

AO 120 (Rev. 08/10)

<b>TO:</b> <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Southern District of New York on the following

☐ Trademarks or ☒ Patents. ( ☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 18-cv-03667-GHW	DATE FILED 4/25/2018	U.S. DISTRICT COURT Southern District of New York
PLAINTIFF Autel Robotics USA LLC		DEFENDANT DJI Technology Inc., et al.,
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 U.S. Pat. 7,979,174	7/12/2011	AUTEL ROBOTICS USA LLC
2 U.S. Pat. 9,260,184	2/16/2016	AUTEL ROBOTICS USA LLC
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 See Attached Sheet		See Attached Sheet
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT COPY ATTACHED: Notice of Voluntary Dismissal
--

CLERK Ruby J. Krajick	(BY) DEPUTY CLERK s/K.Mango	DATE 7/2/2018
--------------------------	--------------------------------	------------------

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK  
AUTEL ROBOTICS USA LLC,

Plaintiffs,

v.

DJI TECHNOLOGY INC.,  
SZ DJI TECHNOLOGY CO., LTD. AND  
DJI EUROPE B.V.

Defendants.


No. 1:18-cv-03667-GHW

**NOTICE OF VOLUNTARY  
DISMISSAL PURSUANT TO  
F.R.C.P. 41(a)(1)(A)(i)**

Pursuant to F.R.C.P. 41(a)(1)(A)(i) of the Federal Rules of Civil Procedure, the plaintiff Autel Robotics USA LLC, by and through its counsel, hereby gives notice that the above-captioned action is voluntarily dismissed, without prejudice against defendants DJI Technology Inc., SZ DJI Technology Col, Ltd, and DJI Europe B.V.

Dated: July 2, 2018  
New York, NY

STEPTOE & JOHNSON LLP

  
Evan Glassman  
1114 Avenue of the Americas  
New York, NY 10036  
Tel: (212) 506-3900  
Fax: (212) 506-3950  
eglassman@steptoe.com

Timothy C. Bickham  
(admitted *pro hac vice*)  
Michael Flynn-O'Brien  
(admitted *pro hac vice*)  
STEPTOE & JOHNSON LLP  
1330 Connecticut Avenue, NW  
Washington, DC 20036  
Tel: (202) 429-5517  
Fax: (202) 429-3902  
tbickham@steptoe.com  
mflynno'Brien@steptoe.com

AO 120 (Rev. 08/10)

<b>TO:</b> <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been  
 filed in the U.S. District Court Southern District of New York on the following

☐ Trademarks or ☒ Patents. ( ☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 1:18-cv-03667	DATE FILED 4/25/2018	U.S. DISTRICT COURT Southern District of New York
PLAINTIFF AUTEL ROBOTICS USA LLC,		DEFENDANT DJI TECHNOLOGY INC., SZ DJI TECHNOLOGY CO., LTD. AND DJI EUROPE B.V.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 U.S. Pat. 7,979,174	7/12/2011	AUTEL ROBOTICS USA LLC
2 U.S. Pat. 9,260,184	2/16/2016	AUTEL ROBOTICS USA LLC
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK Ruby J. Krajick	(BY) DEPUTY CLERK /S/ P. NEPTUNE	DATE 4/27/2018
--------------------------	-------------------------------------	-------------------

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
**United States Patent and Trademark Office**  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
14/277,370	05/14/2014	DRAGANFLY INNOVATIONS INC.	CS-2799 RJS/ds	59330

## Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 03/12/2018 has been accepted.

### CERTIFICATIONS:

#### Change of Entity Status:

☒ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

<b>Signature:</b>	/Richard J. Streit/
<b>Name:</b>	Richard J. Streit
<b>Registration Number:</b>	25765


**UNITED STATES PATENT AND TRADEMARK OFFICE**

UNITED STATES DEPARTMENT OF COMMERCE  
**United States Patent and Trademark Office**  
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 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/277,370	05/14/2014	Orville OLM	CS-2799 RJS/ds

**CONFIRMATION NO. 6717**
**POA ACCEPTANCE LETTER**

26530  
 LADAS & PARRY LLP  
 224 SOUTH MICHIGAN AVENUE  
 SUITE 1600  
 CHICAGO, IL 60604



Date Mailed: 03/08/2018

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 02/26/2018.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/Itaba/


**UNITED STATES PATENT AND TRADEMARK OFFICE**

UNITED STATES DEPARTMENT OF COMMERCE  
**United States Patent and Trademark Office**  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/277,370	05/14/2014	Orville OLM	JAR-3343-101

**CONFIRMATION NO. 6717**
**POWER OF ATTORNEY NOTICE**

23117  
 NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203



Date Mailed: 03/08/2018

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 02/26/2018.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/Itaba/

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

<b>PATENT - POWER OF ATTORNEY          OR          REVOCATION OF POWER OF ATTORNEY          WITH A NEW POWER OF ATTORNEY          AND          CHANGE OF CORRESPONDENCE ADDRESS</b>	Patent Number	9,260,184
	Issue Date	February 16, 2016
	First Named Inventor	Orville OLM
	Title	Compact unmanned rotary aircraft
	Attorney Docket No.	CS-2799 RJS/ds

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

26530

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☒ The address associated with the above-identified Customer Number.

OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☐ Firm or  
Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the:

☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on \_\_\_\_\_

SIGNATURE of Applicant or Patent Owner	
Signature	Date
Name	Telephone
Title and Company	

NOTE: Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☐ A total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(c)**Applicant/Patent Owner: Autel Robotics USA LLCApplication No./Patent No.: Patent 9,260,184Filed/Issue Date: Issued Feb. 16, 2016Titled: COMPACT UNMANNED ROTARY AIRCRAFT

Autel Robotics USA LLC

, a

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is \_\_\_\_%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: O OLM; G WOOD; Z DRAGAN To: DRAGANFLY INNOVATIONS INC.

The document was recorded in the United States Patent and Trademark Office at  
Reel 033105, Frame 0921, or for which a copy thereof is attached.

2. From: DRAGANFLY INNOVATIONS INC. To: ZENON DRAGAN

The document was recorded in the United States Patent and Trademark Office at  
Reel 036181, Frame 0325, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*



**STATEMENT UNDER 37 CFR 3.73(c)**

3. From: ZENON DRAGAN To: DRAGANFLY INNOVATIONS INC.

The document was recorded in the United States Patent and Trademark Office at  
Reel 044038, Frame 0011, or for which a copy thereof is attached.

4. From: DRAGANFLY INNOVATIONS INC. To: AUTEL ROBOTICS USA LLC

The document was recorded in the United States Patent and Trademark Office at  
Reel 044300, Frame 0741, or for which a copy thereof is attached.

5. From: \_\_\_\_\_ To: \_\_\_\_\_

The document was recorded in the United States Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

6. From: \_\_\_\_\_ To: \_\_\_\_\_

The document was recorded in the United States Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature

Loren K. Thompson

Printed or Typed Name

February 26, 2018

Date

Reg. 45918

Title or Registration Number

[Page 2 of 2]

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	31883457
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Loren Keith Thompson/Debbie Szumowski
<b>Filer Authorized By:</b>	Loren Keith Thompson
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	26-FEB-2018
<b>Filing Date:</b>	14-MAY-2014
<b>Time Stamp:</b>	12:37:09
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	no				
<b>File Listing:</b>					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	2018-02-26_cs-2799_9260184_power.pdf	205786  7d0fa7ff70c77c027d4dc2ae6064e382801514b4	no	3
<b>Warnings:</b>					

<b>Information:</b>	
<b>Total Files Size (in bytes):</b>	205786
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>	


**UNITED STATES PATENT AND TRADEMARK OFFICE**

UNITED STATES DEPARTMENT OF COMMERCE  
**United States Patent and Trademark Office**  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/277,370	05/14/2014	Orville OLM	JAR-3343-101

**CONFIRMATION NO. 6717**

23117  
 NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203

**MISCELLANEOUS NOTICE**


Date Mailed: 02/13/2018

A communication which cannot be delivered in electronic form has been mailed to the applicant.



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/277,370	05/14/2014	Orville OLM	JAR-3343-101

CONFIRMATION NO. 6717

23117  
 NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203



\*OC000000097360850\*

**Cc:** LADAS & PARRY LLP  
 224 SOUTH MICHIGAN AVENUE  
 SUITE 1600  
 CHICAGO, IL 60604

Date Mailed: 02/13/2018

## DENIAL OF REQUEST FOR POWER OF ATTORNEY

The request for Power of Attorney filed **02/06/2018** is acknowledged. However, the request cannot be granted at this time for the reason stated below.

- ☐ The Power of Attorney you provided did not comply with the new Power of Attorney rules that became effective on June 25, 2004. See 37 CFR 1.32.
- ☐ The revocation is not signed by the applicant, the assignee of the entire interest, or one particular principal attorney having the authority to revoke.
- ☒ The Power of Attorney is from an assignee and the Certificate required by 37 CFR 3.73 has not been received.
- ☐ The person signing for the assignee has omitted their empowerment to sign on behalf of the assignee.
- ☐ The inventor(s) is without authority to appoint attorneys since the assignee has intervened as provided by 37 CFR 3.71.
- ☐ The signature(s) of, co-inventors in this application, has been omitted. The Power of Attorney will be entered upon receipt of confirmation signed by said co-inventor(s).
- ☐ The person(s) appointed in the Power of Attorney is not registered to practice before the U.S. Patent and Trademark Office.
- ☐ Only one Customer Number can be designated for the Power of Attorney in an application. The Customer Number that was captured is the first Customer Number provided on the Power of Attorney document.




## UNITED STATES PATENT AND TRADEMARK OFFICE

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Alexandria, Virginia 22313-1450  
www.uspto.gov

- ☐ A request under 37 CFR 1.48 to add an inventor was granted in this application, however, no power of attorney consistent with the power of attorney granted by the originally named inventive entity has been received. Thus, the addition of the inventor has resulted in the loss of power of attorney in the application. See 37 CFR 1.32(e).
- ☐ The power of attorney has not been accepted because the party who is giving power of attorney has not been identified. Power of attorney may only be signed by the applicant for patent (37 CFR 1.42) or the patent owner. A patent owner who was not the applicant must appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. See 37 CFR 1.32(b)(4).
- ☐ The power of attorney from the inventors has not been accepted because it is a copy from a prior national application for which benefit is claimed and the continuing application names an inventor who was not named as an inventor in the prior application.
- ☐ The power of attorney from the inventors has not been accepted because the power of attorney must be signed by the applicant for patent. See 37 CFR 1.32(b)(4).
- ☐ Any request to correct or update the name of the applicant must include an application data sheet (ADS) in compliance with 37 CFR 1.76 specifying the correct or updated name of the applicant in the applicant information section. Any request to change the applicant after an original applicant has been specified under 37 CFR 1.46(b) must include a new ADS in compliance with 37 CFR 1.76 specifying the applicant in the applicant information section and comply with 37 CFR 3.71 and 3.73. See 37 CFR 1.46(c).

Any inquiries regarding this notice should be directed to the Application Assistance Unit at 571-272-4200.

  
Application Assistance Unit  
571-272-4200

Under the Paperwork Reduction Act of 1995 no persons are required to respond to a collection of information unless it displays a valid OMB control number

<b>PATENT - POWER OF ATTORNEY          OR          REVOCATION OF POWER OF ATTORNEY          WITH A NEW POWER OF ATTORNEY          AND          CHANGE OF CORRESPONDENCE ADDRESS</b>	Patent Number	9,260,184
	Issue Date	February 16, 2016
	First Named Inventor	Orville OLM
	Title	Compact unmanned rotary aircraft
	Attorney Docket No.	CS-2799 RJS/ds

I hereby revoke all previous powers of attorney given in the above-identified patent.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the Customer Number identified in the box at right as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

26530

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) with respect to the patent identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified patent to:

☒ The address associated with the above-identified Customer Number.

OR

☐ The address associated with the Customer Number identified in the box at right:

OR

☐ Firm or

Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the:

☐ Applicant.

OR

☒ Patent owner.

Statement under 37 CFR 3.73(c) (Form PTO/AIA/96) submitted herewith or filed on \_\_\_\_\_

Signature		Date	
Name	Jeff Powell	Telephone	1/30/2018
Title and Company		Autel Robotics USA LLC	

**NOTE:** Signatures of all the applicants or patent owners of the entire interest or their representative(s) are required. If more than one signature is required, submit multiple forms, check the box below, and identify the total number of forms submitted in the blank below.

☐ A total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(c)**Applicant/Patent Owner: Autel Robotics USA LLCApplication No./Patent No.: Patent 9,260,184Filed/Issue Date: Issued Feb. 16, 2016Titled: COMPACT UNMANNED ROTARY AIRCRAFTAutel Robotics USA LLC, a

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☐ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is \_\_\_\_%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: O OLM; G WOOD; Z DRAGAN To: DRAGANFLY INNOVATIONS INC.The document was recorded in the United States Patent and Trademark Office at  
Reel 033105, Frame 0921, or for which a copy thereof is attached.2. From: DRAGANFLY INNOVATIONS INC. To: ZENON DRAGANThe document was recorded in the United States Patent and Trademark Office at  
Reel 036181, Frame 0325, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



**STATEMENT UNDER 37 CFR 3.73(c)**

3. From: ZENON DRAGAN To: DRAGANFLY INNOVATIONS INC.

The document was recorded in the United States Patent and Trademark Office at  
Reel 044038, Frame 0011, or for which a copy thereof is attached.

4. From: DRAGANFLY INNOVATIONS INC. To: AUTEL ROBOTICS USA LLC

The document was recorded in the United States Patent and Trademark Office at  
Reel 044300, Frame 0741, or for which a copy thereof is attached.

5. From: \_\_\_\_\_ To: \_\_\_\_\_

The document was recorded in the United States Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

6. From: \_\_\_\_\_ To: \_\_\_\_\_

The document was recorded in the United States Patent and Trademark Office at  
Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature

Loren K. Thompson

Printed or Typed Name

February 6, 2018

Date

Reg. 45918

Title or Registration Number

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	31715081
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Loren Keith Thompson/Debbie Szumowski
<b>Filer Authorized By:</b>	Loren Keith Thompson
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	06-FEB-2018
<b>Filing Date:</b>	14-MAY-2014
<b>Time Stamp:</b>	15:00:51
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	no				
<b>File Listing:</b>					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	2018-02-06_cs-2799_9260184_power.pdf	205666 d067341746088ecf4ead8195c99411ad637d48a56	no	3
<b>Warnings:</b>					

<b>Information:</b>	
<b>Total Files Size (in bytes):</b>	205666
<p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p>	



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	02/16/2016	9260184	JAR-3343-101	6717

23117 7590 01/27/2016  
 NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203

**ISSUE NOTIFICATION**

The projected patent number and issue date are specified above.

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
 (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Orville OLM, Saskatchewan, CANADA;  
 DRAGANFLY INNOVATIONS INC., Saskatoon, CANADA;  
 Greg WOOD, Saskatchewan, CANADA;  
 Zenon DRAGAN, Saskatchewan, CANADA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit [SelectUSA.gov](http://SelectUSA.gov).

Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>	14277370			
<b>Filing Date:</b>	14-May-2014			
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT			
<b>First Named Inventor/Applicant Name:</b>	Orville OLM			
<b>Filer:</b>	Joseph A. Rhoa/Coral Jones			
<b>Attorney Docket Number:</b>	JAR-3343-101			
Filed as Small Entity				
<b>Filing Fees for Utility under 35 USC 111(a)</b>				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
Utility Appl Issue Fee	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
Printed Copy of Patent - No Color	8001	2	3	6
<b>Total in USD (\$)</b>				<b>486</b>

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	24582707
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Joseph A. Rhoa/Coral Jones
<b>Filer Authorized By:</b>	Joseph A. Rhoa
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	11-JAN-2016
<b>Filing Date:</b>	14-MAY-2014
<b>Time Stamp:</b>	12:34:06
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$486
RAM confirmation Number	11342
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

<b>File Listing:</b>					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	3343-101_IssueFee.pdf	127756 5f67704093f825acc21e138eca55ef4ac3602be5	no	1
<b>Warnings:</b>					
<b>Information:</b>					
2	Fee Worksheet (SB06)	fee-info.pdf	31916 b642fa7e9dcc5492e91cb859bf2677b5a7e7a294	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>			159672		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>          If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>          If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>          If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
**or Fax** (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23117 7590 11/27/2015  
 NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	05/14/2014	Orville OLM	JAR-3343-101	6717

TITLE OF INVENTION: COMPACT UNMANNED ROTARY AIRCRAFT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	02/29/2016

EXAMINER	ART UNIT	CLASS-SUBCLASS
BADAWI, MEDHAT	3644	244-017230

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,  
 (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Nixon & Vanderhye P.C.

2 \_\_\_\_\_

3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

Zenon Dragan

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Saskatchewan, Canada

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☒ Advance Order - # of Copies 2

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☒ Payment by credit card. Form PTO-2038 is attached.  
☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number 14-1140 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29  
☐ Applicant asserting small entity status. See 37 CFR 1.27  
☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature Joseph A. Rhoa

Date January 8, 2016

Typed or printed name Joseph A. Rhoa

Registration No. 37,515



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

23117 7590 11/27/2015  
 NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203

EXAMINER

BADAWI, MEDHAT

ART UNIT

PAPER NUMBER

3644

DATE MAILED: 11/27/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	05/14/2014	Orville OLM	JAR-3343-101	6717

TITLE OF INVENTION: COMPACT UNMANNED ROTARY AIRCRAFT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	02/29/2016

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

## HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23117 7590 11/27/2015  
**NIXON & VANDERHYTE, PC**  
**901 NORTH GLEBE ROAD, 11TH FLOOR**  
**ARLINGTON, VA 22203**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	05/14/2014	Orville OLM	JAR-3343-101	6717

TITLE OF INVENTION: COMPACT UNMANNED ROTARY AIRCRAFT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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EXAMINER	ART UNIT	CLASS-SUBCLASS
BADAWI, MEDHAT	3644	244-017230

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

**NOTE:** Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

**NOTE:** If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

**NOTE:** Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	05/14/2014	Orville OLM	JAR-3343-101	6717
23117	7590	11/27/2015	EXAMINER	
NIXON & VANDERHYE, PC			BADAWI, MEDHAT	
901 NORTH GLEBE ROAD, 11TH FLOOR			ART UNIT	
ARLINGTON, VA 22203			PAPER NUMBER	

3644

DATE MAILED: 11/27/2015

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**  
 (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

### Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<b>Notice of Allowability</b>	<b>Application No.</b> 14/277,370	<b>Applicant(s)</b> OLM ET AL.	
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644	<b>AIA (First Inventor to File) Status</b> Yes

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/13/2015.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 2-12. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
**Certified copies:**  
a) ☒ All    b) ☐ Some    \*c) ☐ None of the:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).  
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.  
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____ 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material 4. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____ .	5. <input type="checkbox"/> Examiner's Amendment/Comment 6. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance 7. <input type="checkbox"/> Other _____.
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/MEDHAT BADAWI/ Primary Examiner, Art Unit 3644	
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## EAST Search History

## EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1110	B63H1/04	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 02:55
L2	6264	( (B64C39/028 OR B64C27/08 OR B64C1/00 OR B64C39/024 OR B64C2201/108 OR OR B64C2201/042 OR B64C2201/027).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 02:58
L3	16968	( (B64C27/82 OR B64C2027/8254 OR B64C27/04 OR B64C2700/6281 OR B64C39/024 OR B64C27/025 OR B64C2027/8227 OR B64C13/30 OR B64C27/16 OR B64D27/24 OR B64D1/22 OR B64D47/08 OR B64D7/00 OR B64D9/00 OR G05D1/0858).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 02:58
L4	12400	( (B64C27/82 OR B64C39/024 OR B64D45/00 OR B64D47/08 OR B64D7/00 OR B64D9/00).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 02:58
L5	16020	( (B64C23/005 OR B64C27/04 OR B64C2700/6281 OR B64C29/0033 OR B64C2201/108 OR B64C39/024 OR B64C27/32 OR B64C27/52 OR B64C27/02 OR B64C2201/127 OR B64C2201/024 OR G05D1/0858 OR G05D1/0669).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 02:58
L6	7686	( (B63H1/04 OR B64C2201/108 OR B64C2201/127 OR B64C2201/206 OR B64C27/02 OR B64C39/024 OR B64C29/00 OR B64C29/0025).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 02:58
L7	8	(L2 L3 L4 L5 L6) and (uav helicopter) and (shaft adj5 (lock fasten\$4 engage\$4) same (rotor adj1 blade)) and lug	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 02:58
L8	519	(2 3 4 5 6) and (uav helicopter) and	US-PGPUB;	OR	ON	2015/11/22

		(shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			03:07
L9	420	(2 3 4 5 6) and (uav helicopter) and (shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug and notch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 03:08
L10	452	(2 3 4 5 6) and (uav helicopter) and (shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug and (notch opening)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 03:09
L11	152	(L2 L3 L4 L5 L6) and (uav rotor helicopter) and (shaft adj10 (lock fasten\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4)) and lug and (notch opening)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 03:11
L12	537	(2 3 4 5 6) and (uav rotor helicopter) and (shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug and (notch opening groove)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 03:19
L28	3	"20140263823"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/11/22 03:20
L29	9	((("20140263823") or ("4477228") or ("8328130"))).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/11/22 03:20
L30	10	((("20140263823") or ("4477228") or ("8328130"))).PN. or (14/277370).APP.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/11/22 03:25
L31	10	B64C2201/20	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2015/11/22 03:29



[illegible]


11/ 22/ 2015 3:48:53 AM

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**EAST Search History****EAST Search History (Interference)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L32	0	(rotary wing aircraft body plurality arms extending laterally rotor assembly attached end blade releasably driveshaft lock mechanism drive rotating first clockwise direction second counterclockwise engagement generates vertical lift force engageable only cannot be shaft portion defining notches engage corresponding lugs).clm.	US-PGPUB; USPAT	AND	ON	2015/11/22 03:47

**11/ 22/ 2015 3:49:12 AM****C:\ Users\ mbadawi\ Documents\ EAST\ Workspaces\ 14277370.wsp**

<b>Search Notes</b>  	<b>Application/Control No.</b>  14277370	<b>Applicant(s)/Patent Under Reexamination</b>  OLM ET AL.
	<b>Examiner</b>  MEDHAT BADAWI	<b>Art Unit</b>  3644

CPC- SEARCHED		
Symbol	Date	Examiner
SEE SEARCH HISTORY	1/24/2015	M.B.
SEE SEARCH HISTORY	5/5/2015	M.B.
SEE SEARCH HISTORY	8/16/2015	M.B.
SEE SEARCH HISTORY	11/22/2015	M.B.


CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
SEARCH NOTES ATTACHED	1/24/2015	M.B.
INVENTOR SEARCH	1/24/2015	M.B.
SEARCH NOTES ATTACHED	5/5/2015	M.B.
SEARCH NOTES ATTACHED	8/16/2015	M.B.
SEARCH NOTES ATTACHED	11/22/2015	M.B.

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
B64C, B64D, G05D, B63H	SEE .CLM. SEARCH	11/22/2015	M.B.


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<b>Issue Classification</b> 	<b>Application/Control No.</b> 14277370	<b>Applicant(s)/Patent Under Reexamination</b> OLM ET AL.
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644

CPC						
Symbol				Type	Version	
B64C		27		08	F	2013-01-01
B64C		39		024	I	2013-01-01
B64C		2201		027	A	2013-01-01
B64C		2201		108	A	2013-01-01
B64C		2201		20	A	2013-01-01


CPC Combination Sets					
Symbol		Type	Set	Ranking	Version

NONE		<b>Total Claims Allowed:</b>	
(Assistant Examiner)	(Date)	11	
/MEDHAT BADAWI/ Primary Examiner. Art Unit 3644	11/22/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1, 8 and 10

<b>Issue Classification</b> 	<b>Application/Control No.</b> 14277370	<b>Applicant(s)/Patent Under Reexamination</b> OLM ET AL.
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION													
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED								
244		17.23				B	6	4	C	27 / 08 (2006.0)									
CROSS REFERENCE(S)																			
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																		
244	17.27	131																	
416	223R																		

NONE		<b>Total Claims Allowed:</b>	
		11	
(Assistant Examiner)	(Date)		
/MEDHAT BADAWI/ Primary Examiner. Art Unit 3644	11/22/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1, 8 and 10

<b>Issue Classification</b> 	<b>Application/Control No.</b> 14277370	<b>Applicant(s)/Patent Under Reexamination</b> OLM ET AL.
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644

<input type="checkbox"/> <b>Claims renumbered in the same order as presented by applicant</b> <input type="checkbox"/> <b>CPA</b> <input type="checkbox"/> <b>T.D.</b> <input type="checkbox"/> <b>R.1.47</b>															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
-	1	-	17												
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NONE		<b>Total Claims Allowed:</b>	
		11	
(Assistant Examiner)	(Date)		
/MEDHAT BADAWI/	11/22/2015	O.G. Print Claim(s)	O.G. Print Figure
Primary Examiner.Art Unit 3644		1	1, 8 and 10
(Primary Examiner)	(Date)		



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## BIB DATA SHEET

CONFIRMATION NO. 6717

<b>SERIAL NUMBER</b> 14/277,370	<b>FILING or 371(c) DATE</b> 05/14/2014 <b>RULE</b>	<b>CLASS</b> 244	<b>GROUP ART UNIT</b> 3644	<b>ATTORNEY DOCKET NO.</b> JAR-3343-101		
<b>APPLICANTS</b> DRAGANFLY INNOVATIONS INC., Saskatoon, CANADA; <b>INVENTORS</b> Orville OLM, Saskatchewan, CANADA; Greg WOOD, Saskatchewan, CANADA; Zenon DRAGAN, Saskatchewan, CANADA; <b>** CONTINUING DATA *****</b> <b>** FOREIGN APPLICATIONS *****</b> CANADA 2815885 05/15/2013 <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY **</b> 05/27/2014						
Foreign Priority claimed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	35 USC 119(a-d) conditions met <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Met after Allowance M.B. Initials	<b>STATE OR COUNTRY</b> CANADA	<b>SHEETS DRAWINGS</b> 4	<b>TOTAL CLAIMS</b> 20	<b>INDEPENDENT CLAIMS</b> 2
<b>ADDRESS</b> NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203 UNITED STATES						
<b>TITLE</b> COMPACT UNMANNED ROTARY AIRCRAFT						
<b>FILING FEE RECEIVED</b> 800	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

OLM et al.

