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[Continued on next page]

(54) Title: SANDER ATTACHMENT HANDLE

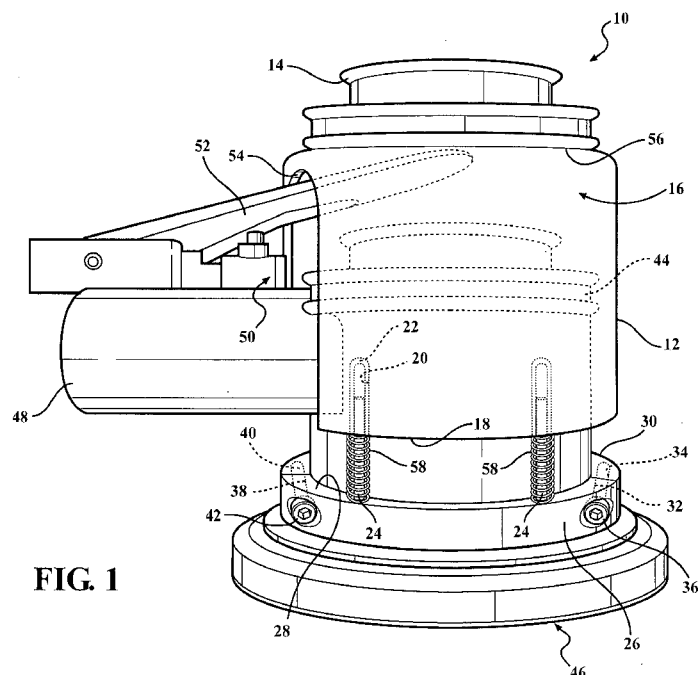


FIG. 1

(57) Abstract: A sander attachment handle (10) comprising a body portion (12) having a circumferential wall (18), a cavity (16) formed as part of said body portion (12), said cavity (16) is surrounded by said circumferential wall (18). A sander (46) is movably disposed in said cavity (16) and a lever (52) is connected to said sander (46) such that said lever (52) extends into said cavity (16) and is in contact with said body portion (12), so that when a force is applied to said body portion (12), the lever (52) is actuated, thereby activating the motor of said sander (46). In one embodiment a split collar (26) is operable for surrounding the sander (46) and supporting the body portion (12).



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- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))* — *of inventorship (Rule 4.17(iv))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *with international search report (Art. 21(3))*
- Published:**

SANDER ATTACHMENT HANDLE

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Application No.
5 61/399,856 filed on July 19, 2010. The disclosure of the above application is incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates to a sander attachment handle operable
10 for providing proper positioning between a working surface and a sanding disc or sanding wheel.

BACKGROUND OF THE INVENTION

Hand sanders are generally known, and are used for a variety of
15 purposes. Some of these purposes include, but are not limited to, sanding painted surfaces, such as a body panel of a vehicle, or sanding wooden surfaces. These types of sanders typically have a wheel or disc that is driven for rotation by an electric or air-powered motor. One side of the wheel is attached to the motor, and the other side is used for sanding the desired
20 surface, also referred to as a "working surface." Different types of sand paper are attached to the wheel for sanding the working surface.

One of the problems with these types of hand sanders is that since the hand sander may be activated prior to coming in contact with the working surface, "wheel cuts" can result if the wheel is not parallel to the working
25 surface when being brought into contact with the working surface. A "wheel cut" occurs where only the outer edge or an area near the outer edge of the wheel contacts the working surface, resulting in an area of the working surface becoming over-sanded. Additionally, when the sander is activated and the wheel is not in contact with a working surface, the sander is in a "free
30 wheeling" condition. When the sander is free wheeling, over-sanding can occur as the wheel contacts the working surface.

Accordingly, there exists a need for a sanding device which overcomes the aforementioned deficiencies, and provides improved contact with a working surface.

5

SUMMARY OF THE INVENTION

The present invention is a sander attachment handle which includes a body portion having a cavity, and a circumferential wall formed as part of the body portion, where the circumferential wall is adjacent to the cavity. A sander is operable for being disposed in the cavity, and has a lever extending
10 into the cavity. The present invention also includes a split collar operable for surrounding the sander and supporting the body portion. The sander has a sanding disc or wheel which is placed on a working surface and is connected to a motor, and when a force is applied to the body portion, the lever is actuated, thereby activating the motor of the sander.

