

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SZ DJI TECHNOLOGY CO., LTD.,
Petitioner

v.

AUTEL ROBOTICS USA LLC,
Patent Owner

Case IPR2019-00343

Patent 9,260,184

**PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES*
REVIEW OF U.S. PATENT NO. 9,260,184**

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Autel Robotics USA LLC (“Patent Owner”) respectfully submits this Preliminary Response to the Petition seeking *inter partes* review of U.S. Patent No. 9,260,184 (Ex. 1001, “the ’184 patent”) filed by SZ DJI Technology Co., Ltd. (“Petitioner”). This Response is timely under 35 U.S.C. § 313 and 37 C.F.R. § 42.107 because it is within three months of the Nov. 30, 2018 date of the Notice granting the Petition a filing date. Paper No. 3, Notice of Filing Date, at 1.

I. INTRODUCTION

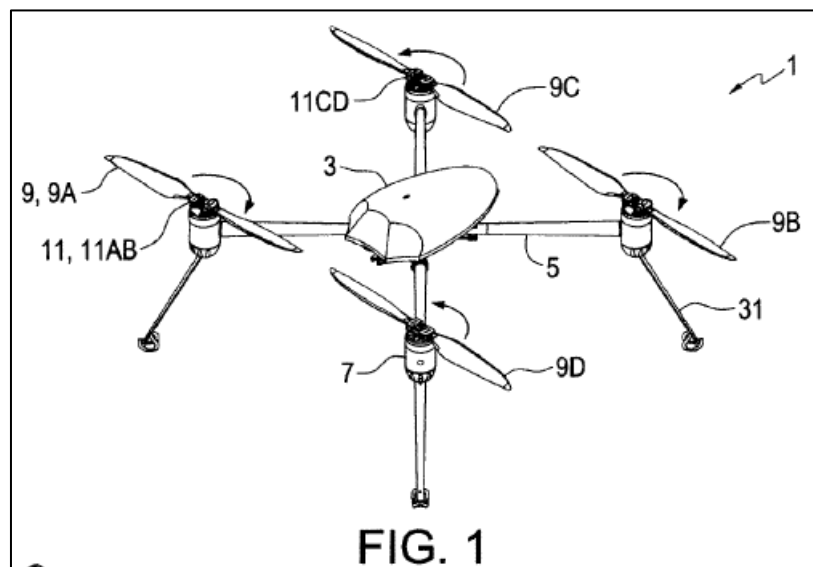
Patent Owner respectfully submits that the Grounds presented in the Petition for *inter partes* review of the ’184 patent should not be instituted because Petitioner has failed to demonstrate that it has a reasonable likelihood of prevailing with respect to any of the challenged claims of the ’184 patent.

First, Petitioner has not provided any evidence that its primary reference is a printed publication as required by statute. This primary reference is required in each of its proposed Grounds, and without it, none of the Grounds can stand. **Second**, none of the references of the proposed Grounds discloses the essential claim elements of a “lock mechanism”, “shaft lock portion” and “blade lock portion” as claimed in independent claim 1 of the ’184 patent.

For at least these reasons, the institution of an *inter partes* review of the ’184 patent should be denied.