Atty. Ref.: JAR-3343-0101

Appl. No. 14/277,370

Confirmation No. 6717

Filed: 05/14/2014

Art Unit: 3644

Examiner: M. BADAWI

For: COMPACT UNMANNED ROTARY AIRCRAFT

\* \* \* \* \*

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

November 13, 2015

Sir:

**AMENDMENT**

Responsive to the Official Action dated August 31, 2015, please amend the  
above-identified application as follows:



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 Appl. No. 14/277,370  
 November 13, 2015

Atty Docket No.: JAR-3343-0101

**AMENDMENTS TO THE CLAIMS:**

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

1. (Canceled)

2. (Currently amended) ~~The apparatus of claim 1~~ A rotary wing aircraft apparatus comprising:

a body;

a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;

each rotor assembly comprising a rotor blade releasably attached to a driveshaft by a lock mechanism, and a drive rotating the driveshaft;

wherein a first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction;

wherein a clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction, and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction;

wherein the clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism; and

wherein the clockwise lock mechanism comprises a shaft lock portion attached to the first driveshaft and a blade lock portion attached to the clockwise rotor blade, the shaft lock portion defining notches configured to engage corresponding lugs on the blade lock portion.

3. (Original) The apparatus of claim 2 wherein the counterclockwise lock mechanism comprises a shaft lock portion attached to the second driveshaft and a blade lock portion attached to the counterclockwise rotor blade, the blade lock portion comprising lugs with a configuration

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November 13, 2015

Atty Docket No.: JAR-3343-0101

that is different than a configuration of the lugs on the blade lock portion of the clockwise lock mechanism.

4. (Original) The apparatus of claim 2 wherein the blade lock portion of the clockwise lock mechanism is rotated counterclockwise with respect to the shaft lock portion thereof to releasably attach the clockwise rotor blade to the first driveshaft.

5. (Original) The apparatus of claim 4 wherein the blade lock portion of the counterclockwise lock mechanism is rotated clockwise with respect to the shaft lock portion thereof to releasably attach the counterclockwise rotor blade to the second driveshaft.

6. (Currently amended) The apparatus of claim 2 ~~claim 1~~ wherein each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.

7. (Original) The apparatus of claim 6 wherein the leg slopes downward and away from the body.

8. (Original) The apparatus of claim 6 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly.

9. (Original) The apparatus of claim 8 comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position.

10. (Original) The apparatus of claim 8 wherein the leg slopes downward and away from the body when in the operating position.

11. (Original) The apparatus of claim 8 wherein a bottom end of the leg engages the arm when in the stored position.

12. (Currently amended) The apparatus of claim 2 ~~claim 1~~ wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms

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November 13, 2015

Atty Docket No.: JAR-3343-0101

extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm.

Claims 13-20 (Canceled).

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November 13, 2015

Atty Docket No.: JAR-3343-0101

**REMARKS**

This is in response to the Office Action dated August 31, 2015. Claims 1 and 13-20 are canceled. Thus, claims 2-12 are currently pending.

The Office Action indicated claims 2-5 would be allowable if re-written in independent form. Allowable claim 2 has been rewritten in independent form. Thus, the case is now in condition for allowance.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:                     /Joseph A. Rhoa/                      
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Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	24073652
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Joseph A. Rhoa/Coral Jones
<b>Filer Authorized By:</b>	Joseph A. Rhoa
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	13-NOV-2015
<b>Filing Date:</b>	14-MAY-2014
<b>Time Stamp:</b>	11:41:52
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment		no			
<b>File Listing:</b>					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		3343-101_Amendment.pdf	260756 c5cfcce07eca4d16d076619937cbb70384780143	yes	6

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Transmittal Letter		1	1
Amendment/Req. Reconsideration-After Non-Final Reject		2	2
Claims		3	5
Applicant Arguments/Remarks Made in an Amendment		6	6

**Warnings:**

**Information:**

<b>Total Files Size (in bytes):</b>	260756
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**  
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**  
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**  
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of Atty Dkt.: JAR-3343-0101

OLM et al. TC/A.U.: 3644

Appln. No. 14/277,370 Examiner: M. BADAWI

Filed: 05/14/2014 Date: November 13, 2015

Title: COMPACT UNMANNED ROTARY AIRCRAFT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**RESPONSE/AMENDMENT/LETTER**

This is a response/amendment/letter in the above-identified application and includes an attachment which is hereby incorporated by reference and the signature below serves as the signature to the attachment in the absence of any other signature thereon.

☐ **Correspondence Address Indication Form attached.****Fees are attached as calculated below:**

Total effective claims after amendment **11** minus highest number  
previously paid for **20** (at least 20) = 0 x \$80.00 = \$0.00 (1202)/\$0.00 (2202)/\$0.00 (3202) \$

Independent claims after amendment **1** minus highest number  
previously paid for **3** (at least 3) = 1 x \$420.00 = \$0.00 (1201)/\$0.00 (2201)/\$ 0.00 (3201) \$

If proper multiple dependent claims now added for first time, (ignore improper); add  
\$780.00 (1203)/\$390.00 (2203)/\$195.00 (3203) \$

Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s)  
One Month Extension \$200.00 (1251)/\$100.00 (2251)/\$50.00 (3251)  
Two Month Extensions \$600.00 (1252)/\$300.00 (2252)/\$150.00 (3252)  
Three Month Extensions \$1400.00 (1253)/\$700.00 (2253)/\$350.00 (3253)  
Four Month Extensions \$2200.00 (1254)/\$1100.00 (2254)/\$550.00 (3254)  
Five Month Extensions \$3000.00 (1255)/\$1500.00 (2255)/\$750.00 (3255) \$

Terminal disclaimer enclosed, add \$160.00 (1814) \$

☐ Applicant claims "small entity" status. ☐ Statement filed herewith  
☐ Applicant claims "micro entity" status ☐ Micro entity certification statement filed herewith

Rule 56 Information Disclosure Statement Filing Fee \$180.00 (1806)/\$90.00 (2806)/\$45.00 (3806) \$

Assignment Recordation Fee \$40.00 (8021)/ \$0 if filed electronically \$

Other: \$

**TOTAL FEE \$ 0.00**☐ **CREDIT CARD PAYMENT (FORM ATTACHED IF PAPER FILING).**

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

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NIXON & VANDERHUYE P.C.  
By Atty: Joseph A. Rhoads Reg. No. 37,515

Signature: /Joseph A. Rhoads/

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>14/277,370</b>		Filing Date <b>05/14/2014</b>		<input type="checkbox"/> To be Mailed					
ENTITY: <input type="checkbox"/> LARGE <input checked="" type="checkbox"/> SMALL <input type="checkbox"/> MICRO														
<b>APPLICATION AS FILED – PART I</b>														
(Column 1)			(Column 2)											
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)						
<input checked="" type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A		<b>140</b>						
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A								
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A								
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =								
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		X \$ =								
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).												
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))														
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL		<b>140</b>						
<b>APPLICATION AS AMENDED – PART II</b>														
(Column 1)			(Column 2)			(Column 3)								
AMENDMENT	<b>11/13/2015</b>		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))		* 11		Minus	** 20		= 0		X \$40 =		0		
	Independent (37 CFR 1.16(h))		* 1		Minus	***3		= 0		X \$210 =		0		
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))													
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))													
												TOTAL ADD'L FEE		<b>0</b>
(Column 1)			(Column 2)			(Column 3)								
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR		PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))		*		Minus	**		=		X \$ =				
	Independent (37 CFR 1.16(h))		*		Minus	***		=		X \$ =				
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))													
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))													
												TOTAL ADD'L FEE		
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>														

LIE  
/GLORIA J. TRAMMELL/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.





## UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	05/14/2014	Orville OLM	JAR-3343-101	6717

23117	7590	08/31/2015
NIXON & VANDERHYE, PC		
901 NORTH GLEBE ROAD, 11TH FLOOR		
ARLINGTON, VA 22203		

EXAMINER	
BADAWI, MEDHAT	

ART UNIT	PAPER NUMBER
3644	

NOTIFICATION DATE	DELIVERY MODE
08/31/2015	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOMAIL@nixonvan.com  
 pair\_nixon@firsttofile.com

<b>Office Action Summary</b>	<b>Application No.</b> 14/277,370	<b>Applicant(s)</b> OLM ET AL.	
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644	<b>AIA (First Inventor to File) Status</b> Yes

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 07/17/2015.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims\***

5) ☒ Claim(s) 1-20 is/are pending in the application.  
5a) Of the above claim(s) 13-20 is/are withdrawn from consideration.

6) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

7) ☒ Claim(s) 1 and 6-12 is/are rejected.

8) ☒ Claim(s) 2-5 is/are objected to.

9) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

**Application Papers**

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on See Continuation Sheet is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a) ☒ All    b) ☐ Some\*\*    c) ☐ None of the:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)  
Paper No(s)/Mail Date \_\_\_\_\_.

3) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

4) ☐ Other: \_\_\_\_\_.

Continuation Sheet (PTOL-326)

Application No. 14/277,370

Continuation of Application Papers 11). The drawing(s) filed on 05/14/2014 and 06/16/2014.

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Art Unit: 3644

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### **DETAILED ACTION**

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **08/11/2015** has been entered.

#### **Reference of prior art**

**Wang et al. (US 2014/0263823, TRANSFORMABLE AERIAL VEHICLE).**

**Duffy et al. (US 4477228, Injection molded propeller).**

**Goossen. (US 8328130, Vertical take off and landing unmanned aerial vehicle airframe structure).**

#### **Claim Rejections - 35 USC § 103**

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 Art Unit: 3644

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The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 6-8, 10-15 and 17- 20** are rejected under **35 U.S.C. § 103(a)** as being unpatentable over **Wang** in view of **Duffy**.

**Re claim 1** Referring to the figures and the Detailed Description, **Wang** discloses: A rotary wing aircraft apparatus comprising:

a body (**fig. 2, item 10**);

a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm (**¶ 0057**);

each rotor assembly comprising a rotor blade releasably attached to a driveshaft by a lock mechanism and a drive rotating the driveshaft (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism**)

wherein a first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction (**¶ 0105**);

wherein a clockwise rotor blade is releasably attached to the first driveshaft by

engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism, thus when the rotor turns clockwise the lock mechanism is construed as a clockwise lock mechanism**), and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism, thus when the other rotor turns counterclockwise the lock mechanism is construed as a counterclockwise lock mechanism**);

However **Wang** fails to teach as disclosed by **Duffy**: the clockwise lock mechanism (**¶ 0105, in case of a clockwise rotation blade**) comprises a first shaft lock portion (**fig. 4, item 28**) attached to the first driveshaft (**fig. 4, item 22**) and a first blade lock portion attached to the clockwise rotor blade (**fig. 4, item 26**);

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to add the **Duffy** teachings of a first shaft lock portion attached to the first driveshaft and a first blade lock portion attached to the clockwise rotor blade into the **Wang** teachings so that a solid and firm connection is established between the shaft and the blade without additional fasteners.

the counterclockwise lock mechanism (**¶ 0105, in case of a counterclockwise rotation blade**) comprises a second shaft lock portion (**fig. 4, item 28**) attached to the second driveshaft (**fig. 4, item 22**) and a second blade lock portion attached to the counterclockwise rotor blade (**fig. 4, item 26**);

wherein the first blade lock portion is configured to engage ~~only~~ the first shaft lock portion by rotating the first blade lock portion in the counterclockwise direction with respect to the first shaft lock portion and cannot engage the second shaft lock portion (**the instant application defined two of the rotor blades 9A, 9B to rotate in a clockwise direction and two of the rotor blades 9C, 9D to rotate in a counterclockwise direction, Wang is quad rotor aircraft similar to the apparatus 1; thus, using the locking mechanism of Duffy in the counterclockwise rotation blade the rotor blades 9C, 9D will allow the first blade lock portion to engage only the first shaft lock portion and cannot engage the second shaft lock portion because of the different blade assembly**);

wherein the second blade lock portion is configured to engage ~~only~~ the second shaft lock portion by rotating the second blade lock portion in the clockwise direction with respect to the second shaft lock portion and cannot engage the first shaft lock portion (**the instant application defined two of the rotor blades 9C, 9D to rotate in a counterclockwise direction and two of the rotor blades 9A, 9B to rotate in a**

clockwise direction, Wang is quad rotor aircraft similar to the apparatus 1; thus, using the locking mechanism of Duffy in the counterclockwise rotation blade the rotor blades 9A, 9B will allow the second blade lock portion to engage only the second shaft lock portion and cannot engage the first shaft lock portion because of the different blade assembly);

wherein the clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism (**Wang ¶ 0105**).

**Re claim 6** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus of claim 1 wherein each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface (**Wang fig. 3, item 40**).

**Re claim 7 and 14** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: wherein the leg slopes downward and away from the body (**Wang fig. 4, item 40**).



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**Re claim 8** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus of claim 6 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly (**Wang ¶ 0065**).

**Re claim 10 and 17** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus, wherein the leg slopes downward and away from the body when in the operating position (**Wang fig. 4, item 40**).

**Re claim 11 and 18** Referring to the figures and the Detailed Description, **Wang, as modified above**, fails to teach: The apparatus, wherein a bottom end of the leg engages the arm when in the stored position.

The Examiner takes official notice that it is old and well known in the art that a bottom end of the leg engages the arm when in the stored position.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify **Wang** to comprise of a bottom end of the leg engages the

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arm when in the stored position as it is old and well known and it would have achieved the predictable result of retaining the legs securely in stowed position.

**Re claims 12 and 20** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus, wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm (**Wang ¶ 0066 and fig. 3, item 20**).

**Re claim 13** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: A rotary wing aircraft apparatus comprising:  
a body;  
a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;  
each rotor assembly comprising a rotor blade and a drive operative to rotate the rotor blade; and  
each rotor assembly comprising a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.

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**(Claim 13 is similar in scope to Claims 1 and 6; therefore, Claim 13 is rejected under the same rationale as Claims 1 and 6).**

**Re claim 15** Referring to the figures and the Detailed Description, **Wang** discloses: The apparatus of claim 13 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly (**Wang ¶ 0065 and fig. 3, item 20**).

**Re claim 19** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus of claim 15 wherein the rotor blades are releasably attached to the rotor assemblies (**Wang fig. 3, as suggested in the drawing, in addition, using the appropriate tools rotors are detachable from the propulsion units driving the rotors**).

**Claims 9 and 16** are rejected under 35 U.S.C. § 103(a) as being unpatentable over **Wang** in view of **Duffy** and further in view of **Goossen**.

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**Re claims 9 and 16** Referring to the figures and the Detailed Description, **Wang, as modified above**, fails to teach as disclosed by **Goossen**:  
 The apparatus comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position. (**col. 5, 1 34-42**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to add the **Goossen** teachings of a bias element urging the leg toward the stored position into the **Wang, as modified above**, teachings so that the leg may be quickly rotated 90 degrees to place the aircraft in a stowed position and hold the landing gear in position.

### **Response to Arguments**

Applicant's arguments filed on **07/17/2015** have been fully considered but they are not persuasive. Applicant made the following arguments:

**Claim 1** Applicant argues “Wang does not disclose a clockwise lock mechanism comprising a first shaft lock portion attached to the first driveshaft and a first blade lock portion attached to the clockwise rotor blade and a counterclockwise lock mechanism comprising a second shaft lock portion attached to the second driveshaft and a second blade lock portion attached to the counterclockwise rotor blade where the first blade lock portion is configured to engage only the first shaft lock portion and cannot engage the second shaft lock portion and where the second

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Art Unit: 3644

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blade lock portion is configured to engage only the second shaft lock portion and cannot engage the first shaft lock portion.”

**Examiner respectfully disagrees, Wang as modified above discloses the structure recited above as recited and explained in the rejection included in the office action.**

Applicant argues that **Duffy** teaches “The drawings show that the shaft 22 of Duffy cannot rotate in the bore 20 as required by the presently amended claim 1, The ribs 28 of Duffy slide into the grooves 26 and no rotation of one with respect to the other is possible. Further there is no differentiation of a shaft and hub for a clockwise rotating propeller or a for counterclockwise rotating propeller – the illustrated shaft will engage a propeller hub for rotation in either direction since the ribs 28 engaged in the grooves 26 prevent rotation of the hub with respect to the shaft in either direction.”

**Examiner respectfully disagrees, Applicant argues limitations have not been claimed; however Wang as modified above met all the structural limitations have been claimed in the instant application.**

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### **Allowable Subject Matter**

**Claim 2-5** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record including the disclosures above neither anticipates nor renders obvious the above recited combination.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP ~ 707.07(a).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEDHAT BADAWI whose telephone number is (571)270-5983. The examiner can normally be reached on Mon-Fri during office hours. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY COLLINS can be reached on 571-272-6886. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or

Application/Control Number: 14/277,370  
Art Unit: 3644

Page 13

Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MEDHAT BADAWI/

Examiner, Art Unit 3644

## EAST Search History

## EAST Search History (Prior Art)


Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	5832	( (B64C39/028 OR B64C27/08 OR B64C1/00 OR B64C39/024 OR B64C2201/108 OR OR B64C2201/042 OR B64C2201/027).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16 18:21
L2	16290	( (B64C27/82 OR B64C2027/8254 OR B64C27/04 OR B64C2700/6281 OR B64C39/024 OR B64C27/025 OR B64C2027/8227 OR B64C13/30 OR B64C27/16 OR B64D27/24 OR B64D1/22 OR B64D47/08 OR B64D7/00 OR B64D9/00 OR G05D1/0858).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16 18:21
L3	11660	( (B64C27/82 OR B64C39/024 OR B64D45/00 OR B64D47/08 OR B64D7/00 OR B64D9/00).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16 18:21
L4	15436	( (B64C23/005 OR B64C27/04 OR B64C2700/6281 OR B64C29/0033 OR B64C2201/108 OR B64C39/024 OR B64C27/32 OR B64C27/52 OR B64C27/02 OR B64C2201/127 OR B64C2201/024 OR G05D1/0858 OR G05D1/0669).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16 18:21
L5	7303	( (B63H1/04 OR B64C2201/108 OR B64C2201/127 OR B64C2201/206 OR B64C27/02 OR B64C39/024 OR B64C29/00 OR B64C29/0025).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16 18:21
L6	8	(L1 L2 L3 L4 L5) and (uav helicopter) and (shaft adj5 (lock fasten\$4 engage\$4) same (rotor adj1 blade)) and lug	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16 18:21
L7	499	(1 2 3 4 5) and (uav helicopter) and (shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16 18:26



L8	570	(1 2 3 4 5) and (uav rotor helicopter) and (shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16: 18:27
L9	184	(1 2 3 4 5) and (uav rotor helicopter) and (shaft adj10 (lock fasten\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4)) and lug	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16: 18:27
L10	127	(1 2 3 4 5) and (uav rotor helicopter) and (shaft adj10 (lock fasten\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4)) and lug and notch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16: 18:27
L12	475	(1 2 3 4 5) and (uav rotor helicopter) and (shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug and notch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16: 18:30
L14	497	(1 2 3 4 5) and (uav rotor helicopter) and (shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug and (notch groove)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/08/16: 18:37
S181	6	"49612450".FMI D.	US-PGPUB; USPAT; FPRS	OR	ON	2015/08/15: 16:45
S182	19	("1400032"   "20120056041"   "20130129545"   "20130287577"   "2563020"   "3245476"   "3904301"   "3914067"   "4101070"   "4477228"   "4611972"   "4863353"   "5593265"   "5593283"   "6918723"   "7086843").PN. OR ("9057273").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2015/08/15: 16:47
S183	10	((("20140263823") or ("4477228") or ("8328130"))).PN. or (14/277370).APP.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/08/16: 15:32

8/16/2015 6:39:16 PM

C:\Users\mbadawi\Documents\EAST\Workspaces\14277370.wsp

<b>Search Notes</b> 	<b>Application/Control No.</b> 14277370	<b>Applicant(s)/Patent Under Reexamination</b> OLM ET AL.
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644

CPC- SEARCHED		
Symbol	Date	Examiner
SEE SEARCH HISTORY	1/24/2015	M.B.
SEE SEARCH HISTORY	5/5/2015	M.B.
SEE SEARCH HISTORY	8/16/2015	M.B.

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
SEARCH NOTES ATTACHED	1/24/2015	M.B.
INVENTOR SEARCH	1/24/2015	M.B.
SEARCH NOTES ATTACHED	5/5/2015	M.B.
SEARCH NOTES ATTACHED	8/16/2015	M.B.

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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<p align="center"><b>REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL</b></p> <p>Address to: Mail Stop RCE Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450</p>	<i>Application Number</i>		14/277,370	
	<i>Filing Date</i>		05/14/2014	
	<i>First Named Inventor</i>		OLM, Orville	
	<i>Group Art Unit</i>	3644	<i>Conf. No.</i>	6717
	<i>Examiner Name</i>		M. BADAWI	
	<i>Attorney Docket Number</i>		JAR-3343-0101	

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application. Request for continued Examination (RCE) practice under 37 C.F.R. § 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO).

1. **Submission required under 37 C.F.R. § 1.114.**

a. ☒ Previously submitted (Note: Any previously filed unentered amendments will be entered unless applicant instructs otherwise. If applicant does not wish to have previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

i. ☒ Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on July 17, 2015

ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_

iii. ☐ Other \_\_\_\_\_

b. ☐ Enclosed

i. ☐ Amendment/Reply

ii. ☐ Affidavit(s)/Declaration(s)

iii. ☐ Information Disclosure Statement (IDS)

iv. ☐ Other \_\_\_\_\_

2. **Miscellaneous**

a. ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(i) required)

b. ☐ Other \_\_\_\_\_

3. **Fees** The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed.

a. ☒ Applicant claims "small entity" status.