15 The sander has a housing portion, and the housing portion is disposed within the cavity. A handle is connected to the housing portion, and an air valve is connected to the handle and operable for receiving pressurized air from a pressurized air source. The lever is pivotally connected to the handle and operable for actuating the air valve such that when a force is applied to
20 the body portion, the lever pivots relative to the handle and actuates the air valve, delivering pressurized air to the motor, activating the sander.

The body portion of the sander attachment handle according to the present invention includes at least one aperture formed as part of the circumferential wall, and at least one bushing disposed within the at least one
25 aperture formed as part of the circumferential wall. At least one guide rod is slidably disposed within the at least one bushing, and the at least one guide rod is connected to the split collar. A return spring circumscribes the guide rod and is disposed between the circumferential wall and the split collar. The return spring is operable for biasing the body portion away from the split
30 collar.

The sander attachment handle of the present invention has the ability to be activated when the wheel is in contact with the working surface, and may be deactivated when the sanding disc is removed from the working

surface. The sander attachment handle of the present invention also improves the operation of a sander by improving proper alignment between the wheel and the working surface prior to activation of the motor

Further areas of applicability of the present invention will become
5 apparent from the detailed description provided hereinafter. It should be understood that the detailed description and specific examples, while indicating the preferred embodiment of the invention, are intended for purposes of illustration only and are not intended to limit the scope of the invention.

10

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description and the accompanying drawings, wherein:

Figure 1 is a perspective view of a sander attachment handle,
15 according to a first embodiment of the present invention; and

Figure 2 is a perspective view of a sander attachment handle, according to a second embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

20 The following description of the preferred embodiment(s) is merely exemplary in nature and is in no way intended to limit the invention, its application, or uses.

A first embodiment of a sander attachment handle is shown in the Figures generally at 10. The attachment handle includes a body portion 12,
25 shown in Figure 1, and a cap portion 14. The body portion 12 has a cavity, shown generally at 16, surrounded by a circumferential wall 18. The wall 18 includes several apertures 20, each of which receives a bushing 22. Slidably disposed within each bushing 22 is a guide rod 24. A portion of each guide rod 24 is always disposed within a respective bushing 22 so as to provide
30 proper guidance of the body portion 12, the function of which will be described later.

Each guide rod 24 is connected to a split collar 26. The split collar 26 has a semi-circular first half 28 and a semi-circular second half 30. The first

half 28 has a first aperture 32 in substantial alignment with a first threaded aperture 34 formed as part of the second half 30. Extending through both apertures 32,34 is a threaded fastener 36 which aids in securing the first half 28 of the split collar 26 to the second half 30. The first half 28 also includes a
5 second aperture 38 which is in substantial alignment with a second threaded aperture 40 formed as part of the second half 30. A second threaded fastener 42 extends through the apertures 38,40 to further secure the first half 28 of the split collar 26 to the second half 30.

When the split collar 26 is assembled, the split collar 26 surrounds the
10 housing portion 44 of a sander, generally shown at 46. The sander 46 is an air-powered sander, having a motor disposed within the housing portion 44 powered by pressurized air. Connected to the housing portion 44 is a handle 48. The handle 48 surrounds a valve, which in this embodiment is an air valve, shown generally at 50. Mounted on the handle 48 is a lever 52, which
15 in this embodiment is pivotally mounted to the handle 48.

The lever 52 extends into cavity 16 of the body portion 12 through a cut-out portion 54 formed as part of the body portion 12. When assembled, the lever 52 is in contact with an upper surface 56 of the cavity 16, and depending upon the shape of the lever 52, the end of the lever may be in
20 contact with the center of the upper surface 56, as shown in Figure 1.

As mentioned above, each guide rod 24 is connected to the split collar 26, and slides within a respective bushing 22. Each guide rod 24 is also surrounded by a biasing member, which in this embodiment is a return spring 58. The return spring 58 is disposed between the split collar 26 and the
25 circumferential wall 18 of the body portion 12, and functions to bias the body portion 12 upwardly when looking at Figure 1, and the sander 46 is in the deactivated position. The lever 52 is also biased upwardly to the position shown in Figure 1 by the air valve 50 (the air valve 50 also includes a spring to bias the air valve 50 to a closed position). However, the distance the body
30 portion 12 is allowed to move upwardly is limited by a plurality of straps 66 connected to the body portion 12 and the split collar 26. One of the plurality of straps 66 is shown in Figure 2, but it is within the scope of the invention that the straps 66 may be replaced by press fit pins or clevis pins extending

downward through the body portion 12 into the split collar 26, but would function in the same manner as the straps 66 (i.e. to prevent the body portion 12 from sliding off of the guide rods 24).