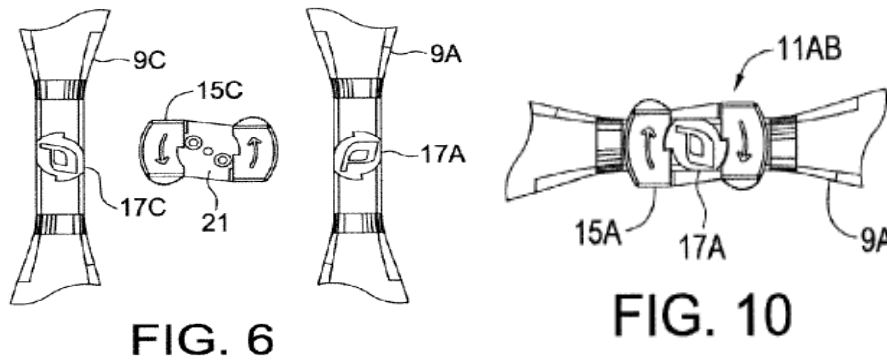
II. BACKGROUND

The '184 patent is directed to a rotary wing aircraft apparatus having arms extending from a body, and a rotor assembly attached to an end of each arm. *See* Ex. 1001, '184 patent, at claim 1. As disclosed in the '184 patent, where rotor assemblies have a single rotor blade, torque on the body from the rotational motion of the rotors is avoided by having the rotors rotate in opposite directions. Ex. 1001, '184 patent, 1:24-31. When an even number of arms and rotor assemblies is used, the rotational forces cancel each other and the body is substantially stable. *Id.* (Figure 1, below) In the claimed embodiments, the rotor blades are configured such that they can be easily detached for transport or storage, and cannot be placed on driveshafts rotating the wrong direction. Ex. 1001, '184 patent, 2:16-18.



The '184 patent achieves the desired configuration by, *inter alia*, a lock mechanism that keeps each rotor blade engaged to a driveshaft via a shaft lock

portion (as depicted by 15C and 15A in Figures 6 and 10 below) and a blade lock portion (as depicted by 17C and 17A). Ex. 1001, '184 patent at 3:55-4:18.



The patent specification states that when the blade lock portion is installed in the shaft lock portion, they “form” a lock mechanism that attaches the rotor blade to the driveshaft. '184 patent at 4:22-26; 4:38-40. Independent claim 1, the sole independent claim in the '184 patent, requires a “shaft lock portion” and a “blade lock portion” that form a “lock mechanism”. *See* Ex. 1001, '184 patent, at claim 1. The “shaft lock portion” and “blade lock portion” together serve the function of locking the blade to the driveshaft.

The '184 patent includes 11 claims. Dependent claims 2-4 cover various aspects of the lock mechanism. Dependent claims 5-10 are directed to various aspects of the leg(s) of the apparatus. Dependent claim 11 is directed to features of the arms of the apparatus.

The '184 patent claims a priority date of May 15, 2013, and Petitioner does not challenge that priority date. Petition at 3.

III. SUMMARY OF GROUNDS

The Petition includes seven grounds. Petition at 11. Ground 1 is based on anticipation by a PDF of a “user manual Version 2.2” for the Microdrones GmbH (Germany) md4-200 (Ex. 1004, “the Manual”) that Petitioner alleges qualifies as a publicly accessible printed publication based on the declaration of a single individual who purchased a single “mdPRO kit” from a UK distributor and discovered the PDF on a “rugged laptop” included in that kit. *Id.* at 11, 3-4. Grounds 2-7 are all based on obviousness where Petitioner relies on the Manual as the primary reference. Petitioner relies on the Manual for the alleged disclosure of the “lock mechanism”, “shaft lock portion” and “blade lock portion,” of claim 1 of the '184 Patent, the only independent claim in the '184 Patent. Accordingly, to the extent that Petitioner has not established that (1) the Manual qualifies as prior art or (2) the Manual discloses the claimed lock mechanism elements, then institution must be denied.

IV. PETITIONER HAS NOT DEMONSTRATED “A REASONABLE LIKELIHOOD OF PREVAILING” AGAINST AT LEAST ONE CLAIM OF THE '184 PATENT UNDER 35 U.S.C. § 314(a)

Under 35 U.S.C. § 314(a), an *inter partes* review may only be instituted where “the information presented in the petition . . . and any response . . . shows

that there is a reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition.” *See also* 37 C.F.R. § 42.108(c). The burden of showing that this statutory threshold has been met belongs to Petitioner. *See, e.g.,* Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48756 (Aug. 14, 2012) (“The Board . . . may institute a trial where the petitioner establishes that the standards for instituting the requested trial are met”).

Petitioner asserts several grounds in its challenge to the ’184 patent. But each and every one of these grounds relies on the Manual reference (Ex. 1004), which the Petitioner has not established is a printed publication. *Vmac Global Technologies Inc. v. Vanair Manufacturing, Inc.*, Case IPR2018-00670, Paper 9 at 11-16 (PTAB August 10, 2018) (finding that an electronic manual is not a printed publication where it was not adequately demonstrated to be publicly accessible).

Moreover, even if the Manual reference were deemed to be a printed publication (which it is not), Petitioner has not shown that any of its alleged prior art references disclose the “lock mechanism”, “shaft lock portion” and “blade lock portion” of independent claim 1 of the ’184 patent. Because the other challenged claims depend from claim 1, Petitioner has failed to establish that the alleged prior art references anticipate or render obvious any of the challenged claims.