☐ Applicant claims "micro entity" status. ☐ Micro entity certification statement filed herewith.

b. ☒ Fees are attached as calculated below:

i. ☒ RCE fee required under 37 C.F.R. § 1.17(e)(1) \$1200.00 (1801)/\$600.00 (2801)/\$300.00 (3801) \$ 600.00

☐ RCE fee required under 37 C.F.R. § 1.17(e)(2) \$1700.00 (1820)/\$850.00 (2820)/\$425.00 (3820) \$

ii. ☐ Petition is made to extend the due date \_\_\_\_\_ months (less \_\_\_\_\_ months previously paid) \$

iii. ☐ Other \$

c. ☒ **CREDIT CARD OR DEPOSIT ACCOUNT PAYMENT (CREDIT CARD FORM ATTACHED IF PAPER FILING) in the amount of \$600.00**

d. ☒ The Director is hereby authorized to charge any deficiency in the fee(s) filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm), to Deposit Account No. 14-1140.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
<i>Name (Print Type)</i>	Joseph A. Rhoa	<i>Registration No. (Attorney/Agent)</i>	37,515
<i>Signature</i>	/Joseph A. Rhoa/	<i>Date</i>	August 11, 2015

CERTIFICATE OF MAILING OR TRANSMISSION			
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office on:			
<i>Name (Print Type)</i>			
<i>Signature</i>		<i>Date</i>	

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>	14277370			
<b>Filing Date:</b>	14-May-2014			
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT			
<b>First Named Inventor/Applicant Name:</b>	Orville OLM			
<b>Filer:</b>	Joseph A. Rhoa/Coral Jones			
<b>Attorney Docket Number:</b>	JAR-3343-101			
Filed as Small Entity				
<b>Filing Fees for Utility under 35 USC 111(a)</b>				
<b>Description</b>	<b>Fee Code</b>	<b>Quantity</b>	<b>Amount</b>	<b>Sub-Total in USD(\$)</b>
<b>Basic Filing:</b>				
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
<b>Petition:</b>				
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Miscellaneous:</b>				
Request for Continued Examination	2801	1	600	600
<b>Total in USD (\$)</b>				<b>600</b>

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	23173394
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Joseph A. Rhoa/Coral Jones
<b>Filer Authorized By:</b>	Joseph A. Rhoa
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	11-AUG-2015
<b>Filing Date:</b>	14-MAY-2014
<b>Time Stamp:</b>	12:09:24
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$600
RAM confirmation Number	10125
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	3343-101_RCE.pdf	172277 <small>77e93e080750fc571cc433196aa2154ce8f54aef</small>	no	1
<b>Warnings:</b>					
This is not a USPTO supplied RCE SB30 form.					
<b>Information:</b>					
2	Fee Worksheet (SB06)	fee-info.pdf	30281 <small>0874985d043df0dd2119d4cc77efdd33869a9043</small>	no	2
<b>Warnings:</b>					
<b>Information:</b>					
Total Files Size (in bytes):			202558		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>            If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>            If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>            If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>14/277,370</b>		Filing Date <b>05/14/2014</b>		<input type="checkbox"/> To be Mailed			
ENTITY: <input type="checkbox"/> LARGE <input checked="" type="checkbox"/> SMALL <input type="checkbox"/> MICRO												
<b>APPLICATION AS FILED – PART I</b>												
(Column 1)			(Column 2)									
FOR		NUMBER FILED	NUMBER EXTRA				RATE (\$)	FEE (\$)				
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A				N/A					
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A	N/A				N/A					
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A				N/A					
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*				X \$	=				
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*				X \$	=				
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).										
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))												
* If the difference in column 1 is less than zero, enter "0" in column 2.							TOTAL					
<b>APPLICATION AS AMENDED – PART II</b>												
(Column 1)			(Column 2)			(Column 3)						
AMENDMENT	<b>08/11/2015</b>		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))		* 12	Minus	** 20	= 0	X \$40 =		0			
	Independent (37 CFR 1.16(h))		* 1	Minus	***3	= 0	X \$210 =		0			
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))											
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
								TOTAL ADD'L FEE		<b>0</b>		
(Column 1)			(Column 2)			(Column 3)						
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))		*	Minus	**	=	X \$		=			
	Independent (37 CFR 1.16(h))		*	Minus	***	=	X \$		=			
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))											
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
								TOTAL ADD'L FEE				
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>												

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.





## UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	05/14/2014	Orville OLM	JAR-3343-101	6717

23117	7590	07/28/2015
NIXON & VANDERHYE, PC		
901 NORTH GLEBE ROAD, 11TH FLOOR		
ARLINGTON, VA 22203		

EXAMINER	
BADAWI, MEDHAT	

ART UNIT	PAPER NUMBER
3644	

NOTIFICATION DATE	DELIVERY MODE
07/28/2015	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOMAIL@nixonvan.com  
 pair\_nixon@firsttofile.com

<b>Advisory Action Before the Filing of an Appeal Brief</b>	<b>Application No.</b> 14/277,370	<b>Applicant(s)</b> OLM ET AL.	
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644	<b>AIA (First Inventor to File) Status</b> Yes

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 17 July 2015 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.  
NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires \_\_\_\_\_ months from the mailing date of the prior Advisory Action or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

*Examiner Note:* If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because

a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);

b) ☐ They raise the issue of new matter (see NOTE below);

c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.

6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☒ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.

9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.

13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). \_\_\_\_\_

14. ☐ Other: \_\_\_\_\_.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_.

Claim(s) objected to: 2-5.

Claim(s) rejected: 1,6-8 and 10-12.

Claim(s) withdrawn from consideration: 13-20.

	/MEDHAT BADAWI/ Examiner, Art Unit 3644
--	--

Continuation of 11. does NOT place the application in condition for allowance because: the amendments do NOT place the application in condition for allowance, Response to the applicant's remarks/argument is included in the previous rejection.

DO NOT ENTER: /M.B./

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

OLM et al.

Atty. Ref.: JAR-3343-0101

Appl. No. 14/277,370

Confirmation No. 6717

Filed: 05/14/2014

Art Unit: 3644

Examiner: M. BADAWI

For: COMPACT UNMANNED ROTARY AIRCRAFT

\* \* \* \* \*

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

July 17, 2015

Sir:

**AMENDMENT AFTER FINAL**

Responsive to the Official Action dated May 12, 2015, please amend the above-identified application as follows:

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

OLM et al.

Atty. Ref.: JAR-3343-0101

Appl. No. 14/277,370

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Examiner: M. BADAWI

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\* \* \* \* \*

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

July 17, 2015

Sir:

**AMENDMENT AFTER FINAL**

Responsive to the Official Action dated May 12, 2015, please amend the above-identified application as follows:

OLM et al.  
 Appl. No. 14/277,370  
 July 17, 2015

Atty Docket No.: JAR-3343-0101

**AMENDMENTS TO THE CLAIMS:**

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

1. (Currently amended) A rotary wing aircraft apparatus comprising:
  - a body;
  - a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;
  - each rotor assembly comprising a rotor blade releasably attached to a driveshaft by a lock mechanism, and a drive rotating the driveshaft;
  - wherein a first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction;
  - wherein a clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction, and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction;
  - wherein the clockwise lock mechanism comprises a first shaft lock portion attached to the first driveshaft and a first blade lock portion attached to the clockwise rotor blade;
  - the counterclockwise lock mechanism comprises a second shaft lock portion attached to the second driveshaft and a second blade lock portion attached to the counterclockwise rotor blade;
  - wherein the first blade lock portion is configured to engage ~~only~~ the first shaft lock portion by rotating the first blade lock portion in the counterclockwise direction with respect to the first shaft lock portion and cannot engage the second shaft lock portion;
  - wherein the second blade lock portion is configured to engage ~~only~~ the second shaft lock portion by rotating the second blade lock portion in the clockwise direction with respect to the second shaft lock portion and cannot engage the first shaft lock portion;

wherein the clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism.

2. (Original) The apparatus of claim 1 wherein the clockwise lock mechanism comprises a shaft lock portion attached to the first driveshaft and a blade lock portion attached to the clockwise rotor blade, the shaft lock portion defining notches configured to engage corresponding lugs on the blade lock portion.

3. (Original) The apparatus of claim 2 wherein the counterclockwise lock mechanism comprises a shaft lock portion attached to the second driveshaft and a blade lock portion attached to the counterclockwise rotor blade, the blade lock portion comprising lugs with a configuration that is different than a configuration of the lugs on the blade lock portion of the clockwise lock mechanism.

4. (Original) The apparatus of claim 2 wherein the blade lock portion of the clockwise lock mechanism is rotated counterclockwise with respect to the shaft lock portion thereof to releasably attach the clockwise rotor blade to the first driveshaft.

5. (Original) The apparatus of claim 4 wherein the blade lock portion of the counterclockwise lock mechanism is rotated clockwise with respect to the shaft lock portion thereof to releasably attach the counterclockwise rotor blade to the second driveshaft.

6. (Original) The apparatus of claim 1 wherein each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.

7. (Original) The apparatus of claim 6 wherein the leg slopes downward and away from the body.

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Appl. No. 14/277,370  
July 17, 2015

Atty Docket No.: JAR-3343-0101

8. (Original) The apparatus of claim 6 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly.

9. (Original) The apparatus of claim 8 comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position.

10. (Original) The apparatus of claim 8 wherein the leg slopes downward and away from the body when in the operating position.

11. (Original) The apparatus of claim 8 wherein a bottom end of the leg engages the arm when in the stored position.

12. (Original) The apparatus of claim 1 wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm.

13-20 (Canceled).



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July 17, 2015

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### REMARKS

This is in response to the Office Action dated May 12, 2015. Claims 13-20 are canceled. Thus, claims 1-12 are currently pending.

The Action rejected claims 1, 6-8, 10-15, and 17-20 as being unpatentable over the prior art of Wang in view of the prior art of Duffy contrary 35 USC 103(a). The Action further rejected claim 9 as being unpatentable over the prior art of Wang in view of the prior art of Duffy and Goossen.

The Action indicated claims 2-5 would be allowable if re-written in independent form.

The Applicant advises that claims 13-20 have been cancelled, so this response deals only with claims 1-12.

In response the Applicant has amended claim 1.

Claim 1 has been amended by adding the following underlined limitations:

wherein the first blade lock portion is configured to engage ~~only~~ the first shaft lock portion by rotating the first blade lock portion in the counterclockwise direction with respect to the first shaft lock portion and cannot engage the second shaft lock portion;

wherein the second blade lock portion is configured to engage ~~only~~ the second shaft lock portion by rotating the second blade lock portion in the clockwise direction with respect to the second shaft lock portion and cannot engage the first shaft lock portion;

The Applicant respectfully submits the amendments are supported generally in the specification and in particular at paragraphs 0033 and 0034 and in Figs. 4-10 of the published application.

The Action refers to paragraph 105 of Wang as disclosing the elements of claim 1. Wang states in part at paragraph 105:

"[0105]..... The blades can be turned by rotation of the central shaft, which can be driven by a suitable motor or engine. The blades can be configured to spin in a clockwise rotation and/or a counterclockwise rotation. ....

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July 17, 2015

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The Applicant respectfully submits that Wang does not disclose a clockwise lock mechanism comprising a first shaft lock portion attached to the first driveshaft and a first blade lock portion attached to the clockwise rotor blade and a counterclockwise lock mechanism comprising a second shaft lock portion attached to the second driveshaft and a second blade lock portion attached to the counterclockwise rotor blade where the first blade lock portion is configured to engage only the first shaft lock portion and cannot engage the second shaft lock portion and where the second blade lock portion is configured to engage only the second shaft lock portion and cannot engage the first shaft lock portion.

Duffy states at column 2 line 68 to column 3 line 4:

"The grooves 26 are adapted for receiving axially extending ribs 28 formed around an outer circumference 30 of the shaft 22 as shown in FIG. 4 When the shaft 22 is inserted inside the bore 20 of the hub 18 the ribs 28 are indexed for receipt inside the grooves 26."

Figs. 3 and 4 of Duffy show the shaft 22 inserted into the bore 20.

The drawings show that the shaft 22 of Duffy cannot rotate in the bore 20 as required by the presently amended claim 1. The ribs 28 of Duffy slide into the grooves 26 and no rotation of one with respect to the other is possible. Further there is no differentiation of a shaft and hub for a clockwise rotating propeller or a for counterclockwise rotating propeller – the illustrated shaft will engage a propeller hub for rotation in either direction since the ribs 28 engaged in the grooves 26 prevent rotation of the hub with respect to the shaft in either direction.

In view of the above the Applicant respectfully submits that a rejection of claim 1 as amended herein as unpatentable over Wang and Duffy cannot be maintained.

Claims 6-12 are dependent on independent claim 1, and the Applicant respectfully submits are therefore also patentable over Wang and Duffy.

Applicant has made an earnest effort to be fully responsive to the Action's objections and believes that Claims 1-12, as amended herein, are in condition for allowance. The Applicant solicits the allowance of Claims 1-12.

It is requested that all rejections be withdrawn. All claims are now in condition for allowance.

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July 17, 2015

Atty Docket No.: JAR-3343-0101

If, however, the Action should for any reason consider this application not to be in condition for allowance he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

Respectfully submitted,

**NIXON & VANDERHYTE P.C.**

By:                     /Joseph A. Rhoa/                      
Joseph A. Rhoa  
Reg. No. 37,515

JAR:caj  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	22944820
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Joseph A. Rhoa/Coral Jones
<b>Filer Authorized By:</b>	Joseph A. Rhoa
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	17-JUL-2015
<b>Filing Date:</b>	14-MAY-2014
<b>Time Stamp:</b>	06:23:06
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment		no			
<b>File Listing:</b>					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		3343-101_Amendment_AFInal.pdf	555984 7013fc0f7dc326518a60d7398f88ad5adc5d42c	yes	8

Multipart Description/PDF files in .zip description			
Document Description	Start	End	
Transmittal Letter	1	1	
Response After Final Action	2	2	
Claims	3	5	
Applicant Arguments/Remarks Made in an Amendment	6	8	
<b>Warnings:</b>			
<b>Information:</b>			
<b>Total Files Size (in bytes):</b>		555984	
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>          If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>          If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>          If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>			



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875				Application or Docket Number <b>14/277,370</b>		Filing Date <b>05/14/2014</b>		<input type="checkbox"/> To be Mailed		
ENTITY: <input type="checkbox"/> LARGE <input checked="" type="checkbox"/> SMALL <input type="checkbox"/> MICRO										
<b>APPLICATION AS FILED – PART I</b>										
		(Column 1)		(Column 2)						
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)		
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A				
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A				
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		X \$ =				
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL				
<b>APPLICATION AS AMENDED – PART II</b>										
		(Column 1)		(Column 2)		(Column 3)				
AMENDMENT	<b>07/17/2015</b>		CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		* 12		Minus	** 20	= 0	X \$40 =	0	
	Independent (37 CFR 1.16(h))		* 1		Minus	*** 3	= 0	X \$210 =	0	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE								<b>0</b>	
		(Column 1)		(Column 2)		(Column 3)				
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT			HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))		*		Minus	**	=	X \$ =		
	Independent (37 CFR 1.16(h))		*		Minus	***	=	X \$ =		
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE									
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

SLIE  
/HELENA PAYTON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	05/14/2014	Orville OLM	JAR-3343-101	6717

23117	7590	05/12/2015
NIXON & VANDERHYE, PC		
901 NORTH GLEBE ROAD, 11TH FLOOR		
ARLINGTON, VA 22203		

EXAMINER	
BADAWI, MEDHAT	

ART UNIT	PAPER NUMBER
3644	

NOTIFICATION DATE	DELIVERY MODE
05/12/2015	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOMAIL@nixonvan.com  
 pair\_nixon@firsttofile.com



<b>Examiner-Initiated Interview Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	14/277,370	OLM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	MEDHAT BADAWI	3644	

All participants (applicant, applicant's representative, PTO personnel):

(1) MEDHAT BADAWI. (3) \_\_\_\_.

(2) JOSEPH RHOA. (4) \_\_\_\_.

Date of Interview: 05 May 2015.

Type: ☒ Telephonic ☐ Video Conference  
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.  
If Yes, brief description: \_\_\_\_.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others  
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: US 4477228.

Substance of Interview  
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussion of the proposed amendments of claims 1 and 13 to better define the invention. Applicant did not accept the proposed amendments.No claim language was coined, no agreement was reached.

**Applicant recordation instructions:** It is not necessary for applicant to provide a separate record of the substance of interview.

**Examiner recordation instructions:** Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/MEDHAT BADAWI/ Examiner, Art Unit 3644	
--	--

<b>Office Action Summary</b>	<b>Application No.</b> 14/277,370	<b>Applicant(s)</b> OLM ET AL.	
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644	<b>AIA (First Inventor to File) Status</b> Yes

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 04/27/2015.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_.

2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims\***

5) ☒ Claim(s) 1-20 is/are pending in the application.  
5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.

6) ☐ Claim(s) \_\_\_\_ is/are allowed.

7) ☒ Claim(s) 1, 6-8, 10-15 and 17- 20 is/are rejected.

8) ☒ Claim(s) 2-5 is/are objected to.

9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

**Application Papers**

10) ☐ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a) ☒ All    b) ☐ Some\*\*    c) ☐ None of the:

1. ☒ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)  
Paper No(s)/Mail Date \_\_\_\_.

3) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.

4) ☐ Other: \_\_\_\_.

Application/Control Number: 14/277,370  
Art Unit: 3644

Page 2

### **DETAILED ACTION**

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

#### **Response to Amendment**

Applicant's amendment necessitated new grounds of rejection.

This action is made final in view of the new grounds of rejection.

#### **Reference of prior art**

**Wang et al. (US 2014/0263823, TRANSFORMABLE AERIAL VEHICLE).**

**Duffy et al. (US 4477228, Injection molded propeller).**

**Goossen. (US 8328130, Vertical take off and landing unmanned aerial vehicle airframe structure).**

#### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Application/Control Number: 14/277,370  
 Art Unit: 3644

Page 3

**Claims 1, 6-8, 10-15 and 17- 20** are rejected under **35 U.S.C. § 103(a)** as being unpatentable over **Wang** in view of **Duffy**.

**Re claim 1** Referring to the figures and the Detailed Description, **Wang** discloses: A rotary wing aircraft apparatus comprising:

a body (**fig. 2, item 10**);

a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm (**¶ 0057**);

each rotor assembly comprising a rotor blade releasably attached to a driveshaft by a lock mechanism and a drive rotating the driveshaft (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism**)

wherein a first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction (**¶ 0105**);

wherein a clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism, thus when the rotor turns clockwise the lock mechanism is construed as a clockwise lock mechanism**), and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force

when rotated in the counterclockwise direction (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism, thus when the other rotor turns counterclockwise the lock mechanism is construed as a counterclockwise lock mechanism**);

However Wang fails to teach as disclosed by Duffy: the clockwise lock mechanism (**¶ 0105, in case of a clockwise rotation blade**) comprises a first shaft lock portion (**fig. 4, item 28**) attached to the first driveshaft (**fig. 4, item 22**) and a first blade lock portion attached to the clockwise rotor blade (**fig. 4, item 26**);

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to add the **Duffy** teachings of a first shaft lock portion attached to the first driveshaft and a first blade lock portion attached to the clockwise rotor blade into the **Wang** teachings so that a solid and firm connection is established between the shaft and the blade without additional fasteners.

the counterclockwise lock mechanism (**¶ 0105, in case of a counterclockwise rotation blade**) comprises a second shaft lock portion (**fig. 4, item 28**) attached to the second driveshaft (**fig. 4, item 22**) and a second blade lock portion attached to the counterclockwise rotor blade (**fig. 4, item 26**);

wherein the first blade lock portion is configured to engage only the first shaft lock portion and cannot engage the second shaft lock portion (**since the instant**

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application and Wang are both quad rotor aircraft; thus, using the locking mechanism of Duffy in the counterclockwise rotation blade will allow the first blade lock portion to engage only the first shaft lock portion and cannot engage the second shaft lock portion because it is a different blade assembly located at the end of another arm);

wherein the second blade lock portion is configured to engage only the second shaft lock portion and cannot engage the first shaft lock portion (since the instant application and Wang are both quad rotor aircraft; thus, using the locking mechanism of Duffy in the clockwise rotation blade will allow the second blade lock portion to engage only the second shaft lock portion and cannot engage the first shaft lock portion because it is a different blade assembly located at the end of another arm);

wherein the clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism (Wang ¶ 0105).

**Re claim 6** Referring to the figures and the Detailed Description, Wang, as modified above, discloses: The apparatus of claim 1 wherein each rotor assembly

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comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface (**Wang fig. 3, item 40**).

**Re claim 7 and 14** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: wherein the leg slopes downward and away from the body (**Wang fig. 4, item 40**).

**Re claim 8** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus of claim 6 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly (**Wang ¶ 0065**).

**Re claim 10 and 17** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus, wherein the leg slopes downward and away from the body when in the operating position (**Wang fig. 4, item 40**).

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**Re claim 11 and 18** Referring to the figures and the Detailed Description, **Wang, as modified above**, fails to teach: The apparatus, wherein a bottom end of the leg engages the arm when in the stored position.

The Examiner takes official notice that it is old and well known in the art that a bottom end of the leg engages the arm when in the stored position.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify **Wang** to comprise of a bottom end of the leg engages the arm when in the stored position as it is old and well known and it would have achieved the predictable result of retaining the legs securely in stowed position.

**Re claims 12 and 20** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus, wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm (**Wang ¶ 0066 and fig. 3, item 20**).

**Re claim 13** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: A rotary wing aircraft apparatus comprising:



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a body;

a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;

each rotor assembly comprising a rotor blade and a drive operative to rotate the rotor blade; and

each rotor assembly comprising a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.

**(Claim 13 is similar in scope to Claims 1 and 6; therefore, Claim 13 is rejected under the same rationale as Claims 1 and 6).**

**Re claim 15** Referring to the figures and the Detailed Description, **Wang** discloses: The apparatus of claim 13 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly (**Wang ¶ 0065 and fig. 3, item 20**).

**Re claim 19** Referring to the figures and the Detailed Description, **Wang, as modified above**, discloses: The apparatus of claim 15 wherein the rotor blades are releasably attached to the rotor assemblies (**Wang fig. 3, as suggested in the**

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drawing, in addition, using the appropriate tools rotors are detachable from the propulsion units driving the rotors).

Claims 9 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over **Wang** in view of **Duffy** and further in view of **Goossen**.

Re claims 9 and 16 Referring to the figures and the Detailed Description, **Wang, as modified above**, fails to teach as disclosed by **Goossen**: The apparatus comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position. (col. 5, 1 34-42).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to add the **Goossen** teachings of a bias element urging the leg toward the stored position into the **Wang, as modified above**, teachings so that the leg may be quickly rotated 90 degrees to place the aircraft in a stowed position and hold the landing gear in position.

### Response to Arguments

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

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### **Allowable Subject Matter**

**Claim 2-5** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record including the disclosures above neither anticipates nor renders obvious the above recited combination.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP ~ 707.07(a).

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened

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statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Point of Contact***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEDHAT BADAWI whose telephone number is (571)270-5983. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY COLLINS can be reached on 571-272-6886. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like

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assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MEDHAT BADAWI/  
Examiner, Art Unit 3644

<b>Examiner-Initiated Interview Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	14/277,370	OLM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	MEDHAT BADAWI	3644	

All participants (applicant, applicant's representative, PTO personnel):

(1) MEDHAT BADAWI. (3)\_\_\_\_\_.

(2) JOSEPH RHOA. (4)\_\_\_\_\_.

Date of Interview: 05 May 2015.

Type: ☒ Telephonic ☐ Video Conference  
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.  
If Yes, brief description: \_\_\_\_\_.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others  
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: US 4477228.

**Substance of Interview**  
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Discussion of the proposed amendments of claims 1 and 13 to better define the invention. Applicant did not accept the proposed amendments.No claim language was coined, no agreement was reached.

**Applicant recordation instructions:** It is not necessary for applicant to provide a separate record of the substance of interview.

**Examiner recordation instructions:** Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/MEDHAT BADAWI/  
Examiner, Art Unit 3644

<b>Notice of References Cited</b>	Application/Control No. 14/277,370	Applicant(s)/Patent Under Reexamination OLM ET AL.	
	Examiner MEDHAT BADAWI	Art Unit 3644	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-1,400,032 A	12-1921	ADAM DICKEY DANIEL	403/257
*	B	US-4,477,228 A	10-1984	Duffy et al.	416/241A
*	C	US-5,201,679 A	04-1993	Velte et al.	440/49
*	D	US-7,086,843 B2	08-2006	Cheng, Jui-Hung	417/423.1
*	E	US-7,200,982 B2	04-2007	Vandyke, George	56/17.5
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

## EAST Search History

## EAST Search History (Prior Art)


Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	("20140263823").PN.	USPAT; USOCR	OR	OFF	2015/05/05 14:21
L3	5	"51140386".FMI D.	US-PGPUB; USPAT; FPRS	OR	OFF	2015/05/05 14:22
L4	2	("20140263823").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/05/05 14:33
L14	18	((("4477228") or ("3904301") or ("20120056041") or ("7086843") or ("20120056041")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/05/05 15:00
S163	5	((("20140263823") or ("8328130")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/04/30 06:12
S164	6	((("20140263823") or ("8328130")).PN. or (14/277370).APP.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/04/30 06:14
S165	5415	( (B64C39/028 OR B64C27/08 OR B64C1/00 OR B64C39/024 OR B64C2201/108 OR OR B64C2201/042 OR B64C2201/027).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/04/30 06:32
S166	15655	( (B64C27/82 OR B64C2027/8254 OR B64C27/04 OR B64C2700/6281 OR B64C39/024 OR B64C27/025 OR B64C2027/8227 OR B64C13/30 OR B64C27/16 OR B64D27/24 OR B64D1/22 OR B64D47/08 OR B64D7/00 OR B64D9/00 OR G05D1/0858).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/04/30 06:32
S167	10987	( (B64C27/82 OR B64C39/024 OR B64D45/00 OR B64D47/08 OR	US-PGPUB; USPAT;	OR	ON	2015/04/30 06:32



		B64D7/00 OR B64D9/00).CPC. )	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S168	14920	( (B64C23/005 OR B64C27/04 OR B64C2700/6281 OR B64C29/0033 OR B64C2201/108 OR B64C39/024 OR B64C27/32 OR B64C27/52 OR B64C27/02 OR B64C2201/127 OR B64C2201/024 OR G05D1/0858 OR G05D1/0669).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/04/30 06:32
S169	6952	( (B63H1/04 OR B64C2201/108 OR B64C2201/127 OR B64C2201/206 OR B64C27/02 OR B64C39/024 OR B64C29/00 OR B64C29/0025).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/04/30 06:32
S170	8	(S165 S166 S167 S168 S169) and (uav helicopter) and (shaft adj5 (lock fasten\$4 engage\$4) same (rotor adj1 blade)) and lug	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/04/30 06:32
S171	491	(S165 S166 S167 S168 S169) and (uav helicopter) and (shaft adj10 (lock fasten\$4 engage\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4 engage\$4)) and lug	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/04/30 06:35
S172	160	(S165 S166 S167 S168 S169) and (uav helicopter) and (shaft adj10 (lock fasten\$4)) ((rotor adj1 blade) adj10 (lock fasten\$4)) and lug	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/04/30 06:45
S173	11	("1400032").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/05/01 10:14
S174	7	((("4477228") or ("20120056041")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/05/01 10:18
S175	24	("0099508"   "0281618"   "0390615"   "3619882").PN. OR ("4477228").URFN.	US-PGPUB; USPAT; USOCR	OR	ON	2015/05/01 10:29

5/ 5/ 2015 5:04:52 PM

C:\Users\mbadawi\Documents\EAST\Workspaces\14277370.wsp

<b>Search Notes</b> 	<b>Application/Control No.</b> 14277370	<b>Applicant(s)/Patent Under Reexamination</b> OLM ET AL.
	<b>Examiner</b> MEDHAT BADAWI	<b>Art Unit</b> 3644

CPC- SEARCHED		
Symbol	Date	Examiner
SEE SEARCH HISTORY	1/24/2015	M.B.
SEE SEARCH HISTORY	5/5/2015	M.B.

