**UNITED STATES PATENT AND TRADEMARK OFFICE**
**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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ONE WORLD TECHNOLOGIES, INC., D/B/A TECHTRONIC INDUSTRIES POWER EQUIPMENT,
Petitioner,

v.

CHERVON (HK) LIMITED,
Patent Owner.

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Case Nos. IPR2020-00884, IPR2020-00886,
IPR2020-00887, IPR2020-00888

Patent Nos. 9,596,806; 9,826,686; 9,986,686; 10,070,588

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# DECLARATION OF FRED P. SMITH IN SUPPORT OF PATENT OWNER'S RESPONSES

I, Fred P. Smith, declare as follows:

## I. INTRODUCTION

1. My name is Fred Smith. I have been retained by counsel for Patent Owner Chervon (HK) Limited ("Patent Owner" or "Chervon") to provide my independent analysis regarding the validity of claims 1-13 of U.S. Patent No. 9,596,806 ("the '806 patent"); claims 1-20 of U.S. Patent No. 9,826,686 ("the '26686 patent"); claims 1-20 of U.S. Patent No. 9,986,686 ("the '86686 patent"); and claims 1-12, 15-17, and 19-21 of U.S. Patent No. 10,070,588 ("the '588 patent") (collectively, the "Challenged Claims" of the "Challenged Patents").

### A. My Background, Qualifications, Publications, and Testimony

2. My background, qualifications, and educational and employment history are set forth in my curriculum vitae, which is attached hereto as **Exhibit 1**.

3. I am a registered Professional Engineer in the States of California, Utah, Nevada and Alabama. I received my Bachelor of Science degree in Mechanical Engineering from California State University, Long Beach, in 1984.

4. I have been a member of the Utah Safety Council, National Safety Council, American Society of Mechanical Engineers, the Society of American Value Engineers, the National Honor Society and Tau Beta Phi, a national engineering honor society. I was also nominated for membership in Phi Kappa Phi, and have been named to Who's Who in California, Who's Who in the West and the national registry of Who's Who in Executives and Businesses. In 2009, I was awarded the Utah Genius award for being one of Utah's top patentees.

5. I am a Certified Safety Professional in comprehensive practice, CSP No. 18890. I am also certified as a train-the-trainer for lift truck operators, first aid, CPR, AED, trainer for scissor lifts and boom lifts. I have also certified as an overhead crane, mobile crane and rigging

inspector. I have taken continuing education courses in intellectual property issues for engineers, risk management/assessment, economic evaluation of projects, AutoCAD, SolidWorks, OSHA health & safety, ANSI A92.2 changes, pole top rescue, confined space and accident investigation.

6. I am the President of Alpine Engineering & Design, Inc., located in Alpine, Utah. I have over 30 years of experience in the fields of mechanical engineering, structural design, mechanical design, fluid power, mechanical controls, electrical controls and manufacturing. Over my 30 years of mechanical design, I have designed many different products from industrial products such as aerial lifts, refuse trucks, dump trailers, mower controls, grain carts and other mobile equipment to consumer products such as exercise equipment, portable putting greens and the like. In my role as a consultant, I have participated in the design and manufacture of numerous other products. I am named as an inventor on 71 patents. A list of my patents is attached as **Exhibit 2**. I have also been retained as an expert on over 100 intellectual property cases, including cases involving lawn mowers. Accordingly, I have significant experience with the patent process and in reading patent claims.

7. I coauthored a white paper titled "An Engineering Guide for Trailer Safety Chain Installation, Attachment and Use." I have authored no other publications in the last 10 years.

8. I believe that my credentials as set forth in my Curriculum Vitae demonstrate that I am an expert in the fields of mechanical design, structural design, design of equipment, design of conveyors, design of hydraulics, design of mobile equipment, design of plastics, and manufacturing.

9. I have testified in a number of cases, both at trial and by deposition in the last four years. A list of these cases is attached as **Exhibit 3**.

### B. Compensation

10. My compensation in this case is $400 per hour without regard to the outcome of these proceedings.

11. I am not, and never have been, an employee of Chervon. I am not receiving compensation for this declaration beyond my normal hourly fees based on my time actually spent analyzing and documenting my opinions herein on the Challenged Patents. My compensation is not related to the outcome of these proceedings, and I will not receive any additional compensation based on the outcome of any IPR or other proceeding involving the Challenged Patents.

## II. SUMMARY OF MY OPINIONS

12. In summary, it is my opinion that each of the Challenged Claims of the Challenged Patents is valid and patentable. Petitioner and its expert, Mr. Reed, have failed to show that the Challenged Claims of the Challenged Patents are rendered obvious by the prior art under 35 U.S.C. § 103.

## III. LEGAL PRINCIPLES

13. I will not offer opinions of the law, as I am not an attorney. However, patent counsel has informed me of several patent law principles, upon which I have relied to arrive at my conclusions.

### A. Legal Standard for Claim Construction

14. It is my understanding that the purpose of the claim construction process is to determine the meaning of the terms in the Challenged Claims of the Challenged Patents to a person of ordinary skill in the art ("POSITA") as of the time that the patent application was filed. I also understand that the words of the claims, the specification, and the prosecution history are to be primarily considered in order to construe the claims. These three sources are commonly referred to as "intrinsic evidence," while everything else is referred to as "extrinsic evidence."

15. It is my understanding that in an *Inter Partes* Review the words of a claim are generally given their ordinary and customary meaning to a POSITA as of the time that the patent application containing the claimed invention was filed.

16. It is also my understanding that, in a United States district court proceeding, the words of a claim are generally given their ordinary and customary meaning to a person of ordinary skill in the art as of the time that the patent application containing the claimed invention was filed.

17. It is my further understanding that the same words and phrases within a claim or claims are presumed to have the same meaning. It is also my understanding that different words and phrases within a claim or claims are presumed to have different meanings. Similarly, all words in a claim have meaning, and a word or phrase in a claim should not be interpreted so as to render other words or phrases in the claim superfluous.

18. It is also my understanding that a POSITA is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification and the prosecution history.

**B. Legal Standard for Obviousness**

19. I understand that a patent claim may be unpatentable if the invention recited in the claim would have been obvious to one of ordinary skill in the art at the time the invention was made. In considering whether Challenged Claims of the Challenged Patents are obvious, I have been asked to consider (a) the level of ordinary skill in the art at the time of the claimed invention, (b) the scope and content of the prior art, and (c) any differences between the prior art and the Challenged Claims of the Challenged Patents. I further understand that the patent owner may show "secondary factors" related to nonobviousness, including commercial success, long-felt but unresolved need, failure of others, copying, praise by others, and unexpected results.

20. I understand that a patent claim composed of several elements is not necessarily proved obvious merely by demonstrating that each of its elements was independently known in the prior art. I also understand that obviousness should not be analyzed using the benefit of hindsight. Instead, it must be analyzed from the standpoint of what was known and understood by a POSITA at the time of the claimed invention. I further understand that a party seeking to invalidate a patent as obvious must demonstrate that a skilled artisan would have had reason to combine the teaching of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success from doing so. I also understand that the party must persuasively explain how the references would be combined to arrive at the claimed invention.

21. Additionally, I understand that a reference qualifies as prior art for an obviousness determination only when it is analogous to the claimed invention. I understand that prior art is analogous if it is from the same field of endeavor or if it is reasonably pertinent to the particular problem the inventor is trying to solve.

## IV. THE BASES FOR MY OPINIONS

22. I have reviewed the Challenged Patents, their file histories, including the Challenged Claims, the Patent Owner's Preliminary Responses, and the Board's Institution Decisions.

23. I have also reviewed the Petitions for IPR filed by Petitioner One World Technologies Inc., d/b/a Techtronic Industries Power Equipment ("Petitioner" or "One World"), the attached Declarations of E. Smith Reed (EX1003), the transcript of the deposition of Mr. Reed (EX2028), as well as the following attached exhibits:

- EX1004: U.S. Patent No. 3,253,391 ("Meldahl");

- EX1006: U.S. Patent No. 8,098,036 ("Matsunaga");
- EX1007: UK Patent App. No. GB 2386813 ("Reichart");
- EX1008: 16 CFR 1205;
- EX1011: U.S. Patent No. 4,753,062 ("Roelle");
- EX1012: U.S. Patent No. 5,209,051 ("Langdon");
- EX1014: French Patent Pub. No. 2768300 ("Outils");
- EX1015: International Patent Pub. No. WO 2013/122266 ("Nakano");
- EX1016: U.S. Patent No. 3,823,291 ("Milcoy"); and
- EX1017: U.S. Patent No. 4,476,643 ("Hilchey");

24. In forming my opinions, I have considered the materials listed above and any other documents cited in this declaration. I have also relied on my own education, knowledge, and experience in the relevant art.

25. I have also considered the understanding of a person of ordinary skill in the art around the time of the invention of the Challenged Claims.

## V. PERSON OF ORDINARY SKILL IN THE ART

26. I am informed that prior art is to be analyzed from the perspective of a person of ordinary skill in the art ("POSITA") who would be involved in the same field as the Challenged Patents at the time of the invention of the Challenged Claims (*i.e.*, October 10, 2013).

27. All of the opinions that I express in this declaration have been made from the standpoint of a POSITA at the time of the invention of the Challenged Claims of the Challenged Patents.

28. I understand that Petitioner has proposed that a POSITA would have had at least a bachelor's degree in mechanical engineering, electrical engineering, or similar technical field, with

at least three years of relevant product design experience. I further understand that Petitioner has proposed that an increase in experience could compensate for less education.

29. For the purposes of this declaration only, I have adopted Petitioner's proposed definition of a POSITA.

30. I met Petitioner's proposed definition of a POSITA as of the time of the invention of the Challenged Claims of the Challenged Patents.

## VI. THE BOARD'S INSTITUTION DECISIONS

31. I understand that the Board instituted review of claims 1-13 of the '806 patent on four grounds: (1) alleged obviousness of claims 1, 2, 6, 7, and 12 over FR 2,768,300 A1 ("Outils") in view of U.S. Patent No. 8,098,036 ("Matsunaga"); (2) alleged obviousness of claims 3, 4, 8, 9, and 13 over Outils in view of Matsunaga, U.S. Patent No. 5,209,051 ("Langdon"), and WO 2013/122266 A2 ("Nakano"); (3) alleged obviousness of claims 5 and 10 over Outils in view of Matsunaga and U.S. Patent No. 3,253,391 ("Meldahl"); and (4) alleged obviousness of claim 11 over Outils in view of Matsunaga, U.S. Patent No. 3,823,291 ("Milcoy"), and U.S. Patent No. 4,476,643 ("Hilchey").

32. I understand that the Board instituted review of claims 1-20 of the '26686 patent on two grounds: (1) alleged obviousness of claims 1-7 and 11-17 over Outils in view of U.S. Patent No. 4,753,062 ("Roelle") and Matsunaga; and (2) alleged obviousness of claims 8-10 and 18-20 over Outils in view of Roelle, Matsunaga, Langdon, and Nakano.

33. I understand that the Board instituted review of claims 1-20 of the '86686 patent on two grounds: (1) alleged obviousness of claims 1-14 and 18-20 over GB 2,386,813 ("Reichart") in view of Nakano, Outils, and 16 CFR 1205; and (2) alleged obviousness of claims 15-17 over Reichart in view of Nakano, Outils, Matsunaga, and 16 CFR 1205.

34. I understand that the Board instituted review of claims 1-12, 15-17, and 19-21 of the '588 patent on four grounds: (1) alleged obviousness of claims 11, 15, and 20 over Outils in view of Matsunaga; (2) alleged obviousness of claims 12, 16, 17, and 21 over Outils, Matsunaga, Langdon, and Nakano; (3) alleged obviousness of claim 19 over Outils in view of Matsunaga, Milcoy, and Hilchey; and (4) alleged obviousness of claims 1-10 over Reichart in view of Nakano.

## VII. OVERVIEW OF THE CHALLENGED PATENTS AND THE CHALLENGED CLAIMS

### A. The '806 Patent.

35. I understand that the application that resulted in the '806 patent, Application No. 14/511,490 was filed on October 10, 2014. The application claims priority to two foreign applications, Chinese Patent App. No. CN201310468919, which was filed on October 10, 2013, and Chinese Patent App. No. CN201410167041, which was filed on April 23, 2014. Accordingly, I understand that the earliest priority date claimed by the '806 patent is October 10, 2013.

36. The '806 patent, entitled "Control System for Controlling the Operation of a Gardening Tool," is generally directed toward a lawnmower with certain performance and safety features. (EX1001, '806 patent, at (54), (57).) The claimed performance and safety features protect a user from injury by controlling when power can be safely delivered to the mower while simultaneously permitting safe and easy storage of the tool through rotating and telescopic handles. (*Id*. at Abstract, 1:38-57.) The claimed features prevent activation of the mower when the mower is not in its proper operational position. (*Id*.)

37. The claimed performance and safety features of the '806 patent include: (1) an operation assembly for controlling the motor; and (2) a control system comprising a first control device and a second control device, wherein the second control device is controlled according to

the rotating position of the handle and locks/unlocks the first control device based on the handle's position. (EX1001, '806 patent, at claims 1 and 6.)

38. The independent claims of the '806 patent are reproduced below:

> 1. A gardening tool, comprising:
>
> a main body at least having a functional accessory and a motor for driving the functional accessory;
>
> a handle rotatably connected to the main body and at least having one operation assembly for being operated by a user to control the motor when the handle is located in a predetermined position; and
>
> a control system for preventing the motor from being controlled by the operation assembly and halting the motor when the handle is located out of the predetermined position, the control system comprising:
>
> a first control device configured to be controlled by the operation assembly, and
>
> a second control device disposed at a position proximate to a shaft of the handle and configured to be controlled according to the rotating position of the handle wherein when the handle rotates to the designated position relative to the main body, the second control device unlocks the first control device so that the first control device allows starting of the motor, and when the handle rotates to a position other than the designated position relative to the main body, the second control device locks the first control device so that the first control device is not allowed to start the motor, and
>
> wherein the second control device comprises at least one of a switch connected to the power supply circuit or a signal source device for sending a control signal to the power supply circuit.

(*Id.* at claim 1.)

> 6. A mower, comprising:
>
> a main body at least having a mowing blade and a motor for driving the mowing blade;
>
> a handle rotatably connected to the main body and at least having one operation assembly for being operated by a user to control the motor when the handle is located in a predetermined position; and

> a control system for preventing the motor from being controlled by the operation assembly and halting the motor when the handle is located out of the predetermined position, the control system comprising:
>
> a first control device configured to be controlled by the operation assembly, and
>
> a second control device disposed at a position proximate to a shaft of the handle and configured to be controlled according to the rotating position of the handle wherein when the handle rotates to the designated position relative to the main body, the second control device unlocks the first control device so that the first control device allows starting of the motor, and when the handle rotates to a position other than the designated position relative to the main body, the second control device locks the first control device so that the first control device is not allowed to start the motor, and
>
> wherein the second control device comprises at least one of a switch connected to the power supply circuit or a signal source device for sending a control signal to the power supply circuit.

(*Id.* at Claim 6.)

**B. The '26686 Patent.**

39. I understand that the application resulting in the '26686 patent, Application No. 15/250,408 was filed on August 29, 2016. (EX1001, '26686 patent, at [22].) The '26686 patent is a continuation of Application No. 14/511,490, which was filed on October 10, 2014, and is now the '806 Patent. (*Id*. at [63].) The application also claims priority to two foreign applications, CN 2013 1 0468919, which was filed on October 10, 2013, and CN 2014 1 0167041, which was filed on April 23, 2014. (*Id.* at [30].) Accordingly, I understand that the earliest priority date claimed by the '26686 patent is October 10, 2013.

40. The '26686 patent, entitled "Gardening Tool," is generally directed toward a gardening tool, such as a lawn mower, with certain performance and safety features. (EX1001, '26686 patent, at (54), (57).) The claimed features protect a user from injury by controlling when power can be safely delivered to the mower while simultaneously permitting safe and easy storage

of the tool through the use of rotating and telescopic handles. (*Id*. at Abstract, 1:42-62.) The claimed features prevent activation of the mower when the mower is not in its proper operational position. (*Id*.)

41. The claimed performance and safety features of the '26686 patent include: (1) an operation assembly for controlling the motor; (2) a control system comprising a first control device and a second control device, wherein the second control device is controlled according to the rotating position of the handle and locks/unlocks the first control device based on the handle's position; and (3) a locking mechanism for locking the rotating position of the handle. (*Id*. at claims 1 and 11.)

42. The independent claims of the '26686 patent are reproduced below:

> 1. A gardening tool, comprising:
>
> a main body having at least a functional accessory and a motor for driving the functional accessory;
>
> a handle, rotatably connected to the main body, having at least one operation assembly for being operated by a user to control the motor when the handle is in a secure position;
>
> a locking mechanism for locking the rotating position of the handle;
>
> a locking member configured to engage with the locking mechanism and providing at least a locking structure to cause the locking mechanism to keep the handle at an accommodating position relative to the main body when the gardening tool is not being used; and
>
> a control system capable of preventing the motor from being controlled by the operation assembly and halting the motor when the handle is out of the secure position, the control system comprising:
>
> a first control device configured to be controlled by the operation assembly; and
>
> a second control device configured to be controlled according to the rotating position of the handle wherein, when the handle rotates to a designated position relative to the main body, the second control

device unlocks the first control device so that the first control device allows starting of the motor, and, when the handle rotates to the accommodating position relative to the main body, the second control device locks the first device so that the first control device is not allowed to start the motor; and

wherein the second control device comprises at least one of a switch connected to the power supply circuit and a signal source device for sending a control signal to control the motor.

(*Id.* at claim 1.)

11. A mower, comprising:

a main body having at least a functional accessory and a motor for driving the functional accessory;

a handle, rotatably connected to the main body, having at least one operation assembly for being operated by a user to control the motor when the handle is in a secure position;

a locking mechanism for locking the rotating position of the handle;

a locking member configured to engage with the locking mechanism and providing at least a locking structure to cause the locking mechanism to keep the handle at an accommodating position relative to the main body when the mower is not being used; and

a control system capable of preventing the motor from being controlled by the operation assembly and halting the motor when the handle is out of the secure position, the control system comprising:

a first control device configured to be controlled by the operation assembly, and

a second control device configured to be controlled according to the rotating position of the handle wherein, when the handle rotates to a designated position relative to the main body, the second control device unlocks the first control device so that the first control device allows starting of the motor, and, when the handle rotates to the accommodating position relative to the main body, the second control device locks the first device so that the first control device is not allowed to start the motor, and

wherein the second control device comprises at least one of a switch connected to the power supply circuit and a signal source device for sending a control signal to control the motor.

(*Id.* at Claim 11.)

**C. The '86686 Patent.**

43. I understand that the '86686 patent was issued on June 5, 2018 from U.S. Patent Application No. 15/250,516 (filed August 29, 2016). (EX1001, '86686 patent, at [21], [22], [45], [54].) The '86686 patent is a continuation of U.S. Patent Application No. 14/511,490 (filed October 10, 2014, now the '806 Patent). (*Id*. at [63].) The '86686 patent also claims priority to two Chinese patent applications: CN2013-10468919 (filed October 10, 2013) and CN2014-10167041 (filed April 23, 2014). (*Id*. at [30].) Accordingly, I understand that the earliest priority date claimed by the '86686 patent is October 10, 2013.