A. Petitioner Fails to Establish that the Manual Qualifies as a Printed Publication.

A reference “will be considered publicly accessible if it was ‘disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.’” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016) (citations omitted); *see also GoPro, Inc. v. Contour IP Holdings, LLC*, IPR2015-01080, Paper 55 at 21 (PTAB Oct. 26, 2016) (adopting the standard enunciated in *Blue Calypso*). To satisfy the initial burden of production on this issue, the Board has required a petitioner “to make a threshold showing that the reference relied upon was publicly accessible as a printed publication prior to the effective filing date of a challenged patent.” *Mylan Pharm. Inc. v. Boehringer Ingelheim Int’l GmbH*, Case IPR2016-01565, Paper 17 at 16–17 (PTAB Feb. 9, 2017). In the situation where the reference at issue is not, *on its face*, clearly prior art, merely providing a conclusory statement in the Petition that a manual is a printed publication and an unexplained citation to a declaration does not satisfy the necessary threshold showing to demonstrate public accessibility. *Vmac Global Technologies Inc.*, Case IPR2018-00670, Paper 9 at 11-12 (emphasis in original). Petitioner’s evidence is insufficient to show that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence could have located the Manual before the critical date of the ’184 patent—May 15, 2013.

Petitioner relies on *EMC Corp. v. PersonalWeb Techs., LLC* for the position that an electronic user manual qualified as a printed publication. *See EMC Corp.*, IPR2013-00086, Paper 66, at 17-18. However, this case is distinct for at least the following reasons. First, at best, Petitioner has shown that the Manual accompanied the purchase of a single “kit.” Second, Petitioner has not shown that the Manual was available for download. Finally, the Petitioner has not shown that the Manual was available upon request from either the distributor that allegedly sold the “kit” or the company that allegedly sold the device included in that “kit” (the md4-200).

1. The Manual Purportedly Accompanied a Single Device

The PTAB has found that an owner’s manual was not a printed publication where it was shipped to four customers as part of various purchases of related systems. *Vmac Global Technologies Inc.*, Case IPR2018-00670, Paper 9 at 13-14 (internal citations omitted). Petitioner relies on the Declaration of Alan Stevens to support their position that the Manual is a printed publication. Paper 1 at 3 (citing Ex. 1016).

However, the Manual was, in fact, purportedly obtained as part a single purchased device. Ex. 1016. ¶¶ 4-5, 9. Mr. Stevens states that in “late 2008 or early 2009,” he had “learned about a company called Microdrones GmbH that had developed an aerial vehicle intended for professional and commercial users” and

that one of the “aerial vehicles” offered at that time was “called the “md4-200.”” *Id.* at ¶¶ 4-5. According to his Declaration, Mr. Stevens contacted Microdrones to inquire about purchasing the md4-200, and in April 2009, he “ordered a Microdrones mdPRO ‘kit’ from a distributor, MW Power Microdrones (UK).” *Id.*

According to Mr. Stevens, he physically went to the “offices of MW Power Microdrones (UK) to collect the mdPRO kit.” *Id.* ¶ 9. At the offices, he “received” the mdPRO kit that purportedly contained “the md4-200 rotary aircraft, as well as a video camera, still camera, and rugged laptop.” *Id.* ¶ 9. No physical manual was obtained. Mr. Stevens asserts that the rugged laptop “contained a PDF copy of the Microdrones md4-200 User Manual (Version 2.2),” or “the Manual.” Accordingly, at best, Petitioner has put forth evidence that a single customer received the Manual on a laptop that was received along with the purchase of a single drone “kit”, and that was picked up in person at an office of a distributor.