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
SEARCH NOTES ATTACHED	1/24/2015	M.B.
INVENTOR SEARCH	1/24/2015	M.B.
SEARCH NOTES ATTACHED	5/5/2015	M.B.

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

OLM et al.

Atty. Ref.: JAR-3343-0101

Appl. No. 14/277,370

Confirmation No. 6717

Filed: 05/14/2014

Art Unit: 3644

Examiner: M. BADAWI

For: COMPACT UNMANNED ROTARY AIRCRAFT

\* \* \* \* \*

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

April 27, 2015

Sir:

**AMENDMENT**

Responsive to the Official Action dated January 29, 2015, please amend the above-identified application as follows:

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Appl. No. 14/277,370  
April 27, 2015

Atty Docket No.: JAR-3343-0101

**AMENDMENTS TO THE CLAIMS:**

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

1. (Currently amended) A rotary wing aircraft apparatus comprising:
  - a body;
  - a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;
  - each rotor assembly comprising a rotor blade releasably attached to a driveshaft by a lock mechanism, and a drive rotating the driveshaft;
  - wherein a first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction;
  - wherein a clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction, and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction; and
  - wherein the clockwise lock mechanism comprises a first shaft lock portion attached to the first driveshaft and a first blade lock portion attached to the clockwise rotor blade;
  - the counterclockwise lock mechanism comprises a second shaft lock portion attached to the second driveshaft and a second blade lock portion attached to the counterclockwise rotor blade;
  - wherein the first blade lock portion is configured to engage only the first shaft lock portion and cannot engage the second shaft lock portion;
  - wherein the second blade lock portion is configured to engage only the second shaft lock portion and cannot engage the first shaft lock portion;
  - wherein the clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism.

2. (Original) The apparatus of claim 1 wherein the clockwise lock mechanism comprises a shaft lock portion attached to the first driveshaft and a blade lock portion attached to the clockwise rotor blade, the shaft lock portion defining notches configured to engage corresponding lugs on the blade lock portion.

3. (Original) The apparatus of claim 2 wherein the counterclockwise lock mechanism comprises a shaft lock portion attached to the second driveshaft and a blade lock portion attached to the counterclockwise rotor blade, the blade lock portion comprising lugs with a configuration that is different than a configuration of the lugs on the blade lock portion of the clockwise lock mechanism.

4. (Original) The apparatus of claim 2 wherein the blade lock portion of the clockwise lock mechanism is rotated counterclockwise with respect to the shaft lock portion thereof to releasably attach the clockwise rotor blade to the first driveshaft.

5. (Original) The apparatus of claim 4 wherein the blade lock portion of the counterclockwise lock mechanism is rotated clockwise with respect to the shaft lock portion thereof to releasably attach the counterclockwise rotor blade to the second driveshaft.

6. (Original) The apparatus of claim 1 wherein each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.

7. (Original) The apparatus of claim 6 wherein the leg slopes downward and away from the body.

8. (Original) The apparatus of claim 6 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly.

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9. (Original) The apparatus of claim 8 comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position.
10. (Original) The apparatus of claim 8 wherein the leg slopes downward and away from the body when in the operating position.
11. (Original) The apparatus of claim 8 wherein a bottom end of the leg engages the arm when in the stored position.
12. (Original) The apparatus of claim 1 wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm.
- 13-20 (Canceled).

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**REMARKS**

This is in response to the Office Action dated January 29, 2015. Claims 13-20 are canceled. Thus, claims 1-12 are currently pending.

The Action rejected claims 1, 6-8, 10, 12-15, 17, 19, and 20 as being allegedly anticipated by Wang under 35 USC 102(a)(1) and 102(a)(2). This Section 102 rejection is respectfully traversed for the reasons herein.

Applicant notes that the Examiner also rejected claims 9, 11, 16, and 18 as being unpatentable over Wang in view of Goossen under 5 USC 103(a).

The Action further indicated that claims 2-5 would be allowable if re-written in independent form.

Claim 1 has been amended by adding the following limitations:

wherein the clockwise lock mechanism comprises a first shaft lock portion attached to the first driveshaft and a first blade lock portion attached to the clockwise rotor blade;

the counterclockwise lock mechanism comprises a second shaft lock portion attached to the second driveshaft and a second blade lock portion attached to the counterclockwise rotor blade;

wherein the first blade lock portion is configured to engage only the first shaft lock portion and cannot engage the second shaft lock portion;

wherein the second blade lock portion is configured to engage only the second shaft lock portion and cannot engage the first shaft lock portion;

The Applicant respectfully submits the amendments are supported in the specification, for example and without limitation at paragraphs 0033 and 0034 and Figs. 4-10.

The Office Action refers to paragraph 105 of Wang as disclosing the elements of claim 1. Wang states in part at paragraph 105:

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"[0105]..... The blades can be turned by rotation of the central shaft, which can be driven by a suitable motor or engine. The blades can be configured to spin in a clockwise rotation and/or a counterclockwise rotation. ....

Applicant respectfully submits that Wang does not disclose a clockwise lock mechanism comprising a first shaft lock portion attached to the first driveshaft and a first blade lock portion attached to the clockwise rotor blade and a counterclockwise lock mechanism comprising a second shaft lock portion attached to the second driveshaft and a second blade lock portion attached to the counterclockwise rotor blade where the first blade lock portion is configured to engage only the first shaft lock portion and cannot engage the second shaft lock portion and where the second blade lock portion is configured to engage only the second shaft lock portion and cannot engage the first shaft lock portion. And there would have been no logical reason to have modified Wang to have met amended claim 1.

It is requested that all rejections be withdrawn. All claims are now in condition for allowance.

If, however, the Action should for any reason consider this application not to be in condition for allowance he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.



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Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:                     /Joseph A. Rhoa/                      
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Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	22170831
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Joseph A. Rhoa/Coral Jones
<b>Filer Authorized By:</b>	Joseph A. Rhoa
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	27-APR-2015
<b>Filing Date:</b>	14-MAY-2014
<b>Time Stamp:</b>	10:25:12
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	no
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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		3343-101_Amendment.pdf	485820 2437fee3e72340eda1b91b8dc4cc0f0b02452e03	yes	8

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Transmittal Letter		1	1
Amendment/Req. Reconsideration-After Non-Final Reject		2	2
Claims		3	5
Applicant Arguments/Remarks Made in an Amendment		6	8

**Warnings:**

**Information:**

<b>Total Files Size (in bytes):</b>	485820
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**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**  
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**  
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**  
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of Atty Dkt.: JAR-3343-0101

OLM et al. TC/A.U.: 3644

Appln. No. 14/277,370 Examiner: M. BADAWI

Filed: 05/14/2014 Date: April 27, 2015

Title: COMPACT UNMANNED ROTARY AIRCRAFT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**RESPONSE/AMENDMENT/LETTER**

This is a response/amendment/letter in the above-identified application and includes an attachment which is hereby incorporated by reference and the signature below serves as the signature to the attachment in the absence of any other signature thereon.

☐ **Correspondence Address Indication Form attached.**

**Fees are attached as calculated below:**

Total effective claims after amendment	12	minus highest number	
previously paid for	20	(at least 20) = 0 x \$80.00 =	\$0.00 (1202)/\$0.00 (2202)/\$0.00 (3202)
Independent claims after amendment	1	minus highest number	
previously paid for	3	(at least 3) = 0 x \$420.00 =	\$0.00 (1201)/\$0.00 (2201)/\$ 0.00 (3201)

If proper multiple dependent claims now added for first time, (ignore improper); add  
\$780.00 (1203)/\$390.00 (2203)/\$195.00 (3203) \$

Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s)

One Month Extension	\$200.00 (1251)/\$100.00 (2251)/\$50.00 (3251)
Two Month Extensions	\$600.00 (1252)/\$300.00 (2252)/\$150.00 (3252)
Three Month Extensions	\$1400.00 (1253)/\$700.00 (2253)/\$350.00 (3253)
Four Month Extensions	\$2200.00 (1254)/\$1100.00 (2254)/\$550.00 (3254)
Five Month Extensions	\$3000.00 (1255)/\$1500.00 (2255)/\$750.00 (3255) \$

Terminal disclaimer enclosed, add \$160.00 (1814) \$

☐ Applicant claims "small entity" status. ☐ Statement filed herewith  
☐ Applicant claims "micro entity" status ☐ Micro entity certification statement filed herewith

Rule 56 Information Disclosure Statement Filing Fee \$180.00 (1806)/\$90.00 (2806)/\$45.00 (3806) \$

Assignment Recordation Fee \$40.00 (8021)/ \$0 if filed electronically \$

Other: \$

**TOTAL FEE \$ 0.00**

☐ **CREDIT CARD PAYMENT (FORM ATTACHED IF PAPER FILING).**

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Account No. 14-1140.

901 North Glebe Road, 11th Floor  
Arlington, Virginia 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100  
JAR:CAJ

NIXON & VANDERHUYE P.C.  
By Atty: Joseph A. Rhoads Reg. No. 37,515

Signature: /Joseph A. Rhoads/

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875					Application or Docket Number <b>14/277,370</b>		Filing Date <b>05/14/2014</b>		<input type="checkbox"/> To be Mailed		
ENTITY: <input type="checkbox"/> LARGE <input checked="" type="checkbox"/> SMALL <input type="checkbox"/> MICRO											
<b>APPLICATION AS FILED – PART I</b>											
(Column 1)			(Column 2)								
FOR		NUMBER FILED	NUMBER EXTRA			RATE (\$)		FEE (\$)			
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A			N/A					
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A	N/A			N/A					
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A			N/A					
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =	*			X \$ =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*			X \$ =					
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))											
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL					
<b>APPLICATION AS AMENDED – PART II</b>											
(Column 1)			(Column 2)			(Column 3)					
AMENDMENT	<b>04/27/2015</b>		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))		* 12	Minus	** 20	= 0	X \$40 =		0		
	Independent (37 CFR 1.16(h))		* 1	Minus	***3	= 0	X \$210 =		0		
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
	TOTAL ADD'L FEE								<b>0</b>		
(Column 1)			(Column 2)			(Column 3)					
AMENDMENT			CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))		*	Minus	**	=	X \$ =				
	Independent (37 CFR 1.16(h))		*	Minus	***	=	X \$ =				
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))										
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
	TOTAL ADD'L FEE										
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>											

LIE  
/MARGARET BYARS/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



## UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/277,370	05/14/2014	Orville OLM	JAR-3343-101	6717

23117	7590	01/29/2015	EXAMINER	
NIXON & VANDERHYE, PC			BADAWI, MEDHAT	
901 NORTH GLEBE ROAD, 11TH FLOOR				
ARLINGTON, VA 22203				

ART UNIT	PAPER NUMBER
3644	

NOTIFICATION DATE	DELIVERY MODE
01/29/2015	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOMAIL@nixonvan.com  
 pair\_nixon@firsttofile.com

<b>Office Action Summary</b>	<b>Application No.</b> 14/277,370		<b>Applicant(s)</b> OLM ET AL.	
	<b>Examiner</b> MEDHAT BADAWI		<b>Art Unit</b> 3644	<b>AIA (First Inventor to File) Status</b> Yes

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☒ Responsive to communication(s) filed on 05/14/2014.  
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_.

2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims\***

5) ☒ Claim(s) 1-20 is/are pending in the application.  
5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.

6) ☐ Claim(s) \_\_\_\_ is/are allowed.

7) ☒ Claim(s) 1,6-8,10,12-15,17,19 and 20 is/are rejected.

8) ☒ Claim(s) 2-5 is/are objected to.

9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

**Application Papers**

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 05/14/2014 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

a) ☒ All    b) ☐ Some\*\*    c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)  
Paper No(s)/Mail Date \_\_\_\_.

3) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.

4) ☐ Other: \_\_\_\_.

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### DETAILED ACTION

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

#### Reference of prior art

**Wang et al.** (US 2014/0263823, TRANSFORMABLE AERIAL VEHICLE).

**Goossen.** (US 8328130, Vertical take off and landing unmanned aerial vehicle airframe structure).

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

(a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.



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 Art Unit: 3644

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**Claims 1, 6-8, 10, 12-15, 17, 19 and 20 are rejected under 35 U.S.C.**

**102(a)(1) and 102(a)(2) as being anticipated by Wang.**

**Re claim 1** Referring to the figures and the Detailed Description, **Wang** discloses: A rotary wing aircraft apparatus comprising:

- a body (**fig. 2, item 10**);
- a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm (**¶ 0057**);
- each rotor assembly comprising a rotor blade releasably attached to a driveshaft by a lock mechanism and a drive rotating the driveshaft (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism**)
- wherein a first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction (**¶ 0105**);
- wherein a clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism, thus when the rotor turns clockwise the lock mechanism is construed as a clockwise lock mechanism**), and a counterclockwise rotor blade is releasably attached to the second driveshaft by

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engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction (**¶ 0105; for further explanation, the rotor is affixed to the central shaft using a lock mechanism, thus when the other rotor turns counterclockwise the lock mechanism is construed as a counterclockwise lock mechanism**); and

wherein the clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism (**¶ 0105**).

**Re claim 6** Referring to the figures and the Detailed Description, **Wang** discloses: The apparatus of claim 1 wherein each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface (**fig. 3, item 40**).

**Re claim 7 and 14** Referring to the figures and the Detailed Description, **Wang** discloses: wherein the leg slopes downward and away from the body (**fig. 4, item 40**).

**Re claim 8** Referring to the figures and the Detailed Description, **Wang**

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discloses: The apparatus of claim 6 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly (**¶ 0065**).

**Re claim 10 and 17** Referring to the figures and the Detailed Description, **Wang** discloses: The apparatus, wherein the leg slopes downward and away from the body when in the operating position (**fig. 4, item 40**).

**Re claims 12 and 20** Referring to the figures and the Detailed Description, **Wang** discloses: The apparatus, wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm (**¶ 0066 and fig. 3, item 20**).

**Re claim 13** Referring to the figures and the Detailed Description, **Wang** discloses: A rotary wing aircraft apparatus comprising:  
a body;

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a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;

each rotor assembly comprising a rotor blade and a drive operative to rotate the rotor blade; and

each rotor assembly comprising a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.

**(Claim 13 is similar in scope to Claims 1 and 6; therefore, Claim 13 is rejected under the same rationale as Claims 1 and 6).**

**Re claim 15** Referring to the figures and the Detailed Description, **Wang** discloses: The apparatus of claim 13 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly (**¶ 0065 and fig. 3, item 20**).

**Re claim 19** Referring to the figures and the Detailed Description, **Wang** discloses: The apparatus of claim 15 wherein the rotor blades are releasably attached to the rotor assemblies (**fig. 3, as suggested in the drawing, in addition, using the**

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**appropriate tools rotors are detachable from the propulsion units driving the rotors).**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 of this title, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 9 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Goossen.**

**Re claims 9 and 16** Referring to the figures and the Detailed Description, **Wang** fails to teach as disclosed by **Goossen**: The apparatus comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position. **(col. 5, l 34-42).**

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to add the **Goossen** teachings of a bias element

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urging the leg toward the stored position into the **Wang** teachings so that the leg may be quickly rotated 90 degrees to place the aircraft in a stowed position and hold the landing gear in position.

**Claims 11 and 18** are rejected under 35 U.S.C. § 103(a) as being unpatentable over **Wang**.

**Re claim 11 and 18** Referring to the figures and the Detailed Description, **Wang** fails to teach: The apparatus, wherein a bottom end of the leg engages the arm when in the stored position.

The Examiner takes official notice that it is old and well known in the art that a bottom end of the leg engages the arm when in the stored position.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify **Wang** to comprise of a bottom end of the leg engages the arm when in the stored position as it is old and well known and it would have achieved the predictable result of retaining the legs securely in stowed position.

#### **Allowable Subject Matter**

**Claim 2-5** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of

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the base claim and any intervening claims. The prior art of record including the disclosures above neither anticipates nor renders obvious the above recited combination.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP ~ 707.07(a).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEDHAT BADAWI whose telephone number is (571)270-5983. The examiner can normally be reached on Mon-Fri during office hours. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY COLLINS can be reached on 571-272-6886. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system,

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contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MEDHAT BADAWI/  
Examiner, Art Unit 3644



<b>Notice of References Cited</b>	Application/Control No. 14/277,370		Applicant(s)/Patent Under Reexamination OLM ET AL.	
	Examiner MEDHAT BADAWI		Art Unit 3644	Page 1 of 3

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2,478,847 A	08-1949	JOSEPH STUART	244/7R
*	B	US-4,161,843 A	07-1979	Hui, Danny C. T.	446/37
*	C	US-2002/0104922 A1	08-2002	Nakamura, Mikio	244/17.25
*	D	US-2005/0061910 A1	03-2005	Wobben, Aloys	244/017.23
*	E	US-2006/0226281 A1	10-2006	Walton, Joh-Paul Christopher	244/017.23
*	F	US-2008/0006737 A1	01-2008	Wobben, Aloys	244/017.13
*	G	US-2008/0048065 A1	02-2008	Kuntz, Julian	244/017.23
*	H	US-2009/0008499 A1	01-2009	Shaw, Donald Orval	244/17.23
*	I	US-2009/0250549 A1	10-2009	Wiggerich, Burkhard	244/17.11
*	J	US-2009/0283629 A1	11-2009	KROETSCH et al.	244/17.23
*	K	US-2010/0044499 A1	02-2010	Dragan et al.	244/17.23
*	L	US-7,699,260 B2	04-2010	Hughey, Bradley Ward	244/17.23
*	M	US-2010/0140415 A1	06-2010	Goossen, Emray	244/23.A

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<b>Notice of References Cited</b>	Application/Control No. 14/277,370	Applicant(s)/Patent Under Reexamination OLM ET AL.	
	Examiner MEDHAT BADAWI	Art Unit 3644	Page 2 of 3

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2010/0243794 A1	09-2010	JERMYN, PHILLIP MATTHEW	244/17.23
*	B	US-2011/0017865 A1	01-2011	Achtelik et al.	244/17.23
*	C	US-2011/0001020 A1	01-2011	Forgac, Pavol	244/7.A
*	D	US-2011/0226892 A1	09-2011	Crowther et al.	244/17.23
*	E	US-8,052,081 B2	11-2011	Olm et al.	244/17.23
*	F	US-2012/0241553 A1	09-2012	Wilke, Paul	244/17.13
*	G	US-8,328,130 B2	12-2012	Goossen, Emray	244/23A
*	H	US-2013/0068892 A1	03-2013	Bin Desa et al.	244/190
*	I	US-8,646,720 B2	02-2014	Shaw, Donald Orval	244/17.23
*	J	US-2014/0061362 A1	03-2014	OLM et al.	244/2
*	K	US-8,662,438 B2	03-2014	Savoye et al.	244/17.13
*	L	US-8,695,919 B2	04-2014	Shachor et al.	244/17.17
*	M	US-2014/0138476 A1	05-2014	Bystrom, Per Olof	244/17.13

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<b>Notice of References Cited</b>	Application/Control No. 14/277,370	Applicant(s)/Patent Under Reexamination OLM ET AL.	
	Examiner MEDHAT BADAWI	Art Unit 3644	Page 3 of 3

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2014/0138477 A1	05-2014	Keennon et al.	244/17.23
*	B	US-2014/0131510 A1	05-2014	Wang et al.	244/17.23
*	C	US-2014/0117149 A1	05-2014	ZHOU et al.	244/17.23
*	D	US-8,753,155 B2	06-2014	Olm et al.	440/12.66
*	E	US-8,794,564 B2	08-2014	Hutson, Donald B.	244/17.17
*	F	US-8,794,566 B2	08-2014	Hutson, Donald B.	244/17.23
*	G	US-2014/0263823 A1	09-2014	Wang et al.	244/17.23
*	H	US-8,919,691 B2	12-2014	Lindmark et al.	244/17.11
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

**FOREIGN PATENT DOCUMENTS**

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	N					
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	Q					
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	S					
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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## BIB DATA SHEET

CONFIRMATION NO. 6717

<b>SERIAL NUMBER</b> 14/277,370	<b>FILING or 371(c) DATE</b> 05/14/2014 <b>RULE</b>	<b>CLASS</b> 244	<b>GROUP ART UNIT</b> 3644	<b>ATTORNEY DOCKET NO.</b> JAR-3343-101	
<b>APPLICANTS</b> DRAGANFLY INNOVATIONS INC., Saskatoon, CANADA, Assignee (with 37 CFR 1.172 Interest); <b>INVENTORS</b> Orville OLM, Saskatchewan, CANADA; Greg WOOD, Saskatchewan, CANADA; Zenon DRAGAN, Saskatchewan, CANADA; <b>** CONTINUING DATA *****</b> <b>** FOREIGN APPLICATIONS *****</b> CANADA 2815885 05/15/2013 <b>** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY **</b> 05/27/2014					
Foreign Priority claimed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 35 USC 119(a-d) conditions met <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Verified and Acknowledged /MEDHAT BADAWI/ Examiner's Signature	<input type="checkbox"/> Met after Allowance M.B. Initials	<b>STATE OR COUNTRY</b> CANADA	<b>SHEETS DRAWINGS</b> 4	<b>TOTAL CLAIMS</b> 20	<b>INDEPENDENT CLAIMS</b> 2
<b>ADDRESS</b> NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203 UNITED STATES					
<b>TITLE</b> COMPACT UNMANNED ROTARY AIRCRAFT					
<b>FILING FEE RECEIVED</b> 800	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

**EAST Search History****EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S113	17	((Orville) near2 (OLM)).INV.	US-PGPUB; USPAT	OR	ON	2015/01/21 11:15
S114	18	((Greg) near2 (WOOD)).INV.	US-PGPUB; USPAT	OR	ON	2015/01/21 11:18
S115	9	((Zenon) near2 (DRAGAN)).INV.	US-PGPUB; USPAT	OR	ON	2015/01/21 11:19
S116	584	244/17.23.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/21 11:21
S117	11998	( (B64C27/10 OR B64C27/12 OR B64C39/024 OR B64C27/08 OR B64C2201/027 OR B64C2201/108 OR B64C2700/6281 OR B64C27/54 OR B64C27/14 OR B64C27/32 OR B64C37/00 OR B64C2700/6288 OR B64C27/00 OR B64C2700/628 OR B64C27/322).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/21 11:28
S118	536	( (B64C27/08 ).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/21 11:29
S119	338	aircraft and (tail adj1 skid)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/21 17:20
S120	142	aircraft and (tail adj1 skid) and spring	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/21 17:23
S121	2	aircraft and (deploy\$4 adj5 tail adj1 skid) and spring	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/21 17:36
S122	15084	(( (B64C27/82 OR B64C2027/8254 OR	US-PGPUB;	OR	ON	2015/01/22

		B64C27/04 OR B64C2700/6281 OR B64C39/024 OR B64C27/025 OR B64C2027/8227 OR B64C13/30 OR B64C27/16 OR B64D27/24 OR B64D1/22 OR B64D47/08 OR B64D7/00 OR B64D9/00 OR G05D1/0858).CPC. )	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			13:01
S123	10500	( (B64C27/82 OR B64C39/024 OR B64D45/00 OR B64D47/08 OR B64D7/00 OR B64D9/00).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 13:01
S124	14491	( (B64C23/005 OR B64C27/04 OR B64C2700/6281 OR B64C29/0033 OR B64C2201/108 OR B64C39/024 OR B64C27/32 OR B64C27/52 OR B64C27/02 OR B64C2201/127 OR B64C2201/024 OR G05D1/0858 OR G05D1/0669).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 13:01
S125	6656	( (B63H1/04 OR B64C2201/108 OR B64C2201/127 OR B64C2201/206 OR B64C27/02 OR B64C39/024 OR B64C29/00 OR B64C29/0025).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 13:01
S126	14	(S122 S123 S124 S125) and (uav helicopter) and rotor and (remot\$3 adj1 control) and illuminat\$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 13:01
S127	0	(S122 S123 S124 S125) and (uav helicopter) and (rotor adj1 blade adj2 lock) and (remot\$3 adj1 control)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 13:02
S128	7	(S122 S123 S124 S125) and (uav helicopter) and (rotor adj1 blade adj2 lock)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 13:02
S129	9	("3029047").URPN.	USPAT	OR	ON	2015/01/22 13:13
S130	128	(S122 S123 S124 S125) and (uav helicopter) and (rotor adj1 blade) and (shaft adj5 (lock fasten\$4 engage\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 13:39
S131	28	(S122 S123 S124 S125) and (uav helicopter) and (shaft adj5 (lock fasten\$4 engage\$4) same (rotor adj1 blade))	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2015/01/22 13:41

