

July 12, 1938.

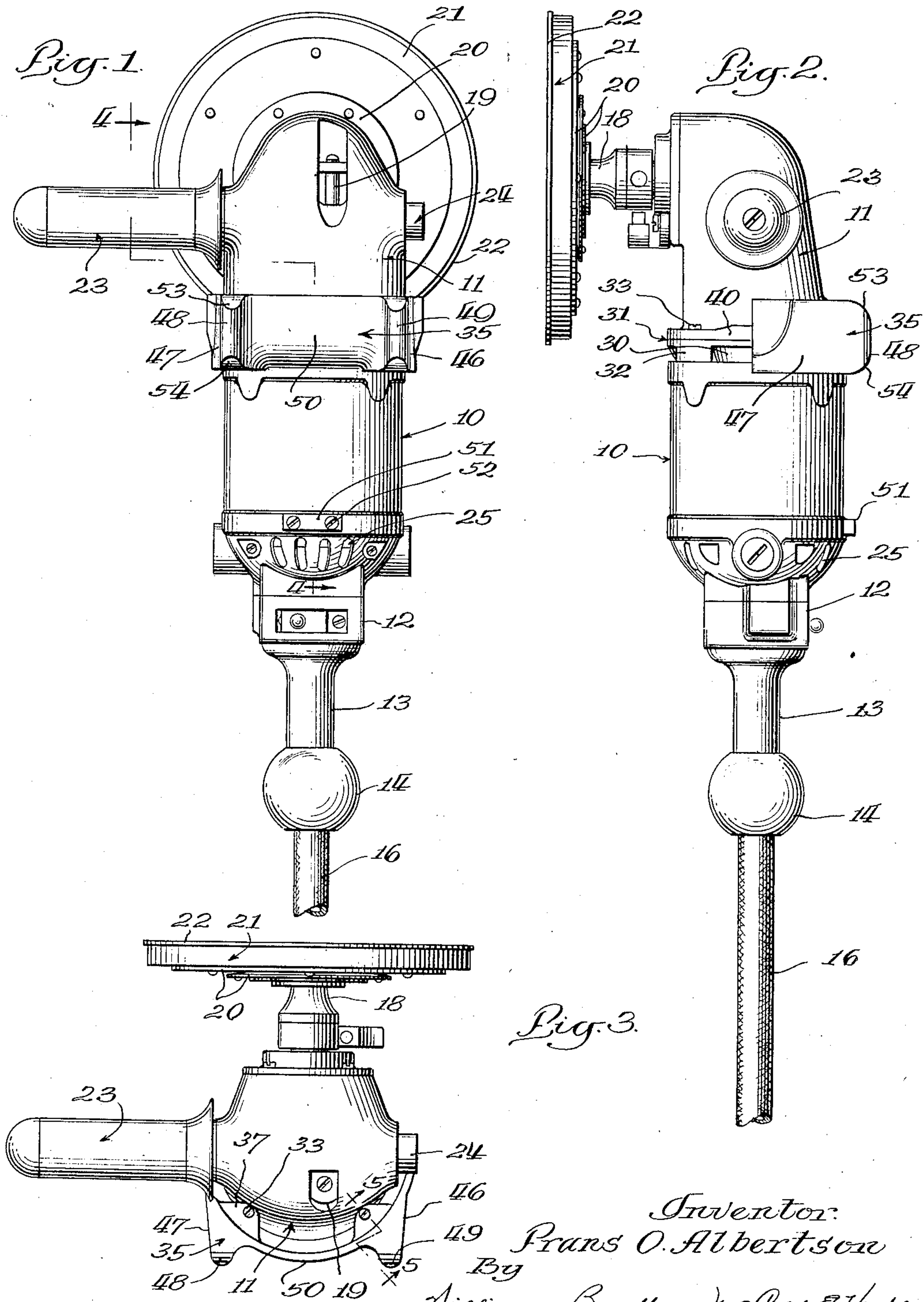
F. O. ALBERTSON

2,123,222

SANDING MACHINE

Filed Oct. 13, 1937

2 Sheets-Sheet 1



Inventor:
F. O. Albertson
By
William Bradbury, McCaleb & Hinkle
Attys.

July 12, 1938.