Petitioner’s evidence is insufficient to prove a printed publication. Mr. Stevens never explains or demonstrates how a person interested and of ordinary skill in the art of unmanned rotary wing aircraft devices could have located the Manual by any method, including exercising reasonable diligence. *See generally* Ex. 1016. Mr. Stevens asserts that it was his “understanding” that any member of the public could have purchased the same “kit” that he allegedly purchased. *Id.* at ¶ 5. However, Mr. Stevens provides no foundation for such an understanding. There

is no information about *how* Mr. Stevens “learned about” the company and the particular aerial vehicle discussed. The time frame that he contends he “learned about” the company also appears to be uncertain (“late 2008 or early 2009”). *Id.* at ¶ 4. There is nothing in the Petition to show that any member of the public would have known that Microdrones GmbH had developed the md4-200 for professional and commercial users, let alone, been able to obtain the “mdPRO kit” including the rugged laptop allegedly including the document that is the Manual reference. Furthermore, Mr. Stevens provides no information to establish that other members of the public, if they had purchased such a kit, would have received a product manual. There is no evidence that any member of the public *could have* obtained such a rugged laptop, or that every such laptop “contained” a PDF copy of the Manual. There is no evidence of the number of md4-200 that were marketed or sold, no evidence of the regular or customary practices of Microdrones GmbH (Germany) or MW Power Microdrones (UK) in marketing and selling such devices, and certainly no evidence of the regular and customary practices of those entities with respect to the accessibility or distribution of any product manuals.

The Manual copy provided by Petitioner is one that Mr. Stevens asserts was saved *on his personal computer*. *Id.* at 9 (referring to Exhibit G). Petitioner provides another manual that Mr. Stevens purportedly received from one “other” Microdrones operator (Ex. 1016, ¶ 13) (referring to Exhibit H). But no

information is provided about *how* the other operator, who is not identified, received the manual. No declaration from this alleged “operator” was submitted. Further, Mr. Stevens admits that this additional manual is not completely identical to his version of the Manual, casting further doubt on Petitioner’s evidence. Ex. 1016 ¶ 13 (noting “there are some minor content and formatting differences between the two Manuals” but that “majority of the information appears to be identical.”) Providing two copies of a manual, which are not completely identical, is showing even less availability than the facts in *Vmac Global Technologies Inc.* where manuals shipped to four customers as part of various purchases of related systems were deemed to fall short of public accessibility. *Vmac Global Technologies Inc.*, Case IPR2018-00670, Paper 9 at 14.

2. The Manual was not Available for Download

In *EMC Corp.*, an electronic publication was considered a “printed publication” where the reference in question was posted on a publicly accessible site—the Invention Factory Bulletin Board System—which was “well known to those interested in the art.” *EMC Corp.*, Paper 66 at 23-24 (finding that the reference was posted on a publicly available site and could be downloaded and retrieved from that site). That is not the case here.

Mr. Stevens asserts that it is his understanding that MW Power Microdrones (UK) was marketing md4-200 “kits” to the public at least through its website. *Id.*

There is no evidence that the website of this particular distributor was well known to those interested in the art. Indeed, the only support for this assertion is Mr. Stevens assertion that using an Internet Archive, he located a webpage for MW Power Microdrones (UK) that “*appears to be the same or similar*” to the webpage that he can “*recall viewing in or around early 2009.*” *Id.* (referring to Exhibit B, emphasis added). Moreover, while the page appears to include links to “view pdf” with respect to certain products, the relevant link shows the contents of a 2-page flyer of the “mdPRO: mdFLY plus BASE STATION.” (Ex. 1016, Exhibit E and F). Thus, at most, there is evidence that a flyer was available for download, not the Manual itself. Indeed, the flyer does not even identify the existence of a manual.

Thus, there is nothing in the Petition or the Stevens Declaration that shows that any other member of the public would have been able to identify the existence of and obtain a copy of the Manual. The Manual contained a copyright notice (see e.g., Ex. 1016, Exhibit G, DJI 1016-0045, noting “copyright microdrones GmbH 2004-2007”). But the PTAB has held that a copyright notice does not establish that an owner’s manual was publicly accessible. *Vmac Global Technologies Inc.*, Case IPR2018-00670, Paper 9 at Fn 6. For at least these reasons, Petitioner has failed to show the Manual was “publicly accessible.”

3. There is No Evidence that the Manual was Available if Requested from the Company

In *Vmac Global Technologies Inc.*, a manual was not deemed to be a printed publication where the record did *not* show that the customers knew of and requested the Owner's Manual or that it was provided (or would have been provided) to non-customers on request. *Id.* at 13. The same principle applies here.