44. The '86686 patent, entitled "Gardening Tool," is generally directed toward an electric walk-behind lawnmower with a telescopic handle that is rotatably connected to the main body of the lawnmower. (EX1001, '86686 patent, at Abstract, FIG. 1, 1:44-55, claim 1, claim 11; *see also* Paper 1 at 5.) The handle includes an operation assembly that is operated by the user to start and stop the motor. (*Id*.)

45. The lawnmower of the '86686 patent further includes a control system for preventing mis-operation of the lawnmower and ensuring the user's safety. (*Id*. at Abstract, 1:56-64, 5:26-42, claim 1, claim 11.) The control system works by sending a control signal to prevent the motor from being started by the operation assembly and stopping the motor when the handle is out of a "secure" position. (*Id*.) The control system comprises three control devices: a first control device that is controlled by the operation assembly, a second control device that is controlled according to the rotating position of the handle, and a third control device that is controlled according to the sliding position of the operation assembly relative to the main body of the lawnmower. (*Id*. at 6:39-49, 7:19-29, claim 1, claim 11.) The motor can only be started when all three control devices are in their designated state (*i.e.*, when the operation assembly is activated

and the handle is rotated and slid to the designated "secure" position). (*Id*. at 5:43-59, claim 1, claim 11.)

46. The independent claims of the '86686 patent are reproduced below:

> 1. A gardening tool, comprising:
>
> a main body having at least a functional accessory and a motor for driving the functional accessory;
>
> a handle, rotatably connected to the main body, having at least one operation assembly for being operated by a user to control the motor when the handle is in a secure position wherein the operation assembly is capable of sliding relative to the main body; and
>
> a control system for sending a control signal to prevent the motor from being controlled by the operation assembly and halting the motor when the handle is out of the secure position, the control system comprising:
>
> a first control device configured to be controlled by the operation assembly;
>
> a second control device configured to be controlled according to the rotating position of the handle wherein, when the handle rotates to a designated rotating position relative to the main body, the second control device unlocks the first control device so that the first control device allows starting of the motor, and, when the handle rotates to a position other than the designated rotating position relative to the main body, the second control device locks the first device so that the first control device is not allowed to start the motor; and
>
> a third control device configured to be controlled according to the sliding position of the operation assembly relative to the main body wherein, when the operation assembly slides to a designated sliding position, the third control device unlocks the first control device so that the first control device allows starting of the motor, and, when the operation assembly slides to a position other than the designated sliding position relative to the main body, the third control device locks the first device so that the first control device is not allowed to start the motor.

(*Id*. at claim 1.)

> 11. A gardening tool, comprising:

> a main body having at least a functional accessory and a motor for driving the functional accessory;
>
> a handle, rotatably connected to the main body, having at least one operation assembly for being operated by a user to control the motor when the handle is in a secure position wherein the operation assembly is capable of sliding relative to the main body; and
>
> a control system for sending a control signal to prevent the motor from being controlled by the operation assembly and halting the motor when the handle is out of the secure position, the control system comprising:
>
> a first control device configured to be controlled by the operation assembly, and
>
> a second control device configured to be controlled according to the rotating position of the handle wherein, when the handle rotates to a designated rotating position relative to the main body, the second control device unlocks the first control device so that the first control device allows starting of the motor, and, when the handle rotates to a position other than the designated rotating position relative to the main body, the second control device locks the first device so that the first control device is not allowed to start the motor.

(*Id*. at claim 11.)

**D. The ‘588 Patent.**

47. I understand that the application that resulted in the ‘588 patent, Application No. 14/511,590 was filed on August 29, 2016. (EX1001, ‘588 patent, at [22].) The ‘588 patent is a continuation of Application No. 14/511,490, which is now the ‘806 patent. (*Id*. at [63].) The ‘588 patent also claims priority to two Chinese patent applications: CN2013-10468919 (filed October 10, 2013) and CN2014-10167041 (filed April 23, 2014). (*Id*. at [30].) Accordingly, I understand that the earliest priority date claimed by the ‘588 patent is October 10, 2013.

48. The ‘588 patent, entitled “Gardening Tool,” is generally directed toward a lawnmower with certain performance and safety features. (EX1001, ‘588 patent, at (54), (57).) The claimed features protect a user from injury by controlling when power can be safely delivered

to the mower while simultaneously permitting safe and easy storage of the tool through the use of rotating and telescopic handles. (*Id*. at Abstract, 1:44-64.) The features prevent activation of the mower when the mower is not in its proper operational position. (*Id*.)

49. The claimed performance and safety features of the '588 patent include: (1) an operation assembly for controlling the motor; and (2) a control system for preventing the motor from being controlled by the operation assembly and halting the motor when the handle is moved from a predetermined operating position. (*Id*. at claims 1, 11, and 15.) In one embodiment, the control system comprises a control device that is controlled according to the sliding position of the telescopic handle. (*Id*. at claim 1.) In another embodiment, the control system comprises a first control device and a second control device, wherein the second control device is controlled according to the rotating position of the handle and locks/unlocks the first control device based on the handle's rotating position. (*Id*. at claims 11 and 15.)

50. The independent claims of the '588 patent are reproduced below:

> 1. A mower, comprising:
>
> a main body including a motor for driving a mowing blade to rotate;
>
> an operation assembly for being operated by a user to activate the motor;
>
> a handle rotatably connected to the main body and including a plurality of telescopic members slidably connected to each other; and
>
> a control device for sending a control signal to cause the motor to be activated by the operation assembly when one of the plurality of telescopic members is caused to be moved to a predetermined position relative to another one of the plurality of telescopic members or to prevent the motor from being activate by the operation assembly when the one of the plurality of telescopic members is caused to be moved away from the predetermined position relative to the another one of the plurality of telescopic members.

(*Id.*, at claim 1.)

> 11. A gardening tool, comprising:
>
> a main body at least having a functional accessory and a motor for driving the functional accessory;
>
> a handle connected to the main body and at least having one operation assembly for being operated by a user to control the motor when the handle is located in a predetermined position relative to the main body, the handle being rotatable relative to the main body around a pivot axis;
>
> an electric power source and a power supply circuit enabling the electric power source to provide power to the motor; and
>
> a control system for preventing the motor from being controlled by the operation assembly and halting the motor when the handle is located out of the predetermined position, the control system comprising:
>
> a first control device configured to be controlled by the operation assembly and a second control device disposed at a position proximate to the pivot axis and configured to be controlled according to the rotating position of the handle wherein, when the handle rotates to the predetermined position relative to the main body, the control system allows starting of the motor and, when the handle rotates to a position other than the predetermined position relative to the main body, the control system is not allowed to start the motor and wherein the second control device comprises a signal source device for sending a control signal to the power supply circuit.

(*Id.*, at claim 11.)

> 15. A mower, comprising:
>
> a main body at least having a mowing blade and a motor for driving the mowing blade;
>
> a handle having an end rotatably connected to the main body and at least having one operation assembly for being operated by a user to control the motor when the handle is located in a predetermined position relative to the main body;
>
> an electric power source and a power supply circuit enabling the electric power source to provide power to the motor; and

> a control system for preventing the motor from being controlled by the operation assembly and halting the motor when the handle is located out of the predetermined position, the control system comprising:
>
> a first control device configured to be controlled by the operation assembly and a second control device disposed at a position proximate to the end of the handle and configured to be controlled according to a rotating position of the handle wherein, when the handle rotates to the predetermined position relative to the main body, the second control device unlocks the first control device so that the first control device allows starting of the motor and, when the handle rotates to a position other than the predetermined position relative to the main body, the second control device locks the first control device so that the first control device is not allowed to start the motor, and wherein the second control device comprises at least one of a first switch connected to the power supply circuit and a first signal source device for sending a control signal to the power supply circuit.

(*Id.*, at claim 15.)

## VIII. OVERVIEW OF THE ASSERTED PRIOR ART

51. I understand that Petitioner has asserted the following prior art references. These references are discussed in detail below:

| Exhibit Number | Prior Art |
|---|---|
| 1004 | U.S. Patent No. 3,253,391 ("Meldahl") |
| 1006 | U.S. Patent No. 8,098,036 ("Matsunaga") |
| 1007 | GB 2,386,813 ("Reichart") |
| 1008 | 16 C.F.R. § 1205 – Safety Standard for Walk-Behind Power Lawn Mowers (January 1, 2012) ("16 CFR 1205") |
| 1011 | U.S. Patent No. 4,753,062 ("Roelle") |
| 1012 | U.S. Patent No. 5,209,051 ("Langdon") |
| 1014 | FR 2,768,300 certified English translation ("Outils") |

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|---|---|
| 1015 | WO 2013/122266 A2 ("Nakano") |
| 1016 | U.S. Patent No. 3,823,291 ("Milcoy") |
| 1017 | U.S. Patent No. 4,476,643 ("Hilchey") |

**A. Meldahl**

52. I have reviewed Meldahl. Meldahl discloses a handle-controlled combination blade brake and clutch for a rotary-type power lawnmower. (EX1004, Meldahl, at 1:7-10.) The combination blade brake and clutch renders the blade stationary and harmless whenever the mower handle is in a released or raised position. (*Id*. at 1:26-30.)

**B. Matsunaga**

53. I have reviewed Matsunaga. Matsunaga discloses a hand-held electric grass or hedge trimmer with an improved circuit design. (EX1006, Matsunaga, at FIGS. 1 and 3, Abstract.) The circuit is designed such that, in the event of a short-circuit, current is prevented from continuing to flow to the motor. (*Id*. at 1:38-58.)

**C. Reichart**

54. I have reviewed Reichart. Reichart discloses an engine-powered lawnmower with a telescopic handle 5 that is rotatably connected to the lawnmower casing 1. (EX1007, Reichart, at Abstract, FIGS. 1-3.) The handle 5 can be rotated over the main body 1 to a "non-use" storage position. (*Id*. at 4:8-10, 6:1-11, FIG. 2.) When the handle 5 is in the "use" position, the length of the handle 5 can be adjusted to accommodate users having different body sizes and heights, while still maintaining a minimum horizontal distance between the cutting blade 8 and the user's feet to give the user the necessary stepping freedom. (*Id*. at Abstract, 1:28-31, 2:1-4, 4:22-26, 4:28-5:18, FIGS. 3-4, claim 1.) As the user's height and stride increases, so does the horizontal distance

between the user and the cutting blade 8. (*Id*.) The handle 5 also includes a locking mechanism to fix the length of the telescopic handle. (*Id*. at 2:12-23, 5:20-27, claim 2.)

**D. 16 CFR 1205**

55. I have reviewed 16 CFR 1205. 16 CFR 1205 is a Federal regulation that sets a safety standard for electric and gas-powered walk-behind lawnmowers. (*See generally* EX1008, 16 CFR 1205.) 16 CFR 1205 requires that walk-behind power lawnmowers have, *inter alia*, various protective shields/enclosures and various warning labels. (*Id*. at 3-8.)

**E. Roelle**

56. I have reviewed Roelle. Roelle discloses a lawnmower with a handle pivotally connected to main body and having means for alternately securing the position of the handle in a cutting position or in a vertical position. (EX1011, Roelle, at Abstract.) The lawnmower also includes a control system that stops the engine any time the cover to the cuttings container is opened. (*Id*.)

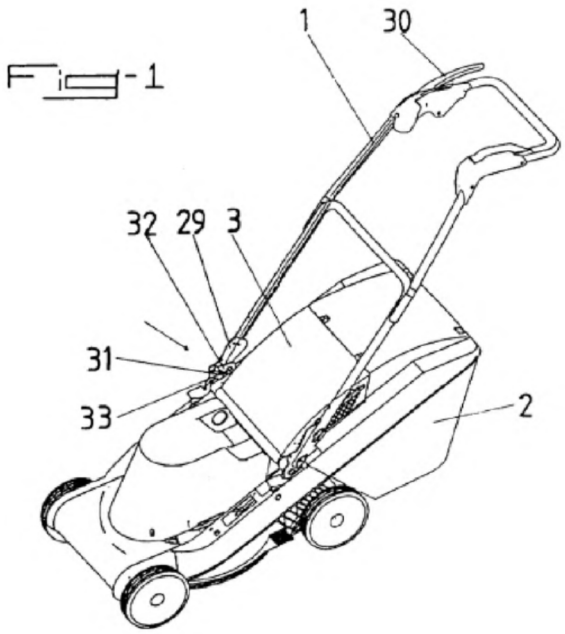
**F. Langdon**

57. I have reviewed Langdon. Langdon discloses a rotary lawnmower with a push handle assembly. (EX1012, Langdon, at Abstract.) The push handle assembly is comprised of telescopic members and is pivotally attached to the lawnmower deck such that the handle may be folded over for storage. (*Id*.)

**G. Outils**

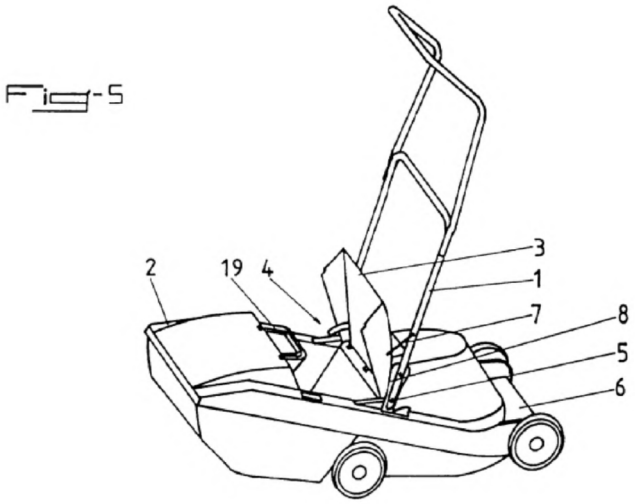
58. I have reviewed Outils. Outils discloses a lawnmower with a handlebar 1, a cut grass receptacle 2, and a "safety device" for preventing access to the rotating cutting blade. (EX1014, Outils, at Abstract, 3:25-33, claim 1.) Outils discloses several separate, distinct embodiments for its "safety device."

59. In a first embodiment of the "safety device" (shown in FIG. 1 below), the safety device comprises a safety cover 3 and a means 28 for controlling rotation of the cutting blade. (EX1014, Outils, at 3:35-4:8, claims 2-3, FIGS. 1-4.) The means 28 comprises a remote control cable 29 which acts on a motor brake, a brake coupling, or an electrical supply contactor and is actuated by a hold-to-run control component 30. (*Id*.) The remote control cable 29 and the electrical supply contactor function to disable the motor when the handlebar 1 is rotated out of position. (*Id*. at 4:5-8, 4:14-17, 5:4-8, claim 3.)




(*Id*. at FIG. 1.)

60. In a second embodiment of the "safety device" (shown in FIG. 5 below), the safety device comprises a safety cover 3 and a means 4 for controlling activation of the cutting blade. (*Id*. at 5:14-19, 8:22-29, FIGS. 5 and 10, claims 4-5 and 18.) The means 4 may take the form of an electrical, electromechanical, or mechanical activation actuator 23 that interacts with a cam 24 provided on the handlebar 1. (*Id*.) The activation actuator 23 functions to disable the motor when the handlebar 1 is rotated out of position. (*Id*. at 8:22-29.)




(*Id*. at FIG. 5.)

61. Notably, as shown in FIG. 5 of Outils, the second embodiment of Outils' "safety device" does not have a remote control cable 29 or a hold-to-run control component 30 on the handlebar 1. (*Id*.)

**H. Nakano**

62. I have reviewed Nakano. Nakano discloses an electric hand-held bush cutter comprising two telescopic pipes: a fixed pipe 40 and a movable pipe 80. (EX1015, Nakano, at 7:17-8:3, FIG. 1.) A handle unit 41 comprising a trigger lever 44 is attached to the fixed pipe 40. (*Id*. at 8:11-17, FIG. 1.) Nakano's bush cutter is designed to be operable only when the movable pipe 80 is at its fully extended length. (*Id*. at 9:15-16, FIG. 1, claim 12.) When the movable pipe 80 is not fully extended, or if the movable pipe 80 is accidentally retracted during operation, an extending detection unit prevents operation of the motor or causes the motor to automatically stop. (*Id*. at 9:16-22, FIG. 2, claim 12.)

### I. Milcoy

63. I have reviewed Milcoy. Milcoy discloses an electric switch for a portable electric appliance, such as a lawnmower. (EX1016, Milcoy, at Abstract, 1:4-13.) The electric switch includes locking means for preventing mis-operation of the appliance. (*Id.*)

### J. Hilchey

64. I have reviewed Hilchey. Hilchey relates to a hand control system for a lawnmower comprising a pair of control levers and a U-shaped bail. (EX1017, Hilchey, at Abstract.) The bail cooperates with the control levers to permit one-handed control of the lawnmower. (*Id*.)

## IX. CLAIM CONSTRUCTION

### A. "power supply circuit" ['806 patent, claims 1, 3, and 6-8; '26686 patent, claims 1, 2, 5, 9-12, 15, 19, and 20; '86686 patent, claims 2, 5, 9, 10, 12, 15, 19, and 20; '588 patent, claims 2, 5, 8-12, 15, and 16]

65. I understand that Petitioner asserts that the term "power supply circuit" in the Challenged Patents should be construed as "the electrical path between an electric power source and the claimed 'motor' taken by (high-power) current that drives the motor."

66. I understand that the Board declined to construe the term "power supply circuit" in its Institution Decisions.

67. I also understand that the District Court in the parties' related district court litigation rejected Petitioner's proposed construction. (EX2025, CC Opinion, at 8.)

68. Nevertheless, my opinions herein would be the same regardless of whether this term is construed as Petitioner proposes, as the District Court construed the term, or not at all. In other words, the construction of this term is immaterial to my opinions herein.

**B. "trigger" ['806 patent, claim 11; '588 patent, claim 19]**

69. I understand that Petitioner asserts that the term "trigger" in the '806 and '588 patents should be construed as "a lever manually pulled against a biasing force, and not a pushed button."

70. I understand that the Board declined to construe the term "trigger" in its Institution Decisions.

71. I also understand that the District Court in the parties' related district court litigation rejected Petitioner's proposed construction. (EX2025, CC Opinion, at 9.)

72. Nevertheless, my opinions herein would be the same regardless of whether this term is construed as Petitioner proposes, as the District Court construed the term, or not at all. In other words, the construction of this term is immaterial to my opinions herein.

**C. "locks" and "unlocks" ['806 patent, claims 1, 3, 6, and 8; '26686 patent, claims 1, 8, 11, and 18; '86686 patent, claims 1, 8, 11, and 18]**

73. I understand that Petitioner asserts that the terms "locks" and "unlocks" in the '806, '26686, and '86686 patents should be construed as "electrically disabling" and "electrically enabling," respectively.

74. For the purposes of these proceedings, I have adopted Petitioner's proposed constructions of the terms "locks" and "unlocks."