			EPO; JPO; DERWENT; IBM_TDB			
S132	2	("140277854").PN. or (14/167679).APP.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/01/22 17:17
S133	5135	( (B64C39/028 OR B64C27/08 OR B64C1/00 OR B64C39/024 OR B64C2201/108 OR OR B64C2201/042 OR B64C2201/027).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 17:26
S134	15084	( (B64C27/82 OR B64C2027/8254 OR B64C27/04 OR B64C2700/6281 OR B64C39/024 OR B64C27/025 OR B64C2027/8227 OR B64C13/30 OR B64C27/16 OR B64D27/24 OR B64D1/22 OR B64D47/08 OR B64D7/00 OR B64D9/00 OR G05D1/0858).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 17:41
S135	10500	( (B64C27/82 OR B64C39/024 OR B64D45/00 OR B64D47/08 OR B64D7/00 OR B64D9/00).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 17:41
S136	14491	( (B64C23/005 OR B64C27/04 OR B64C2700/6281 OR B64C29/0033 OR B64C2201/108 OR B64C39/024 OR B64C27/32 OR B64C27/52 OR B64C27/02 OR B64C2201/127 OR B64C2201/024 OR G05D1/0858 OR G05D1/0669).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 17:41
S137	6656	( (B63H1/04 OR B64C2201/108 OR B64C2201/127 OR B64C2201/206 OR B64C27/02 OR B64C39/024 OR B64C29/00 OR B64C29/0025).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 17:41
S138	28	(S134 S135 S136 S137) and (uav helicopter) and (shaft adj5 (lock fasten\$4 engage\$4) same (rotor adj1 blade))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 17:41
S139	32	(S133 S134 S135 S136 S137) and (uav helicopter) and (shaft adj5 (lock fasten\$4 engage\$4) same (rotor adj1 blade))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/22 17:43
S140	1	(09/571815).APP.	US-PGPUB; USPAT;	OR	OFF	2015/01/22 18:09

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S141	87	("1822386"   "2961188"   "3049320"   "3066888"   "3078062"   "3083934"   "3117746"   "3254725"   "3322223"   "3335977"   "3350035"   "3379395"   "3559922"   "3572614"   "3666209"   "3712406"   "3915411"   "4037807"   "4426049"   "4537372"   "4828058"   "4828205"   "4865275"   "5026002"   "5035377"   "5054716"   "5065833"   "5096140"   "5145129"   "5178344"   "5242132"   "5244167"   "5289994"   "5314035"   "5357894"   "5395073"   "5407150"   "5419514"   "5433400"   "5597137"   "5653404"   "5746390"   "5758844"   "5839691"   "5863013"   "6113029"   "6170778"   "D418805"   "RE29023"   "RE36487").PN. OR ("6343768").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2015/01/22 18:10
S142	5135	( (B64C39/028 OR B64C27/08 OR B64C1/00 OR B64C39/024 OR B64C2201/108 OR OR B64C2201/042 OR B64C2201/027).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/23 06:03
S143	15084	( (B64C27/82 OR B64C2027/8254 OR B64C27/04 OR B64C2700/6281 OR B64C39/024 OR B64C27/025 OR B64C2027/8227 OR B64C13/30 OR B64C27/16 OR B64D27/24 OR B64D1/22 OR B64D47/08 OR B64D7/00 OR B64D9/00 OR G05D1/0858).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/23 06:03
S144	10500	( (B64C27/82 OR B64C39/024 OR B64D45/00 OR B64D47/08 OR B64D7/00 OR B64D9/00).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/23 06:03
S145	14491	( (B64C23/005 OR B64C27/04 OR B64C2700/6281 OR B64C29/0033 OR B64C2201/108 OR B64C39/024 OR B64C27/32 OR B64C27/52 OR B64C27/02 OR B64C2201/127 OR B64C2201/024 OR G05D1/0858 OR G05D1/0669).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/23 06:03
S146	6656	( (B63H1/04 OR B64C2201/108 OR B64C2201/127 OR B64C2201/206 OR B64C27/02 OR B64C39/024 OR B64C29/00 OR B64C29/0025).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/23 06:03
S147	7	(S142 S143 S144 S145 S146) and (uav helicopter) and (shaft adj5 (lock fasten\$4 engage\$4) same (rotor adj1 blade)) and (notch groove)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2015/01/23 06:03




			EPO; JPO; DERWENT; IBM_TDB			
S148	1	(14/277370).APP.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/01/23 06:34
S149	5136	( (B64C39/028 OR B64C27/08 OR B64C1/00 OR B64C39/024 OR B64C2201/108 OR OR B64C2201/042 OR B64C2201/027).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/24 12:14
S150	15100	( (B64C27/82 OR B64C2027/8254 OR B64C27/04 OR B64C2700/6281 OR B64C39/024 OR B64C27/025 OR B64C2027/8227 OR B64C13/30 OR B64C27/16 OR B64D27/24 OR B64D1/22 OR B64D47/08 OR B64D7/00 OR B64D9/00 OR G05D1/0858).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/24 12:14
S151	10515	( (B64C27/82 OR B64C39/024 OR B64D45/00 OR B64D47/08 OR B64D7/00 OR B64D9/00).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/24 12:14
S152	14500	( (B64C23/005 OR B64C27/04 OR B64C2700/6281 OR B64C29/0033 OR B64C2201/108 OR B64C39/024 OR B64C27/32 OR B64C27/52 OR B64C27/02 OR B64C2201/127 OR B64C2201/024 OR G05D1/0858 OR G05D1/0669).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/24 12:14
S153	6662	( (B63H1/04 OR B64C2201/108 OR B64C2201/127 OR B64C2201/206 OR B64C27/02 OR B64C39/024 OR B64C29/00 OR B64C29/0025).CPC. )	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/24 12:14
S154	24	(S149 S150 S151 S152 S153) and (uav helicopter) and (shaft adj5 (lock fasten\$4 engage\$4) same (rotor adj1 blade)) and (leg tube rod)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/24 12:14
S155	19	(S149 S150 S151 S152 S153) and (uav helicopter) and (rotor adj1 blade) and (landing adj2 (leg tube rod))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2015/01/24 12:16
S156	78	(S149 S150 S151 S152 S153) and (uav helicopter) and (rotor adj1 blade) and	US-PGPUB; USPAT;	OR	ON	2015/01/24 12:29

## EAST Search History

	(landing with (leg tube rod))	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB		
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**1/ 24/ 2015 5:19:09 PM****C:\ Users\ mbadawi\ Documents\ EAST\ Workspaces\ 14277370.wsp**

<b><i>Search Notes</i></b>  	<b>Application/Control No.</b>  14277370	<b>Applicant(s)/Patent Under Reexamination</b>  OLM ET AL.
	<b>Examiner</b>  MEDHAT BADAWI	<b>Art Unit</b>  3644

CPC- SEARCHED		
Symbol	Date	Examiner
SEE SEARCH HISTORY	1/24/2015	M.B.

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
SEARCH NOTES ATTACHED	1/24/2015	M.B.
INVENTOR SEARCH	1/24/2015	M.B.

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/277,370	05/14/2014	Orville OLM	JAR-3343-101

CONFIRMATION NO. 6717

23117

NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203

## PUBLICATION NOTICE



\*OC000000071951845\*

Title:COMPACT UNMANNED ROTARY AIRCRAFT

Publication No.US-2014-0339355-A1

Publication Date:11/20/2014

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at [www.uspto.gov](http://www.uspto.gov). The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at [www.uspto.gov](http://www.uspto.gov) using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/277,370	05/14/2014	Orville OLM	JAR-3343-101

**CONFIRMATION NO. 6717**
**POA ACCEPTANCE LETTER**

23117  
 NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203



Date Mailed: 06/19/2014

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 06/16/2014.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/mbeyene/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

<b>PATENT APPLICATION FEE DETERMINATION RECORD</b> Substitute for Form PTO-875						Application or Docket Number 14/277,370				
<b>APPLICATION AS FILED - PART I</b>										
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A				
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	300		N/A				
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *	x 40 =	0.00	OR					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 = *	x 210 =	0.00						
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00						
				TOTAL		TOTAL				
* If the difference in column 1 is less than zero, enter "0" in column 2.				730						
<b>APPLICATION AS AMENDED - PART II</b>										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
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 Alexandria, Virginia 22313-1450  
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
14/277,370	05/14/2014	3673	800	JAR-3343-101	20	2

CONFIRMATION NO. 6717

## UPDATED FILING RECEIPT



\*OC000000069077956\*

23117

NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203

Date Mailed: 06/19/2014

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

## Inventor(s)

Orville OLM, Saskatchewan, CANADA;  
 Greg WOOD, Saskatchewan, CANADA;  
 Zenon DRAGAN, Saskatchewan, CANADA;

## Applicant(s)

DRAGANFLY INNOVATIONS INC., Saskatoon, CANADA

## Assignment For Published Patent Application

DRAGANFLY INNOVATIONS INC., Saskatoon, CANADA

Power of Attorney: The patent practitioners associated with Customer Number 23117

## Domestic Applications for which benefit is claimed - None.

*A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.*

**Foreign Applications** (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

CANADA 2815885 05/15/2013

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

## If Required, Foreign Filing License Granted: 05/27/2014

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/277,370**

Projected Publication Date: 11/20/2014

page 1 of 3

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* SMALL ENTITY \*\***

**Title**

COMPACT UNMANNED ROTARY AIRCRAFT

**Preliminary Class**

070

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).



**LICENSE FOR FOREIGN FILING UNDER**  
**Title 35, United States Code, Section 184**  
**Title 37, Code of Federal Regulations, 5.11 & 5.15**

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

---

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

OLM et al.

Appln. No. 14/277,370

Filed: May 14, 2014

For: COMPACT UNMANNED ROTARY AIRCRAFT

Atty. Dkt. JAR-3343-101

Confirmation No. 6717

Date: June 16, 2014

**Mail Stop Missing Parts**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

The attached completes filing of the above-identified patent application:☐ Correspondence Address Indication Form attached.☒ Signed Rule 63 Declaration alone, ☐ Copy of Declaration from prior application alone, OR☐ Signed Declaration plus attached copy of originally filed specification/drawings.☒ **NOTICE TO FILE CORRECTED APPLICATION PAPERS** form.☒ Record the attached Assignment to DRAGANFLY INNOVATIONS INC., Saskatoon, Saskatchewan, CA and return to the undersigned.☒ Power of Attorney ☐ 37 CFR 3.73(b) or 37 CFR 3.73(c) Statement ☐ General Power of Attorney Transmittal Letter☒ Priority is hereby claimed under 35 U.S.C. § 119 based on the following foreign applications:**Application Number**

2815885

**Country**

CA

**Day/Month/Year Filed**

15 May 2013

respectively.

☐ Certified copy(ies) of foreign application(s) is/are attached.☐ Certified copy(ies) filed on \_\_\_\_\_ in prior application no. \_\_\_\_\_, filed \_\_\_\_\_.☒ Applicant claims "small entity" status. ☐ "Small entity" statement attached.☐ Applicant claims "micro entity" status. ☐ Micro entity certification statement filed herewith.☐ Please enter the attached Preliminary Amendment prior to calculation of filing fee.☒ Also attached: ☒ **Other: Submission of Replacement Drawings**

OLM et al.  
 Appln. No. 14/277,370  
 JAR-3343-101

**Fees due are calculated below:**

Basic filing fee \$280.00 (1011)/ \$140.00 (2011)/ (\$70.00)/\$70.00 (3011)/ (\$70.00 ) (4011) \$  
 Search Fee \$600.00 (1111)/\$300.00 (2111) /\$150.00 (3111) \$  
 Examination Fee \$720.00 (1311)/\$360.00 (2311) /\$180.00 (3311) \$

Application Size Fee (\$400.00) for each add'l 50 sheets that exceeds 100 sheets)

Paper filing: Total pages: -100 = 0 \$0.00(1081)/ \$0.00 (2081) \$

**SURCHARGE for Paper filing** \$400.00 (1090)/\$ 200.00 (2090) \$

**E-filing:** Total pages:  
 \*.75 = 0 - 100 = 0 / 50 = 0 \$0.00(1081)/ \$0.00 (2081) \$  
 \$0.00 (3081)

Total effective claims 0 - 20 (at least 20) = 0 x \$80.00 = \$0.00 (1202)/\$0.00 (2202) /\$0.00 (3202) \$

Independent claims 0 - 3 (at least 3) = 0 x \$420.00 = \$0.00 (1201)/\$0.00 (2201)/\$0.00 (3201) \$

If any proper multiple dependent claims now added for first time (ignore improper), add \$780.00 (1203)/\$390.00 (2203) /\$195.00 (3203) \$

Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s)

One Month Extension \$200.00 (1251)/\$100.00 (2251)/\$50.00 (3251)

Two Month Extensions \$600.00 (1252)/\$300.00 (2252)/\$150.00 (3252)

Three Month Extensions \$1400.00 (1253)/\$700.00 (2253)/\$350.00 (3253)

Four Month Extensions \$2200.00 (1254)/\$1100.00 (2254)/\$550.00 (3254)

Five Month Extensions \$3000.00 (1255)/\$1500.00 (2255) /\$750.00 (3255) \$

Surcharge if Declaration or filing fee first now submitted:\$140.00 (1051)/\$70.00 (2051) /\$35.00 (3051) \$

English translation of specification and claims \$140.00 (1053)/\$70.00 (2053) /\$35.00 (3053) \$

Assignment Recording Fee \$40.00 (8021) /\$0 if filed electronically \$

**TOTAL FEE DUE** \$ 0.00

☐ CREDIT CARD OR DEPOSIT ACCOUNT PAYMENT (CREDIT CARD FORM ATTACHED IF PAPER FILING).

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to **Deposit Account No. 14-1140**. However, authorization is NOT given hereby to charge any extra claims fees or multiple dependent claims fees.

**CUSTOMER NUMBER:**

**23117**

901 North Glebe Road, 11th Floor  
 Arlington, Virginia 22203-1808  
 Telephone: (703) 816-4000  
 Facsimile: (703) 816-4100  
 JAR:caj

NIXON & VANDERHYE P.C.  
 By Atty: Joseph A. Rhoa, Reg. No. 37,515

Signature: /Joseph A. Rhoa/

Doc code: Oath  
Document Description: Oath or declaration filed

Attorney Docket Number	JAR-3343-101
First Named Inventor	Orville OLM

**INVENTOR'S DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) USING AN APPLICATION DATA SHEET (37 CFR 1.76)**

☐ Declaration Submitted With Initial Filing

**OR**

☒ Declaration Submitted After Initial Filing (surcharge (37 C.F.R. § 1.16(f)) required)

**COMPACT UNMANNED ROTARY AIRCRAFT**

(Title of the Invention)

As a below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application,

**OR**

☒ United States Application Number or PCT International application number 14/277,370 filed on May 14, 2014.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WHEREAS, the undersigned (hereinafter ASSIGNOR), has made an invention in the Application identified above.

WHEREAS, DRAGANFLY INNOVATIONS INC. (hereinafter ASSIGNEE), a corporation of the State of Canada, having an office and place of business at 2108 Saint George Avenue, Saskatoon, Saskatchewan, CA S7M 0K7, is desirous of acquiring an interest therein;

NOW, THEREFORE, in consideration of Ten Dollars (\$10.00) and/or other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the said ASSIGNOR by these presents hereby sells, assigns, and transfers unto the said ASSIGNEE, its successors, assigns, and legal representatives, ASSIGNOR'S entire right, title and interest in the United States of America and all foreign countries, in and to the invention as described in the aforesaid application, and to the said application and to all subsequent applications based thereon including any and all continuations, divisions, reissues, and substitutes of said application, and all resulting patents, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and the ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue said Letters Patent to ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns, and legal representatives. It is understood and agreed that ASSIGNEE'S attorneys Nixon & Vanderhye P.C. have represented only ASSIGNEE and will continue to represent only ASSIGNEE with respect to this invention;

ASSIGNOR hereby agrees to transfer a like interest upon request of said ASSIGNEE, its successors, assigns, and legal representatives, and without further remuneration, in and to any improvements, and applications for patents based thereon, growing out of or related to the said invention;

ASSIGNOR hereby agrees to execute any papers by ASSIGNEE, its successors, assigns, and legal representatives, deemed essential to ASSIGNEE'S full protection and title in and to the invention hereby transferred; and

ASSIGNOR hereby agrees, upon request of ASSIGNEE, and without further remuneration, to execute any and all papers desired by ASSIGNEE, for the filing and granting of foreign applications and the perfecting of title thereto in ASSIGNEE.

**AGREED and executed as noted below:**

**LEGAL NAME OF SOLE OR FIRST INVENTOR:**

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Orville

OLM

Inventor's Signature:

Date:

June 5, 2014

Witnessed by:

Name:

Devin Ternan

Signature of witness:

Devin Ternan

Date:

June 5th 2014

[X] Additional inventors are being named on the 1 supplemental sheet(s) PTO/AIA/10 attached hereto

(Page 1 of 2)



Note: PTO Rules state A person may not execute an oath or declaration for an application unless that person has reviewed and understands the contents of the application, including the claims, and is aware of the duty to disclose to the Office all information known to the person to be material to patentability as defined in [37 CFR] § 1.56.

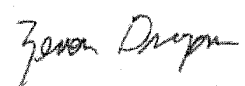

2345865

DOCKET NO. JAR-3343-101

<b>SUPPLEMENTAL SHEET FOR DECLARATION</b>	<b>ADDITIONAL INVENTOR(S)</b>
	Supplemental Sheet (for PTO/AIA/08/09)

(Page 2 of 2)

<b>Legal Name of Additional Joint Inventor, if any:</b>	
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)	
Greg WOOD	
Inventor's Signature: 	Date: June 3/14
Witnessed by:	
Name: Lana Moldenhauer	
Signature of witness: 	Date: 06/03/14

<b>Legal Name of Additional Joint Inventor, if any:</b>	
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)	
Zenon DRAGAN	
Inventor's Signature: 	Date: June 3, 2014
Witnessed by:	
Name: Lana Moldenhauer	
Signature of witness: 	Date: 06/03/14

Doc Code: PA..

Document Description: Power of Attorney

PTO/AIA/82B (07-13)

Approved for use through 11/30/2014, OMB 0651-0051

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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## POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

- ☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

23117

OR

- ☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

- ☒ The address associated with the above-mentioned Customer Number

OR

- ☐ The address associated with Customer Number:

OR

Firm or Individual Name				
Address				
City	State	Zip		
Country				
Telephone		Email		

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

DRAGANFLY INNOVATIONS INC.

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

### SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	Date (Optional)
<i>Zoran Dragan</i>	June 3, 2014
Name	Zoran Dragan
Title	Owner / President

**NOTE:** Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

- ☒ Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

Confirmation No. 6717

OLM et al.

Appln. No. 14/277,370

Atty Ref.: JAR-3343-101

Filed: May 14, 2014

Art Unit: 3673

For: COMPACT UNMANNED ROTARY  
AIRCRAFT

Examiner: To be assigned

\* \* \* \* \*

June 16, 2014

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**SUBMISSION OF REPLACEMENT DRAWINGS**

In response to the Notice to File Corrected Application Papers mailed May 29, 2014, please find enclosed herewith one sheet of formal, inked drawings (Figs. 15-17) for the above-identified application.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: /Joseph A. Rhoa/  
Joseph A. Rhoa  
Reg. No. 37,515

JAR:caj  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100

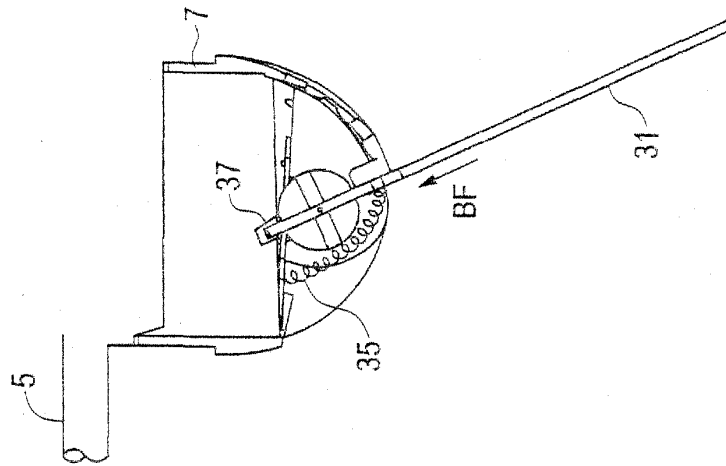


FIG. 15

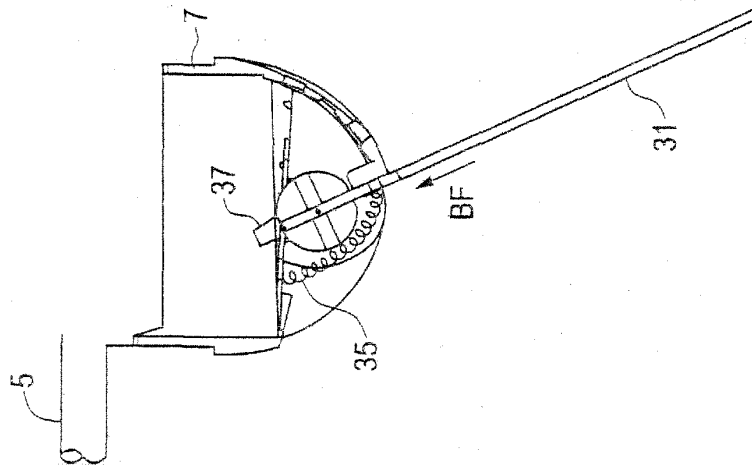


FIG. 16

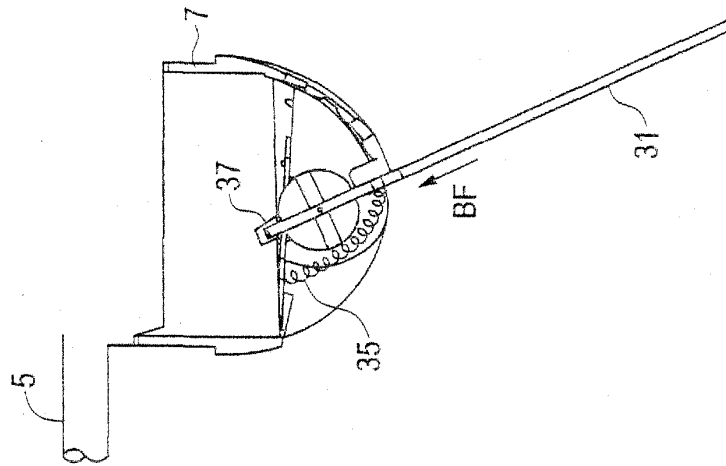


FIG. 17



Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	19308636
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Joseph A. Rhoa/Coral Jones
<b>Filer Authorized By:</b>	Joseph A. Rhoa
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	16-JUN-2014
<b>Filing Date:</b>	14-MAY-2014
<b>Time Stamp:</b>	09:06:05
<b>Application Type:</b>	Utility under 35 USC 111(a)

**Payment information:**

Submitted with Payment	no
------------------------	----

**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		3343-101_MissingParts_Decl_P OA.pdf	839760  168ea9875a5ed86e1717ee2129b0d87aa1b f4df9	yes	5

Multipart Description/PDF files in .zip description					
Document Description			Start	End	
Applicant Response to Pre-Exam Formalities Notice			1	2	
Oath or Declaration filed			3	4	
Power of Attorney			5	5	
<b>Warnings:</b>					
<b>Information:</b>					
2		3343-101_Replacement_Drawings.pdf	86613 f181b58be116a504e3a7f40b29eac8e7e55c7536	yes	2
Multipart Description/PDF files in .zip description					
Document Description			Start	End	
Transmittal Letter			1	1	
Drawings-only black and white line drawings			2	2	
<b>Warnings:</b>					
<b>Information:</b>					
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<b>PATENT ASSIGNMENT COVER SHEET</b>
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EPAS ID: PAT2898838

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
ORVILLE OLM	06/05/2014
GREG WOOD	06/03/2014
ZENON DRAGAN	06/03/2014
<b>RECEIVING PARTY DATA</b>	
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<b>Postal Code:</b>	S7M 0K7
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	14277370
<b>CORRESPONDENCE DATA</b>	
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<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
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<b>ATTORNEY DOCKET NUMBER:</b>	JAR-3343-101
<b>NAME OF SUBMITTER:</b>	JOSEPH A. RHOA
<b>SIGNATURE:</b>	/Joseph A. Rhoa/
<b>DATE SIGNED:</b>	06/16/2014
This document serves as an Oath/Declaration (37 CFR 1.63).	
<b>Total Attachments: 2</b>	
source=3343-101_Assignment#page1.tif	
source=3343-101_Assignment#page2.tif	

Doc code: Oath  
Document Description: Oath or declaration filed

Attorney Docket Number	JAR-3343-101
First Named Inventor	Orville OLM

**INVENTOR'S DECLARATION AND ASSIGNMENT FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63) USING AN APPLICATION DATA SHEET (37 CFR 1.76)**

☐ Declaration Submitted With Initial Filing

**OR**

☒ Declaration Submitted After Initial Filing (surcharge (37 C.F.R. § 1.16(f)) required)

**COMPACT UNMANNED ROTARY AIRCRAFT**

(Title of the Invention)

As a below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application,

**OR**

☒ United States Application Number or PCT International application number 14/277,370 filed on May 14, 2014.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WHEREAS, the undersigned (hereinafter ASSIGNOR), has made an invention in the Application identified above.