Petitioner has not provided evidence that the Manual was available if requested from Microdrones GmbH (Germany) or MW Power Microdrones (UK). Mr. Stevens asserts it is his "understanding" that any member of the public could have purchased an md4-200 "kit" from MW Power Microdrones (UK). Ex. 1016, at ¶ 5. But there is no evidence of this. More importantly, there is no evidence that the Manual was available or discoverable to a person of ordinary skill in any way other than the purchase made by Mr. Stevens.

Mr. Stevens contends that MW Power Microdrones (UK) was "marketing" "kits" "at least through its website." *Id.* ¶ 5. However, the only support for this is Exhibit B of the Stevens Declaration, Exhibit 1016, which appears to be an informational page. There is nothing to show that any member of the public would have known of this page, or would have used it to order any "kits." There does not appear to be an option to "shop" for these systems on that page. There is no description of the manual or the existence of the manual. Moreover, there is nothing that indicates that any member of the public was able to "request" a

manual, or that a manual would be available to any member of the public. At most, Petitioner’s evidence shows that up to two individuals knew of these kits – Mr. Stevens and, potentially, the other “user” he mentions. Ex. 1016 at ¶ 12.

Thus, there is no evidence that customers *in general* were provided with the Manual. Nor is there evidence that the Manual was provided or would have been provided (or was otherwise available) to non-customers on request. Finally, regarding the Manual there has been no “satisfactory showing that such document was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.” *In re Wyer*, 655 F.2d 221, 210 USPQ 790 (CCPA 1981). Indeed, there has been no such showing whatsoever.

B. Grounds 1-7 Fail Because Petitioner Fails to Show that any of its References Discloses the Lock Mechanism Elements of Claim 1

1. Claim Construction

The U.S. Patent & Trademark Office has recently adopted the same claim construction standard used by Article III federal courts and the ITC, both of which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See 83 Fed. Reg. 51340, “Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board” (noting effective date of November 13, 2018). This rule reflects that the PTAB in an AIA proceeding will apply the same standard applied in federal courts to construe

patent claims. For example, claim construction begins with the language of the claims. *Phillips*, 415 F.3d at 1312-14. The “words of a claim are generally given their ordinary and customary meaning,” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1312-13. The specification is “the single best guide to the meaning of a disputed term and . . . acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.” *Id.* at 1321 (internal quotation marks omitted); *see also Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1062 (Fed. Cir. 2016) (noting that “Construing individual words of a claim without considering the context in which those words appear is simply not ‘reasonable’”). Moreover, the prosecution history is another source of intrinsic evidence that can “inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Phillips*, 415 F.3d at 1317; *see also D’Agostino v. Mastercard Int’l Inc.*, 844 F.3d 945, 948 (Fed. Cir. 2016) (quoting *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015) (stating that “the Board ‘should also consult the patent’s prosecution history in proceedings in which the patent has been brought back to the agency for a second review’”). Extrinsic evidence, such as expert testimony and dictionaries, may be

useful in educating the court regarding the field of the invention or helping determine what a person of ordinary skill in the art would understand claim terms to mean, but is viewed as less reliable than intrinsic evidence. *Phillips*, 415 F.3d at 1318-19.

Patent Owner disagrees with the claim terms proposed by Petitioner to the extent they contradict the plain meaning of the terms and how they are used in the context of the specification. With respect to the claim terms “lock mechanism”, “shaft lock portion,” and “blade lock portion”, Patent Owner respectfully submits that they should be given their plain and ordinary meaning.

Claim Term	Proposed Construction
“lock mechanism”	Plain and ordinary meaning
“shaft lock portion”	Plain and ordinary meaning
“blade lock portion”	Plain and ordinary meaning

When the scope of the claim of the patent may be ascertained from the words of the patent alone, no construction is necessary. *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313 (Fed. Cir. 2002); *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (holding that courts “indulge a ‘heavy presumption’ that a claim term carries its ordinary and customary meaning”).

The language of claim 1 describes the “lock” features in detail. Specifically, the aircraft apparatus includes:

- “a rotor blade releasably *attached to a driveshaft by a lock mechanism;*”
- “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;”
- “a counterclockwise rotor blade is releasably attached to the second driveshaft by engagement in a counterclockwise lock mechanism;”
and
- “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.”

Accordingly, the claim language, by itself, makes it clear that the shaft lock portion and blade lock portion together form the lock mechanism that attaches the rotor blade to the driveshaft.