Attached to the motor disposed within the housing portion 44 is a sanding device, or sanding wheel 60. The sanding wheel 60 may be used for sanding various types of surfaces, depending upon what is desired by the user.

When in use, the air valve 50 is connected to a hose for supplying pressurized air to the air valve 50. To use the sander 46, the sander 46 is initially positioned such that the sanding wheel 60 is in contact with the surface to be sanded, or the working surface. Once the wheel 60 is in contact with the working surface, pressure is applied to the cap portion 14 to overcome the biasing force of each of the return springs 58 and the biasing force applied to the lever 52 by the air valve 50. When these biasing forces are overcome, the body portion 12 and cap portion 14 move downwardly when looking at Figure 1, and the lever 52 moves downwardly as well. When the lever 52 has moved downward, the air valve 50 is opened, allowing pressurized air to flow into and activate the motor of the sander 46. The wheel 60 then spins and begins to sand the working surface.

The air valve 50 may be adjusted as desired to allow a desired amount of air to flow to the sander 46, thereby adjusting the amount of air flowing to the motor, controlling the speed of the wheel 60. The same amount of force may be applied to the to the cap portion 14, the lever 52 (and the body portion 12) is allowed to move to an intermediate position, this allows for control over the speed of the wheel 60.

The sander attachment handle 10 of the present invention provides the advantages of being able to activate the lever 52 of the sander 46 when the wheel 60 is in contact with a working surface, and the guide rods 24 help to maintain proper alignment of the body portion 12 and cap portion 14 as the sander 46 is activated and deactivated. Additionally, the split collar 26 may be disassembled by removing the fasteners 36,42, and the straps 66 may be removed as well, allowing the sander attachment handle 10 to be removed and used with different sanders. Additionally, the use of the sander

attachment handle 10 reduces the likelihood of over-sanding and wheel cuts caused by free wheeling of the sander 46.

An alternate embodiment of the invention is shown in Figure 2, with like numbers referring to like elements. It can be seen that the sander attachment
5 handle 10 of the alternate embodiment has a body portion 12, but the cap portion 14 has been removed, and there are several holes 62 that have been drilled into the top surface 64 of the body portion 12. The removal of the cap portion 14 and the material removed from the holes 62 reduces the overall weight of the sander attachment handle 10.

10 The description of the invention is merely exemplary in nature and, thus, variations that do not depart from the essence of the invention are intended to be within the scope of the invention. Such variations are not to be regarded as a departure from the spirit and scope of the invention.

CLAIMS

What is claimed is:

1. A sander attachment handle, comprising:
 - 5 a body portion having a circumferential wall;
 - a cavity formed as part of said body portion, said cavity surrounded by said circumferential wall;
 - a sander movably disposed in said cavity; and
 - a lever connected to said sander such that said lever extends into said
 - 10 cavity and is in contact with said body portion;wherein a force is applied to said body portion, actuating said lever, causing said lever to move and activate said sander.
2. The sander attachment handle of claim 1, further comprising a
15 split collar connected to said body portion, said split collar surrounding said sander to position said sander at least partially in said cavity.
3. The sander attachment handle of claim 2, said split collar further comprising:
 - 20 a semi-circular first half;
 - a first aperture formed as part of said semi-circular first half;
 - a second aperture formed as part of said semi-circular first half;
 - a semi-circular second half;
 - a first threaded aperture formed as part of said semi-circular second
 - 25 half;
 - a second threaded aperture formed as part of said semi-circular second half;
 - a first threaded fastener operable for extending through said first aperture and said first threaded aperture; and
 - 30 a second threaded fastener operable for extending through said second aperture and said second threaded aperture;wherein said semi-circular first half is connected to said semi-circular second half when said first threaded fastener is inserted through said first

aperture and said first threaded aperture, and when said second threaded fastener is inserted through said second aperture and said second threaded aperture

- 5 4. The sander handle attachment of claim 2, further comprising:
 at least one aperture formed as part of said circumferential wall;
 at least one bushing disposed within said at least one aperture formed
 as part of said circumferential wall;
 at least one guide rod slidably disposed within said at least one
10 bushing, said at least one guide rod connected to said split collar; and
 at least one return spring circumscribing said at least one guide rod,
 said at least one return spring disposed between said circumferential wall and
 said split collar, said at least one return spring operable for biasing said body
 portion away from said split collar.