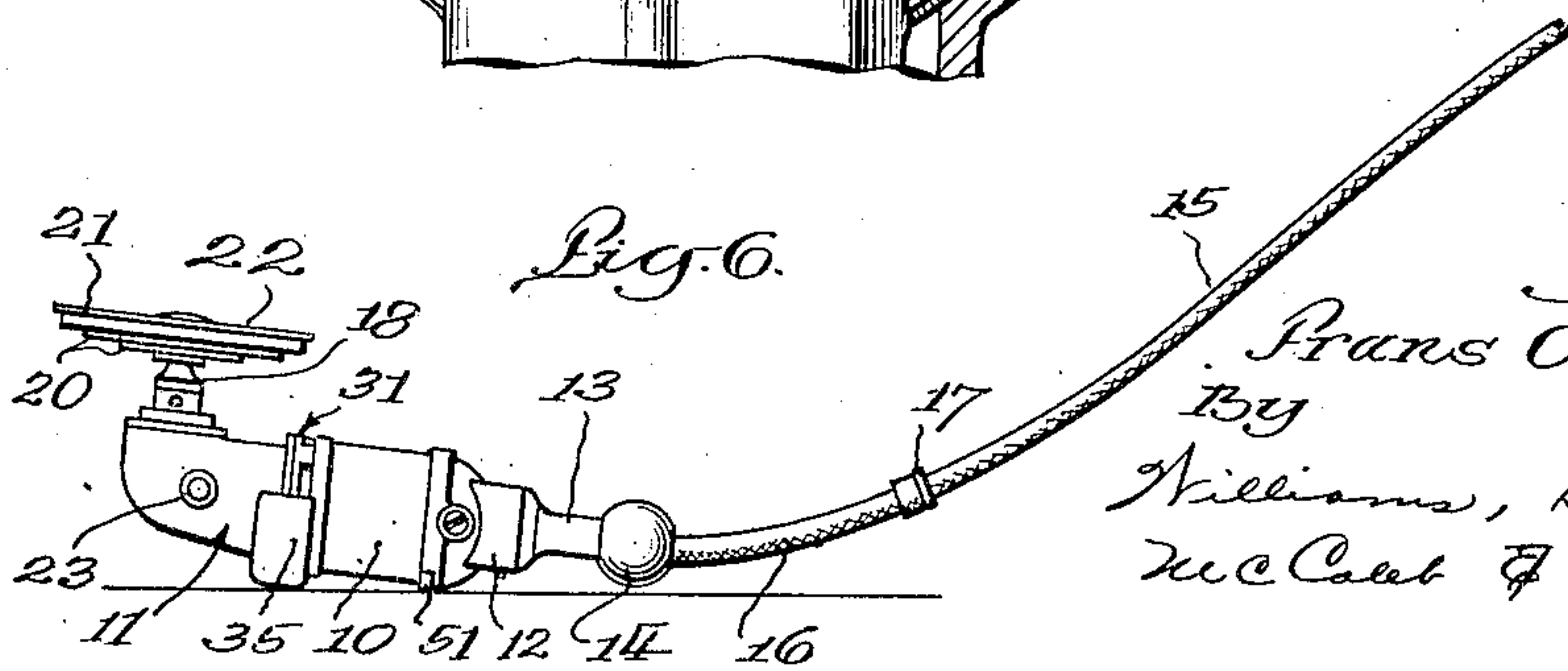
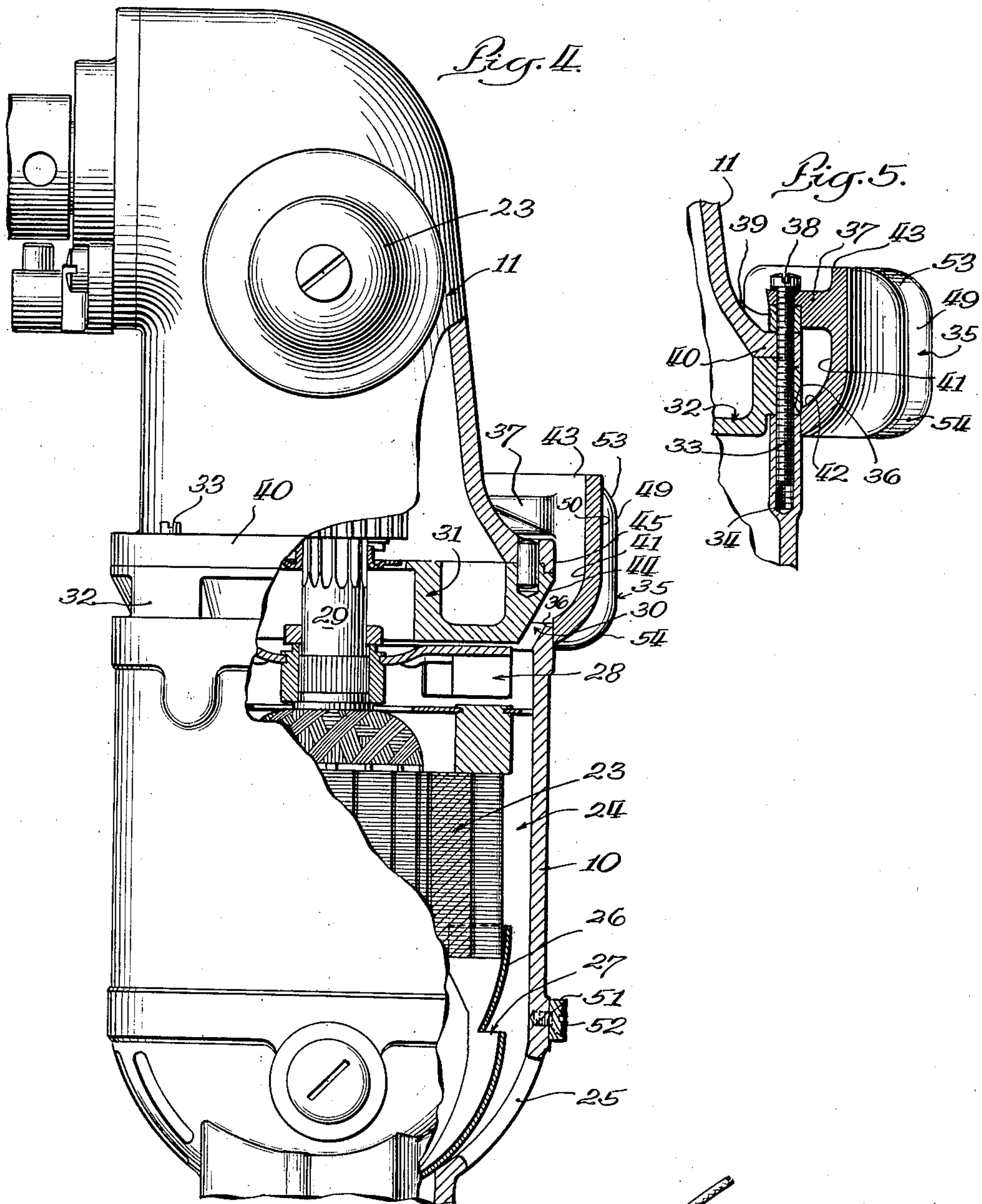
F. O. ALBERTSON