Further, the specification describes the shaft lock portion, the blade lock portion and the resulting lock mechanism as follows:

Each clockwise lock mechanism 11AB comprises a shaft lock portion 15A attached to 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.

Ex. 1001, '184 patent at 3:55-62.

The specification illustrates a top view of the shaft lock portion 15A and blade lock portion 17A in Fig. 9 below. In this figure, a clockwise rotor blade 9A is “ready for engagement or removal,” but has not been engaged or locked yet. Ex. 1001, '184 patent at 2:58-60.

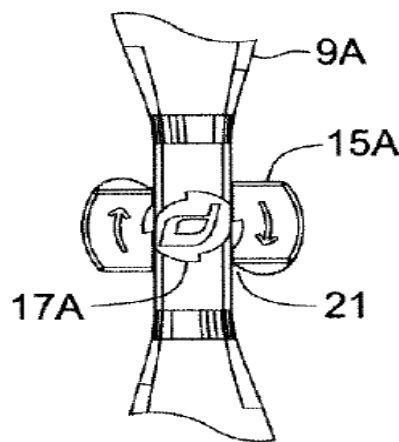


FIG. 9

The specification then goes on to describe how the blade is “successfully installed” by referencing Figures 10 and 7. As shown in the next figures, blade lock portion (17A, 17C) is rotated into the shaft lock portion (15A, 15C) to “form a clockwise lock mechanism” (Fig. 10) and “counterclockwise lock mechanism.” (Fig. 7). Ex. 1001, '184 patent at 2:61-62; 4:23-26; 4:38-40. In short, after the blade is rotated, as shown in Figs. 10 and 7, the “lock mechanism” is successfully formed.

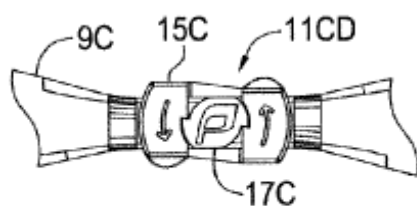


FIG. 7

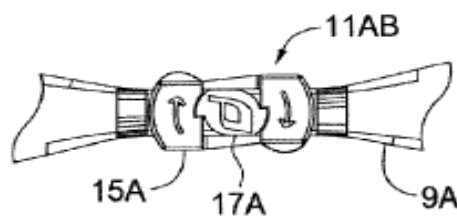


FIG. 10

Thus, as is clear from the patent specification, the shaft lock portion and the blade lock portion, together, form a lock mechanism that secures the blade to the driveshaft, without the need for additional components. The patent specification does not indicate that (or depict any exemplary embodiments where) components, other than the shaft and blade lock portions, are required or used to attach the blade to the driveshaft or form a lock mechanism.

This is consistent with the plain and ordinary meaning of the word “lock,” which the inventor chose to use in the terms “lock mechanism”, “shaft lock portion” and the “blade lock portion”. In the language of Claim 1, the lock mechanism, through the interaction of the shaft lock portion with the blade lock portion, attaches the blade to the driveshaft. Nothing more is required.

This is also consistent with the patent specification’s statement that a lock mechanism *is formed* when the “blade lock portion” is installed in the “shaft lock portion”. Ex. 1001, ’184 patent at 4:23-26 (“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.”) (emphasis added). No components other than the “shaft lock portion” and the “blade lock portion” are required to form the lock mechanism and serve the locking function.

Petitioner’s proposed constructions, *inter alia*, contend that “the recited ‘lock mechanisms’ may include components other than those specifically recited in the claims to releasably attach the rotor blades.” Petition at 31-32. While Patent Owner does not dispute that the lock mechanisms can include other components, the plain language of the claims and specification show that the shaft lock portion and the blade lock portion are the components that secure the rotor blade to the driveshaft. No other components are needed or used to achieve the locking function.

Petitioner asserts that its proposed construction is based on the use of the word “comprises” with respect to the claimed lock mechanism. Petition at 32. Petitioner’s argument, however, is misplaced. Although “comprises” is an open ended term, it is “not a weasel word with which to abrogate claim limitations” and it “does not displace, or otherwise allow one to disregard, the patent specification.” *Raytheon Co. v. Sony Corp.*, 727 F. App’x 662, 672 (Fed. Cir. 2018) (internal citations omitted); *Dippin’ Dots, Inc. v. Mosey*, 476 F.3d 1337, 1343 (Fed. Cir. 2007) (noting that the term “comprising” does not “reach into each of the ... steps

to render every word and phrase therein open-ended.”). Because the ’184 patent claims and specification make clear that the shaft lock portion and blade lock portion must form a lock mechanism, the claims do not cover devices where these claim requirements are evaded or where additional components -- other than the shaft lock portion and blade lock portion -- serve the function of attaching the rotor blade to the driveshaft.