15

5. The sander attachment handle of claim 1, said sander further
 comprising:
 a housing portion movably disposed within said cavity;
 a handle connected to said housing portion, said handle extending into
20 said cavity through a cut-out portion formed as part of said circumferential
 wall; and
 an air valve connected to said handle, said air valve operable for
 receiving pressurized air from a pressurized air source;
 wherein said lever is pivotally connected to said handle such that when
25 a force is applied to said body portion, said lever pivots relative to said handle
 and actuates said air valve, delivering pressurized air to said sander,
 activating said sander.

30

6. A sander attachment handle, comprising:

a body portion having a cavity;

an circumferential wall formed as part of said body portion, said circumferential wall surrounding said cavity;

5 a sander operable for being disposed in said cavity, said sander having a lever extending into said cavity; and

a split collar operable for surrounding said sander and supporting said body portion, and when a force is applied to said body portion, said lever is actuated, thereby activating said sander.

10

7. The sander attachment handle of claim 6, said sander further comprising:

a housing portion, said housing portion disposed within said cavity;

a handle connected to said housing portion; and

15 an air valve connected to said handle and operable for receiving pressurized air from a pressurized air source;

wherein said lever is pivotally connected to said handle and operable for actuating said air valve such that when a force is applied to said body portion, said lever pivots relative to said handle and actuates said air valve,
20 delivering pressurized air to said sander, activating said sander.

8. The sander attachment handle of claim 6, further comprising:

a first aperture formed as part of a semi-circular first half of said split collar;

25 a first threaded aperture formed as part of a semi-circular second half of said split collar;

a first threaded fastener operable for extending through said first aperture and said first threaded aperture;

30 a second aperture formed as part of said semi-circular first half of said split collar;

a second threaded aperture formed as part of said semi-circular second half of said split collar; and

a second threaded fastener operable for extending through said second aperture and into said second threaded aperture, such that when said first threaded fastener is extended through said first aperture and said first threaded aperture and said second threaded fastener is extended through
5 said second aperture and into said second threaded aperture, said first half of said split collar is connected to said second half of said split collar.

9. The sander attachment handle of claim 6, further comprising:
at least one aperture formed as part of said circumferential wall;
10 at least one bushing disposed within said at least one aperture formed as part of said circumferential wall;
at least one guide rod slidably disposed within said at least one bushing, said at least one guide rod connected to said split collar; and
at least one return spring circumscribing said at least one guide rod,
15 said at least one return spring disposed between said circumferential wall and said split collar, said at least one return spring operable for biasing said body portion away from said split collar.

10. A sander attachment handle operable for mounting on a sander,
20 comprising:
a body portion having a cavity;
a circumferential wall formed as part of said body portion, said circumferential wall surrounding said cavity;
a cut-out portion formed as part of said circumferential wall;
25 a sander operable for being at least partially disposed in said cavity, said sander having a pivotable lever extending through said cutout portion and into said cavity;
a split collar operable for surrounding said sander and supporting said body portion;
30 at least one aperture formed as part of said circumferential wall;
at least one bushing disposed within said at least one aperture formed as part of said circumferential wall;

at least one guide rod slidably disposed within said at least one bushing, said at least one guide rod connected to said split collar; and

at least one return spring circumscribing said at least one guide rod, said at least one return spring disposed between said circumferential wall and said split collar, said at least one return spring operable for biasing said body portion away from said split collar;

wherein said lever pivots relative to said sander when a force is applied to said body portion to overcome the force of said at least one return spring, thereby activating said sander.

10

11. The sander attachment handle operable for mounting on a sander of claim 10, said split collar further comprising:

a semi-circular first half;

a first aperture formed as part of said semi-circular first half;

15

a second aperture formed as part of said semi-circular first half;

a semi-circular second half;

a first threaded aperture formed as part of said semi-circular second half;

20

a second threaded aperture formed as part of said semi-circular second half;

a first threaded fastener operable for extending through said first aperture and said first threaded aperture; and

a second threaded fastener operable for extending through said second aperture and said second threaded aperture;

25

wherein said semi-circular first half is connected to said semi-circular second half when said first threaded fastener is inserted through said first aperture and said first threaded aperture, and when said second threaded fastener is inserted through said second aperture and said second threaded aperture.