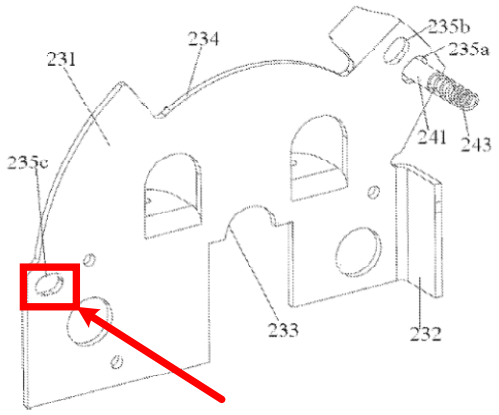
**D. "accommodating position relative to the main body" ['26686 patent, claims 1 and 11]**

75. Consistent with the claims and specification of the '26686 patent, the term "accommodating position relative to the main body" in Challenged Claims 1 and 11 of the '26686 patent should be construed as a "horizontal position over the main body."

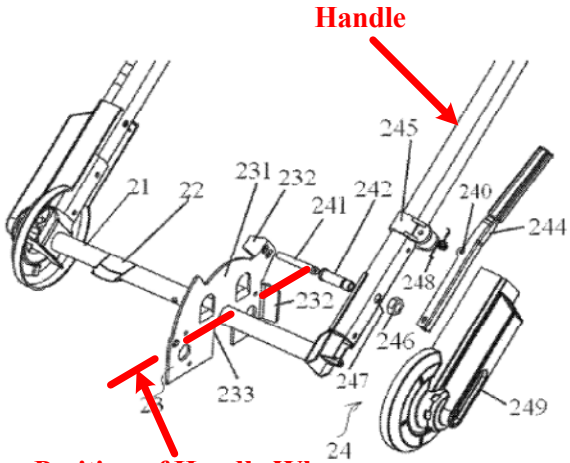
76. First, the claims support Patent Owner's proposed construction. Challenged Claims 1 and 11 of the '26686 patent recite that the claimed "accommodating position" of the handle is a

non-use position (*i.e.*, a horizontal storage position). (EX1001, '26686 patent, at claims 1 and 11 ("keep the handle at an accommodating position relative to the main body when the [gardening tool / mower] is not being used"); *see also id.* (reciting that the motor cannot be started when the handle is rotated to the "accommodating position").) Challenged Claims 1 and 11 also recite a "locking mechanism" to keep the handle in the non-use, horizontal "accommodating position relative to the main body." (*Id.*)

77. Second, the specification supports Patent Owner's proposed construction. The specification of the '26686 patent discloses that the "handle 20 is provided with [a] locking mechanism 24 which is automatically snap fitted with a plurality of levels of [a] level changing member 23 so as to fix and adjust the handle 20. The level changing member 23 is used to set levels and cooperate with the locking mechanism to lock the levels." (*Id.* at 3:8-14.) The level changing member 23 includes a "limiting hole 235c" that is used to lock the handle at a horizontal "accommodating level for folding the handle upon accommodating the mower." (*Id.* at 5:9-20, FIG. 4.) The horizontal "accommodating level" is the claimed "accommodating position relative to the main body."




**"Limiting Hole" for Locking Handle at a Horizontal "Accommodating Position"**




**Position of Handle When Locked in the Horizontal "Accommodating Position"**

(EX1001, '26686 patent, at FIGS. 3-4 (annotated).)

78. The specification of the '26686 patent also states that the user of the disclosed lawnmower "may achieve accommodation by rotating the handle 20 to adjust an operation posture or reducing space occupied by the mower 100." (EX1001, '26668 patent, at 2:39-42.) In view of this disclosure, a POSITA would understand that the claimed "accommodating position relative to the main body"—which again is a non-use position, not an operation position—is a horizontal position over the main body used to reduce the space occupied by the claimed lawnmower.

79. Third, I understand that Petitioner's expert, Mr. Reed, confirmed during his deposition that Patent Owner's proposed construction is correct. (EX2028, Reed Transcript, at 136:13-22.)

80. Accordingly, the term "accommodating position relative to the main body" should be construed as a "horizontal position over the main body."

## X. PETITIONER HAS FAILED TO SHOW THAT MATSUNAGA AND NAKANO ARE ANALOGOUS ART TO THE CLAIMED INVENTIONS OF THE CHALLENGED PATENTS.

### A. Petitioner Has Failed To Show That Matsunaga Is Analogous Art To The Claimed Inventions Of The Challenged Patents.

#### 1. Petitioner Has Failed To Show That Matsunaga Is From The Same Field Of Endeavor As The Challenged Patents.

81. The field of endeavor of the Challenged Patents is electric walk-behind lawnmowers and associated performance and safety features. (*See, e.g.,* '806 patent at Abstract, 1:12-13, 1:17-31; '26686 patent at Abstract, 1:14-15, 1:19-35; '86686 patent at Abstract, 1:16-17, 1:21-36; '588 patent at Abstract, 1:16-17, 1:21-36.)

82. Matsunaga's field of endeavor is circuits for hand-held grass and hedge trimmers. (*See, e.g.*, EX1006, Matsunaga, at FIGS. 1 and 3, 1:5-34, 6:3-25.) Matsunaga is not directed to a lawnmower and does not disclose a lawnmower of any kind. (*See generally id*.)

83. Lawnmowers and hand-held grass or hedge trimmers have very different design considerations and requirements. For example, lawnmowers and hand-held grass and hedge trimmers are entirely different devices (*e.g.*, a lawnmower is pushed from behind whereas a grass or hedge trimmer is held in the user's hands, a lawnmower has a blade encased in a main body whereas a grass or hedge trimmer has an exposed blade, etc.) and are subject to different safety standards and safety considerations. (*See, e.g.,* https://www.opei.org/services/product-safety-standards/product-standards-listing/; *compare* EX1030, ANSI B71.1 lawnmower standard *with* EX2012, ANSI B175.3.) Lawnmowers are also heavier than hedge trimmers and require a lot more power than hedge trimmers because they are used to cut a larger area. Thus, a POSITA designing a lawnmower would have had no reason to look to hand-held grass or hedge trimmers.

84. Accordingly, Matsunaga is not from the same field of endeavor as the Challenged Patents.

**2. Petitioner Has Failed To Show That Matsunaga Is Reasonably Pertinent To The Particular Problem The Inventors Of The Challenged Patents Were Trying To Solve.**

85. The Challenged Patents are concerned with lawnmowers and providing a control system for disabling a lawnmower when the lawnmower's handle is moved from a designated use position. (*See, e.g.,* '806 patent at 1:17-31, 1:38-57, claims 1 and 6; '26686 patent at 1:18-35, 1:42-62, claims 1 and 11; '86686 patent at 1:21-36, 1:44-64, claims 1 and 11; '588 patent at 1:21-36, 1:44-64, claims 1, 11, and 15.)

86. Matsunaga is concerned with short-circuit faults in semiconductor switches located in hand-held grass and hedge trimmers. (*See, e.g*., EX1006, Matsunaga, at FIGS. 1 and 3, 1:7-25, 1:38-43.) Matsunaga does not disclose and has nothing to do with lawnmowers or safety features for lawnmowers. (*See generally id*.) Thus, Matsunaga is directed to a different purpose than the Challenged Patents.

### B. Petitioner Has Failed To Show That Nakano Is Analogous Art To The Claimed Inventions Of The Challenged Patents.

#### 1. Petitioner Has Failed To Show That Nakano Is From The Same Field Of Endeavor As The Challenged Patents.

87. As noted above, the field of endeavor of the Challenged Patents is electric walk-behind lawnmowers and associated performance and safety features. (*See, e.g.* '806 patent at Abstract, 1:17-31; '26686 patent at Abstract, 1:14-15, 1:19-35; '86686 patent at Abstract, 1:16-17, 1:21-36; '588 patent at Abstract, 1:16-17, 1:21-36.)

88. Nakano's field of endeavor is hand-held bush cutters. (*See, e.g.*, EX1015, Nakano, at 1:10-11, 2:18-23, FIGS. 1-2.) Notably, Nakano is not directed to a lawnmower and does not disclose a lawnmower of any kind. (*See generally id.*)

89. Lawnmowers and hand-held bush cutters have very different design considerations and requirements. For example, lawnmowers and hand-held bush cutters are entirely different devices (*e.g.*, a lawnmower is pushed from behind whereas a bush cutter is held in the user's hands, a lawnmower has a blade encased in a main body whereas a bush cutter has an exposed blade, etc.) and are subject to different safety standards and safety considerations. (*See, e.g.,* https://www.opei.org/services/product-safety-standards/product-standards-listing/; *compare* EX1030, ANSI B71.1 lawnmower standard *with* EX2012, ANSI B175.3.) Lawnmowers are also heavier than bush cutters and require a lot more power than bush cutters because they are used to cut a larger area. Thus, a POSITA designing a lawnmower would have had no reason to look to hand-held bush cutters.

90. Accordingly, Nakano is not from the same field of endeavor as the Challenged Patents.

#### 2. Petitioner Has Failed To Show That Nakano Is Reasonably Pertinent To The Particular Problem The Inventors Of The Challenged Patents Were Trying To Solve.

91. As noted above, the Challenged Patents are concerned with lawnmowers and providing a control system for disabling a lawnmower when the lawnmower's handle is rotated and/or collapsed from a designated use position. (*See, e.g.,* '806 patent, at 1:24-32, 1:38-57, claims 1 and 6; '26686 patent at 1:18-35, 1:42-62, claims 1 and 11; '86686 patent at 1:21-36, 1:44-64, claims 1 and 11; '588 patent at 1:21-36, 1:44-64, claims 1, 11, and 15.)

92. Nakano is concerned with providing a hand-held electric bush cutter that is easy to use and has a brake to stop the motor. (*See* EX1015, Nakano, at 2:17-3:11.) Nakano does not disclose and has nothing to do with lawnmowers or safety features for lawnmowers and does not have a collapsible handle (*see generally id*.), and thus Nakano is directed to a different purpose than the Challenged Patents.

## XI. PETITIONER HAS FAILED TO THAT THE CHALLENGED CLAIMS OF THE '806 PATENT ARE UNPATENTABLE AS OBVIOUS UNDER 35 U.S.C. § 103.

### A. Ground 1: Petitioner Has Failed To Show That Challenged Claims 1, 2, 6, 7, And 12 Of The '806 Patent Are Obvious Over Outils In View Of Matsunaga.

#### 1. Petitioner Has Failed To Show That Matsunaga Is Analogous Art To The Claimed Invention Of The '806 Patent.

93. Petitioner has failed to show that Challenged Claims 1, 2, 4, 6, 7, and 12 of the '806 patent are obvious over Outils in view of Matsunaga because, as discussed above, Petitioner has failed to show that Matsunaga is analogous art to the claimed invention of the '806 patent.

#### 2. Petitioner Has Failed To Show That The Combination Of Outils And Matsunaga Discloses, Teaches, Or Suggests Every Limitation Of Challenged Claims 1, 2, 6, 7, And 12 Of The '806 Patent.

##### a. Petitioner Has Failed To Show That Outils Discloses, Teaches, Or Suggests "a second control device disposed at a position proximate to a shaft of the handle and configured to … unlock[] the first control device so that the first control device allows

**starting of the motor, and … lock[] the first device so that the first control device is not allowed to start the motor" ("Second Control Device Limitation").**

94. Under the Second Control Device Limitation, the claimed "second control device" of the control system must be configured to "unlock" (*i.e.*, electrically enable) the claimed "first control device" so that the first control device allows the motor to start, and must be configured to "lock" (*i.e.*, electrically disable) the first control device so that the first control device is not allowed to start the motor. (EX1001, '806 patent, at claims 1 and 6.)

95. Petitioner relies solely on Outils for the Second Control Device Limitation. (Paper 2 at 37.) Petitioner asserts that Outils' "activation actuator 23" is the claimed "second control device" (*id*.), and that Outils' "electrical supply contactor" is the claimed "first control device" (*id*. at 36). According to Petitioner, Outils' actuator 23 meets the Second Control Device Limitation because the actuator 23 purportedly unlocks and locks Outils' electrical supply contactor based on the rotating position of Outils' handle 1. (*Id*. at 37 (citing EX1003, Reed Declaration, ¶ 79).)

96. At the outset, Petitioner's assertion that Outils' actuator 23 unlocks and locks Outils' electrical supply contactor is incorrect.

97. Outils does not disclose, teach, or suggest that actuator 23 unlocks or locks Outils' electrical supply contactor because, as discussed in the summary of Outils above, the actuator 23 and the electrical supply contactor are components of separate, distinct embodiments of Outils' disclosed and claimed "safety device." Outils' specification treats these embodiments as wholly separate and independently functioning embodiments with their own dedicated figures and claims. (*See generally* EX1014, Outils; *compare id*. at FIG. 1, claims 2-3 *with id*. at FIG. 5, claim 4.)

98. Similarly, at no point does Outils disclose, teach, or suggest that actuator 23 electrically disables or enables the electrical supply contactor, or that actuator 23 and the electrical supply contactor are electrically connected such that actuator 23 could electrically disable and

enable the electrical supply contactor. (*Id*.) Indeed, the only description of the electrical supply contactor that Outils provides is that it is "acted on" by the remote control cable 29. (EX1014, Outils, at 4:6-7, claim 3.)

99. Further, in Outils the actuator 23 from the second embodiment and the hold-to-run component 30 / remote control cable 29 / electrical supply contactor system from the first embodiment have the exact same function of stopping and disabling the motor when the handle is rotated out of position. (*Id*. at 4:24-27, 8:27-28.)

100. Additionally, Petitioner has failed to show that Outils' actuator 23 "locks" the electrical supply contactor so that the electrical supply contactor "is not allowed to start the motor" as claimed because Outils does not disclose, teach, or suggest that the electrical supply contactor functions to start the motor. (*See generally* EX1014, Outils.) At best, Outils discloses that the electrical supply contactor functions to disable the motor when the handle 1 is rotated out of position or when the hold-to-run component 30 is released. (*Id*. at 4:5-8, 4:14-17, 5:4-8, claim 3.) Notably, Outils does not disclose how the mower is started. (*See generally id*.) Outils' lawnmower could start in many different ways. For example, Outils' lawnmower could have a pull cord, a separate start switch, a relay, etc.

101. Thus, Petitioner has failed to show that Outils discloses, teaches, or suggests the Second Control Device Limitation.

### 3. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Matsunaga As Proposed.

102. Petitioner proposes implementing Outils' actuator 23 using Matsunaga's contact switches 11 or 12. (Paper 2 at 39-40.) Petitioner asserts that a POSITA would have been motivated to make this modification "from the disclosure of Matsunaga that it is not desirable to pass the high current needed to power a lawn mowing motor through contact switches" and that it is instead

"preferable to use smaller capacity contact switches … and to avoid the thick wiring … and associated danger of high current flowing through contact switches." (*Id*. at 38.)

103. Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Matsunaga as proposed because each of Petitioner's asserted reasons for combining Outils with Matsunaga is unsupported.

104. First, Petitioner's assertion that Matsunaga discloses that it is not desirable to pass high current through contact switches is unsupported and directly contradicted by Matsunaga. Matsunaga expressly discloses that it is desirable to pass high current through a contact switch because the "[r]eliability of the tool is improved" in such designs as the contact switch is a backup for the semiconductor switch that may have a short-circuit fault. (EX1006, Matsunaga, at 1:38-43.) I agree that passing current used to drive a motor through a contact switch is a reliable way of controlling the motor, as taught in "Unexamined Patent Publication No. 57-109230" listed in Matsunaga. (*Id*. at 1:26-28.)

105. Moreover, Matsunaga expressly discloses that designs where high current does not pass through a contact switch can have significant drawbacks. Specifically, a short-circuit of the semiconductor switch that controls the current path between the power source and the motor may cause the motor to continuously operate even after the user releases the contact switch. (EX1006, Matsunaga, at 1:17-25, 2:17-23, 2:38-58, 9:24-39, 12:9-25.)

106. While Matsunaga discloses that contact switches with "large contact capacity" sufficient for carrying high current are larger and more expensive than contact switches with "small contact capacity" (EX1006, Matsunaga, at 1:44-48, 9:56-67), a POSITA would have known that any size or cost savings realized from replacing Outils' actuator 23 with Matsunaga's "small contact capacity" contact switches 11 or 12 would be far outweighed by the numerous additional

and costly components (*i.e.*, at least two semiconductor switches, a CPU, a gate, wiring to connect these components to each other and to the motor, and hardware for mounting these components in the lawnmower) that would need to be added to Outils to implement Matsunaga's contact switches 11 or 12. (*See, e.g.,* EX1006, Matsunaga, at FIG. 2, FIGS. 6-7, 7:37-8:31; Paper 2 at 39-40; Paper 20 at 54.)

107. Second, Petitioner's assertion that it is "dangerous" for high current to flow through a contact switch is unsupported. At no point does Matsunaga disclose that it is "dangerous" for high current to flow through a contact switch. (*See generally* EX1006, Matsunaga.) Indeed, the terms "danger" and "dangerous" do not appear anywhere in Matsunaga. (*Id*.) In my opinion, there is no inherent "danger" associated with passing high current through a contact switch.

108. Nevertheless, even if Petitioner had demonstrated that it is "undesirable" or "dangerous" to pass high current through a contact switch (it has not), Outils expressly discloses that actuator 23 can be "mechanical" instead of "electrical." (EX1014, Outils, at 8:22-24.) Consequently, simply implementing Outils' actuator 23 as a mechanical component instead of an electrical component would solve any purported issues associated with passing high current through actuator 23 and would thus negate each of Petitioner's asserted reasons for combining Outils with Matsunaga.

109. Third, Petitioner's assertion that a POSITA would have combined Outils with Matsunaga to avoid the thick wiring purportedly associated with large capacity contact switches is unsupported. Matsunaga expressly states that, "depending on a region in the tool where the contact switch is disposed, a thick wiring line through which a large current flows may have to be installed over a long distance." (EX1006, Matsunaga, at 1:49-52.) Matsunaga also states that in its disclosed trimmer "there is a physically large distance from the operation switches operated by

the user to the motor" and thus the "wiring lines from the respective switches to the motor and the power supplier become long." (*Id*. at 5:4-8; *see also id*. at 9:44-54, FIG. 1.) In Outils, however, the distance between actuator 23 and the motor is short because actuator 23 is installed directly on the mower casing 6. (EX1014, Outils, at FIG. 10.) Thus, Matsunaga's concern of thick wiring being installed over a long distance is inapplicable to Outils. Tellingly, Matsunaga does not identify any issues with thick wiring in its second embodiment depicted in FIG. 3 where contact switches 31 and 32 are positioned close to the motor 25. (*See generally* EX1006, Matsunaga, at 10:6-12:44.)

110. Further, as noted above, any size or cost savings attributable to connecting Outils' actuator 23 to the motor using thin instead of thick wires would be far outweighed by the numerous additional and costly components (*i.e.*, at least two semiconductor switches, a CPU, a gate, wiring to connect these components to each other and to the motor, and hardware for mounting these components in the lawnmower) that would need to be added to Outils to implement Matsunaga's contact switches 11 or 12. This is especially true since thick wires are still needed to transmit the amperage from the battery to the motor regardless.