Patent Owner respectfully submits that this plain and ordinary meaning, as informed by the patent specification, would be appropriate in the context of the inventions described.

2. The Manual Does Not Disclose a “Shaft Lock Portion” or a “Blade Lock Portion” or a “Lock Mechanism”

Independent claim 1, from which all other claims at issue depend, covers

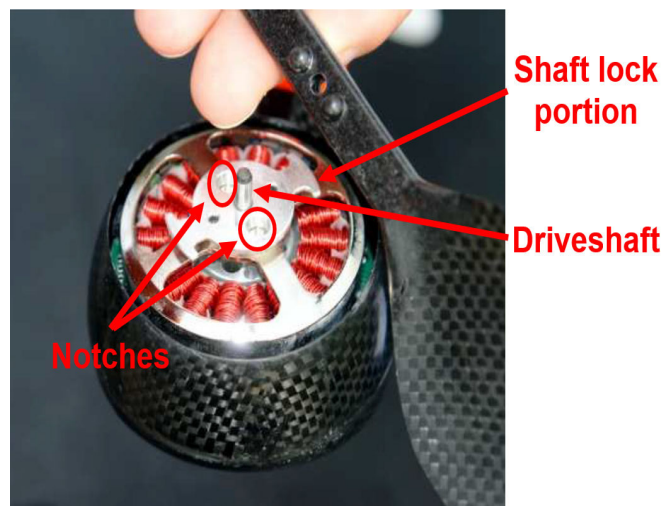
1. A rotary wing aircraft apparatus comprising:
 - a body;
 - a plurality of arms extending laterally from the body, and a rotor assembly attached to an outside end of each arm;
 - each rotor assembly comprising a *rotor blade releasably attached to a driveshaft by a lock mechanism*, and a drive rotating 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.

As explained in section IV.B.1 above, the claimed **shaft lock portion** and **blade lock portion** together form the claimed **lock mechanism** and function together, without the need for additional components, to secure the blade to the driveshaft.

Petitioner contends that in the Manual, the “**shaft lock portion**” is the “**silver rotor mounting plate**.” See Paper 1, p. 38; Petitioner’s Annotated Fig. 25 below.



Petitioner contends that the “**blade lock portion**” is the “**center bar having protruding notches**.” See Paper 1, p. 39; Petitioner’s Annotated Fig. 25 below.



Petitioner's arguments make no sense.

From photographs alone (e.g., Petitioner's Annotated Fig. 25, above), it is clear that a "rotor mounting plate" is not a "shaft lock portion." The plate does not lock anything, let alone engage a "blade lock portion" to secure the blade to the driveshaft.

Further, the photographs clearly show that a "center bar" is not a "blade lock portion." It does not have a locking functionality at all, let alone one that together with a "shaft lock portion," secures the blade to the driveshaft.

Petitioner asserts that the rotor mounting plate and center bar have "lugs" and "notches," (Paper 1, page 40):

And just like the lock mechanisms claimed in the '184 patent, [the Manual's] lock mechanisms feature lugs on a blade lock portion of the rotor blade (*i.e.*, center bar having protruding notches) and notches on a shaft lock portion (*i.e.*, silver rotor mounting plate with notches):