WHEREAS, DRAGANFLY INNOVATIONS INC. (hereinafter ASSIGNEE), a corporation of the State of Canada, having an office and place of business at 2108 Saint George Avenue, Saskatoon, Saskatchewan, CA S7M 0K7, is desirous of acquiring an interest therein;

NOW, THEREFORE, in consideration of Ten Dollars (\$10.00) and/or other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the said ASSIGNOR by these presents hereby sells, assigns, and transfers unto the said ASSIGNEE, its successors, assigns, and legal representatives, ASSIGNOR'S entire right, title and interest in the United States of America and all foreign countries, in and to the invention as described in the aforesaid application, and to the said application and to all subsequent applications based thereon including any and all continuations, divisions, reissues, and substitutes of said application, and all resulting patents, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States of America adheres, and the ASSIGNOR hereby authorizes and requests the Commissioner of Patents and Trademarks to issue said Letters Patent to ASSIGNEE, for its interest as ASSIGNEE, its successors, assigns, and legal representatives. It is understood and agreed that ASSIGNEE'S attorneys Nixon & Vanderhye P.C. have represented only ASSIGNEE and will continue to represent only ASSIGNEE with respect to this invention;

ASSIGNOR hereby agrees to transfer a like interest upon request of said ASSIGNEE, its successors, assigns, and legal representatives, and without further remuneration, in and to any improvements, and applications for patents based thereon, growing out of or related to the said invention;

ASSIGNOR hereby agrees to execute any papers by ASSIGNEE, its successors, assigns, and legal representatives, deemed essential to ASSIGNEE'S full protection and title in and to the invention hereby transferred; and

ASSIGNOR hereby agrees, upon request of ASSIGNEE, and without further remuneration, to execute any and all papers desired by ASSIGNEE, for the filing and granting of foreign applications and the perfecting of title thereto in ASSIGNEE.

**AGREED and executed as noted below:**

**LEGAL NAME OF SOLE OR FIRST INVENTOR:**

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Orville

OLM

Inventor's Signature:

Date:

June 5, 2014

Witnessed by:

Name:

Devin Ternan

Signature of witness:

Devin Ternan

Date:

June 5th 2014

[X] Additional inventors are being named on the 1 supplemental sheet(s) PTO/AIA/10 attached hereto



(Page 1 of 2)

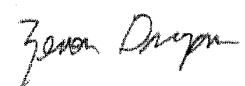

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DOCKET NO. JAR-3343-101

<b>SUPPLEMENTAL SHEET FOR DECLARATION</b>	<b>ADDITIONAL INVENTOR(S)</b>
	Supplemental Sheet (for PTO/AIA//08/09)

(Page 2 of 2)

<b>Legal Name of Additional Joint Inventor, if any:</b>	
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)	
Greg WOOD	
Inventor's Signature: 	Date: June 3/14
Witnessed by:	
Name: Lana Moldenhauer	
Signature of witness: 	Date: 06/03/14

<b>Legal Name of Additional Joint Inventor, if any:</b>	
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)	
Zenon DRAGAN	
Inventor's Signature: 	Date: June 3, 2014
Witnessed by:	
Name: Lana Moldenhauer	
Signature of witness: 	Date: 06/03/14



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Specification and Drawings, as originally filed, with Application for Patent Serial No:  
**CA 2815885**, on May 15, 2013, by **DRAGANFLY INNOVATIONS INC.**, assignee of  
Orville Olm, Greg Wood and Zenon Dragan, for "Compact Unmanned Rotary Aircraft".

*L. Reginald*  
Agent certificateur / Certifying Officer

May 26, 2014

Date

**Canada**

CANADA  
(CIPO 68)  
01/10

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**ABSTRACT**

A rotary wing aircraft apparatus has arms extending from a body, and a rotor assembly attached to an end of each arm. Each rotor assembly has a rotor blade releasably attached  
5 by a lock mechanism. A clockwise rotor blade is releasably attached to a first rotor assembly by engagement in a clockwise lock mechanism, and a counterclockwise rotor blade is releasably attached to a second rotor assembly by engagement in a counterclockwise lock mechanism. The clockwise rotor blade is engageable only with  
10 the clockwise lock mechanism and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism. A leg extends down from each rotor assembly to support the apparatus on the ground.

15

**COMPACT UNMANNED ROTARY AIRCRAFT**

This disclosure relates to the field of unmanned rotary aircraft or helicopters and more particularly rotary aircraft with a compact storage configuration.

5

**BACKGROUND**

Unmanned remote control rotary aircraft have recently become popular for recreation and also in larger and more sophisticated versions for surveillance by military and police personnel. One popular configuration includes a number of arms extending laterally from the aircraft body, with a rotor assembly on the end of each arm. The rotor assemblies sometimes have upper and lower rotors that rotate in opposite directions to avoid exerting torque on the body which would cause it to spin.

15 Where the rotor assemblies have a single rotor, torque on the body from the rotational motion of the rotors is avoided by having the rotors rotate in opposite directions. The vertical lift is the same, but the torque imparted by rotation in one direction is cancelled out by the rotation in the opposite direction. Where an even number of arms and rotor assemblies is used, the rotational forces cancel each other and the body is substantially  
20 stable.

Where an uneven number of arms and rotor assemblies is used, such as in the popular three rotor configuration, two rotors spin in one direction and the third spins in the opposite direction. The rotational axis of the third rotor is then tilted slightly away from  
25 vertical so it exerts a horizontal force component that counteracts the torque force exerted by the other rotors, again resulting in a stable body. The degree of tilt can be adjusted by  
~~rotating the arm to adjust for varying rotor speeds.~~



Such multi-rotor unmanned remote control rotary aircraft are disclosed for example in United States Patent Numbers 8,052,081 and 8,292,215 to the present inventors Olm et al. To make the aircraft more compact for storage and transport the rotors can be removed and the arms folded into a side by side orientation. Although not shown in the patents, a leg assembly is typically attached to the bottom of the aircraft body, and to support the aircraft on the ground in the necessary orientation for landing and takeoff.

#### SUMMARY OF THE INVENTION

10

The present disclosure provides a rotary aircraft apparatus that overcomes problems in the prior art.

In a first embodiment the present disclosure provides a rotary wing aircraft apparatus comprising a body, a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm. Each rotor assembly comprises a rotor blade releasably attached to a driveshaft by a lock mechanism, and a drive rotating the driveshaft. A first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction. A clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction, and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction. The clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism.

In a second embodiment the present disclosure provides a rotary wing aircraft apparatus comprising a body, a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm, each rotor assembly comprising a rotor  
5 blade and a drive operative to rotate the rotor blade. Each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.

The rotor blades can be easily detached for transport or storage, and cannot be placed on  
10 driveshafts rotating the wrong direction. Legs extending down from the rotor assemblies increase stability allowing landing upright and operational on steep slopes. The legs can also be conveniently folded for storage.

#### **DESCRIPTION OF THE DRAWINGS**

15

While the invention is claimed in the concluding portions hereof, preferred embodiments are provided in the accompanying detailed description which may be best understood in conjunction with the accompanying diagrams where like parts in each of the several diagrams are labeled with like numbers, and where:

20

Fig. 1 is a schematic perspective view of an embodiment of a rotary wing aircraft apparatus of the present disclosure with arms and legs in the operating position, and rotor blades installed

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Fig. 2 is a schematic perspective view of the embodiment of Fig. 1 with legs in the stored position, and rotor blades removed;

Fig. 3 is a schematic perspective view of the embodiment of Fig. 1 with legs in the stored position, rotor blades removed, and the arms folded;

5 Fig. 4 is a schematic perspective view of clockwise lock mechanism used to attach clockwise rotor blades in the embodiment of Fig. 1 with the rotor blade in the recess ready for engagement or removal;

10 Fig. 5 is a schematic perspective view of clockwise lock mechanism of Fig. 4 with the rotor blade engaged and locked in the lock mechanism;

Fig. 6 is a top view of the shaft lock portion of a counterclockwise lock mechanism with a counterclockwise rotor blade on one side and a clockwise rotor blade on the other side;

15 Fig. 7 shows the counterclockwise rotor blade installed in the shaft lock portion of the counterclockwise lock mechanism of Fig. 6;

20 Fig. 8 shows the clockwise rotor blade blocked from engagement and installation in the shaft lock portion of the counterclockwise lock mechanism of Fig. 6;

Fig. 9 is a top view of the shaft lock portion of a clockwise lock mechanism with a clockwise rotor blade in the recess ready for engagement or removal;

25 Fig. 10 shows the clockwise rotor blade of Fig. 9 installed in the shaft lock portion of the clockwise lock mechanism;

~~Figs. 11 and 12 show respectively perspective and side views of a leg of the~~  
embodiment of Fig. 1 in the operating position;

Figs. 13 and 14 show respectively perspective and side views of the leg of Figs. 11 and 12 in the stored position;

5 Fig. 15 is a schematic cut away side view of a leg latch mechanism for operating the legs of the embodiment of Fig. 1, with the leg in the stored position;

Fig. 16 is a schematic cut away side view of the leg latch mechanism of Fig. 15 with the leg in the operating position but not yet engaged in the recess and thus not latched;

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Fig. 17 is a schematic cut away side view of the leg latch mechanism of Fig. 15 with the leg in the operating position and latched.

#### **DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENTS**

15

Figs. 1 - 3 schematically illustrate an embodiment of a rotary wing aircraft apparatus 1 of the present disclosure. The apparatus 1 comprises a body 3, and a plurality of arms 5 extending laterally from the body 3. A rotor assembly 7 is attached to an outside end of each arm 5. Each rotor assembly 7 comprises a rotor blade 9 releasably attached to a driveshaft by a lock mechanism 11, and a drive, typically an electric motor, rotating the driveshaft.

20

Fig. 2 shows the apparatus 1 with rotor blades removed and support legs in the stored position as described further below. In the illustrated apparatus 1 the arms 5 are movably attached to the body 3 such that the arms 5 can be moved from a flying position illustrated in Fig. 1, where the arms extend forward and rearward laterally outward from the body 3, such that the arms 5 are substantially equally spaced, to a folded stored

25

position illustrated in Fig. 3 where the arms are generally aligned with and adjacent to each other.

5 The illustrated apparatus 1 has four arms 5 and corresponding rotor assemblies 7, and as is known in the art, two of the rotor blades 9A, 9B rotate in a clockwise direction and generate a vertical lift force when rotated in the clockwise direction, while the other two rotor blades 9C, 9D rotate in a counterclockwise direction and generate a vertical lift force when rotated in the clockwise direction.

10 The operation of the lock mechanisms 11 is illustrated in Figs. 4 – 10. Each clockwise rotor blade 9A, 9B is releasably attached to the corresponding driveshaft 13 by engagement in a clockwise lock mechanism 11AB and each counterclockwise rotor blade 9C, 9D is releasably attached to the corresponding driveshaft 13 by engagement in a counterclockwise lock mechanism 11CD.

15

It will be appreciated that in order for the apparatus 1 to operate properly, the rotor blades 9 must be mounted to driveshafts that are rotating in the correct direction. To ensure that the correct positioning, the clockwise rotor blades 9A, 9B are engageable only with the clockwise lock mechanisms 11AB and cannot be engaged in the counterclockwise lock mechanisms 11CD, and similarly the counterclockwise rotor blades 9C, 9D are  
20 engageable only with the counterclockwise lock mechanisms 11CD and cannot be engaged in the clockwise lock mechanisms 11AB.

Each clockwise lock mechanism 11AB comprises a shaft lock portion 15A attached to  
25 the corresponding clockwise rotating driveshaft and a blade lock portion 17A attached to the clockwise rotor blade 9A, 9B. Similarly each counterclockwise lock mechanism 11CD comprises a shaft lock portion 15C attached to the corresponding counterclockwise

---

rotating driveshaft and a blade lock portion 17C attached to the counterclockwise rotor blade 9C, 9D.

Figs. 4 and 5 show the operation of the lock mechanisms 11. A clockwise lock mechanism 11A is illustrated with the shaft lock portion 15A attached to a clockwise rotating driveshaft 13. Arrows on the shaft lock portion 15A indicate the rotational direction, and the shaft lock portion defines a recess 21 in the middle between the arrows. The blade lock portion 17A of the lock mechanism 11A on the clockwise rotor blade 9A is dropped into the recess 21 as seen in Fig. 4 and the rotor blade 9A is then rotated in direction R opposite to the direction of the arrows such that the blade 9A slides into slots 23 on each side of the shaft lock portion 15A under the arrows, and lugs 25A on the blade lock portion 17A engage notches 27A defined by the shaft lock portion as seen in Fig. 5.

The blade lock portion 17A of the clockwise lock mechanisms 11A are rotated counterclockwise with respect to the shaft lock portion 15A thereof to push the blade into the slots 23 to releasably attach the clockwise rotor blade 9A to the shaft lock portion 15A and thus to the driveshaft 13. During operation the shaft lock portion 15A exerts a force in the direction of the arrows on the rotor blade to rotate same, and this force keeps the blade engaged in the slots 23. The counterclockwise lock mechanism 11C operates in a similar fashion with an opposite spin direction.

Fig. 6 shows the shaft lock portion 15C, with recess 21, of a counterclockwise lock mechanism with a counterclockwise rotor blade 9C, with blade lock portion 17C, on one side and a clockwise rotor blade 9A, with blade lock portion 17A, on the other side. Fig. 7 shows the blade lock portion 17C of the counterclockwise rotor blade 9C successfully installed in the shaft lock portion 15C to form a counterclockwise lock mechanism 11CD.

Fig. 8 shows that the blade lock portion 17A of the clockwise rotor blade 9A is prevented from rotating in direction R as required by contact of the lugs 17A with the oppositely configured notches 27C of the shaft lock portion 15C. Thus the clockwise rotor blades 9A, 9B cannot be installed on the shaft lock portion 15C of a counterclockwise lock mechanism, and similarly the counterclockwise rotor blades 9C, 9D cannot be installed on the shaft lock portion 15A of a clockwise lock mechanism.

Fig. 9 shows the blade lock portion 17A of the clockwise rotor blade 9A placed in the recess 21 of a correctly selected clockwise shaft lock portion 15A, and Fig. 10 shows the blade lock portion 17A successfully installed in the shaft lock portion 15A to form a clockwise lock mechanism 11AB.

Commonly in the prior art the rotary aircraft is supported on a leg structure attached under the body. Stability of the aircraft on the ground is improved in present apparatus 1 where each rotor assembly 7 has a leg 31 pivotally attached to a bottom portion of the rotor assembly 7, as illustrated in Figs. 11 - 17. Each leg 31 is movable from a stored position as illustrated in Fig. 2, where the leg 31 extends laterally from the rotor assembly 7 along the arm 5 supporting the rotor assembly, to an operating position as illustrated in Fig. 1, where the leg extends downward from the rotor assembly 7.

It can be seen in Fig. that the bottom ends of the legs 31 in the operating position are much farther apart than would be practical with a leg structure mounted to the body 3. The apparatus can thus land on a considerable slope if necessary. Beneficially the legs 31 are made from a strong yet light and somewhat flexible material to cushion the apparatus 1 on landing. A carbon-fiber-reinforced polymer material could be used for example. While stationary legs as shown in Fig. 1 provide increased stability, same are awkward for storage and transport, and interfere with folding arms.

In the illustrated apparatus 1 each leg 31 is therefore is pivotally attached to the bottom portion of the rotor assembly 7 such that the leg is movable from a stored position, where the leg 31 extends laterally from the rotor assembly 7 along the arm 5 supporting the rotor assembly 7, to an operating position where the leg 31 extends downward from the  
5 rotor assembly 7.

Figs. 11 and 12 show one of the legs in the operating position, where the leg 31 slopes from the rotor assembly 7 downward and away from the body at the opposite inner end of the arm 5. Figs. 13 and 14 show the leg 31 in the stored position, where a saddle 33 on  
10 the bottom end of the leg 31 engages the arm 5 to reduce the risk that the leg 31 may be forced laterally and damaged during transport to a use site.

In the illustrated apparatus 1, as seen in Figs. 15 – 17, each leg 31 is pivotally attached to the bottom of the rotor assembly 7 about a pivot axis PA that is substantially  
15 perpendicular to the arm 5. A bias element, illustrated as spring 35, urges the leg 31 toward the stored position shown in Fig. 1. To move to the operating position, the operator pivots the leg 31 against the bias force BF to the operating position shown in Fig. 16, where the upper end of the leg 31 is aligned with a recess 37 in the rotor assembly 7 and the bias force BF draws the leg into the recess 37. The end of the leg 31  
20 in the recess 37 acts then as a latch to lock the leg 31 in the operating position.

The rotor blades of the illustrated apparatus 1 can be easily detached for transport of storage, and cannot be placed on driveshafts rotating the wrong direction. The legs extending down from the rotor assemblies significantly increase stability allowing the  
25 apparatus 1 to land on a steep slope without falling over and becoming inoperative. The legs can also be conveniently folded for storage.



The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous changes and modifications will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all such suitable changes or modifications in  
5 structure or operation which may be resorted to are intended to fall within the scope of the claimed invention.

**CLAIMS**

What is claimed is:

1. A rotary wing aircraft apparatus comprising:

a body;

a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;

each rotor assembly comprising a rotor blade releasably attached to a driveshaft by a lock mechanism, and a drive rotating the driveshaft;

wherein a first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction;

wherein a clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction, and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction; and

wherein the clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and ~~the counterclockwise rotor blade is engageable only with the counterclockwise~~  
lock mechanism and cannot be engaged in the clockwise lock mechanism.

2. The apparatus of claim 1 wherein the clockwise lock mechanism comprises a shaft lock portion attached to the first driveshaft and a blade lock portion attached to the clockwise rotor blade, the shaft lock portion defining notches configured to engage corresponding lugs on the blade lock portion.
3. The apparatus of claim 2 wherein the counterclockwise lock mechanism comprises a shaft lock portion attached to the second driveshaft and a blade lock portion attached to the counterclockwise rotor blade, the blade lock portion comprising lugs with a configuration that is different than a configuration of the lugs on the blade lock portion of the clockwise lock mechanism.
4. The apparatus of any one of claims 2 and 3 wherein the blade lock portion of the clockwise lock mechanism is rotated counterclockwise with respect to the shaft lock portion thereof to releasably attach the clockwise rotor blade to the first driveshaft.
5. The apparatus of claim 4 wherein the blade lock portion of the counterclockwise lock mechanism is rotated clockwise with respect to the shaft lock portion thereof to releasably attach the counterclockwise rotor blade to the second driveshaft.
6. The apparatus of any one of claims 1 – 5 wherein each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.
7. The apparatus of claim 6 wherein the leg slopes downward and away from the body.
8. The apparatus of claim 6 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly.

9. The apparatus of claim 8 comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position.
10. The apparatus of any one of claims 8 and 9 wherein the leg slopes downward and away from the body when in the operating position.
11. The apparatus of any one of claims 8 – 10 wherein a bottom end of the leg engages the arm when in the stored position.
12. The apparatus of any one of claims 1 – 11 wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm.
13. A rotary wing aircraft apparatus comprising:
  - a body;
  - a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;
  - each rotor assembly comprising a rotor blade and a drive operative to rotate the rotor blade; and
  - each rotor assembly comprising a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.
14. The apparatus of claim 13 wherein the leg slopes downward and away from the body.

15. The apparatus of claim 13 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly.
16. The apparatus of claim 15 comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position.
17. The apparatus of any one of claims 15 and 16 wherein the leg slopes downward and away from the body when in the operating position.
18. The apparatus of any one of claims 15 – 17 wherein a bottom end of the leg engages the arm when in the stored position.
19. The apparatus of any one of claims 15 – 18 wherein the rotor blades are releasably attached to the rotor assemblies.
20. The apparatus of claim 19 wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm.

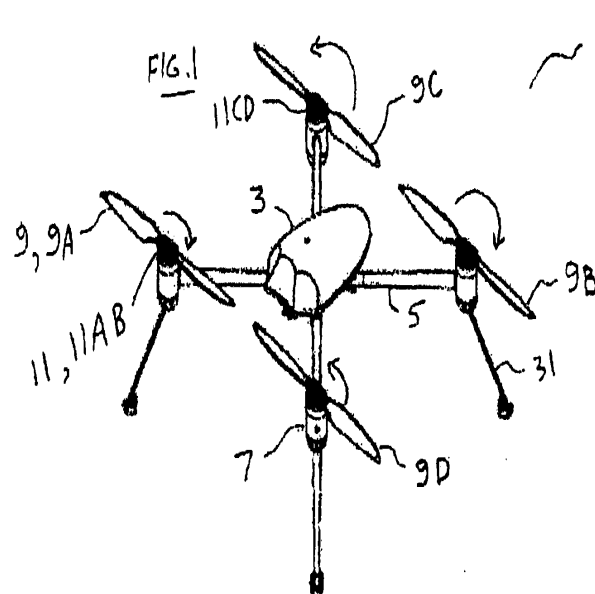


FIG. 2

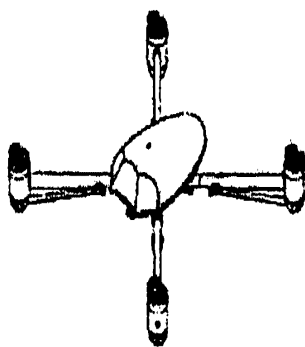
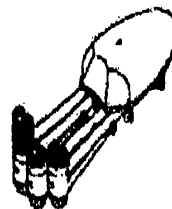
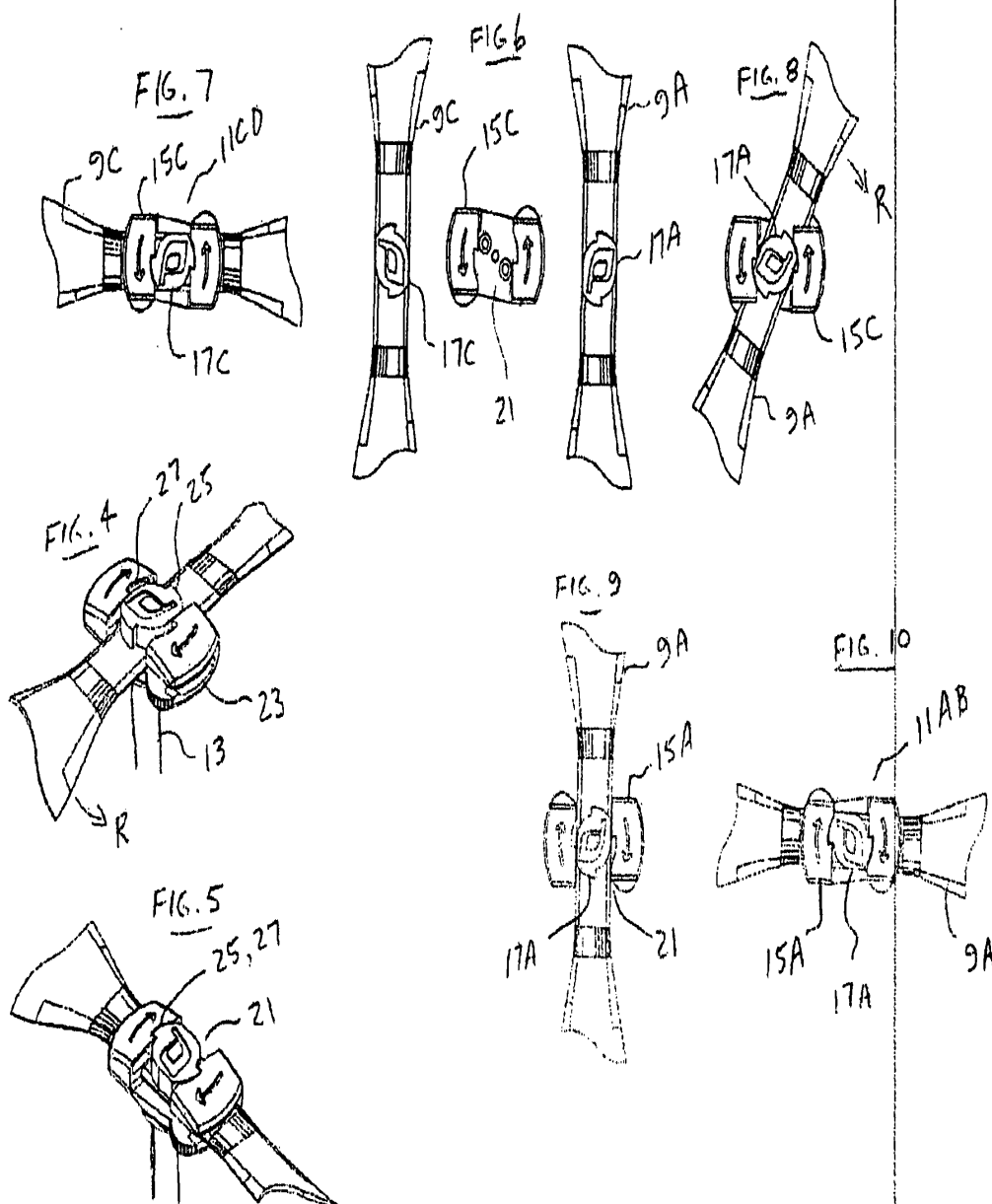
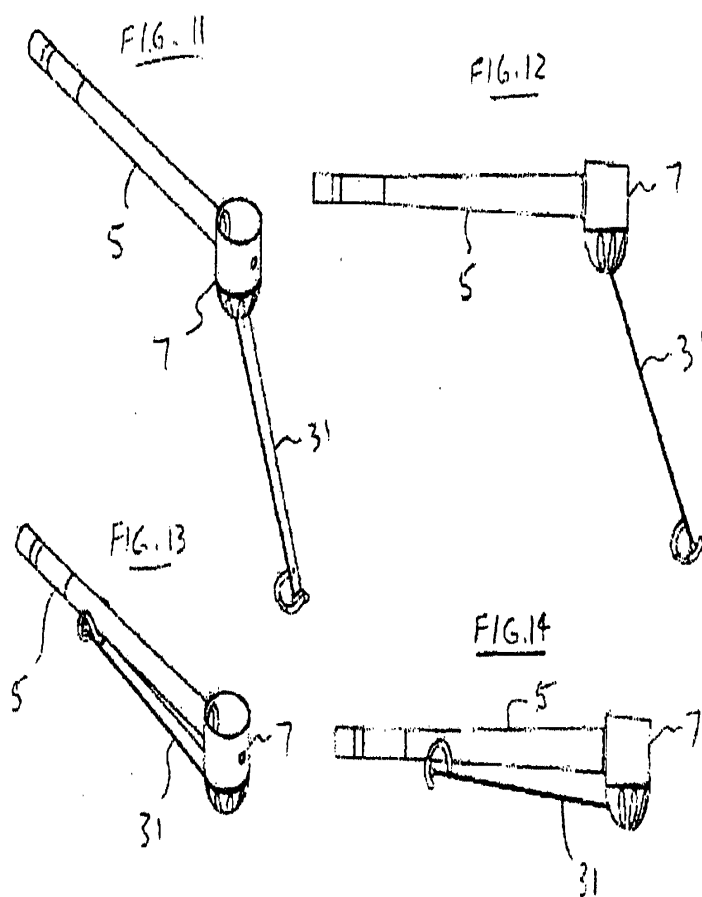