30

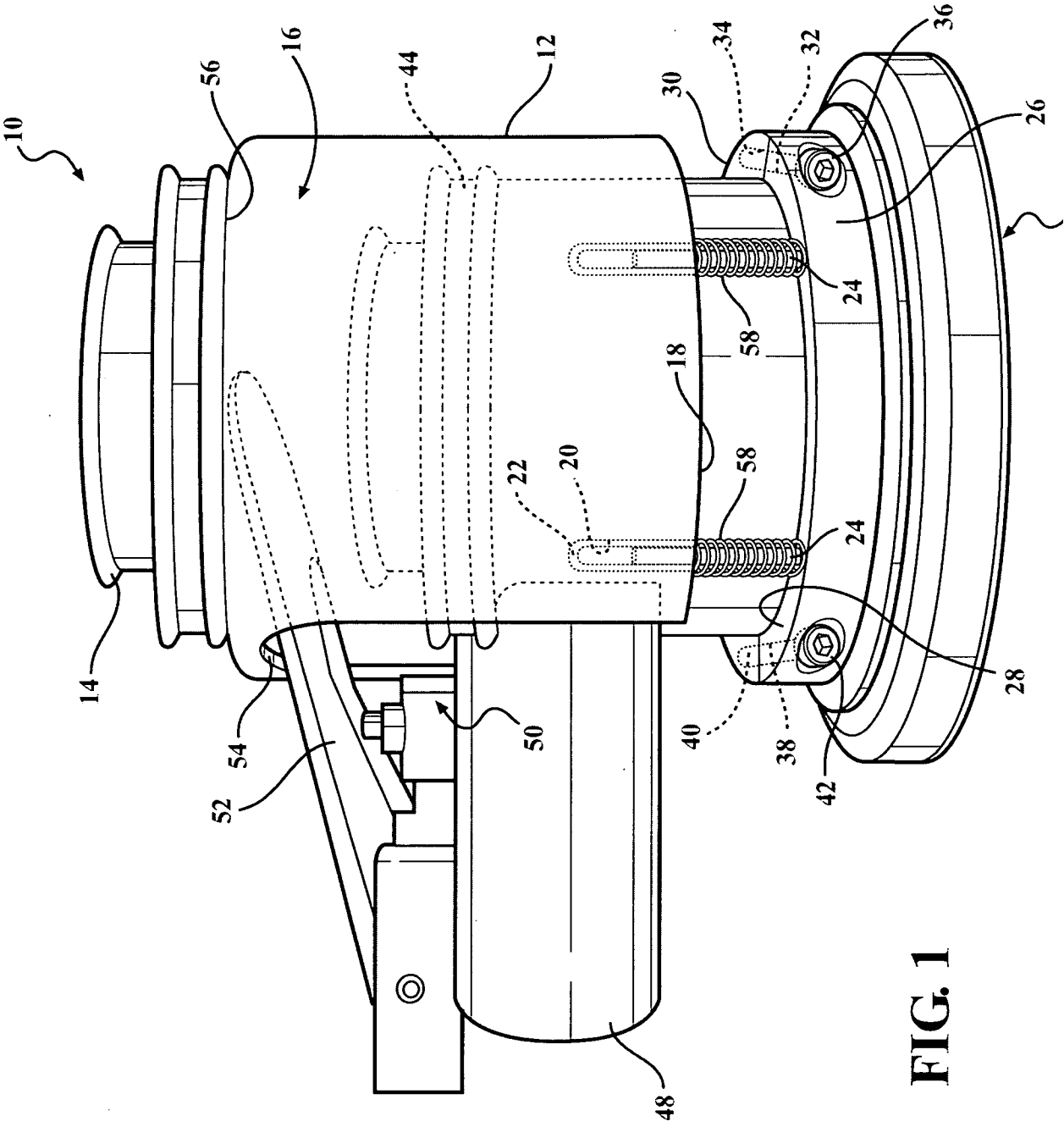
12. The sander attachment handle operable for mounting on a sander of claim 10, said sander further comprising:

a housing portion movably disposed in said cavity;

5 a handle connected to said housing portion, and extending out of said housing portion through said cut-out portion; and

an air valve mounted to said handle, said air valve operable for receiving pressurized air from an air source, said air valve actuated by said lever;

10 wherein said body portion pivots said lever to actuate said air valve and activate said sander when a force is applied to said body portion to overcome the force of said at least one return spring.