2,123,222

SANDING MACHINE

Filed Oct. 13, 1937

2 Sheets-Sheet 2



Inventor:
Francis O. Albertson
By
Williams, Bradbury,
McCaleb & Hinkle
Attys.

UNITED STATES PATENT OFFICE

2,123,222

SANDING MACHINE

Frans O. Albertson, Sioux City, Iowa, assignor to
Albertson & Company, Inc., Sioux City, Iowa,
a corporation of Iowa

Application October 13, 1937, Serial No. 168,702

4 Claims. (Cl. 51—170)

The present invention relates to sanding machines and is particularly concerned with improvements in sanding machines of the type covered by my prior patents for avoiding injury to the housing when it is dragged about by the connection cord, and for preventing the ventilating air current from the motor from being blown toward the face of the operator.

One of the objects of the invention is the provision of an improved ventilation guard for sanding machines, which is adapted to deflect the air which issues from the rear side of the motor housing, and which is loaded with abrasive particles, from the face of the operator so as to protect the operator from the abrasive particles in the air exhausted from the motor.

Another object of the invention is the provision of an improved ventilation guard which is also adapted to be used to support and protect the motor housing and gear housing when the device is not in use.

Another object of the invention is the provision of an improved sander guard which is adapted to serve as a stand for the sander, to give it a stable supporting surface with the sanding disc out of contact with the floor, so that the disc is protected from injury. It has been found that operators of such sanding machines frequently drop them on concrete floors and the machines are often dragged about by the cord so that sanders have come for repair which have their housings practically worn out. Furthermore, the sanders of the prior art have not been provided with any stable supporting surface, and if those sanders are allowed to lie on the floor, the sanding disc is apt to come into contact with the floor or other supporting structure, and may accidentally cause damage to the sanding disc, the machine, or the floor when the plug is first put in, if the switch happens to be turned on.

Other objects and advantages of the invention will be apparent from the following description and the accompanying drawings, in which similar characters of reference indicate similar parts throughout the several views.