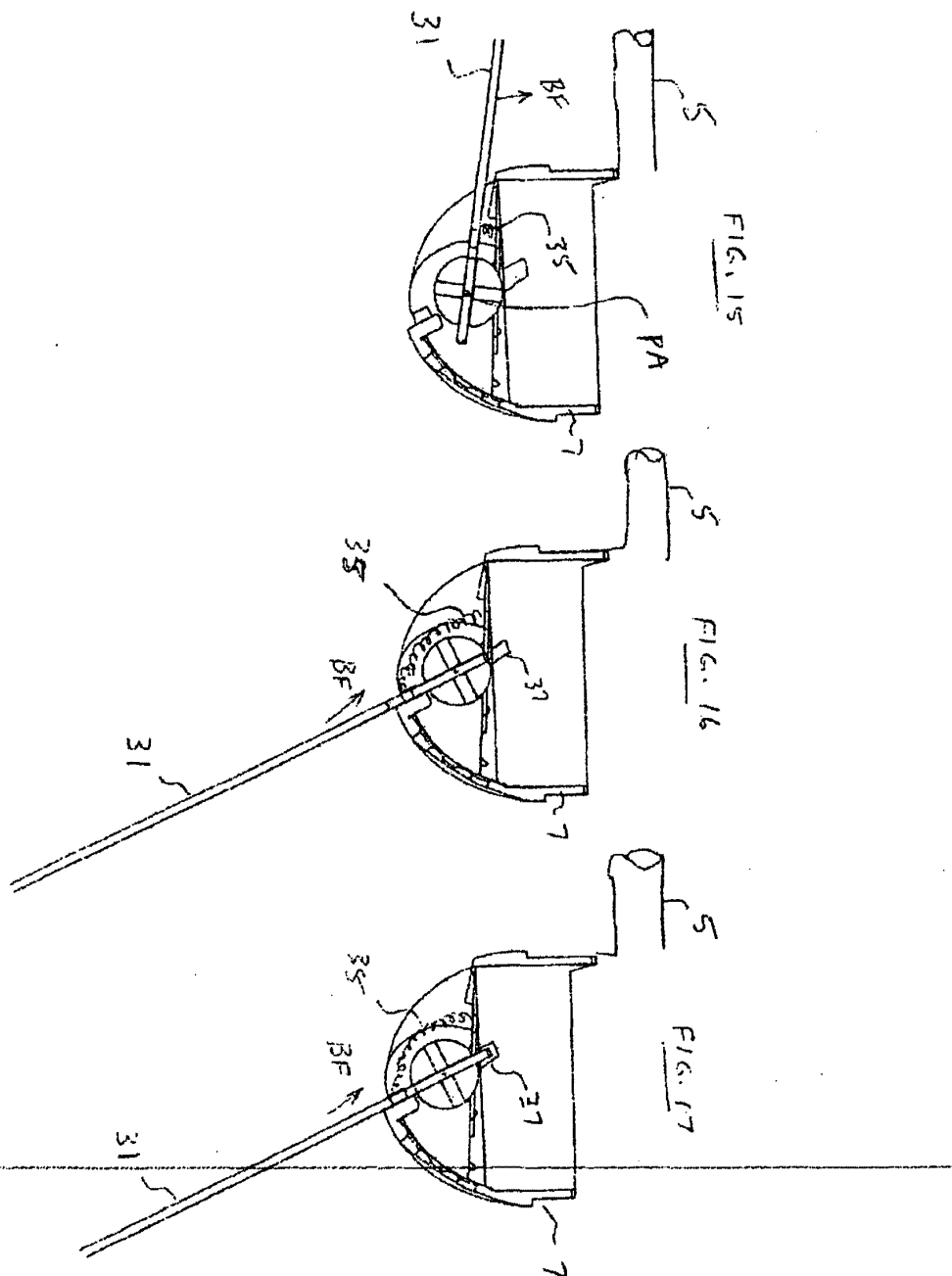
FIG. 3











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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

OLM et al.

Appln. No. 14/277,370

Filed: May 14, 2014

For: COMPACT UNMANNED ROTARY AIRCRAFT



Conf. No.: 6717

Atty. Ref.: JAR-3343-101

Art Unit: 3673

Examiner: To be assigned

\* \* \* \* \*

June 16, 2014

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**SUBMISSION OF PRIORITY DOCUMENT**

It is respectfully requested that this application be given the benefit of the foreign filing date under the provisions of 35 U.S.C. §119 of the following, a certified copy of which is submitted herewith:

<u>Application No.</u>	<u>Country of Origin</u>	<u>Filed</u>
2815885	CA	15 May 2013

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By: \_\_\_\_\_

Joseph A. Rhoa  
Reg. No. 37,515

JAR:caj  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
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Facsimile: (703) 816-4100



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
14/277,370	05/14/2014	3673	800	JAR-3343-101	20	2

CONFIRMATION NO. 6717

23117

NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203

## FILING RECEIPT



\*OC000000068667976\*

Date Mailed: 05/29/2014

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

## Inventor(s)

Orville OLM, Saskatchewan, CANADA;  
 Greg WOOD, Saskatchewan, CANADA;  
 Zenon DRAGAN, Saskatchewan, CANADA;

## Applicant(s)

DRAGANFLY INNOVATIONS INC., Saskatoon, CANADA

## Assignment For Published Patent Application

DRAGANFLY INNOVATIONS INC., Saskatoon, CANADA

## Power of Attorney: None

## Domestic Applications for which benefit is claimed - None.

*A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.*

**Foreign Applications** (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)

CANADA 2815885 05/15/2013

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

## If Required, Foreign Filing License Granted: 05/27/2014

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/277,370**

**Projected Publication Date:** To Be Determined - pending completion of Corrected Papers

page 1 of 3

**Non-Publication Request:** No

**Early Publication Request:** No

**\*\* SMALL ENTITY \*\***

**Title**

COMPACT UNMANNED ROTARY AIRCRAFT

**Preliminary Class**

070

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:** No

## **PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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<b>PATENT APPLICATION FEE DETERMINATION RECORD</b>						Application or Docket Number 14/277,370	
Substitute for Form PTO-875							
<b>APPLICATION AS FILED - PART I</b>							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)	OR	RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *	x 40 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 = *	x 210 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL		TOTAL	
				730			
<b>APPLICATION AS AMENDED - PART II</b>							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	OTHER THAN SMALL ENTITY	
	Total (37 CFR 1.16(i))	*	Minus **	=	x	=	OR
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x	=	OR
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
				TOTAL ADD'L FEE		TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	OTHER THAN SMALL ENTITY	
	Total (37 CFR 1.16(i))	*	Minus **	=	x	=	OR
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x	=	OR
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
				TOTAL ADD'L FEE		TOTAL ADD'L FEE	
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.</p>							


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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/277,370	05/14/2014	Orville OLM	JAR-3343-101

**CONFIRMATION NO. 6717**
**FORMALITIES LETTER**

23117

NIXON & VANDERHYE, PC  
 901 NORTH GLEBE ROAD, 11TH FLOOR  
 ARLINGTON, VA 22203



\*OC000000068667977\*

Date Mailed: 05/29/2014

**NOTICE TO FILE CORRECTED APPLICATION PAPERS**
***Filing Date Granted***

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings must be reasonably free from erasures and must be free from alterations, overwriting, interlineations, folds, and copy marks. See Figure(s) 16.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

**Items Required To Avoid Processing Delays:**

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):  
 Orville OLM  
 Greg WOOD  
 Zenon DRAGAN



Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts  
Commissioner for Patents  
P.O. Box 1450  
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice".  
<https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/mkanno/

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Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Atty. Dkt.: JAR-3343-101  
Date: May 14, 2014

Attached for filing is the **UTILITY** patent application of:  
Inventor: OLM et al.  
Entitled: COMPACT UNMANNED ROTARY AIRCRAFT  
including the attachments as noted below:

Application and Signed Documents

14 pages of Specification, Claims and Abstract (including 20 numbered claims)

4 sheets of Drawing(s) (Figures 1 - 17)

- ☐ Declaration ☐ Combined Declaration and Assignment (submitted via EPAS)  
☐ Newly executed; ☐ A copy from a prior application (37 CFR 1.63(d))  
☐ Assignment and Recordation Form Cover Sheet (paper filing) ☐ Assignment (submitted via EPAS)  
☐ Power of Attorney ☐ 37 CFR 3.73(b) or 37 CFR 3.73(c) Statement ☐ General Power of Attorney Transmittal Letter  
☒ Application Data Sheet  
☐ English Translation

Priority Claim (Domestic and/or Foreign) (must be included in Application Data Sheet)

- ☐ Provisional/Nonprovisional Application(s) are identified in attached Application Data Sheet  
☐ Continuation/Division/Continuation-In-Part parent application(s) are identified in attached Application Data Sheet  
☒ PCT/foreign application(s) is/are identified in attached Application Data Sheet  
☒ Incorporation by Reference statement is in the specification or Preliminary Amendment  
☒ Copy the incorporation by reference from the specification or Preliminary Amendment and insert text here:  
This application claims priority to Canadian Patent Application No. 2815885 filed May 15, 2013, the entire content of which is hereby incorporated by reference.

Certified Copy/Copies

- ☐ Certified copy(ies) of foreign application(s) attached  
☐ Certified copy(ies) filed on \_\_\_\_\_ in prior Application No. \_\_\_\_\_ filed \_\_\_\_\_  
☐ Interim copy(ies) of priority document(s) (effective March 16, 2013)  
☐ Request to Retrieve Electronic Priority Application(s) (for a non-EPO priority doc that is of record in an EPO application or a non-JPO priority document that is of record in a JPO application)

Prior U.S. Application(s)

- ☐ Request under 37 CFR 1.48(a) to delete inventor(s) named in prior application  
☐ Petition filed in prior application to extend its life to ensure co-pendency of parent application

Preliminary Amendment

- ☐ Preliminary Amendment (Please enter the attached Preliminary Amendment prior to calculation of claims fees.)

Information Disclosure Statement

- ☐ Information Disclosure Statement (IDS) and Form(s) PTO/SB/08  
☐ Copies of newly cited publications, other than U.S. patents and U.S. patent application publications, are attached  
☐ English language and/or "concise explanation" is/was provided for each foreign language document  
☐ Form(s) PTO/SB/08 listing the references cited in the parent application(s) (for continuing cases)

Other Documents

- ☐ Non-Publication Request  
☐ Nucleotide and/or Amino Acid Sequence Submission ☐ Computer Readable Form (CRF)/☐ Specification Sequence  
Listing on ☐ CD-ROM or CD-R (2 copies) or ☐ Paper/☐ Statements verifying identity of above copies  
☐ Authorization to Permit Access to Search Results by the European Patent Office (EPO) (Form PTO/SB/69)  
☐ Other (itemize each attachment):

Small Entity

☒ Applicant claims "small entity" status. ☐ "Small entity" statement(s) attached

Micro Entity

☐ Applicant claims "micro entity" status. ☐ Micro entity certification statement filed herewith.

Fee CalculationFILING FEE IS BASED ON CLAIMS AS FILED LESS ANY HEREWITH CANCELED

Utility Basic Filing Fee		\$280.00 (1011)	\$	70.00
		\$140.00 (2011) \$70.00 (4011) \$70.00 (3011)		
Utility Search Fee		\$600.00 (1111) \$300.00 (2111) \$150.00 (3111)	\$	300.00
Utility Examination Fee		\$720.00 (1311) \$360.00 (2311) \$180.00 (3311)	\$	360.00
Utility Application Size Fee (\$400.00) for each <u>additional</u> 50 pages that exceeds 100 pages):				
Paper filing: Total pages: 0-100 = 0		\$0.00 (1081) / \$0.00 (2081) / \$0.00 (3081)	\$	
Surcharge for Paper Filing		\$400.00 (1090) / \$200.00 (2090) / \$200.00 (3090)		
<u>E-filing:</u>				
Total pages: 18 *.75 = 14-100 = 0/50	=	0	\$0.00(1081) / \$0.00 (2081) / \$0.00 (3081)	\$
Total effective claims	20 - 20 (at least 20) =	0	x \$ 80.00 = \$0.00 (1202) / \$0.00 (2202) / \$0.00 (3202)	\$
Independent claims	2 - 3 (at least 3) =	0	x \$ 420.00 = \$0.00 (1201) / \$0.00 (2201) / \$0.00 (3201)	\$
If any proper multiple dependent claims now added for first time, add \$780.00 (1203) / \$390.00 (2203) / \$195.00 (3203)				
(ignore improper)				
Assignment Recording Fee		\$40.00 (8021) / \$0 if filed electronically	\$	
Prepayment of Surcharge for Late Declaration		\$140.00 (1051) / \$70.00 (2051) / \$70.00 (3051)	\$	70.00
			TOTAL FEE	\$ 800.00

☒ CREDIT CARD OR DEPOSIT ACCOUNT PAYMENT (CREDIT CARD FORM ATTACHED IF PAPER FILING).

Extension of Time

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension.

Deposit Account Authorization

The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to Deposit Account No. 14-1140. However, **authorization is NOT given hereby to charge any extra claims fees or multiple dependent claims fees.**

Correspondence Address:

Customer Number:

23117

Telephone: (703) 816-4000

Facsimile: (703) 816-4100

JAR:js

NIXON & VANDERHYE P.C.

By Attorney: Joseph A. Rhoa, Reg. No. 37,515

Signature: /Joseph A. Rhoa/

**COMPACT UNMANNED ROTARY AIRCRAFT****CROSS-REFERENCE TO RELATED APPLICATIONS**

- 5 This application claims priority to Canadian Patent Application No. 2815885 filed May 15, 2013, the entire content of which is hereby incorporated by reference.

This disclosure relates to the field of unmanned rotary aircraft or helicopters and more particularly rotary aircraft with a compact storage configuration.

10

**BACKGROUND**

Unmanned remote control rotary aircraft have recently become popular for recreation and also in larger and more sophisticated versions for surveillance by military and police personnel. One popular configuration includes a number of arms extending laterally from the aircraft body, with a rotor assembly on the end of each arm. The rotor assemblies sometimes have upper and lower rotors that rotate in opposite directions to avoid exerting torque on the body which would cause it to spin.

20 Where the rotor assemblies have a single rotor, torque on the body from the rotational motion of the rotors is avoided by having the rotors rotate in opposite directions. The vertical lift is the same, but the torque imparted by rotation in one direction is cancelled out by the rotation in the opposite direction. Where an even number of arms and rotor assemblies is used, the rotational forces cancel each other and the body is substantially stable.

25

Where an uneven number of arms and rotor assemblies is used, such as in the popular three rotor configuration, two rotors spin in one direction and the third spins in the opposite direction. The rotational axis of the third rotor is then tilted slightly away from vertical so it exerts a horizontal force component that counteracts the torque force exerted by the other rotors, again resulting in a

stable body. The degree of tilt can be adjusted by rotating the arm to adjust for varying rotor speeds.

Such multi-rotor unmanned remote control rotary aircraft are disclosed for example in United States Patent Numbers 8,052,081 and 8,292,215 to the present inventors Olm et al. To make the aircraft more compact for storage and transport the rotors can be removed and the arms folded into a side by side orientation. Although not shown in the patents, a leg assembly is typically attached to the bottom of the aircraft body, and to support the aircraft on the ground in the necessary orientation for landing and takeoff.

## 10 **SUMMARY OF THE INVENTION**

The present disclosure provides a rotary aircraft apparatus that overcomes problems in the prior art.

15 In a first embodiment the present disclosure provides a rotary wing aircraft apparatus comprising a body, a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm. Each rotor assembly comprises a rotor blade releasably attached to a driveshaft by a lock mechanism, and a drive rotating the driveshaft. A first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction. A clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction, and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction. The clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism.

30 In a second embodiment the present disclosure provides a rotary wing aircraft apparatus comprising a body, a plurality of arms extending laterally from the body, and a rotor assembly

attached to an outside end of each arm, each rotor assembly comprising a rotor blade and a drive operative to rotate the rotor blade. Each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.

- 5 The rotor blades can be easily detached for transport or storage, and cannot be placed on driveshafts rotating the wrong direction. Legs extending down from the rotor assemblies increase stability allowing landing upright and operational on steep slopes. The legs can also be conveniently folded for storage.

## 10 **DESCRIPTION OF THE DRAWINGS**

While the invention is claimed in the concluding portions hereof, preferred embodiments are provided in the accompanying detailed description which may be best understood in conjunction with the accompanying diagrams where like parts in each of the several diagrams are labeled  
15 with like numbers, and where:

Fig. 1 is a schematic perspective view of an embodiment of a rotary wing aircraft apparatus of the present disclosure with arms and legs in the operating position, and rotor blades installed

- 20 Fig. 2 is a schematic perspective view of the embodiment of Fig. 1 with legs in the stored position, and rotor blades removed;

Fig. 3 is a schematic perspective view of the embodiment of Fig. 1 with legs in the stored position, rotor blades removed, and the arms folded;

- 25 Fig. 4 is a schematic perspective view of clockwise lock mechanism used to attach clockwise rotor blades in the embodiment of Fig. 1 with the rotor blade in the recess ready for engagement or removal;

Fig. 5 is a schematic perspective view of clockwise lock mechanism of Fig. 4 with the rotor blade engaged and locked in the lock mechanism;

5 Fig. 6 is a top view of the shaft lock portion of a counterclockwise lock mechanism with a counterclockwise rotor blade on one side and a clockwise rotor blade on the other side;

Fig. 7 shows the counterclockwise rotor blade installed in the shaft lock portion of the counterclockwise lock mechanism of Fig. 6;

10 Fig. 8 shows the clockwise rotor blade blocked from engagement and installation in the shaft lock portion of the counterclockwise lock mechanism of Fig. 6;

Fig. 9 is a top view of the shaft lock portion of a clockwise lock mechanism with a clockwise rotor blade in the recess ready for engagement or removal;

15 Fig. 10 shows the clockwise rotor blade of Fig. 9 installed in the shaft lock portion of the clockwise lock mechanism;

20 Figs. 11 and 12 show respectively perspective and side views of a leg of the embodiment of Fig. 1 in the operating position;

Figs. 13 and 14 show respectively perspective and side views of the leg of Figs. 11 and 12 in the stored position;

25 Fig. 15 is a schematic cut away side view of a leg latch mechanism for operating the legs of the embodiment of Fig. 1, with the leg in the stored position;

Fig. 16 is a schematic cut away side view of the leg latch mechanism of Fig. 15 with the leg in the operating position but not yet engaged in the recess and thus not latched;

30

Fig. 17 is a schematic cut away side view of the leg latch mechanism of Fig. 15 with the leg in the operating position and latched.

## **DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENTS**

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Figs. 1 - 3 schematically illustrate an embodiment of a rotary wing aircraft apparatus 1 of the present disclosure. The apparatus 1 comprises a body 3, and a plurality of arms 5 extending laterally from the body 3. A rotor assembly 7 is attached to an outside end of each arm 5. Each rotor assembly 7 comprises a rotor blade 9 releasably attached to a driveshaft by a lock mechanism 11, and a drive, typically an electric motor, rotating the driveshaft.

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Fig. 2 shows the apparatus 1 with rotor blades removed and support legs in the stored position as described further below. In the illustrated apparatus 1 the arms 5 are movably attached to the body 3 such that the arms 5 can be moved from a flying position illustrated in Fig. 1, where the arms extend forward and rearward laterally outward from the body 3 such that the arms 5 are substantially equally spaced, to a folded stored position illustrated in Fig. 3 where the arms are generally aligned with and adjacent to each other.

15

The illustrated apparatus 1 has four arms 5 and corresponding rotor assemblies 7, and as is known in the art, two of the rotor blades 9A, 9B rotate in a clockwise direction and generate a vertical lift force when rotated in the clockwise direction, while the other two rotor blades 9C, 9D rotate in a counterclockwise direction and generate a vertical lift force when rotated in the clockwise direction.

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The operation of the lock mechanisms 11 is illustrated in Figs. 4 – 10. Each clockwise rotor blade 9A, 9B is releasably attached to the corresponding driveshaft 13 by engagement in a clockwise lock mechanism 11AB and each counterclockwise rotor blade 9C, 9D is releasably attached to the corresponding driveshaft 13 by engagement in a counterclockwise lock mechanism 11CD.

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It will be appreciated that in order for the apparatus 1 to operate properly, the rotor blades 9 must be mounted to driveshafts that are rotating in the correct direction. To ensure that the correct positioning, the clockwise rotor blades 9A, 9B are engageable only with the clockwise lock mechanisms 11AB and cannot be engaged in the counterclockwise lock mechanisms 11CD, and  
 5 similarly the counterclockwise rotor blades 9C, 9D are engageable only with the counterclockwise lock mechanisms 11CD and cannot be engaged in the clockwise lock mechanisms 11AB.

Each clockwise lock mechanism 11AB comprises a shaft lock portion 15A attached to the  
 10 corresponding clockwise rotating driveshaft and a blade lock portion 17A attached to the clockwise rotor blade 9A, 9B. Similarly each counterclockwise lock mechanism 11CD comprises a shaft lock portion 15C attached to the corresponding counterclockwise rotating driveshaft and a blade lock portion 17C attached to the counterclockwise rotor blade 9C, 9D.

15 Figs. 4 and 5 show the operation of the lock mechanisms 11. A clockwise lock mechanism 11A is illustrated with the shaft lock portion 15A attached to a clockwise rotating driveshaft 13. Arrows on the shaft lock portion 15A indicate the rotational direction, and the shaft lock portion defines a recess 21 in the middle between the arrows. The blade lock portion 17A of the lock mechanism 11A on the clockwise rotor blade 9A is dropped into the recess 21 as seen in Fig. 4  
 20 and the rotor blade 9A is then rotated in direction R opposite to the direction of the arrows such that the blade 9A slides into slots 23 on each side of the shaft lock portion 15A under the arrows, and lugs 25A on the blade lock portion 17A engage notches 27A defined by the shaft lock portion as seen in Fig. 5.