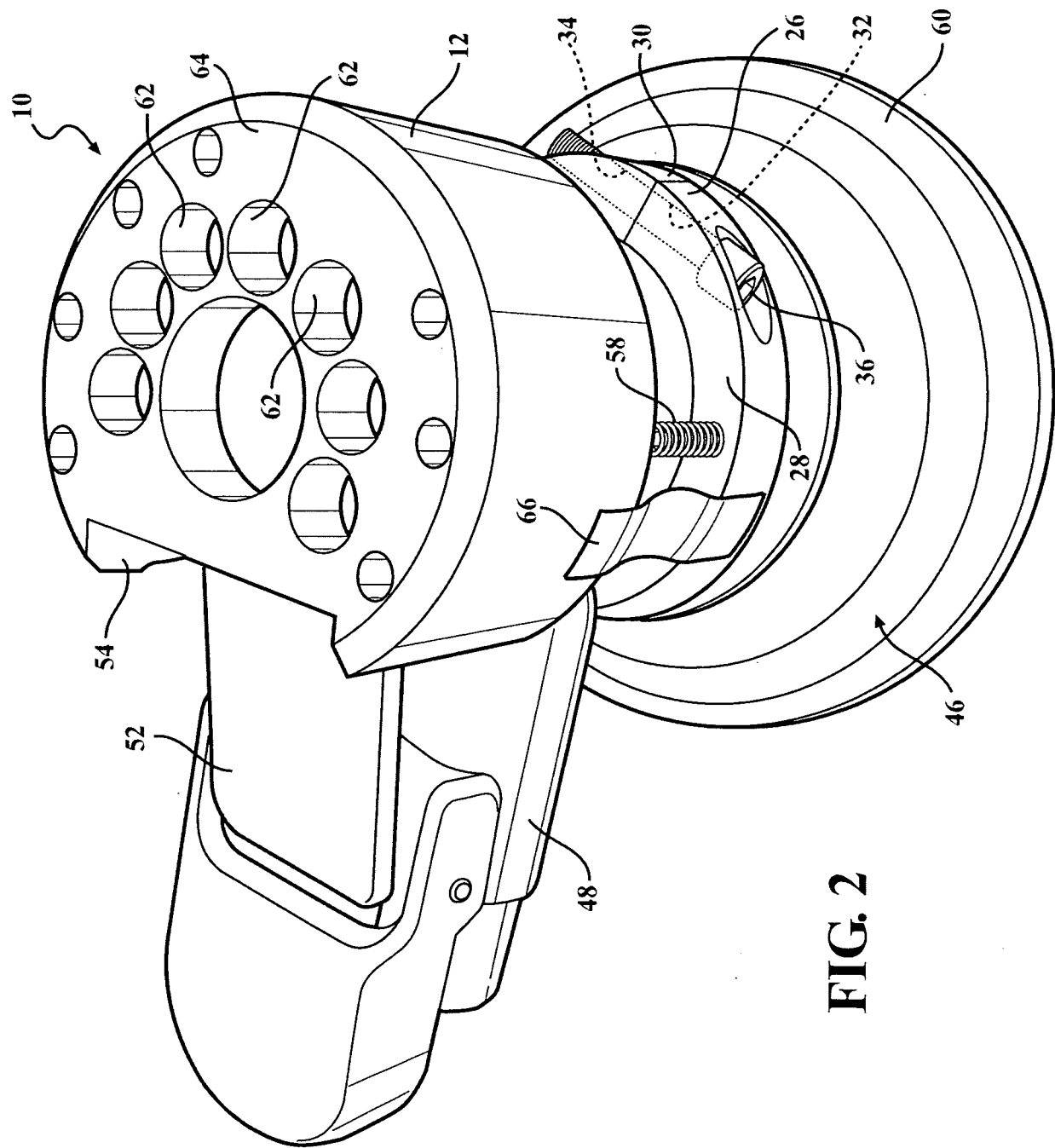


FIG. 2

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/001280

A. CLASSIFICATION OF SUBJECT MATTER
INV. B24B23/00 B24B23/02 B25F5/02
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B24B B25F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 308 247 A1 (INGERSOLL RAND CO [US]) 7 May 2003 (2003-05-07) abstract; figures 1,3 -----	1-12
A	US 2004/147209 A1 (BICKFORD THEODORE S [US] ET AL) 29 July 2004 (2004-07-29) abstract; figure 3 -----	1-12



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2011/001280

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1308247	A1	07-05-2003	DE 60208513 T2 21-09-2006
		US 2003083005 A1	01-05-2003

US 2004147209	A1	29-07-2004	NONE