111. Additionally, a POSITA would not have been motivated to combine Outils with Matsunaga because Matsunaga's teachings are irrelevant to Outils' lawnmower. Matsunaga only relates to improvements to "conventional motor-operated electric power tool[s] [that] use[] a semiconductor switch for closing/interrupting a current path from a power source to a motor" by addressing issues that may arise if the semiconductor switch short-circuits. (EX1006, Matsunaga, at 1:7-25.) Outils' lawnmower, however, does not have a semiconductor switch (*see generally* EX1014, Outils), and thus Matsunaga's teachings are inapplicable to Outils' semiconductor-less

lawnmower. Accordingly, a POSITA considering Outils' semiconductor-less lawnmower would have had no reason to look to Matsunaga.

112. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Matsunaga as proposed.

### B. Ground 2: Petitioner Has Failed To Show That Challenged Claims 3, 4, 8, 9, And 13 Of The '806 Patent Are Obvious Over Outils In View Of Matsunaga, Langdon, And Nakano.

#### 1. Petitioner Has Failed To Show That Nakano Is Analogous Art To The Claimed Invention Of The '806 Patent.

113. Petitioner has failed to show that Challenged Claims 3, 4, 8, 9, and 13 of the '806 patent are obvious over Outils in view of Matsunaga, Langdon, and Nakano because, as discussed above, Petitioner has failed to show that Nakano is analogous art to the claimed invention of the '806 patent.

#### 2. Petitioner Has Failed To Show That The Combination Of Outils With Matsunaga, Langdon, And Nakano Discloses, Teaches, Or Suggests Every Limitation of Challenged Claims 3, 4, 8, 9, And 13 Of The '806 Patent.

##### a. Petitioner Has Failed To Show That Nakano Discloses, Teaches, Or Suggests "a third control device configured to be controlled by the telescopic action of the telescopic tubes, wherein … the third control device unlocks the first control device so that the first control device [allows starting of the motor / is allowed to start the motor], and … the third control locks the first control device so that the first control device is not allowed to start the motor" ("Third Control Device Limitation").

114. Under the Third Control Device Limitation, the control system comprises a "third control device" that is configured to be controlled by the telescopic action of a telescopic handle. (EX1001, '806 patent, at claims 3 and 8.) The claimed "third control device" of the control system must also be configured to "unlock" (*i.e.*, electrically enable) the claimed "first control device" so that the first control device allows the motor to start, and must be configured to "lock" (*i.e.*,

electrically disable) the first control device so that the first control device is not allowed to start the motor. (*Id*.)

115. Petitioner relies solely on Nakano for the Third Control Device Limitation. (Paper 2 at 46.) Petitioner asserts that Nakano discloses a telescoping handle that purportedly includes a "pipe 40," a "pipe 80," and a "handle unit 41." (*Id*. at 44-45.) Petitioner also asserts that Nakano discloses several "control devices" that purportedly meet the Third Control Device Limitation. (*Id*. at 46.)

116. Petitioner cannot show that any of Nakano's "control devices" are the claimed "third control device" configured to be controlled by the telescopic action of a telescopic handle because Nakano does not disclose, teach, or suggest a telescopic handle.

117. A POSITA would understand a "handle" to be a part by which a thing is held or controlled. Nakano discloses a "handle unit 41." (EX1015, Nakano, at 7, FIGS. 1-2.) A POSITA also would have understood Nakano's "handle unit 41" to be Nakano's "handle" because it is the part by which Nakano's bush cutter is held and controlled. (EX1015, Nakano, at 8, FIGS. 1-2, FIG. 17 (Nakano disclosing a "handle unit 41" that comprises a U-shaped handle pipe 42 that has two grip portions 43 attached to both ends of the handle pipe 42); *id*. at 35 (Nakano further disclosing that a user controls Nakano's bush cutter by moving the handle pipe 42 while gripping the grip portions 43).) Notably, Nakano does not disclose, teach, or suggest that its handle (*i.e.*, "handle unit 41") is telescopic. (*See generally* EX1015, Nakano.)

118. While Petitioner asserts that Nakano's handle is also comprised of telescopically-coupled pipes 40 and 80 (Paper 2 at 44-45), Nakano's pipes 40 and 80 are not part of Nakano's handle because Nakano does not disclose, teach, or suggest that Nakano's bush cutter is held or controlled by pipes 40 or 80 (*see generally* EX1015, Nakano). Rather, Nakano discloses that pipes

40 and 80 comprise the main "contracting rod" that connects the "operation unit 10" to the "driving unit 151." (EX1015, Nakano, at 7-8, FIGS. 1-2.) Accordingly, Nakano does not disclose, teach, or suggest a telescopic handle, and thus Nakano does not disclose, teach, or suggest the claimed "third control device" configured to be controlled by the telescopic action of a telescopic handle.

119. Additionally, Petitioner has failed to show that Nakano discloses, teaches, or suggests the Third Control Device Limitation because Petitioner does not assert that Nakano's "control devices" unlock or lock any alleged "first control device" as claimed. (*See generally id*. at 44-55.) Rather, Petitioner merely asserts that Nakano's "control devices" enable or disable Nakano's alleged "operation assembly" – which, again, is different than the claimed "first control device." (*Id*. at 46, 52.)

120. Thus, Petitioner has failed to show that Nakano discloses, teaches, or suggests the Third Control Device Limitation.

**3. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Matsunaga, Langdon, And Nakano.**

**a. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Langdon As Proposed.**

121. Challenged Claims 3 and 8 recite that "the handle comprises a plurality of telescopic tubes." (EX1001, '806 patent, at claims 3 and 8.) Petitioner concedes that Outils does not disclose a handle comprising a plurality of telescopic tubes, but asserts that it would have been obvious to use Langdon's telescopic handle in Outils' mower. (Paper 2 at 42-43.) Petitioner asserts that a "POSITA would have been motivated by the collapsibility of Langdon's telescopic handle, and by the fact that it does not have to be removed from the lawnmower body," and that a "POSITA would have recognized the advantage of collapsing Outils' handle to make the lawnmower easier to ship and store." (*Id*. at 43.)

122. A POSITA would not have been motivated to use Langdon's telescopic handle in Outils' lawnmower because: (i) Outils' lawnmower is incompatible with a telescopic handle; and (ii) Outils already suggests that its handle is collapsible without being removed from the lawnmower body.

123. First, a POSITA would not have been motivated to use Langdon's telescopic handle in Outils' lawnmower because a POSITA would have known that Outils' lawnmower is incompatible with a telescopic handle.

124. Petitioner asserts that the alleged "first control device configured to be controlled by [an] operation assembly" of Outils is an electrical supply contactor controlled by a remote control cable 29 that is actuated by a hold-to-run component 30 located at the end of the handle 1. (Paper 2 at 31, 36.) Outils' remote control cable 29 runs in a straight line along the inside of the handle 1 from one end to the other. (EX1014, Outils, at FIGS. 1-4; EX2028, Reed Transcript, at 85:5-8.)

125. I understand that Petitioner's expert, Mr. Reed, testified that a POSITA would have understood Outils' remote control cable 29 to be a Bowden cable. (EX2028, Reed Transcript, at 141:1-4.) I agree with Mr. Reed that a POSITA would have understood Outils' remote control cable 29 to be a Bowden cable. (EX1014, Outils, at 4:24-27 (referring to the "distance between the sleeve stops of the cable 29" changing as the handle is tilted), FIGS. 3-4.)

126. I also understand that Mr. Reed testified that a POSITA would have known that a Bowden cable is incompressible. (EX2028, Reed Transcript, at 141:5-7.) I agree with Mr. Reed that a Bowden cable is incompressible.

127. To implement Outils' handle as a telescopic handle, a POSITA would have known that Outils' remote control cable 29 would need to be capable of compression to accommodate

changes in length of the telescopic handle. But a POSITA would have understood that Outils' remote control cable 29 is incapable of compression because it is a Bowden cable. Thus, a POSITA would have known that Outils' lawnmower is incompatible with a telescopic handle such as Langdon's.

128. Further, even if Outils' remote control cable 29 were compressible such that a POSITA could have modified Outils to have a telescopic handle, a POSITA would have known that such a modification would cause Outils' remote control cable 29 to kink inside the handle every time the handle is shortened. Over time, this kinking would cause damage to the remote control cable 29. After enough repetitions the remote control cable 29 would break, rendering Outils' lawnmower inoperable. (*See* EX1014, Outils, at 4:14-17 (disclosing that Outils' motor is inoperable unless remote control cable 29 is tensioned).) This is why Reichart discloses a flexible spiral cable to accommodate changes in length of its telescopic handle without damaging the cable. (*See, e.g.,* EX1007, Reichart, at 3:8-12, 6:13-17.) The same would be true of a cable on the outside of the telescoping handle as the telescoping handle precludes its attachment to the handle, allowing the cable to snag on objects as the lawnmower is being pushed and again causing a likelihood of the cable breaking.

129. Second, a POSITA would not have been motivated to use Langdon's telescopic handle in Outils' lawnmower because Outils already suggests that its handle is collapsible.

130. Outils discloses a U-shaped lawnmower handle. (EX1014, Outils, at FIGS. 1 and 5.) A POSITA would have recognized that Outils' U-shaped handle resembles a U-shaped lawnmower handle that is designed to fold in half and rotate over the main body to a compact storage position. Such folding U-shaped lawnmower handles were well-known and widely available decades before the invention of the Challenged Claims.

131. For example, US Patent No. 3,527,469 to Gobin ("Gobin") discloses a folding U-shaped handle. (EX2030.) A single bolt through the two sections of the handle on each side locks the free ends of the upper handle portion to the upper end of the bottom handle portion. The upper handle portion has free ends that conform to (or wrap partially around) the upper end of the lower handle portion to keep it from rotating with respect to the lower handle portion. To collapse the handle for storage, the user would loosen the wing nut on each of the bolts such that the conforming part of the upper handle could move outward enough such that the upper handle portion could rotate with respect to the lower handle portion. In this way, the upper and lower handle portions could be folded over the deck of the mower as shown in FIG. 1 of Gobin below:

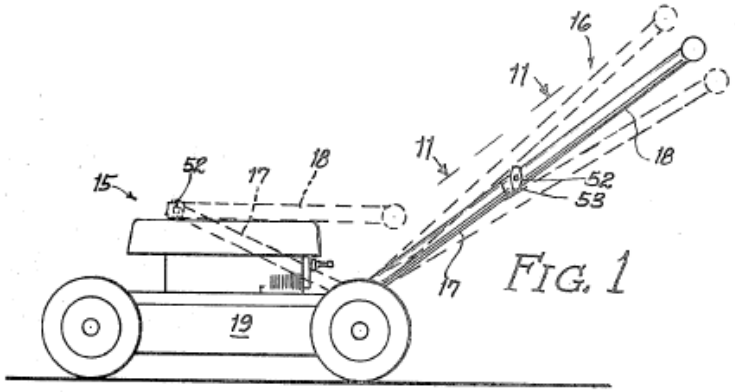
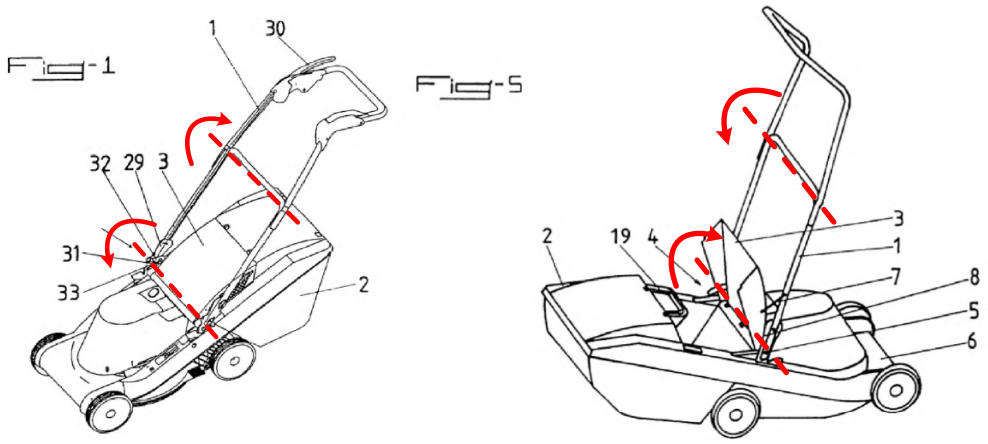


FIG. 1

132. Other examples of similar folding U-shaped lawnmower handles are shown in US Patent No. 5,636,504 to Kaley (EX2031), US Patent No. 5,261,215 to Hartz (EX2032), and US 4,043,102 to Uhilinger (EX2033).

133. In view of the visual and structural similarity between Outils' U-shaped lawnmower handle and common prior art folding U-shaped lawnmower handles, Outils' figures would have suggested to a POSITA that the handle can be folded to a compact storage position along the axes shown below:




(EX1014, Outils, at FIGS. 1 and 5 (annotated).)

134. A POSITA also would have recognized that the upper handle portion could alternatively be folded forward with the bottom handle portion. Additionally, a POSITA would have recognized that Outils' remote control cable 29 could bend to accommodate the folding of the handle. (EX1014, Outils, at FIGS. 3-4 (showing cable 29 bending).)

135. A POSITA would have had no reason to combine Outils with Langdon as proposed because such a combination would have provided a redundant feature (*i.e.*, a collapsible handle) at additional cost.

136. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Langdon as proposed.

**b. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Nakano As Proposed.**

137. Petitioner proposes "using" Nakano's alleged "control devices" in Outils' "modified" lawnmower (*i.e.*, Outils' lawnmower with a telescopic handle). (Paper 2 at 53-54.)

138. Petitioner provides no reasons why a POSITA would have combined Outils' modified lawnmower with Nakano and does not even assert that a POSITA would have been motivated to combine Outils' modified lawnmower with Nakano. (*See generally* Paper 2 at 44-56.)

139. Petitioner also fails to explain how Outils' modified lawnmower would be combined with Nakano to arrive at the claimed invention of Challenged Claims 3 and 8. For example, Challenged Claims 3 and 8 recite that the claimed "third control device" must be configured to "unlock" and "lock" the claimed "first control device." (EX1001, '806 patent, at claims 3 and 8.) But Petitioner does not even assert that Nakano's alleged "control devices" would unlock or lock Outils' electrical supply contactor (*i.e.*, the alleged "first control device") as claimed. (*See generally* Paper 2 at 44-56.)

140. Petitioner states that Nakano purportedly "improves safety of a telescoping handle by detecting whether it has partially collapsed, and braking/disabling the grass cutter's motor accordingly." (Paper 2 at 44.) To the extent the Board considers this statement a purported motivation to combine, Nakano's alleged "control devices" would not have "improved the safety" of Outils' modified lawnmower because, assuming a POSITA would have and could have modified Outils to have a telescopic handle in the first place (as discussed above, they would not have and could not have done so), Outils' modified lawnmower would already have included a system for braking/disabling the motor when the handle is partially collapsed. Thus, adding Nakano's alleged "control devices" would have provided a redundant feature at additional cost.

141. As noted above, Petitioner relies on Outils' electrical supply contactor controlled by remote control cable 29 and hold-to-run component 30 for the claimed "first control device configured to be controlled by [an] operation assembly." (Paper 2 at 31, 36, 61.) According to Outils, the motor can operate only when remote control cable 29 is tensioned by hold-to-run control component 30. (EX1014, Outils, at 4:29-5:8.) The motor will stop and will be unable to resume operation if there is slack on remote control cable 29—regardless of whether hold-to-run control component 30 is actuated. (EX1014, Outils, at 4:24-27, 5:1-8.) Assuming a POSITA would have

and could have modified Outils to have a telescopic handle, partially collapsing the handle would introduce slack on remote control cable 29 due to the decreased distance between the end of the handle (where one end of the cable 29 is connected) and the mower body (where the other end of cable 29 is connected). Consequently, partially collapsing the handle would cause Outils' remote control cable 29 to become slack which would stop and disable the motor, and thus adding Nakano's alleged "control devices" to Outils' modified lawnmower would have done nothing to improve the safety of Outils' lawnmower. Outils' motor already would stop if either the handle was rotated or was telescoped in due to either of these motions making the remote control cable 29 go slack. There would be no need for the added complexity involved by combining Nakano with Outils.

142. Petitioner also states that a "POSITA would [] have found [Outils' and Nakano's] designs to [be] compatible for obvious combination." (Paper 2 at 47.) To the extent the Board considers this statement a purported motivation to combine, the statement is without merit because even a cursory review of Outils and Nakano demonstrates that Outils' and Nakano's designs are very dissimilar and not compatible. For example, (i) Outils discloses a lawnmower, whereas Nakano discloses a bush cutter; (ii) Outils' lawnmower is pushed from behind, whereas Nakano's bush cutter is hand-held; and (iii) Outils' cutting blade is covered by a casing, whereas Nakano's cutting blade is exposed. (*See, e.g.,* EX1014, Outils, at FIGS. 1 and 5; EX1015, Nakano, at FIG. 1.) Further, Outils' lawnmower and Nakano's bush cutter are subject to different safety standards.

143. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Nakano as proposed.

### C. Ground 3: Petitioner Has Failed To Show That Challenged Claims 5 And 10 Of The '806 Patent Are Obvious Over Outils In View Of Matsunaga And Meldahl.

144. Petitioner has failed to show that Outils in combination with Matsunaga and Meldahl renders Challenged Claims 5 and 10 obvious in view of their dependency on Challenged Claims 1 and 6, respectively. I also note that a POSITA would not combine the mechanism of Meldahl with Outils because the applicable lawnmower safety standards require the handle to lock in the operating position, but the Meldahl handle does not lock in the operating position. (ANSI B71.1, at 16-17 (10.7.2.1-2) (requiring the handle lock in the "operating position").) In fact, the Meldahl handle is spring loaded to the non-operating position. A POSITA would find the Meldahl handle extremely difficult to use as it would always require pushing down on the handle to get the lawnmower to operate.

### D. Ground 4: Petitioner Has Failed To Show That Challenged Claim 11 Of The '806 Patent Is Obvious Over Outils In View Of Matsunaga, Milcoy, And Hilchey.

145. Petitioner has failed to show that Outils in combination with Matsunaga, Milcoy, and Hilchey renders Challenged Claim 11 obvious in view of its dependency on Challenged Claim 6.

## XII. PETITIONER HAS FAILED TO SHOW THAT THE CHALLENGED CLAIMS OF THE '26686 PATENT ARE UNPATENTABLE AS OBVIOUS UNDER 35 U.S.C. § 103.

### A. Ground 1: Petitioner Has Failed To Show That Challenged Claims 1-7 And 11-17 Of The '26686 Patent Are Obvious Over Outils In View Of Roelle And Matsunaga.

#### 1. Petitioner Has Failed To Show That Matsunaga Is Analogous Art To The Claimed Invention Of The '26686 Patent.

146. Petitioner has failed to show that Challenged Claims 1-7 and 11-17 of the '26686 patent are obvious over Outils in view of Roelle and Matsunaga because, as discussed above,

Petitioner has failed to show that Matsunaga is analogous art to the claimed invention of the '26686 patent.