25 The blade lock portion 17A of the clockwise lock mechanisms 11A are rotated counterclockwise with respect to the shaft lock portion 15A thereof to push the blade into the slots 23 to releasably attach the clockwise rotor blade 9A to the shaft lock portion 15 15A and thus to the driveshaft 13. During operation the shaft lock portion 15A exerts a force in the direction of the arrows on the rotor blade to rotate same, and this force keeps the blade engaged in the slots 23. The

counterclockwise lock mechanism 11C operates in a similar fashion with an opposite spin direction.

Fig. 6 shows the shaft lock portion 15C, with recess 21, of a counterclockwise lock mechanism with a counterclockwise rotor blade 9C, with blade lock portion 17C, on one side and a clockwise rotor blade 9A, with blade lock portion 17A, on the other side. Fig. 7 shows the blade lock portion 17C of the counterclockwise rotor blade 9C successfully installed in the shaft lock portion 15C to form a counterclockwise lock mechanism 11CD.

Fig. 8 shows that the blade lock portion 17A of the clockwise rotor blade 9A is prevented from rotating in direction R as required by contact of the lugs 17A with the oppositely configured notches 27C of the shaft lock portion 15C. Thus the clockwise rotor blades 9A, 9B cannot be installed on the shaft lock portion 15C of a counterclockwise lock mechanism, and similarly the counterclockwise rotor blades 9C, 9D cannot be installed on the shaft lock portion 15A of a clockwise lock mechanism.

Fig. 9 shows the blade lock portion 17A of the clockwise rotor blade 9A placed in the recess 21 of a correctly selected clockwise shaft lock portion 15A, and Fig. 10 shows the blade lock portion 17A successfully installed in the shaft lock portion 15A to form a clockwise lock mechanism 11AB.

Commonly in the prior art the rotary aircraft is supported on a leg structure attached under the body. Stability of the aircraft on the ground is improved in present apparatus 1 where each rotor assembly 7 has a leg 31 pivotally attached to a bottom portion of the rotor assembly 7, as illustrated in Figs. 11 - 17. Each leg 31 is movable from a stored position as illustrated in Fig. 2, where the leg 31 extends laterally from the rotor assembly 7 along the arm 5 supporting the rotor assembly, to an operating position as illustrated in Fig. 1, where the leg extends downward from the rotor assembly 7.

It can be seen in Fig. that the bottom ends of the legs 31 in the operating position are much farther apart than would be practical with a leg structure mounted to the body 3. The apparatus can thus land on a considerable slope if necessary. Beneficially the legs 31 are made from a strong yet light and somewhat flexible material to cushion the apparatus 1 on landing. A carbon-fiber-reinforced polymer material could be used for example. While stationary legs as shown in Fig. 1 provide increased stability, same are awkward for storage and transport, and interfere with folding arms.

In the illustrated apparatus 1 each leg 31 is therefore is pivotally attached to the bottom portion of the rotor assembly 7 such that the leg is movable from a stored position, where the leg 31 extends laterally from the rotor assembly 7 along the arm 5 supporting the rotor assembly 7, to an operating position where the leg 31 extends downward from the rotor assembly 7.

Figs. 11 and 12 show one of the legs in the operating position, where the leg 31 slopes from the rotor assembly 7 downward and away from the body at the opposite inner end of the arm 5. Figs. 13 and 14 show the leg 31 in the stored position, where a saddle 33 on the bottom end of the leg 31 engages the arm 5 to reduce the risk that the leg 31 may be forced laterally and damaged during transport to a use site.

In the illustrated apparatus 1, as seen in Figs. 15 – 17, each leg 31 is pivotally attached to the bottom of the rotor assembly 7 about a pivot axis PA that is substantially perpendicular to the arm 5. A bias element, illustrated as spring 35, urges the leg 31 toward the stored position shown in Fig. 1. To move to the operating position, the operator pivots the leg 31 against the bias force BF to the operating position shown in Fig. 16, where the upper end of the leg 31 is aligned with a recess 37 in the rotor assembly 7 and the bias force BF draws the leg into the recess 37. The end of the leg 31 in the recess 37 acts then as a latch to lock the leg 31 in the operating position.

The rotor blades of the illustrated apparatus 1 can be easily detached for transport of storage, and cannot be placed on driveshafts rotating the wrong direction. The legs extending down from the

rotor assemblies significantly increase stability allowing the apparatus 1 to land on a steep slope without falling over and becoming inoperative. The legs can also be conveniently folded for storage.

- 5 The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous changes and modifications will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all such suitable changes or modifications in structure or operation which may be resorted to are intended to fall within the scope of the claimed invention.

10

**CLAIMS**

What is claimed is:

1. A rotary wing aircraft apparatus comprising:

a body;

a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;

each rotor assembly comprising a rotor blade releasably attached to a driveshaft by a lock mechanism, and a drive rotating the driveshaft;

wherein a first driveshaft rotates in a clockwise direction and a second driveshaft rotates in a counterclockwise direction;

wherein a clockwise rotor blade is releasably attached to the first driveshaft by engagement in a clockwise lock mechanism and generates a vertical lift force when rotated in the clockwise direction, and a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism and generates a vertical lift force when rotated in the counterclockwise direction; and

wherein the clockwise rotor blade is engageable only with the clockwise lock mechanism and cannot be engaged in the counterclockwise lock mechanism, and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism.

2. The apparatus of claim 1 wherein the clockwise lock mechanism comprises a shaft lock portion attached to the first driveshaft and a blade lock portion attached to the clockwise

- rotor blade, the shaft lock portion defining notches configured to engage corresponding lugs on the blade lock portion.
3. The apparatus of claim 2 wherein the counterclockwise lock mechanism comprises a shaft lock portion attached to the second driveshaft and a blade lock portion attached to the counterclockwise rotor blade, the blade lock portion comprising lugs with a configuration that is different than a configuration of the lugs on the blade lock portion of the clockwise lock mechanism.
  4. The apparatus of claim 2 wherein the blade lock portion of the clockwise lock mechanism is rotated counterclockwise with respect to the shaft lock portion thereof to releasably attach the clockwise rotor blade to the first driveshaft.
  5. The apparatus of claim 4 wherein the blade lock portion of the counterclockwise lock mechanism is rotated clockwise with respect to the shaft lock portion thereof to releasably attach the counterclockwise rotor blade to the second driveshaft.
  6. The apparatus of claim 1 wherein each rotor assembly comprises a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.
  7. The apparatus of claim 6 wherein the leg slopes downward and away from the body.
  8. The apparatus of claim 6 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly.
  9. The apparatus of claim 8 comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position.

10. The apparatus of claim 8 wherein the leg slopes downward and away from the body when in the operating position.
11. The apparatus of claim 8 wherein a bottom end of the leg engages the arm when in the stored position.
12. The apparatus of claim 1 wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm.
13. A rotary wing aircraft apparatus comprising:
 

a body;

a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;

each rotor assembly comprising a rotor blade and a drive operative to rotate the rotor blade; and

each rotor assembly comprising a leg extending downward from a bottom portion of the rotor assembly to support the apparatus on a ground surface.
14. The apparatus of claim 13 wherein the leg slopes downward and away from the body.
15. The apparatus of claim 13 wherein each leg is pivotally attached to the bottom portion of the rotor assembly such that the leg is movable from a stored position, where the leg extends laterally from the rotor assembly along the arm supporting the rotor assembly, to an operating position where the leg extends downward from the rotor assembly.

16. The apparatus of claim 15 comprising a bias element urging the leg toward the stored position, and a latch operative to lock the leg in the operating position.
17. The apparatus of claim 15 wherein the leg slopes downward and away from the body when in the operating position.
18. The apparatus of claim 15 wherein a bottom end of the leg engages the arm when in the stored position.
19. The apparatus of claim 15 wherein the rotor blades are releasably attached to the rotor assemblies.
20. The apparatus of claim 19 wherein the arms are movably attached to the body such that the arms can be moved from a flying position, where the arms extend forward and rearward laterally outward from the body such that the arms are substantially equally spaced, to a folded stored position where at least one arm is substantially aligned with and adjacent to another arm.



**ABSTRACT**

A rotary wing aircraft apparatus has arms extending from a body, and a rotor assembly attached to an end of each arm. Each rotor assembly has a rotor blade releasably attached by a lock mechanism. A clockwise rotor blade is releasably attached to a first rotor assembly by engagement in a clockwise lock mechanism, and a counterclockwise rotor blade is releasably attached to a second rotor assembly by engagement in a counterclockwise lock mechanism. The clockwise rotor blade is engageable only with the clockwise lock mechanism and the counterclockwise rotor blade is engageable only with the counterclockwise lock mechanism and cannot be engaged in the clockwise lock mechanism. A leg extends down from each rotor assembly to support the apparatus on the ground.

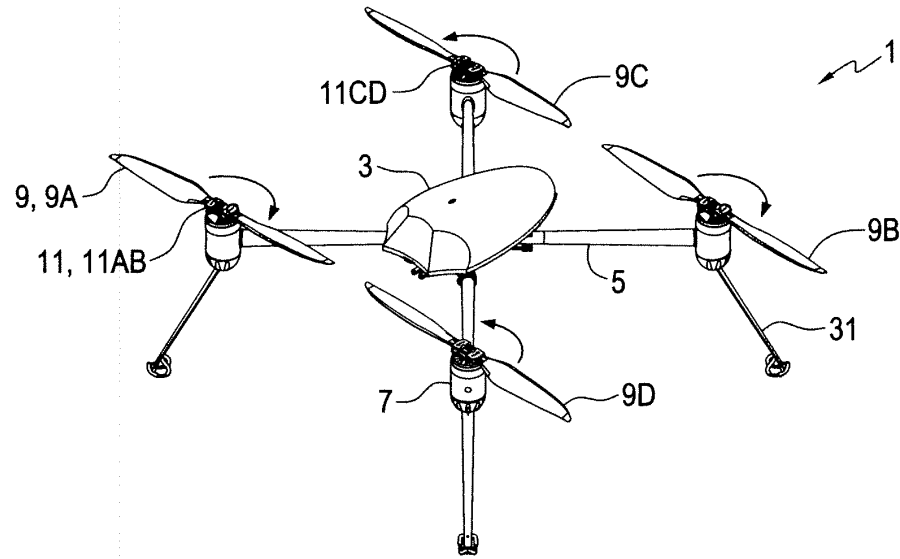


FIG. 1

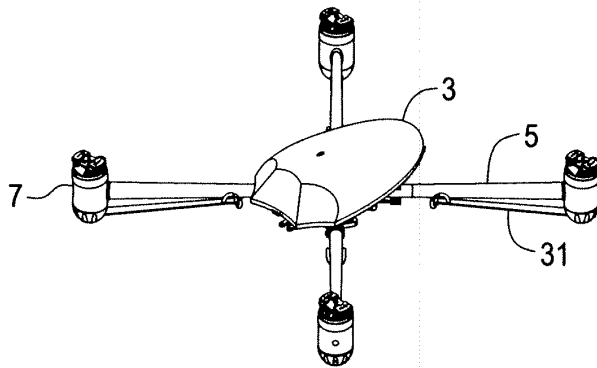


FIG. 2

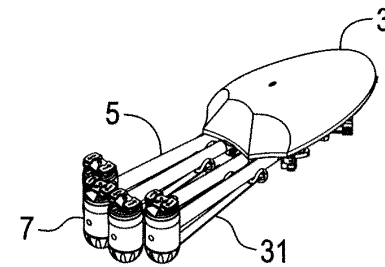


FIG. 3

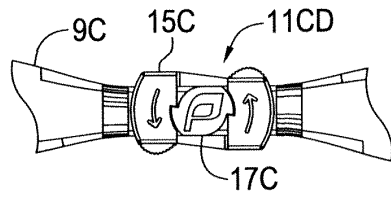


FIG. 7

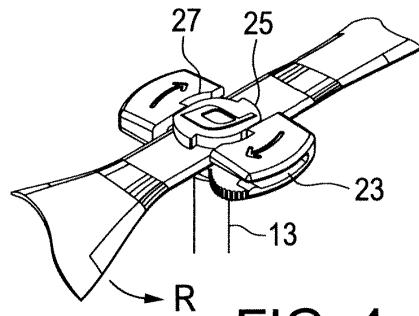


FIG. 4

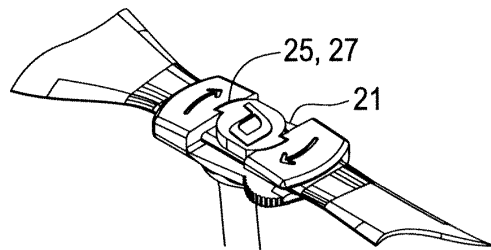


FIG. 5

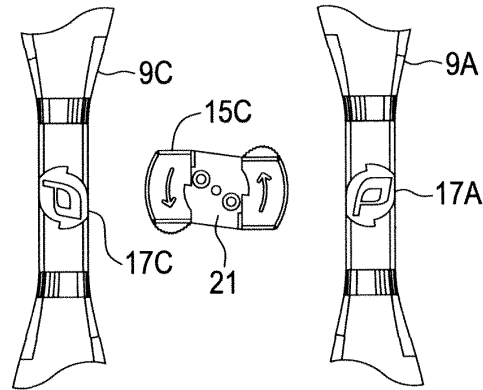


FIG. 6

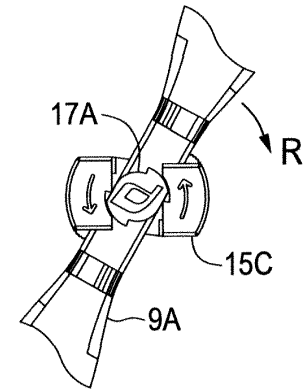


FIG. 8

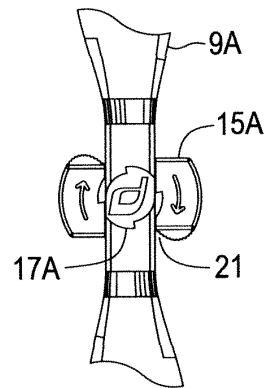


FIG. 9

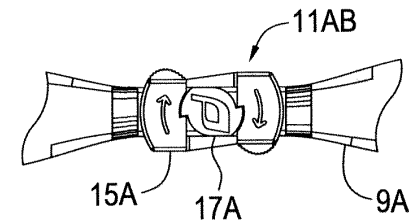
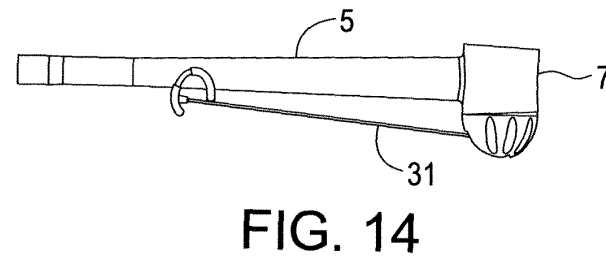
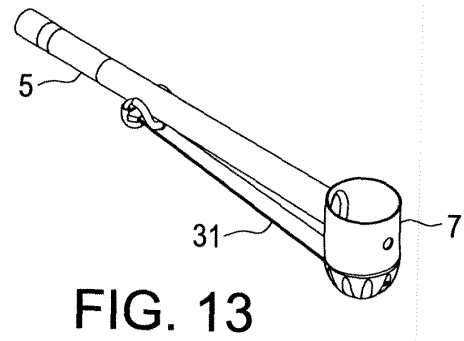
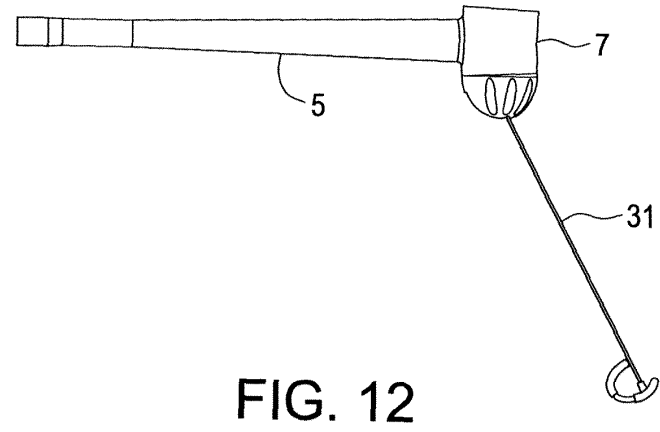
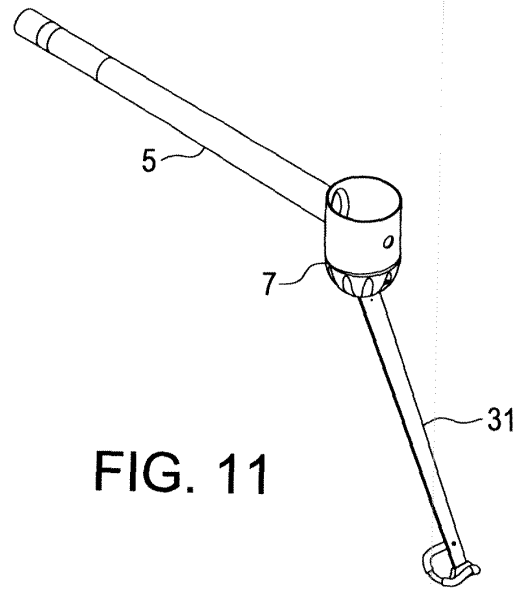


FIG. 10



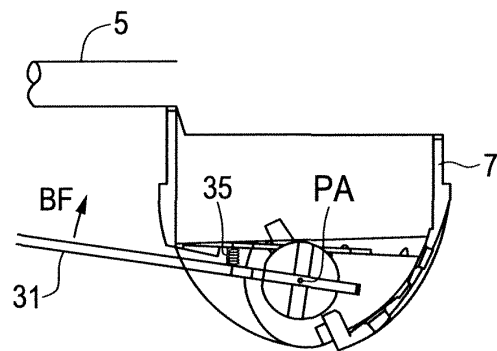


FIG. 15

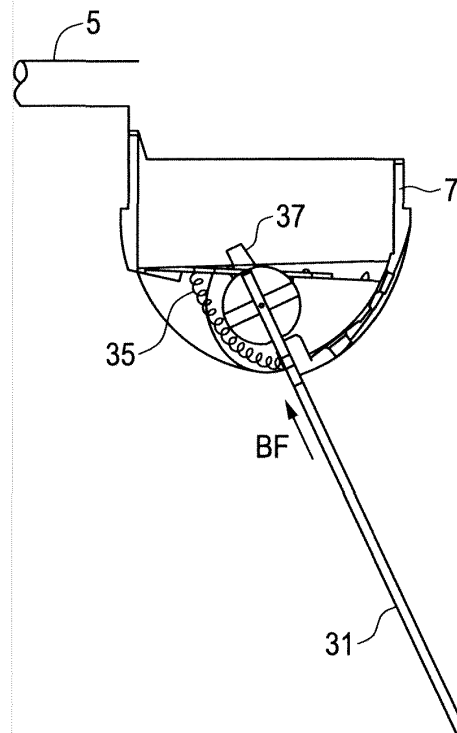


FIG. 16

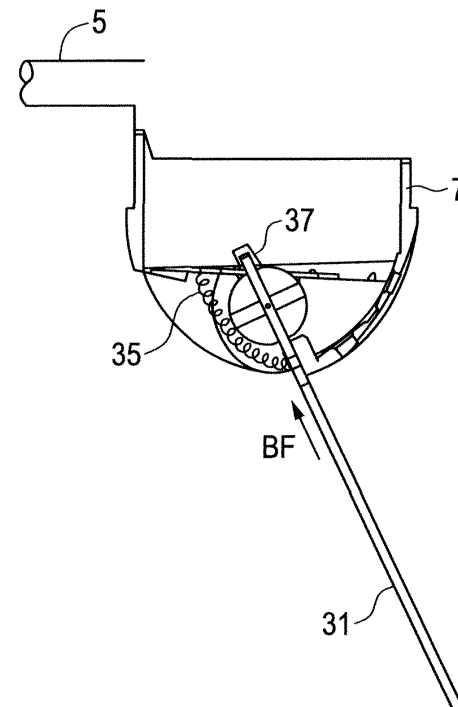


FIG. 17

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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	JAR-3343-101
		Application Number	
Title of Invention	COMPACT UNMANNED ROTARY AIRCRAFT		
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>			

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	Greg		WOOD		
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<b>Address 2</b>					
<b>City</b>	Saskatoon, Saskatchewan	<b>State/Province</b>			
<b>Postal Code</b>	S7M 0K7	<b>Country i</b>	CA		
<b>Inventor 3</b>					<b>Remove</b>
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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number		JAR-3343-101
		Application Number		
Title of Invention	COMPACT UNMANNED ROTARY AIRCRAFT			
Prefix	Given Name	Middle Name	Family Name	Suffix
	Zenon		DRAGAN	
Residence Information (Select One) <input type="radio"/> US Residency <input checked="" type="radio"/> Non US Residency <input type="radio"/> Active US Military Service				
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### Application Information:

Title of the Invention	COMPACT UNMANNED ROTARY AIRCRAFT		
Attorney Docket Number	JAR-3343-101	Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	4	Suggested Figure for Publication (if any)	

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Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country i

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	JAR-3343-101
		Application Number	
Title of Invention	COMPACT UNMANNED ROTARY AIRCRAFT		

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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	JAR-3343-101
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Title of Invention	COMPACT UNMANNED ROTARY AIRCRAFT		
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<input type="checkbox"/> This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.
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<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	JAR-3343-101
		Application Number	
Title of Invention	COMPACT UNMANNED ROTARY AIRCRAFT		

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Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.	
<b>Assignee 1</b>	
<p>Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.</p>	
<input type="button" value="Remove"/>	
If the Assignee or Non-Applicant Assignee is an Organization check here. <input type="checkbox"/>	

<b>Application Data Sheet 37 CFR 1.76</b>		Attorney Docket Number	JAR-3343-101
		Application Number	
Title of Invention	COMPACT UNMANNED ROTARY AIRCRAFT		

Prefix	Given Name	Middle Name	Family Name	Suffix

**Mailing Address Information For Assignee including Non-Applicant Assignee:**

Address 1			
Address 2			
City		State/Province	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

**Signature:**


NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications

<b>Signature</b>	/Joseph A. Rhoa/		Date (YYYY-MM-DD)	2014-05-14
First Name	Joseph	Last Name	Rhoa	Registration Number
				37515

Additional Signature may be generated within this form by selecting the Add button.

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

## Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
<b>Application Number:</b>				
<b>Filing Date:</b>				
<b>Title of Invention:</b>		COMPACT UNMANNED ROTARY AIRCRAFT		
<b>First Named Inventor/Applicant Name:</b>		Orville OLM		
<b>Filer:</b>		Joseph A. Rhoa/Jeanine Stewart		
<b>Attorney Docket Number:</b>		JAR-3343-101		
Filed as Small Entity				
<b>Utility under 35 USC 111(a) Filing Fees</b>				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Basic Filing:</b>				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
<b>Pages:</b>				
<b>Claims:</b>				
<b>Miscellaneous-Filing:</b>				
Late Filing Fee for Oath or Declaration	2051	1	70	70
<b>Petition:</b>				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
<b>Patent-Appeals-and-Interference:</b>				
<b>Post-Allowance-and-Post-Issuance:</b>				
<b>Extension-of-Time:</b>				
<b>Miscellaneous:</b>				
<b>Total in USD (\$)</b>				<b>800</b>

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	19030180
<b>Application Number:</b>	14277370
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	6717
<b>Title of Invention:</b>	COMPACT UNMANNED ROTARY AIRCRAFT
<b>First Named Inventor/Applicant Name:</b>	Orville OLM
<b>Customer Number:</b>	23117
<b>Filer:</b>	Joseph A. Rhoa/Jeanine Stewart
<b>Filer Authorized By:</b>	Joseph A. Rhoa
<b>Attorney Docket Number:</b>	JAR-3343-101
<b>Receipt Date:</b>	14-MAY-2014
<b>Filing Date:</b>	
<b>Time Stamp:</b>	14:10:58
<b>Application Type:</b>	Utility under 35 USC 111(a)

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**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Transmittal of New Application	3343-101_Utility_App_Transmittal.pdf	24165 6f3e67c2e9fe1acfe400a1d5afc83362c8ab149f	no	2
Warnings:					
Information:					
2		3343-101_Specification.pdf	62170 b4b65bdd5c83022f39381ad91339a75cb327ee4	yes	14
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	9	
	Claims		10	13	
	Abstract		14	14	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	3343-101_Drawings.pdf	635642 da9f9c3e98cd6f38d0313bfa99357a3f18c1121b	no	4
Warnings:					
Information:					
4	Application Data Sheet	3343-101_Application_Data_Sheet.pdf	1571700 82e1dbaaad684edb3529eb72f198b615b7b8d8bb	no	7
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	36437 921911619bd24f752ba999e3811dd83e17907bc8	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			2330114		



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**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.