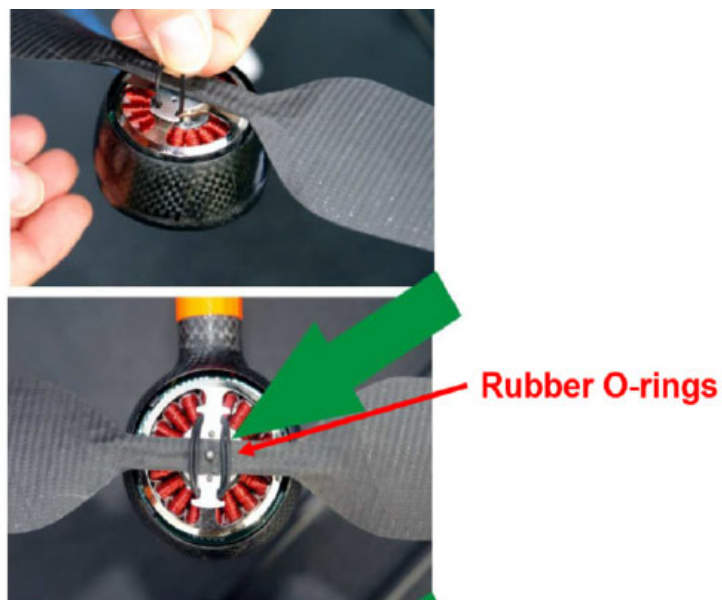
Paper 1, page 28 (Petitioner's Annotated Fig. 25).

However, as is clear from the photograph, those features are not a shaft lock portion or a blade lock portion. Neither the lugs nor notches form a lock mechanism, and neither attach the blade to the shaft. The Manual explains that the “lugs” or “notches” (described as “knobs” and “holds” [sic]) are features that match the blade with the relevant rotor (e.g., clockwise blade to clockwise rotor). Ex. 1004, page 27 (“Each rotor has two knobs on its bottom of the centre bar which are matched by two holds in the rotor mounting plate. To avoid accidental misplacement, both directions of turning use individual distances between these knobs.”) Nothing in the Manual indicates that these features secure the blade to the shaft.

As is obvious from looking at the Annotated Fig. 25 above, if the blade were simply positioned on the drive shaft, with the lugs filling the notches, the blade would not be secured or locked to the driveshaft. Accordingly the rotor mounting

plate and center bar do not serve as the claimed “shaft lock portion” and “blade lock portion” and do not form the claimed “lock mechanism.”

Indeed, the Manual makes clear that the “rotor mounting plate” and “center bar” do not form a lock mechanism because different components are used to achieve a locking function. The device in the Manual requires *rubber O-rings* to achieve a locking function. Petition at 41, 45 (shown in the Petitioner’s Annotated Figure below).



The Petition (at p. 40) goes on to explain:

Lastly, as shown below, [the Manual’s] lock mechanism further includes two rubber O-rings and corresponding hooks on the rotor mounting plate for coupling to the O-rings, and, as in the ’184 patent. This lock mechanism enables the rotor blade to be releasably attached to the driveshaft:

As explicitly stated in the Manual, “The rotors are *secured by* two *O-rings* of rubber.” Ex. 1004, page 27 (emphasis added). Thus, the rotor in the device in the Manual is secured by O-rings, not the rotor mounting plate and center bar. As explained in section IV.B.1, in the ’184 patent, the claimed shaft lock portion and blade lock portion together form the claimed lock mechanism and without the need for additional components, secure the blade to the driveshaft. Thus, the Manual does not disclose a device with a shaft lock portion and blade lock portion that forms a lock mechanism.

For at least these reasons, the claimed shaft lock portion, blade lock portion, and lock mechanism are not taught by the Manual, as asserted by Petitioner.

3. None of the Other References Discloses a “Lock Mechanism”, a “Shaft Lock Portion” or a “Blade Lock Portion”

Petitioner does not contend that any of the other references discloses a “lock mechanism”, a “shaft lock portion” and a “blade lock portion.” *See generally*, Petition. Since the Manual does not disclose this feature, all anticipation and obviousness grounds fail. Institution of Grounds 1-7 should be denied.

V. CONCLUSION

For the foregoing reasons, there is not a reasonable likelihood of Petitioner prevailing with respect to any of the challenged claims of the ’184 patent. Accordingly, the Petition should be denied under 35 U.S.C. § 314(a).

Date: February 27, 2019

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CERTIFICATION UNDER 37 C.F.R. §42.24

Under the provisions of 37 C.F.R. §42.24, the undersigned hereby certifies that the foregoing document contains 5,393 words, and thus complies with the word-count limits of 37 C.F.R. § 42.24.

Date: February 27, 2019

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e), the undersigned hereby certifies that a copy of the foregoing PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,260,184 was served on February 27, 2019 by filing this document through the Patent Trial and Appeal Board End to End as well as by delivering a copy via the delivery method indicated to the attorneys of record for the Petitioner as follows:

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