**2. Petitioner Has Failed To Show That The Combination Of Outils With Roelle And Matsunaga Discloses, Teaches, Or Suggests Every Limitation of Challenged Claims 1-7 And 11-17 Of The '26686 Patent.**

**a. Petitioner Has Failed to Show that Roelle Discloses, Teaches, Or Suggests "a locking member configured to engage with the locking mechanism and providing at least a locking structure to cause the locking mechanism to keep the handle at an accommodating position relative to the main body when the [gardening tool / mower] is not being used" ("Locking Member Limitation").**

147. Under the Locking Member Limitation, the claimed "locking member" and the claimed "locking mechanism" must engage with each other to cause the locking mechanism to keep the handle at an "accommodating position" relative to the main body when the lawnmower is not in use. (EX1001, '26686 patent, at claims 1 and 11.) As discussed above, the term "accommodating position relative to the main body" should be construed as a "horizontal position over the main body."

148. Petitioner relies solely on Roelle for the Locking Member Limitation. (Paper 1 at 36.) Petitioner asserts that Roelle discloses a "locking structure" that locks Roelle's handle at a non-use, nearly vertical position when the lawnmower is not in use. (*Id*. at 34 ("Roelle secures rotating handle 24 in its in-use position (Figures 1, 1A) but the locking structure including a locking mechanism (spring biased pin 68) also keeps the handle in an accommodating, vertical position when the mower is not in use (Figure 2)."); *see also id*. at 36.) But Roelle's non-use vertical position is not the claimed horizontal "accommodating position." Further, Roelle does not disclose, teach, or suggest locking the handle at a horizontal position over the main body. (*See generally* EX1011, Roelle.)

149. Accordingly, Roelle does not disclose, teach, or suggest the Locking Member Limitation.

**b. Petitioner Has Failed To Show That Outils Discloses, Teaches, Or Suggests "a second control device configured to be controlled according to the rotating position of the handle wherein, … the second control device unlocks the first control device so that the first control device allows starting of the motor, and … the second control device locks the first device so that the first control device is not allowed to start the motor" ("Second Control Device Limitation").**

150. Under the Second Control Device Limitation, the claimed "second control device" of the control system must be configured to "unlock" (*i.e.*, electrically enable) the claimed "first control device" so that the first control device allows starting of the motor, and must be configured to "lock" (*i.e.*, electrically disable) the first control device so that the first control device is not allowed to start the motor. (EX1001, '26686 patent, at claims 1 and 11.)

151. Petitioner relies solely on Outils for the Second Control Device Limitation. (Paper 1 at 40-41.) Petitioner asserts that Outils' "activation actuator 23" is the claimed "second control device" (*id*. at 40), and that Outils' "electrical supply contactor" is the claimed "first control device" (*id*.). According to Petitioner, Outils' actuator 23 meets the Second Control Device Limitation because the actuator 23 purportedly unlocks and locks Outils' electrical supply contactor based on the rotating position of Outils' handle 1. (*Id*. at 40-41 (citing EX1003, Reed Declaration, ¶ 86).)

152. At the outset, Petitioner's assertion that Outils' actuator 23 purportedly unlocks and locks Outils' electrical supply contactor is incorrect.

153. Outils does not disclose, teach, or suggest that actuator 23 unlocks or locks Outils' electrical supply contactor because, as discussed above, the actuator 23 and the electrical supply contactor are components of separate, distinct embodiments of Outils' disclosed and claimed

"safety device." Outils' specification treats these embodiments as wholly separate and independently functioning embodiments with their own dedicated figures and claims. (*See generally* EX1014, Outils; *compare id*. at FIG. 1, claims 2-3 *with id*. at FIG. 5, claim 4.)

154. Similarly, at no point does Outils disclose, teach, or suggest that actuator 23 electrically disables or enables the electrical supply contactor, or that actuator 23 and the electrical supply contactor are electrically connected such that actuator 23 could electrically disable and enable the electrical supply contactor. (*Id*.) Indeed, the only description of the electrical supply contactor that Outils provides is that it is "acted on" by the remote control cable 29. (EX1014, Outils, at 4:6-7, claim 3.)

155. Further, in Outils the actuator 23 from the second embodiment and the hold-to-run component 30 / remote control cable 29 / electrical supply contactor system from the first embodiment have the exact same function of stopping and disabling the motor when the handle is rotated out of position. (*Id*. at 4:24-27, 8:27-28.)

156. Additionally, Petitioner has failed to show that Outils' actuator 23 "locks" the electrical supply contactor so that the electrical supply contactor "is not allowed to start the motor" as claimed because Outils does not disclose, teach, or suggest that the electrical supply contactor functions to start the motor. (*See generally* EX1014, Outils.) At best, Outils discloses that the electrical supply contactor functions to disable the motor when the handle 1 is rotated out of position or when the hold-to-run component 30 is released. (*Id*. at 4:5-8, 4:14-17, 5:4-8, claim 3.) Notably, Outils does not disclose how the mower is started. (*See generally id*.) Outils' lawnmower could start in many different ways. For example, Outils' lawnmower could have a pull cord, a separate start switch, a relay, etc.

157. Thus, Petitioner has failed to show that Outils discloses, teaches, or suggests the Second Control Device Limitation.

### 3. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Roelle And Matsunaga.

#### a. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Roelle As Proposed.

158. Petitioner proposes providing Roelle's alleged "locking structure" (*i.e.*, pin 68 and plate 26) in Outils' lawnmower to lock handle 1 in the alleged "accommodating position" of Outils' Figure 7. (Paper 1 at 34-36.) Petitioner asserts that a POSITA would have been "motivated by safety" to make this modification because a POSITA purportedly "would have recognized that Outils' lock 12 could inadvertently *and dangerously* allow handle 1 to rotate from its accommodating position of Figure 7, *i.e.*, a position when the mower is not in use and/or the user is emptying the cut-grass receptacle, to its in-use position of Figure 6 (or at least closer to that position)." (*Id*. at 34.)

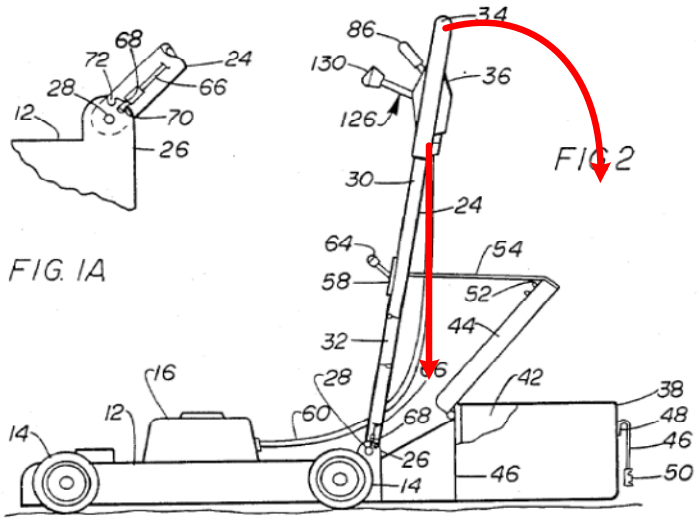
159. At the outset, Petitioner fails to provide any analysis, evidence, or explanation as to why locking Outils' handle in a non-use position would promote "safety" or why Outils' handle inadvertently rotating from a non-use position to an in-use position would be "dangerous." (Paper 1 at 34 (citing EX1003, Reed Declaration, ¶ 75).) To be sure, a POSITA would not have considered Outils' handle inadvertently rotating from a non-use position to an in-use position to be "dangerous."

160. Additionally, Outils expressly discloses that its "safety device" eliminates the risk of danger to the user when the user is emptying the cut-grass receptacle in the non-use position, which further confirms that a POSITA would not have considered Outils' handle rotating from a non-use position to an in-use position to be "dangerous." (EX1014, Outils, at 10:22-29.)

161. Further, Roelle does not disclose that its pin 68 and plate 26 locking system has anything to do with safety, and the 16 CFR 1205 federal lawnmower safety regulations and the ANSI B71.1 lawnmower safety standard do not disclose or require a locking mechanism for locking the handle in a non-use position. (EX1011, Roelle, at 3:38-43, 3:67-4:5; EX1030, ANSI B71.1, at 16-17 (10.7.2.1-2) (requiring only that the handle lock in the "operating position"); *see generally* EX1008, 16 CFR 1205 (failing to even mention a lock or locking system).) Again, this confirms that "safety" would not have motivated a POSITA to combine Outils with Roelle as proposed.

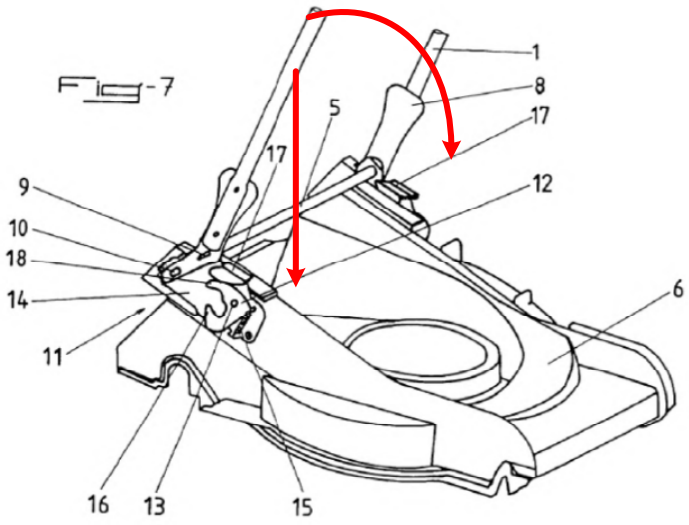
162. Moreover, a POSITA would have understood that the reason why Roelle's pin 68 and plate 26 locking system is included in Roelle's lawnmower is inapplicable to Outils' lawnmower, and thus a POSITA would have had no reason to add Roelle's pin 68 and plate 26 locking system to Outils.

163. In Roelle, the center-of-mass of the handle 24 is located behind the lawnmower main body 12 when the handle 24 is in the alleged "accommodating position" of Figure 2, and thus gravity would cause Roelle's handle 24 to automatically and inconveniently rotate back to the in-use position of Figure 1 if there were no locking mechanism present. Accordingly, Roelle adopted a pin 68 and plate 26 locking system to prevent gravity from rotating the handle 24 back into the in-use position so that the user can access the grass cuttings container 38.




(EX1011, Roelle, at FIG. 2 (annotated).)

164. In Outils, however, the center-of-mass of the handle 1 is located over the lawnmower main body 6 when the handle 1 is in the alleged "accommodating position" of Figure 7, and thus gravity would cause Outils' handle 1 to "lock" in the non-use position of Figure 7. Thus, a POSITA would have known that there is no reason to add a mechanical locking mechanism to Outils to lock the handle in the non-use position.




(EX1014, Outils, at FIG. 7 (annotated).)

165. A POSITA would not have combined the handle locking mechanism of Roelle with Outils as it would only have added extra expense and complication and Outils already solved the problem of the handle being held in place for emptying the grass clippings by using gravity.

166. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Roelle as proposed.

**b. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Matsunaga As Proposed.**

167. Petitioner proposes implementing Outils' actuator 23 using Matsunaga's contact switches 11 or 12. (Paper 1 at 43-44.) Petitioner asserts that a POSITA would have been motivated to make this modification "from the disclosure of Matsunaga that it is not desirable to pass the high current needed to power a lawn mowing motor through contact switches" and that it is instead "preferable to use smaller capacity contact switches … and to avoid the thick wiring … and associated danger of high current flowing through contact switches." (*Id*. at 41-42.)

168. Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Matsunaga as proposed because, as discussed in detail above, each of Petitioner's alleged reasons for combining Outils with Matsunaga is unsupported.

169. Additionally, a POSITA would not have been motivated to combine Outils with Matsunaga because, as discussed in detail above, Matsunaga's teachings are irrelevant to Outils' lawnmower.

170. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Matsunaga as proposed.

### B. Ground 2: Petitioner Has Failed To Show That Challenged Claims 8-10 and 18-20 Of The '26686 Patent Are Obvious Over Outils In View Of Roelle, Matsunaga, Langdon, And Nakano.

#### 1. Petitioner Has Failed To Show That Nakano Is Analogous Art To The Claimed Invention Of The '26686 Patent.

171. Petitioner has failed to show that Challenged Claims 8-10 and 18-20 of the '26686 patent are obvious over Outils in view of Roelle, Matsunaga, Langdon, and Nakano because, as discussed above, Petitioner has failed to show that Nakano is analogous art to the claimed invention of the '26686 patent.

#### 2. Petitioner Has Failed To Show That The Combination Of Outils With Roelle, Matsunaga, Langdon, And Nakano Discloses, Teaches, Or Suggests Every Limitation Of Challenged Claims 8-10 And 18-20 Of The '26686 Patent.

##### a. Petition Has Failed To Show That Nakano Discloses, Teaches, Or Suggests "a third control device unlocks the first control device so that the first control device is capable of starting the motor, and … the third control locks the first control device so that the first control device is not capable of starting the motor" ("Third Control Device Limitation").

172. Under the Third Control Device Limitation, the claimed "third control device" of the control system must be configured to be controlled by the telescopic action of a telescopic handle, must be configured to "unlock" (*i.e.*, electrically enable) the claimed "first control device" so that the first control device is capable of starting the motor, and must be configured to "lock" (*i.e.*, electrically disable) the first control device so that the first control device is not capable of starting the motor. (EX1001, '26686 patent, at claims 8 and 18.)

173. Petitioner relies solely on Nakano for the Third Control Device Limitation. (Paper 1 at 54-64.) Petitioner asserts that Nakano discloses a telescoping handle that purportedly includes a "pipe 40," a "pipe 80," and a "handle unit 41." (*Id*. at 55.) Petitioner also asserts that Nakano

discloses several "control devices" that purportedly meet the Third Control Device Limitation. (*Id*. at 57.)

174. Petitioner cannot show that any of Nakano's "control devices" are the claimed "third control device" configured to be controlled by the telescopic action of a telescopic handle because, as discussed above, Nakano does not disclose, teach, or suggest a telescopic handle.

175. Additionally, Petitioner has failed to show that Nakano discloses, teaches, or suggests the Third Control Device Limitation because Petitioner does not assert that Nakano's "control devices" unlock or lock any alleged "first control device" as claimed. (*See generally id*. at 54-64.) Rather, Petitioner merely asserts that Nakano's "control devices" enable or disable Nakano's alleged "operation assembly" – which, again, is different than the claimed "first control device." (*Id*. at 57, 63.)

176. Thus, Petitioner has failed to show that Nakano discloses, teaches, or suggests the Third Control Device Limitation.

**3. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Roelle, Matsunaga, Langdon, And Nakano.**

**a. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Langdon As Proposed.**

177. Challenged Claims 8 and 18 recite that "the handle comprises a plurality of telescopic members for connecting the operation assembly to the main body." (EX1001, '26686 patent, at claims 8 and 18.) Petitioner concedes that Outils does not disclose a handle comprising a plurality of telescopic members, but asserts that it would have been obvious to use Langdon's telescopic handle in Outils' mower. (Paper 1 at 52-54.) Petitioner asserts that a "POSITA would have been motivated by the collapsibility of Langdon's telescopic handle, and by the fact that it does not have to be removed from the lawnmower body," and that a "POSITA would have

recognized the advantage of collapsing Outils' handle to make the lawnmower easier to ship and store." (*Id*. at 53.)

178. As discussed in detail above, a POSITA would not have been motivated to use Langdon's telescopic handle in Outils' lawnmower because: (i) Outils' lawnmower is incompatible with a telescopic handle; and (ii) Outils already suggests that its handle is collapsible without being removed from the lawnmower body.

**b. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Nakano As Proposed.**

179. Petitioner proposes "incorporating" Nakano's alleged "control devices" in Outils' "modified" lawnmower (*i.e.*, Outils' lawnmower with a telescopic handle). (Paper 1 at 65.)

180. Petitioner provides no reasons why a POSITA would have combined Outils' modified lawnmower with Nakano and does not even assert that a POSITA would have been motivated to combine Outils' modified lawnmower with Nakano. (*See generally* Paper 1 at 54-67.)

181. Petitioner also fails to explain how Outils' modified lawnmower would be combined with Nakano to arrive at the claimed invention of Challenged Claims 8 and 18. For example, Challenged Claims 8 and 18 recite that the claimed "third control device" must be configured to "unlock" and "lock" the claimed "first control device." (EX1001, '26686 patent, at claims 8 and 18.) But Petitioner does not even assert that Nakano's alleged "control devices" would unlock or lock Outils' electrical supply contactor (*i.e.*, the alleged "first control device") as claimed. (*See generally* Paper 1 at 54-64.)

182. Petitioner states in the Petition that Nakano purportedly "improves safety of a telescoping handle by detecting whether it has partially collapsed, and braking/disabling the grass cutter's motor accordingly." (Paper 1 at 55.) To the extent the Board considers this statement a

purported motivation to combine, Nakano's alleged "control devices" would not have "improved the safety" of Outils' modified lawnmower—assuming a POSITA would have and could have modified Outils to have a telescopic handle in the first place (they would not have and could not have done so)—because, as discussed in detail above, Outils' modified lawnmower would already have included a system for braking/disabling the motor when the handle is partially collapsed.

183. Additionally, Petitioner states in the Petition that a "POSITA would [] have found [Outils' and Nakano's] designs to [be] compatible for obvious combination." (Paper 1 at 57.) To the extent the Board considers this statement a purported motivation to combine, the statement is without merit because even a cursory review of Outils and Nakano demonstrates that Outils' and Nakano's designs are very dissimilar and not compatible. For example, (i) Outils discloses a lawnmower, whereas Nakano discloses a bush cutter; (ii) Outils' lawnmower is pushed from behind, whereas Nakano's bush cutter is hand-held; and (iii) Outils' cutting blade is covered by a casing, whereas Nakano's cutting blade is exposed. (*See, e.g.,* EX1014, Outils, at FIGS. 1 and 5; EX1015, Nakano, at FIG. 1.) Also, as noted above, Outils' lawnmower and Nakano's bush cutter are subject to different safety standards.

184. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Nakano as proposed.

## XIII. PETITIONER HAS FAILED TO SHOW THAT THE CHALLENGED CLAIMS OF THE '86686 PATENT ARE UNPATENTABLE AS OBVIOUS UNDER 35 U.S.C. § 103.

### A. Ground 1: Petitioner Has Failed To Show That Challenged Claims 1-14 And 18-20 Of The '86686 Patent Are Obvious Over Reichart In View Of Nakano, Outils, And 16 CFR 1205.

#### 1. Petitioner Has Failed To Show That Nakano Is Analogous Art To The Claimed Invention Of The '86686 Patent.

185. Petitioner has failed to show that Challenged Claims 1-14 and 18-20 of the '86686 patent are obvious over Reichart in view of Nakano, Outils, and 16 CFR 1205 because, as discussed above, Petitioner has failed to show that Nakano is analogous art to the claimed invention of the '86686 patent.

#### 2. Petitioner Has Failed To Show That The Combination Of Reichart With Nakano, Outils, And 16 CFR 1205 Discloses, Teaches, Or Suggests Every Limitation Of Challenged Claims 1-14 And 18-20 Of The '86686 Patent.

##### a. Petitioner Has Failed To Show That Outils Discloses, Teaches, Or Suggests "a second control device configured to … unlock[] the first control device so that the first control device allows starting of the motor, and … lock[] the first device so that the first control device is not allowed to start the motor" ("Second Control Device Limitation").

186. Under the Second Control Device Limitation, the claimed "second control device" of the control system must be configured to "unlock" the claimed "first control device" so that the first control device can allow the motor to start, and must be configured to "lock" the first control device so that the first control device is not allowed to start the motor. (EX1001, '86686 patent, at claims 1 and 11.)

187. Petitioner relies solely on Outils for the Second Control Device Limitation. (Paper 1 at 39-41, 66.) Petitioner asserts that Outils' "actuator 23" is the claimed "second control device." (*Id*. at 39-40.) According to Petitioner, Outils' actuator 23 meets the Second Control Device

Limitation because the actuator 23 purportedly "halts and prevents the operation assembly [*i.e.*, hold-to-run component 30] from activating a lawnmower motor when the handle is raised to a vertical position permitting access to a cut-grass collector." (*Id*. at 39 (citing EX1003, Reed Declaration, ¶ 86); *see also id*. at 40 (citing EX1003, Reed Declaration, ¶ 88).)

188. At the outset, Petitioner's assertion that Outils' actuator 23 prevents Outils' alleged operation assembly (*i.e.*, hold-to-run component 30) from activating the motor is incorrect.

189. Outils does not disclose, teach, or suggest that actuator 23 prevents Outils' hold-to-run component 30 from activating the motor because, as discussed in detail above, the actuator 23 and the hold-to-run component 30 are components of separate, distinct embodiments of Outils' disclosed and claimed "safety device." Outils' specification treats these embodiments as wholly separate and independently functioning embodiments with their own dedicated figures and claims. (*See generally* EX1014, Outils; *compare id*. at FIG. 1, claims 2-3 *with id*. at FIG. 5, claim 4.)

190. Further, in Outils the actuator 23 from the second embodiment and the hold-to-run component 30 / remote control cable 29 / electrical supply contactor system from the first embodiment have the exact same function of stopping and disabling the motor when the handle is rotated out of position. (*Id*. at 4:24-27, 8:27-28.)

191. Similarly, Outils does not disclose, teach, or suggest that actuator 23 prevents Outils' hold-to-run component 30 from activating the motor because Outils at no point discloses, teaches, or suggests that hold-to-run component 30 functions to activate the motor. (*See generally* EX1014, Outils.) At best, Outils discloses that hold-to-run component 30 functions to disable the motor when hold-to-run component 30 is not actuated. (*Id*. at 4:5-8, 4:14-17, 5:4-8, claim 3.) Notably, Outils does not disclose how the mower is started. (*See generally id*.) Outils' lawnmower

could start in many different ways. For example, Outils' lawnmower could have a pull cord, a separate start switch, a relay, etc.

192. Thus, Petitioner has failed to show that Outils discloses, teaches, or suggests the Second Control Device Limitation.

**b. Petitioner Has Failed To Show That Nakano Discloses, Teaches, Or Suggests "a third control device configured to be controlled according to the sliding position of the operation assembly relative to the main body" ("Third Control Device Limitation").**

193. Under the Third Control Device Limitation, the claimed "third control device" must be configured to be controlled according to the sliding position of the operation assembly relative to the main body. (EX1001, '86686 patent, at claim 1.)

194. Petitioner relies solely on Nakano for the Third Control Device Limitation. (Paper 1 at 41-54.) Petitioner asserts that Nakano's "trigger lever 44" is the claimed "operation assembly." (*Id*. at 47.) Petitioner also asserts that Nakano discloses several "control devices" that purportedly meet the Third Control Device Limitation. (*Id*. at 46.)

195. Petitioner cannot show that any of Nakano's "control devices" are the claimed "third control device" configured to be controlled according to the sliding position of an operation assembly relative to the main body because Nakano does not disclose, teach, or suggest that its "trigger lever 44" (*i.e.*, the alleged "operation assembly") can slide. Rather, Nakano expressly discloses that "movable pipe 80" is the component that slides in Nakano's bush cutter. (EX1015, Nakano, at 7-8, FIGS. 1-2.) Nakano's "trigger lever 44" (which is part of "handle unit 41"), on the other hand, is "bolted and fixed" to a "fixed pipe 40." (*Id*.)

196. Accordingly, Petitioner has failed to show that Nakano discloses, teaches, or suggests the Third Control Device Limitation.

**c. Petitioner Has Failed To Show That Reichart Discloses, Teaches, Or Suggests "an electric power source and a power**

**supply circuit for enabling the electric power source to provide power to the motor."**

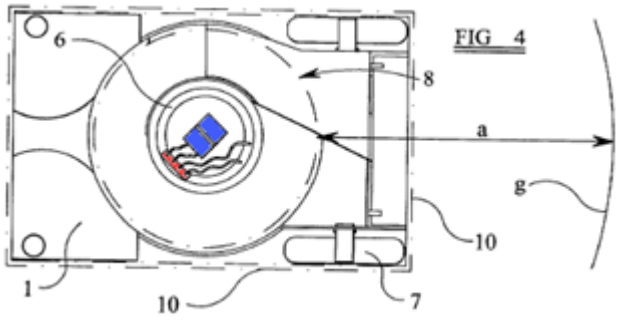
197. Petitioner asserts, without explanation, that a "POSITA would have understood [Reichart's] references to electricity as being consistent with a lawn mower that could be powered by a spark-ignition gasoline engine or an electric motor with electric power source (battery)." (Paper 1 at 54 (citing EX1003, Reed Declaration, ¶ 105).)

198. At the outset, Reichart says nothing about an electric motor, an electric power source, or a power supply circuit. (*See generally* EX1007, Reichart.) Thus, Reichart does not expressly disclose an "electric motor," an "electric power source," or a "power supply circuit." Similarly, Reichart does not necessarily or inherently disclose an "electric motor," an "electric power source," or a "power supply circuit."

199. Additionally, Petitioner's assertion that Reichart's lawnmower "could be powered by … an electric motor with electric power source (battery)" is without merit because it is expressly contradicted by Reichart.

200. Reichart expressly discloses that its lawnmower is powered by an "engine 6." (EX1007, Reichart, at 4:4-5, 6:14-15, FIG. 1, FIGS. 3-4.) A POSITA would have understood a lawnmower engine such as Reichart's "engine 6" to be a gasoline-powered internal combustion engine, not a battery-powered electric motor. (*See, e.g.,* EX1008, 16 CFR 12015, at 2 (1205.3(a)(6)) (defining an "engine" as "a power producing device which converts thermal energy from a fuel into mechanical energy."); EX1014, Outils, at 3:30 (distinguishing between an "electric motor" and a "thermal engine"); EX1015, Nakano, at 1 (distinguishing between an "internal combustion engine" and an electric "motor").) Further, Reichart discloses a "spiral cable as the electrical connection between the machine drive and the operating elements" (EX1007, Reichart, at 6:9-11), and a POSITA would have understood that this disclosure is consistent with a wire for

the kill switch on the coil secondary to stop the engine when it is grounded. I also note that Reichart's figures show a magneto (red below) and a capacitor (blue below) that would be common to the ignition system of a gas-powered engine:




(EX1007, Reichart, at FIG. 4.)

201. Because Petitioner has failed to show (and cannot show) that Reichart's lawnmower is battery-powered, Petitioner cannot show that Reichart discloses, teaches, or suggests the claimed "electric power source" or "power supply circuit" providing power to a motor.

### 3. Petition Has Failed To Show That A POSITA Would Have Been Motivated To Combine Reichart With Nakano, Outils, And 16 CFR 1205.

#### a. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Reichart With Nakano As Proposed.

202. Petitioner does not assert that Reichart discloses, teaches, or suggests the claimed "first control device" or the claimed "third control device," and instead relies solely on Nakano for these limitations. (*See generally* Paper 1 at 36-37, 41-54.)

203. Petitioner asserts that a "POSITA would have been motivated by Reichart's description of an operation assembly" to include Nakano's alleged "first control device" (*i.e.*, switch 21) as a switch in Reichart's alleged power supply circuit "to connect the electric power source to the motor or disconnect the electric power source from the motor." (Paper 1 at 37.)

204. Petitioner also proposes modifying Reichart's lawnmower to include one or more of Nakano's alleged "third control devices" that are controlled according to the sliding position of Nakano's telescopic tubes. (*See, e.g., id*. at 44-47.) Petitioner asserts that a POSITA would have been motivated to add Nakano's alleged "third control devices" to Reichart's lawnmower: (i) "to reduce the chance of injury to the user"; (ii) because a POSITA purportedly would have found Reichart's and Nakano's designs "compatible for obvious combination"; and (iii) in view of certain governmental regulations and industry safety standards for lawnmowers. (*Id*. at 42-47 (citing EX1003, Reed Declaration, ¶¶ 91-94, 97).)

205. Petitioner has failed to show that a POSITA would have been motivated to add Nakano's alleged "first control device" or Nakano's alleged "third control devices" to Reichart's lawnmower because (i) Nakano's alleged "first control device" would have been inoperable in Reichart's engine-powered lawnmower; (ii) each of Petitioner's three asserted reasons for adding Nakano's alleged "third control devices" to Reichart's lawnmower is without merit (*i.e.*, Nakano's alleged "third control devices" would have had no impact on the safety of Reichart's lawnmower, Reichart's lawnmower and Nakano's bush cutter are incompatible, and Reichart's lawnmower and Nakano's bush cutter are subject to different safety standards); and (iii) adding Nakano's alleged "third control devices" to Reichart's lawnmower would have changed Reichart's basic principle of operation and would have rendered Reichart's lawnmower inoperable for its intended purpose.

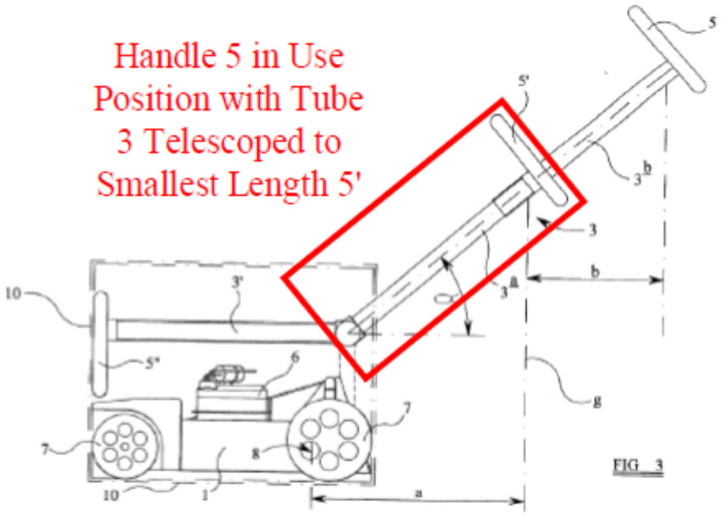
206. First, Nakano's alleged "first control device" would have been inoperable in Reichart's engine-powered lawnmower.

207. According to Petitioner, Nakano's switch 21 controls the connection between an electric power source and an electric motor of a battery-powered machine by being placed in a power supply circuit of the machine. (Paper 1 at 36-37; *see also* EX1015, Nakano, at FIGS. 7 and

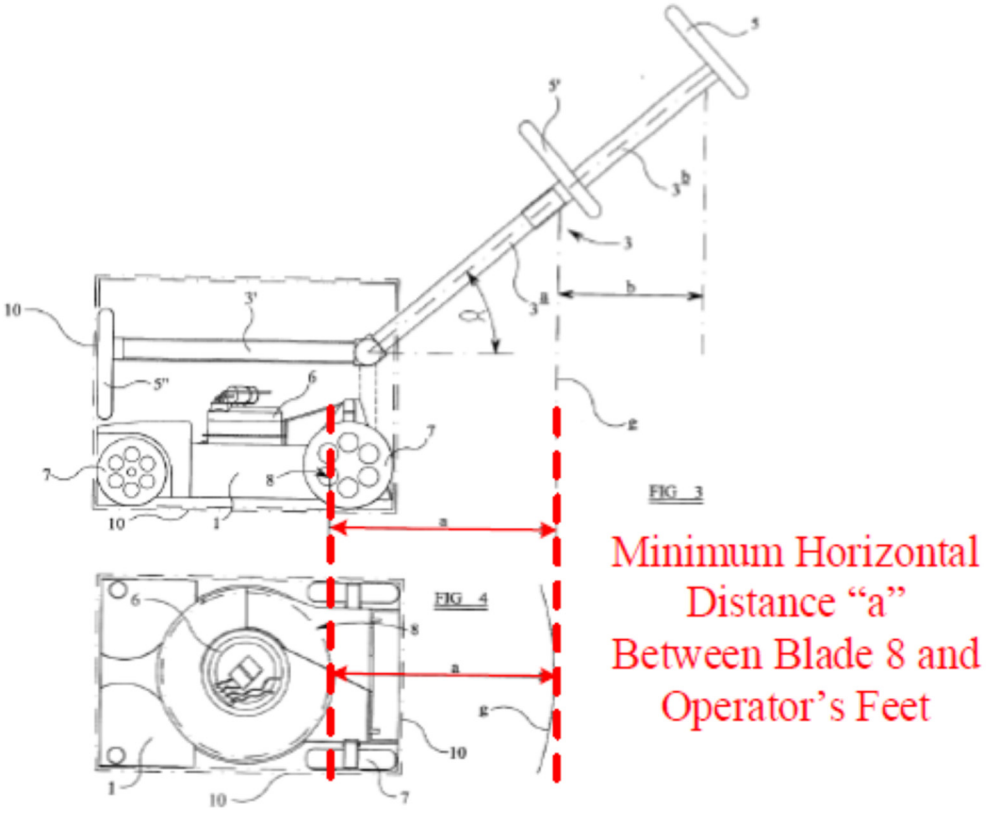
11 (showing switch 21 in the circuit connecting battery 2 to motor 153).) But Reichart's engine-powered lawnmower does not have—and Petitioner has failed to establish that a POSITA would have modified Reichart's lawnmower to have—any of the components necessary for Nakano's switch 21 to operate (*i.e.*, a power supply circuit, an electric power source, and an electric motor). Thus, Nakano's switch 21 would have been inoperable in Reichart's lawnmower, and a POSITA would not have been motivated to add Nakano's alleged "first control device" (*i.e.*, switch 21) to Reichart as proposed.

208. Additionally, Petitioner's first reason for adding Nakano's alleged "third control devices" to Reichart's lawnmower (*i.e.*, "to reduce the chance of injury to the user") is without merit because adding Nakano's alleged "third control devices" to Reichart's lawnmower would have had no impact on the safety of Reichart's lawnmower.

209. Petitioner asserts that a POSITA would have added Nakano's alleged "third control devices" to Reichart's lawnmower to prevent Reichart's motor from starting when the operator is too close to the main body for safe use. (*See* Paper 1 at 43-44; EX1003, Reed Declaration, ¶ 93.) But Reichart already addresses the problem of its telescoping handle bringing the operator being too close to the main body for safe use by: (i) ensuring a safe horizontal distance "a" between the blade circular path 8 and the operator's feet, even when the telescopic tube 3 is telescoped to its smallest length in the "use" position; (ii) increasing the horizontal distance "a + b" between the blade and the operator's feet as the operator's height increases; and (iii) including a locking mechanism in the handle 5 to fix the length of the telescopic tube 3. (EX1007, Reichart, at Abstract, FIGS. 3 and 4, 1:28-2:10, 2:13-15, 2:20-23, 4:22-5:32, claims 1-2 and 4-5.)



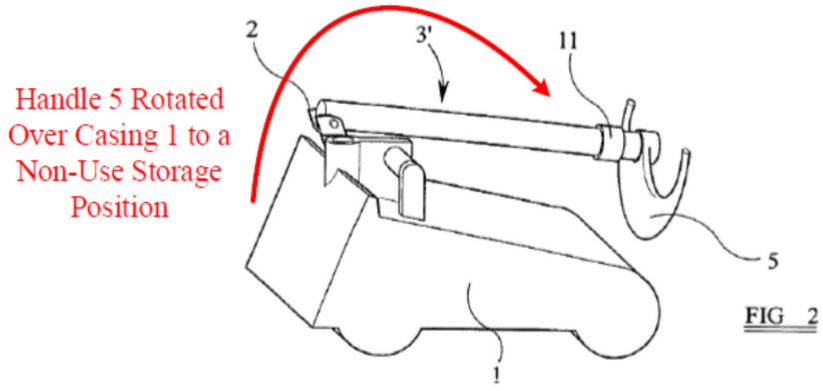

(EX1007, Reichart, at FIG. 3; *see also id*. at 4:31-5:5, 5:29-32, 6:1-5.)




(EX1007, Reichart, at FIGS. 3-4.)

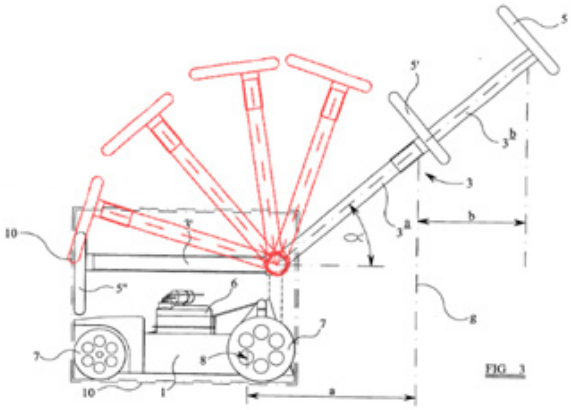
210. The only purported safety issue with Reichart's lawnmower that Petitioner has identified is that the operator is allegedly too close to the main body for safe use when the handle

5 is rotated over the main body 1 to the non-use storage configuration shown in Figure 2. (*See* Paper 1 at 44; *see also* EX1003, Reed Declaration, ¶ 93.)




(EX1007, Reichart, at FIG. 2; *see also id*. at FIG. 3, 3:23-25, 4:8-10 (showing and describing that the handle 5 is rotated over the main body 1 to the non-use storage configuration shown in FIG. 2); *id*. at 4:31-5:3, 6:1-5 (disclosing that the length of the handle 5 does not change when the handle 5 is rotated over the main body 1 to the non-use storage configuration).)

211. Reichart expressly discloses that the length of the handle in its folded condition is the same length as its safe use position for a short person. This is illustrated by the annotated FIG. 3 showing the short handle and folded handle to be the same length:



(EX1007, Reichart, at FIG. 3 (annotated).)

212. As a matter of common sense, adding Nakano's alleged "third control devices"—which purportedly are controlled according to the sliding position of Nakano's telescoping tubes

(Paper 1 at 44, 46-47, 62-63)—to Reichart's lawnmower would have done nothing to address the alleged safety issue of Reichart's handle 5 rotating to a non-use storage position.

213. Thus, adding Nakano's alleged "third control devices" to Reichart's lawnmower would have had no impact on the safety of Reichart's lawnmower.

214. Further, Petitioner's second reason for adding Nakano's alleged "third control devices" to Reichart's lawnmower (*i.e.*, Reichart's and Nakano's designs are purportedly "compatible for obvious combination") is without merit because even a cursory review of Reichart and Nakano demonstrates that Reichart's and Nakano's designs are very dissimilar and not compatible. For example, (i) Reichart discloses a lawnmower, whereas Nakano discloses a bush cutter; (ii) Reichart's lawnmower is pushed from behind, whereas Nakano's bush cutter is hand-held; and (iii) Reichart's cutting blade is covered by a casing, whereas Nakano's cutting blade is exposed. (*See, e.g.,* EX1015, Nakano, at FIG. 1; EX1007, Reichart, at FIG. 3.) Reichart also does not have an electric motor to utilize Nakano's controls. Further, Reichart's lawnmower and Nakano's bush cutter are subject to different safety standards.

215. Additionally, Petitioner's third reason for adding Nakano's alleged "third control devices" to Reichart's walk-behind lawnmower (*i.e.*, in view of 16 CFR 1205 and the ANSI lawnmower standard) is without merit because (i) Nakano is a hand-held bush cutter, not a lawnmower, and walk-behind/ride-on lawnmower standards/regulations would not have led a POSITA to look to Nakano's hand-held bush cutter; and (ii) neither 16 CFR 1205 nor the ANSI mower standard discloses or requires a safety feature like Nakano's alleged "third control devices."

216. First, Nakano is a hand-held bush cutter, not a lawnmower (*see generally* EX1015, Nakano); there are different safety standards for lawnmowers and bush cutters (*compare* EX1030, ANSI Mower Standard *with* EX2012, ANSI B175.3); and lawnmower regulations and standards

such as 16 CFR 1205 and the ANSI lawnmower standard would have led a POSITA away from Nakano's hand-held bush cutter.

217. Second, neither 16 CFR 1205 nor the ANSI lawnmower standard discloses or requires a safety feature like Nakano's alleged "third control devices" that are purportedly controlled according to the sliding position of Nakano's telescoping tubes. (*See generally* EX1008, 16 CFR 1205; EX1030, ANSI Standard.)

218. Moreover, a POSITA would not have added Nakano's alleged "third control devices" to Reichart's lawnmower because doing so would have changed Reichart's basic principle of operation and would have rendered Reichart's lawnmower inoperable for its intended purpose.

219. Reichart's basic principle of operation and its express intended purpose is to provide a lawnmower with a telescopic handle that can be adjusted between a minimum and a maximum length to accommodate operators having different heights, while still maintaining a minimum horizontal distance between the operator and the cutting blade. (*See, e.g.,* EX1007, Reichart, at Abstract, 1:28-2:10, 4:22-5:18, claim 1.)

220. Nakano's alleged "third control devices," on the other hand, render Nakano's motor inoperable when the telescopic tubes of the hand-held trimmer are shortened from their fully-extended length. (Paper 1 at 46-47; EX1015, Nakano, at 5:7-17, 9:15-22, FIGS. 1-2, claim 12.)

221. As a matter of common sense, adding Nakano's alleged "third control devices" to Reichart's lawnmower would have changed Reichart's basic principle of operation because Reichart's lawnmower would be usable at only the fully-extended handle length (as opposed to at a variety of lengths, as Reichart teaches). (EX1007, Reichart, at Abstract.) Similarly, adding Nakano's alleged "third control devices" to Reichart's lawnmower would render Reichart's

lawnmower inoperable for its intended purpose because Reichart's lawnmower would no longer be able to accommodate users having a variety of different heights. Instead, Reichart's lawnmower would be able to accommodate only the tallest of users.

222. Accordingly, a POSITA would not have combined Reichart with Nakano as Petitioner proposes.

**b. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Reichart With Outils As Proposed.**

223. Petitioner asserts that a POSITA would have been motivated to "provide" Reichart with Outils' alleged "second control device" (*i.e.*, actuator 23) because (i) a POSITA allegedly would have known "that activation of Reichart's lawnmower at any non-use position would be dangerous to the operator and other persons nearby"; and (ii) in view of 16 CFR 1205's requirement that a lawnmower's blade control system halt the blade's motion "within 3 seconds after release of the control." (Paper 1 at 39, 41.)

224. Petitioner has failed to show that a POSITA would have been motivated to combine Reichart with Outils as proposed because (i) Petitioner has failed to show that a POSITA at the time of the invention of the Challenged Claims would have considered Reichart's lawnmower to be "dangerous" or to present an unreasonable risk of inadvertent activation when the handle is in a non-use position; and (ii) 16 CFR 1205's user-operated blade control system has no logical relationship to Outils' cam-actuated actuator 23.

225. First, a POSITA would have understood that Reichart's lawnmower complies with the ANSI B71.1 and 16 CFR 1205 blade control system requirement. (EX2028, Reed Transcript, at 131:21-132:2.) Moreover, Petitioner's expert testified that a POSITA would have considered a lawnmower that complies with the ANSI B71.1 and 16 CFR 1205 blade control system requirement to be "reasonably safe." (EX2028, Reed Transcript, at 59:9-20; *see also id*. at 62:3-

6, 77:4-14, 77:17-20 (Petitioner's expert testifying that whether a lawnmower is reasonably "safe" depends on whether it complies with the ANSI B71.1 lawnmower standard and 16 CFR 1205).) Thus, Petitioner cannot show that a POSITA would have considered Reichart's lawnmower to be "dangerous" or to present an unreasonable risk of inadvertent activation when the handle is in a non-use position because Reichart's lawnmower already complies with the ANSI B71.1 lawnmower standard and 16 CFR 1205.

226. Second, 16 CFR 1205 and ANSI B71.1's user-operated blade control system requirement has no logical relationship to Outils' cam-actuated actuator 23. 16 CFR 1205 and ANSI B71.1 require a two-part, user-operated blade control system located in the "operating control zone" at the end of the handle that comprises: (i) an operator-actuated control that must be actuated to start the blade and must be continuously contacted for the blade to continue to be driven; and (ii) another means which must be manually actuated before a stopped blade can be restarted. (EX1008, 16 CFR 1205, at 7-8 (1205.5(a)(1)-(2), (c)); EX1030, ANSI B71.1, at 86 (stating that the requirements for pedestrian-controlled mowers that fall within the scope of 16 CFR 1205 "are not repeated in this standard."); EX2028, Reed Transcript, at 131:5-20.) Unlike 16 CFR 1205 and ANSI B71.1's user-operated blade control system, Outils' actuator 23 is located on the main body of the lawnmower and is actuated by a cam 24. (EX1014, Outils, at 8:22-29, FIG. 10.) Accordingly, 16 CFR 1205 and ANSI B71.1's user-operated blade control system requirement has no logical relationship to Outils' actuator 23 and would not have led a POSITA to add Outils' actuator 23 to Reichart's lawnmower.

227. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Reichart with Outils as proposed.

**c. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Modify Reichart's Lawnmower To Have An**

**Electric Motor, A Power Supply Circuit, And An Electric Power Source As Proposed.**

228. Petitioner asserts that a "POSITA would have found it obvious" to "use" an electric motor, a power supply circuit, and an electric power source in Reichart's lawnmower: (i) in view of the purported "prevalence of suitable electric motors and electric power sources in the field"; (ii) to reduce exhaust emissions; (iii) because Nakano states that noise is not emitted and "running costs are excellent" in electric bush cutters; (iv) because battery-powered motors offer freedom over electrical cords; and (v) because Nakano's alleged "third control devices" that are controlled according to the telescoping position of Nakano's handle are "based on an electrically powered motor that receives power from an onboard electric power source." (Paper 1 at 54-55; *see also id.* at 31.)

229. At the outset, a POSITA would not have been motivated to replace Reichart's gasoline-powered internal combustion engine with a battery-powered electric motor because doing so would have fundamentally altered Reichart's principle of operation.

230. The principle operating component of any power lawnmower is the driving mechanism (*e.g.*, an internal combustion engine or an electric motor). The driving mechanism causes the cutting blade to rotate and propels the lawnmower forward in the case of self-propelled lawnmowers.

231. Reichart expressly discloses that its driving mechanism is an "engine 6," which, as discussed above, a POSITA would have understood to be a gasoline-powered internal combustion engine. (EX1007, Reichart, at 4:4-5, 6:14-15, FIG. 1, FIGS. 3-4.) Replacing Reichart's gasoline-powered internal combustion engine with a battery-powered electric motor would have fundamentally altered Reichart's principle of operation from a gasoline-powered lawnmower to a battery-powered lawnmower.

232. Additionally, converting Reichart from an engine-powered lawnmower to an electric motor-powered lawnmower would have required a fundamental redesign of Reichart's lawnmower, including changing the connection between the driving mechanism and the starting/control components, and changing the shape of the main body to accommodate a different driving mechanism and power supply. Such changes would have amounted to an entirely new design, would have taken a significant amount of time and money to plan and complete, and a POSITA would not have undertaken such a redesign without a very compelling reason to do so – which Petitioner has failed to provide.

233. Additionally, Petitioner has failed to show that a POSITA would have been motivated to "use" an electric motor, a power supply circuit, and an electric power source in Reichart's lawnmower because each of Petitioner's purported reasons for modifying Reichart is unsupported and/or legally irrelevant.

234. First, the mere alleged existence of electric motors and electric power sources in the prior art fails to explain why a POSITA would have modified Reichart to have an electric motor and electric power source.

235. Second, Petitioner has failed to consider the disadvantages associated with converting Reichart's gas-powered lawnmower to a battery-powered lawnmower, including, for example, (i) the significant time, effort, and expense that a POSITA would have incurred in redesigning Reichart's lawnmower to have an electric motor instead of a gas-powered engine; and (ii) the skepticism in the market at the time of the invention of the Challenged Claims that battery-powered lawnmowers could produce enough power and battery life to compete with gas-powered lawnmowers. It is well accepted that battery-powered lawnmowers may only operate in the 45-60 minute range before needing to be recharged, whereas gas-powered lawnmowers can effectively

work continuously for many days if need be with a quick simple gas refill. Electric lawnmowers also do not handle thicker grass as well as gas-powered lawnmowers.

236. Third, Nakano's statements about noise and running costs expressly apply only to electric bush cutters, not lawnmowers. (EX1015, Nakano, at 1.) Petitioner has failed to provide any evidence comparing the running costs of electric lawnmowers to those of gas-powered lawnmowers. (Paper 1 at 31, 54-55.) Further, electric lawnmowers are not noiseless. They operate at about 75 decibels, as loud as the average washing machine. (*See, e.g.,* https://homeguides.sfgate.com/differences-between-electric-gas-lawn-mowers-75889.html.)

237. Fourth, gas-powered lawnmowers offer the same "freedom over electrical cords" that battery-powered lawnmowers offer.

238. Fifth, as discussed above, Petitioner has failed to establish that a POSITA would have combined Nakano's alleged "third control devices" with Reichart.

239. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to modify Reichart to have an electric motor, a power supply circuit, and an electric power source as proposed.

### B. Ground 2: Petitioner Has Failed To Show That Challenged Claims 15-17 Of The '86686 Patent Are Obvious Over Reichart In View Of Nakano, Outils, Matsunaga, And 16 CFR 1205.

240. Petitioner has failed to show that Reichart in combination with Nakano, Outils, Matsunaga, and 16 CFR 1205 renders Challenged Claims 15-17 obvious in view of their dependency on Challenged Claim 11.

## XIV. PETITIONER HAS FAILED TO SHOW THAT THE CHALLENGED CLAIMS OF THE '588 PATENT ARE UNPATENTABLE AS OBVIOUS UNDER 35 U.S.C. § 103.

### A. Ground 1: Petitioner Has Failed To Show That Challenged Claims 1-10 Of The '588 Patent Are Obvious Over Reichart In View Of Nakano.

#### 1. Petitioner Has Failed To Show That Nakano Is Analogous Art To The Claimed Invention Of The '588 Patent.

241. Petitioner has failed to show that Challenged Claims 1-10 of the '588 patent are obvious over Reichart in view of Nakano because, as discussed above, Petitioner has failed to show that Nakano is analogous art to the claimed invention of the '588 patent.

#### 2. Petitioner Has Failed To Show That The Combination Of Reichart And Nakano Discloses, Teaches, Or Suggests Every Limitation Of Challenged Claims 1-10 Of The '588 Patent.

##### a. Petitioner Has Failed To Show That Nakano Discloses, Teaches, Or Suggests "a control device for sending a control signal to cause the motor to be activated by the operation assembly when one of the plurality of telescopic members is caused to be moved to a predetermined position relative to another one of the plurality of telescopic members or to prevent the motor from being activated by the operation assembly when the one of the plurality of telescopic members is caused to be moved away from the predetermined position relative to the another one of the plurality of telescopic members" ("Control Device Limitation").

242. Under the Control Device Limitation, the claimed lawnmower comprises a "control device" that is configured to be controlled by the telescopic action of a telescopic handle. (EX1001, '588 patent, at claim 1.)

243. Petitioner relies solely on Nakano for the Control Device Limitation. (Paper 1 at 35-49.) Petitioner asserts that Nakano discloses a telescoping handle that purportedly includes a "pipe 40," a "pipe 80," and a "handle unit 41." (*Id*. at 38.) Petitioner also asserts that Nakano discloses several "control devices" that purportedly meet the Control Device Limitation. (*Id*. at 40.)

244. Petitioner cannot show that any of Nakano's "control devices" are the claimed "control device" configured to be controlled by the telescopic action of a telescopic handle because, as discussed above, Nakano does not disclose, teach, or suggest a telescopic handle.

245. Thus, Petitioner has failed to show that Nakano discloses, teaches, or suggests the Control Device Limitation.

### 3. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Reichart With Nakano As Proposed.

246. Petitioner proposes modifying Reichart's lawnmower to include one or more of Nakano's alleged "control devices" that disable Nakano's motor when Nakano's telescoping tubes are partially collapsed. (Paper 1 at 38-40, 45; EX1003, Reed Declaration, ¶¶ 81, 85.) Petitioner asserts that a POSITA would have been motivated to add Nakano's alleged "control devices" to Reichart's lawnmower: (i) "to reduce the chance of injury to the user"; (ii) because a POSITA purportedly would have found Reichart's and Nakano's designs "compatible for obvious combination"; and (iii) in view of certain governmental regulations and industry safety standards for lawnmowers. (Paper 1 at 36-40; EX1003, Reed Declaration, ¶¶ 63-67.)

247. As discussed in detail above, Petitioner has failed to show that a POSITA would have been motivated to add Nakano's alleged "control devices" to Reichart's lawnmower because (i) each of Petitioner's three purported reasons for adding Nakano's alleged "control devices" to Reichart's lawnmower is without merit; and (ii) adding Nakano's alleged "control devices" to Reichart's lawnmower would have changed Reichart's basic principle of operation and would have rendered Reichart's lawnmower inoperable for its intended purpose.

248. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Reichart with Nakano as proposed.

### B. Ground 2: Petitioner Has Failed To Show That Challenged Claims 11, 15, And 20 Of The '588 Patent Are Obvious Over Outils In View Of Matsunaga.

#### 1. Petitioner Has Failed To Show That Matsunaga Is Analogous Art To The Claimed Invention Of The '588 Patent.

249. Petitioner has failed to show that Challenged Claims 11, 15, and 20 of the '588 patent are obvious over Outils in view of Matsunaga because, as discussed above, Petitioner has failed to show that Matsunaga is analogous art to the claimed invention of the '588 patent.

#### 2. Petitioner Has Failed To Show That The Combination Of Outils With Matsunaga Discloses, Teaches, Or Suggests Every Limitation of Challenged Claims 11, 15, And 20 Of The '588 Patent.

##### a. Petitioner Has Failed To Show That Outils Discloses, Teaches, Or Suggests "a second control device disposed at a position proximate to the pivot axis and configured to be controlled according to the rotating position of the handle wherein, … the control system allows starting of the motor and, … the control system is not allowed to start the motor" Or "a second control device disposed at a position proximate to the end of the handle and configured to … unlock[] the first control device so that the first control device allows starting of the motor, and … lock[] the first device so that the first control device is not allowed to start the motor" (Collectively, The "Second Control Device Limitations").

250. According to Challenged Claim 11 of the '588 patent, the claimed "second control device" must be configured to be controlled according to the rotating position of the handle. (EX1001, '588 patent, at claim 11.) When the handle rotates to a predetermined position relative to the main body, the control system allows starting of the motor and, when the handle rotates to a position other than the predetermined position, the control system is not allowed to start the motor. (*Id*.)

251. Similarly, Challenged Claim 15 of the '588 patent recites that the claimed "second control device" of the control system must be configured to be controlled according to the rotating position of the handle, must be configured to "unlock" the claimed "first control device" so that

the first control device allows starting of the motor when the handle rotates to the predetermined position, and must be configured to "lock" the claimed first control device so that the first control device is not allowed to start the motor when the handle rotates to a position other than the predetermined position. (*Id*. at claim 15.)

252. Petitioner relies solely on Outils for the Second Control Device Limitations. (Paper 1 at 70, 75.) Petitioner asserts that Outils' "activation actuator 23" is the claimed "second control device" (*id*.), and that Outils' "electrical supply contactor" is the claimed "first control device" (*id*. at 70). Petitioner asserts that Outils meets Challenged Claim 11 of the '588 patent in part because "when the handle … rotate[s] to the predetermined (in-use) position relative to the main body (casing 6), the control system (including actuator 23 which engages cam 24) allows the first control device (the electrical supply contactor controlled by hold-to-run component 30) to start the motor." (*Id*.) Similarly, Petitioner asserts that Outils meets Challenged Claim 15 of the '588 patent in part because "the second control device (activation actuator 23 which engages cam 24) unlocks/allows the first control device (the electrical supply contactor controlled by hold-to-run component 30) to start the motor … [and] the second control device (activation actuator 23 being separated from cam 24) locks/disables the first control device so that it is not allowed to start the motor." (*Id*. at 75.)

253. At the outset, Petitioner's assertion that Outils' actuator 23 unlocks/allows Outils' electrical supply contactor to start the motor and locks/disables Outils' electrical supply contactor so that it is not allowed to start the motor is incorrect.

254. Outils does not disclose, teach, or suggest that actuator 23 unlocks/allows or locks/does not allow Outils' electrical supply contactor to start the motor because, as discussed in detail above, the actuator 23 and the electrical supply contactor are components of separate, distinct

embodiments of Outils' disclosed and claimed "safety device." Outils' specification treats these embodiments as wholly separate and independently functioning embodiments with their own dedicated figures and claims. (*See generally* EX1014, Outils; *compare id*. at FIG. 1, claims 2-3 *with id*. at FIG. 5, claim 4.)

255. Further, in Outils the actuator 23 from the second embodiment and the hold-to-run component 30 / remote control cable 29 / electrical supply contactor system from the first embodiment have the exact same function of stopping and disabling the motor when the handle is rotated out of position. (*Id*. at 4:24-27, 8:27-28.)

256. Similarly, Petitioner has failed to show that Outils' actuator 23 allows / does not allow the electrical supply contactor to start the motor as claimed because at no point does Outils disclose, teach, or suggest that the electrical supply contactor functions to start the motor. (*See generally* EX1014, Outils.) At best, Outils discloses that the electrical supply contactor functions to disable the motor when the handle 1 is rotated out of position or when the hold-to-run component 30 is released. (*Id*. at 4:5-8, 4:14-17, 5:4-8, claim 3.) Notably, Outils does not disclose how the mower is started. (*See generally id*.) Outils' lawnmower could start in many different ways. For example, Outils' lawnmower could have a pull cord, a separate start switch, a relay, etc.

257. Thus, Petitioner has failed to show that Outils discloses, teaches, or suggests the Second Control Device Limitations.

### 3. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Matsunaga As Proposed.

258. Petitioner proposes implementing Outils' actuator 23 using Matsunaga's contact switch 11 or contact switch 12. (Paper 1 at 71-72, 76.) Petitioner asserts that a POSITA would have been motivated to make this modification "from the disclosure of Matsunaga that it is not desirable to pass the high current needed to power a lawn mowing motor through contact switches"

and that it is instead "preferable to use smaller capacity contact switches … and to avoid the thick wiring … and associated danger of high current flowing through contact switches." (*Id*. at 71.)

259. Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Matsunaga as proposed because, as discussed in detail above, each of Petitioner's alleged reasons for combining Outils with Matsunaga is unsupported.

260. Additionally, as discussed in detail above, a POSITA would not have been motivated to combine Outils with Matsunaga because Matsunaga's teachings are irrelevant to Outils' lawnmower.

261. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Matsunaga as proposed.

### C. Ground 3: Petitioner Has Failed To Show That Challenged Claims 12, 16, 17, And 21 Of The '588 Patent Are Obvious Over Outils In View Of Matsunaga, Langdon, And Nakano.

#### 1. Petitioner Has Failed To Show That The Combination Of Outils, Matsunaga, Langdon, And Nakano Discloses, Teaches, Or Suggests Every Limitation Of Challenged Claims 12, 16, 17, And 21.

##### a. Petitioner Has Failed To Show That Nakano Discloses, Teaches, Or Suggests "wherein the handle comprises a plurality of telescopic tubes, and the control system further comprises a third control device configured to be controlled by the telescopic action of the telescopic tubes" ("Third Control Device Limitation").

262. Under the Third Control Device Limitation, the control system comprises a "third control device" that is configured to be controlled by the telescopic action of a telescopic handle. (EX1001, '588 patent, at claims 12 and 16.)

263. Petitioner relies solely on Nakano for the Third Control Device Limitation. (Paper 1 at 79-80.)

264. Petitioner cannot show that any of Nakano's "control devices" are the claimed "third control device" configured to be controlled by the telescopic action of a telescopic handle because, as discussed above, Nakano does not disclose, teach, or suggest a telescopic handle.

265. Thus, Petitioner has failed to show that Nakano discloses, teaches, or suggests the Third Control Device Limitation.

**2. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Matsunaga, Langdon, And Nakano.**

**a. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Langdon As Proposed.**

266. Challenged Claims 12 and 16 recite that "the handle comprises a plurality of telescopic tubes." (EX1001, '588 patent, at claims 12 and 16.) Petitioner concedes that Outils does not disclose a handle comprising a plurality of telescopic tubes, but asserts that it would have been obvious to use Langdon's telescopic handle in Outils' mower. (Paper 1 at 77-78.) Petitioner asserts that a "POSITA would have been motivated by the collapsibility of Langdon's telescopic handle and by the fact that it does not have to be removed from the lawnmower body," and that a "POSITA would have recognized the advantage of collapsing Outils' handle to make the lawnmower easier to ship and store." (*Id*. at 78.)

267. As discussed in detail above, a POSITA would not have been motivated to use Langdon's telescopic handle in Outils' lawnmower because: (i) Outils' lawnmower is incompatible with a telescopic handle; and (ii) Outils already suggests that its handle is collapsible without being removed from the lawnmower body.

268. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Langdon as proposed.

### b. Petitioner Has Failed To Show That A POSITA Would Have Been Motivated To Combine Outils With Nakano As Proposed.

269. Petitioner proposes "using" Nakano's alleged "control devices" in Outils' "modified" lawnmower (*i.e.*, Outils' lawnmower with a telescopic handle). (Paper 1 at 81.)

270. Petitioner provides no reasons why a POSITA would have combined Outils' modified lawnmower with Nakano and does not assert that a POSITA would have been motivated to combine Outils' modified lawnmower with Nakano. (*See generally* Paper 1 at 79-83.)

271. Petitioner states in the Petition that Nakano purportedly "add[s] safety by detecting the collapsing of the rod during work, and braking/disabling the motor." (Paper 1 at 79.) To the extent the Board considers this statement a purported motivation to combine, Nakano's alleged "control devices" would not have "added safety" to Outils' modified lawnmower—assuming a POSITA would have and could have modified Outils to have a telescopic handle in the first place (as discussed above, they would not have and could not have done so)—because, as discussed in detail above, Outils' modified lawnmower would already have included a system for braking/disabling the motor when the handle is partially collapsed.

272. Accordingly, Petitioner has failed to show that a POSITA would have been motivated to combine Outils with Nakano as proposed.

## D. Ground 4: Petitioner Has Failed To Show That Challenged Claim 19 Of The '588 Patent Is Obvious Over Outils In View Of Matsunaga, Milcoy, and Hilchey.

273. Petitioner has failed to show that Outils in combination with Matsunaga, Milcoy, and Hilchey renders Challenged Claim 19 obvious in view of its dependency on Challenged Claim 15.

## XV. CONCLUSIONS

- The Challenged Claims of the Challenged Patents are not obvious in light of the disclosures of the asserted prior art references.
- The Challenged Claims of the Challenged Patents are not unpatentable and were properly issued by the Patent and Trademark Office.

I have prepared this Declaration based upon my review of the materials referenced, and my own personal knowledge, education, skill and experience. I declare, under penalty of perjury under the laws of the United States of America, that the foregoing is true and correct.

Dated: January 29, 2021

Fred P. Smith, P.E., CSP

# EXHIBIT 1

ALPINE
ENGINEERING & DESIGN, INC.

111 W Canyon Crest Rd.,
Alpine, UT 84004
Office: (801) 763-8484

# Curriculum Vitae
# FRED P. SMITH, P.E., CSP

Mr. Smith has been in consulting engineering since 1980. He is currently president of Alpine engineering & Design, Inc., a company he started in 2000. Previously, he spent 20 years doing consulting work with F.S. New Products, Inc.

While working for F.S. New Products, Inc., Mr. Smith developed and patented RF and Magnetic shielding for magnetic resonance imagers. Mr. Smith and two other partners started MRI Support Systems Corporation to exploit the patented technology. As Vice President of Engineering for MRI Support Systems Corporation, Mr. Smith was responsible for the design of RF and magnetic shields manufactured for magnetic resonance imagers and supervised the development of new shielding products. He collaborated with other engineers and architects to assure the shielding interfaced well with the complete project and tested the performance of the completed shields.

In 2004, while working for Alpine Engineering & Design, Inc., Mr. Smith, along with two partners, began a startup company, Composite Works, LLC, which designed and manufactured custom fiberglass components for OEM's. Mr. Smith designed or specified all the processes, equipment and molds required to produce the products. Composite Works, LLC was successfully sold in 2015.

Mr. Smith began his engineering career, prior to college, in the engineering department of Sargent Industries, Huntington Park Division, a company that designed and manufactured valves for nuclear submarines. He performed engineering design changes, accumulated and organized technical information for record purposes and submittal to customers on government related projects. He was tasked with writing instruction manuals for the process he developed for the preparation of Certification Data Sheets and model parts lists.

Mr. Smith worked for F.S. New Products, Inc. and attended college concurrently from 1980 through 1984. In 1984 Mr. Smith completed his B.S. in Mechanical Engineering and graduated with distinction from California State University, Long Beach, where he was on both the Dean's and the President's Honor Lists.

During his consulting career, Mr. Smith has directed the development and improvement of a wide variety of products including trucking equipment, refuse equipment, hydraulically operated mobile equipment, cranes, manlifts, specialty axles and suspensions, zip lines, amusement rides, exercise equipment, radio frequency and magnetically shielded enclosures, rotomolded containers, aerial lifts and a variety of consumer products. Mr. Smith has over 70 patents on such products with a number of patent applications still pending.

Mr. Smith's expertise extends to many areas of product design; including concept generation, design, stress calculations, finite element analysis, modeling, safety, prototyping, testing, manufacturing and assisting in the patent process. Mr. Smith is certified as a Six Sigma Lean Black Belt Professional and a Six Sigma Champion.

Mr. Smith is a registered professional mechanical engineer in the States of California, Nevada and Alabama, and a registered professional structural engineer in Utah with license numbers M025127, 016907, 28224 and 177027-2202 respectively. Mr. Smith is certified by the Board of Certified Safety Professionals (BCSP) as a Certified Safety Professional in comprehensive practice, CSP No. 18890. He has certified as a trainer in 1st aid, CPR and AED. He has certified as a train-the-trainer for lift truck operators. He has also certified as a trainer for aerial work platforms and aerial boom lifts. He has also certified as an overhead, mobile crane and rigging inspector. Mr. Smith is also licensed as an Amateur Radio Operator (License - KC7URM).

He has taken a number of continuing education courses including the OSHA 30-hour Hazard Recognition Training course, the OSHA Health and Safety course, Intellectual Property Issues, Risk Management and Assessment, Pole Top Rescue, Confined Space and Lock Out/Tag Out. He is certified in TIMS (Traffic Incident Management & Responder Safety and has taken courses on the MUTCD (Manual on Uniform Traffic Control Devices), Advance Warning, Blocking Procedures, Safe Operations for Vehicle Fires, Special Hazards and Incident Command and Management.

Mr. Smith has been a member of the Utah Safety Council, National Safety Council, American Society of Mechanical Engineers, the Society of American Value Engineers, the National Honor Society, and Tau Beta Phi, a national engineering honor society. He was nominated for membership in Phi Kappa Phi, and has been named to Who's Who in California, Who's Who in the West and the National Registry of Who's Who in Executives and Businesses. He also received the Utah Genius Award for being one of Utah’s top inventors.

Mr. Smith co-authored a white paper entitled, “An Engineering Guide for Trailer Safety Chain Installation, Attachment and Use.”

Mr. Smith has been retained over 500 times as an expert in product liability, breach of warranty, negligent misrepresentation. Over 100 of those cases have been intellectual property cases where he has testified regarding claim construction, infringement and invalidity. He has testified in court over 40 times in multiple state courts, Federal Court, before the Patent Trial and Appeal Board (PTAB), the Federal Trade Commission (FTC) and the International Trade Commission (ITC).

# EXHIBIT 2

# PATENT LISTING

| DESCRIPTION | PATENT # | DATE |
|---|---|---|
| 1. Universal Container Grabber Apparatus for a Refuse Collection Vehicle | 4,708,570 | Nov. 24, 1987 |
| 2. Enclosure for Providing Electromagnetic and Magnetic Shielding | 4,755,630 | July 5, 1988 |
| 3. Apparatus for Extending and Retracting the Rear Wheels Wheels of a Trailer | 4,948,155 | August 14, 1990 |
| 4. Apparatus for Loading Materials into a Storage Compartment | 4,954,020 | Sep. 4, 1990 |
| 5. Refuse Truck body Having Load Carrying Ejector Assemble | 4,954,040 | Sep. 4, 1990 |
| 6. Apparatus for Transferring Refuse from Containers into Refuse Equipment | 5,006,030 | April 9, 1991 |
| 7. Apparatus for Loading Materials into a Storage Compartment and Associated Fluid Pressure Delivery System | 5,015,144 | May 14, 1991 |
| 8. Refuse Container With Snap-On Cover | 5,141,124 | Aug. 15, 1992 |
| 9. Latching system for Transfer Truck and Trailer Set | 5,143,496 | Sep. 1. 1992 |
| 10. Gripping Apparatus for Omnifarious Containers | 5,209,537 | May 11, 1993 |
| 11. Refuse Container With Snap-On Cover | 5,217,135 | June 8, 1993 |
| 12. Apparatus for Transferring a Trailer Body between a Trailer & Truck | 5,219,260 | June 15, 1993 |
| 13. Top Mounted Container Handling Apparatus | 5,419,671 | May 30, 1995 |
| 14. Personal Trainer | 5,429,571 | July 4, 1995 |
| 15. Front-Side Lifting and Loading Apparatus | 5,470,187 | Nov. 28, 1995 |
| 16. Gripping Apparatus for Omnifarious Containers | 5,482,180 | Jan. 9, 1996 |
| 17. Friction Resistance Exercise Device | 5,486,149 | Jan. 23, 1996 |
| 18. Hoist Mechanism | 5,513,901 | May 7, 1996 |
| 19. Top Mounted Container Handling Apparatus | 5,547,332 | Aug. 20, 1996 |
| 20. Gripping Apparatus for Omnifarious Containers | 5,557,877 | Nov. 26, 1996 |
| 21. Front-Side Lifting and Loading Apparatus | 5,601,392 | Feb. 11, 1997 |
| 22. Universal Engaging Mechanism for Collection Containers | 5,711,565 | Jan 27, 1998 |
| 23. Front-Side Lifting and Loading Apparatus | 5,743,698 | April 28, 1998 |
| 24. Gripping Apparatus for Omnifarious Containers | 5,759,008 | June 2, 1998 |
| 25. Door opening System and Receptacle | 5,770,935 | June 23, 1998 |
| 26. Articulating Trailing Tag Axle | 5,823,629 | Oct. 20, 1998 |
| 27. Lock Mechanism for Fifth Wheel Hitch | 5,839,745 | Nov. 24, 1998 |
| 28. Gripping Apparatus for Omnifarious Containers | 5,846,044 | Dec. 8, 1998 |
| 29. Automated Low Profile Refuse Vehicle | 5,890,865 | April 6, 1999 |
| 30. Inflatable Bag Assembly for Lifting a Load | 5,975,643 | Nov. 2, 1999 |
| 31. Gripping Apparatus for Omnifarious Containers | 6,012,895 | January 11, 2000 |
| 32. Hanging Scaffold Support | 6,053,280 | April 25, 2000 |
| 33. Hinge Assembly for Pickup Trucks | 6,059,371 | May 9, 2000 |
| 34. Articulating Trailing Tag Axle | 6,116,698 | September 12, 2000 |
| 35. Compact, Trailing, Auxiliary System | 6,189,901 | February 20, 2001 |
| 36. Compaction mechanism for refuse…collection vehicles | 6,234,739 | May 22, 2001 |
| 37. Trailing Axle Assembly | 6,247,712 | June 19, 2001 |
| 38. Inflatable bag assembly for lifting a load | 6,267,447 | June 31, 2001 |
| 39. Inflatable bag assembly for lifting a load | 6,267,448 | June 31, 2001 |
| 40. Portable, adjustable-contour, putting green | 6,338,682 | January 15, 2002 |
| 41. Compaction mechanism for refuse and recyclables vehicles | 6,398,478 | June 4, 2002 |
| 42. Lightweight, adjustable-height, axle | 6,416,136 | June 9, 2002 |
| 43. Container covering apparatus | 6,742,828 | June 1, 2004 |
| 44. Lightweight, adjustable-height, axle | 6,758,535 | July 6, 2004 |
| 45. Combination Drop & Broadcast Spreader | 6,932,286 | August 23,2005 |
| 46. Truck Operated Transfer System Apparatus & Method | 6,935,829 | August 30,2005 |
| 47. Articulated cable puller | 6,948,701 | September 27, 2005 |
| 48. Container covering apparatus | 6,974,176 | December 13, 2005 |
| 49. Method and apparatus for gripping containers | 7,066,514 | June 27, 2006 |
| 50. Trailer-tilting, load-discharge apparatus and method | 7,114,909 | October 3, 2006 |
| 51. Material ejection system for a vehicle | 7,147,423 | December 12, 2006 |
| 52. Vehicle loading and unloading method | 7,309,205 | December 18, 2007 |

| | | | |
|---|---|---|---|
| 53. | Cargo unloading apparatus and method | 7,320,572 | January 22, 2008 |
| 54. | Enclosed-reeving, live-line boom | 7,341,157 | March 11, 2008 |
| 55. | Door assembly for a chute system | 7,350,636 | April 1, 2008 |
| 56. | Tarpaulin system for covering an open-topped container | 7,350,846 | April 1, 2008 |
| 57. | Tarping system for open top containers | 7,413,234 | August 19, 2008 |
| 58. | Side-loading refuse collection apparatus and method | 7,452,175 | November 18, 2008 |
| 59. | Tarpaulin system for covering an open-topped container | 7,458,629 | December 2, 2008 |
| 60. | Method and Apparatus for Gripping Containers | 7,472,937 | January 6, 2009 |
| 61. | Torque-limited electric servo system for deploying snow chains | 7,506,729 | March 24, 2009 |
| 62. | Tracked Bicycle | 7,540,506 | June 2, 2009 |
| 63. | Tarping system for open top containers | 7,673,926 | March 9, 2010 |
| 64. | Cross-member for a trailer frame & trailer frame incorporating same | 7,762,616 | July 27, 2010 |
| 65. | Apparatus for raising a spring arm on a trailer hitch | 7,934,742 | May 3, 2011 |
| 66. | Tarping system for open top containers | 7,954,877 | June 7, 2011 |
| 67. | Tarping system for open top containers | 8,287,026 | October 16, 2012 |
| 68. | Roll tarp system | 8,998,287 | April 7, 2015 |
| 69. | Combination Trailer | 9,387,788 | July 12, 2016 |
| 70. | Roll tarp system | 9,415,667 | August 16, 2016 |
| 71. | Roll tarp system | 10,071,619 | September 11, 2018 |
| 72. | Material Placer | 10,683,176 | June 16,2020 |
| 73. | Adjustable Safety Chain Attachment for Trailers | 10,703,150 | July 7, 2020 |

# EXHIBIT 3

## PREVIOUS TESTIMONY

| Case | Court case | Number |
|---|---|---|
| **2016** | | |
| *Standard & Hingst v Starcraft | Iowa District Court | LACV 008424 |
| MTD v. Toro | Northern District Court of Ohio | 1:16-cv-00297-SL |
| Jernigan v Heil | Circuit Court, Barbour County, AL | CV-69-CV-2015-900009 |
| Verrazono v Gehl | Superior Court of CA | SCV-256870 |
| Eisenbise v Crown | Southern District of CA | 3:15-cv-00972-AJB-WVG |
| Rivas v Jerr-Dan | Superior Court of CA, Marin Co. | CIV1302666 |
| Abrams v Takeuchi | District Court, 506th District, Waller Co. | 15-08-23266 |
| Eisenbise v Crown | District Court, Southern District of CA | 15-CV-0972-AJB (WVG) |
| YETI Coolers v RTIC Coolers | District Court, Western District of TX, Austin | 1:15CV597-RP |
| **2017** | | |
| Garcia v United Parcel Service | District Court, Hidalgo CO, TX | C-1808-13-J |
| SFEG v Blendtec | District Court, Northern District of Ohio | 1:15-cv-01118-PAG |
| Rivas v Jerr-Dan | Superior Court of CA, Marin Co. | CIV1302666 |
| *Abrams v Takeuchi | District Court, 506th District, Waller Co. | 15-08-23266 |
| SFEG v Blendtec | District Court, Middle District of TN | 3:15-CV-00466 |
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*Indicates testified in court. Underline indicates retaining party.