Referring to the two sheets of drawings,

Fig. 1 is a rear plan view of a sanding machine constructed according to the present invention;

Fig. 2 is a side elevational view;

Fig. 3 is an end elevational view;

Fig. 4 is a full sized fragmentary view showing the details of construction of the guard with respect to the deflection of the cooling air from the motor;

Fig. 5 is a fragmentary detail showing a section of the housing at the point of attachment of the guard;

Fig. 6 is a side elevational view of a sander provided with a guard according to the invention

and supported upon the stable supporting surface of the guard.

Referring to Fig. 1, the sanding machines to which the invention relates usually comprise an electric motor 10 having a cylindrical housing 5 and provided at one end with a gear housing 11 and at the other end with a box-like switch housing 12.

The switch housing 12 carries a cylindrical handle 13, which terminates in a ball 14 adapted to be supported in the palm of the hand, and the electrical connection cord 15 (Fig. 6) leads into the handle 13 through the ball 14 and through a reinforcing rubber hose 16, which is provided with suitable anchors at 17 and inside the ball 14.

The gear housing 11 supports suitable speed reduction gears by means of which the drive spindle 18 may be driven at a speed suitable for sanding operations or for polishing operations, and the position of the transmission gears may be changed by moving the push rod 19, which extends into the housing 11.

The machine is shown in connection with a sanding disc comprising a threaded hub supporting a pair of resilient metal plates 20 which carry a rubber pad 21, to which is secured an abrasive disc 22. The machine is usually provided with a removable side handle 23, which may be attached to either side of the gear housing 11, by means of appropriate lugs 24 having a suitable threaded socket.

Referring to Fig. 4, the motor housing 10 supports the motor field 23 in spaced relation to the housing 10, providing an air ventilation conduit 24, by means of which the motor may be cooled. The air is drawn in through the ventilation slots 25 at the lower end of the motor (Figs. 1 and 4), and it passes over the baffle 26, which is provided with a suction opening 27, and directs the air into the ventilation conduit 24. Air enters the suction opening 27 from the vicinity of the commutator, which is also kept cool by the ventilation system. The air is impelled by means of a centrifugal fan 28, carried by the motor shaft 29, and air is expelled through the annular slot 30 between the partition plate 31 at the end of the motor and between the gear housing 11 and the motor housing 10.

The air vents 30 comprise a plurality of annular slots which are located between the axially extending lugs 32 on the partition plate 31. The gear housing 11, partition plate 31, and motor housing 10 are all secured together by a plurality of screw bolts 33 which extend through the flange of the gear housing through the partition 32, and are threaded into threaded bores 34 in the wall of the motor housing 10.

The sander is provided with a guard member 35 which is located on the side opposite to the sanding disc 22 at that end of the motor from which

the air issues through the ventilation outlet 30. The guard 35 may comprise a cast metal member which has a half cylindrical inner surface 36 adapted to engage the outside of the motor housing 10 over half its circumference, and with a plurality of inwardly extending lugs 37, which may be two in number, for securing the guard to the motor.

The inwardly extending lugs 37 may be located at such points that they coincide with the location of the screw bolts 33, and they are provided with apertures 38 for passing the screw bolts 33.

A tubular spacer 39 is located along each screw bolt 33, between the attachment lug 37 and the attachment flange 40 of the gear housing 11.

Between the attachment lugs 37 and the cylindrical surface 36, the guard 35 is provided with an annular recess 41, which extends from the lower end 42 of this recess to the upper end 43 of the guard. The recess 41 thus provides a further conduit in cooperation with the outer surfaces 44, 45 of the partition 31 and attachment flange 40 for conducting the air from the discharge outlet 30 to the atmosphere.

Instead of the discharge air with its dust and abrasive particles blowing up into the face of the operator, this discharge air is blown off horizontally in a direction parallel to the axis of the motor, due to the action of this guard member 35.

The guard member 35 may have its side surfaces 46, 47, flat, which will provide a stable supporting surface on either of those sides, when the sanding disc is removed, and it may be provided with a pair of downwardly extending legs or skids 48 or 49. The under surface 50 between these skids may be cylindrical, and is preferably higher than the lower edge of the skids in Fig. 3, so that the skids 48, 49 provide the supporting surface for the sander, and the portion 50 is out of contact with the floor.

The sander guard 35 is so located on the sander that there is an approximate balance between the sanding disc end and the motor end of Fig. 6, but the motor end slightly overbalances the sander end, as shown in Fig. 6. In order to protect the motor from engagement with the floor, it is provided upon its opposite end with a curved strip of steel 51, secured to the motor by a pair of screw bolts 52 passing through the strip 51 and threaded into the motor housing.

The steel strip 51 is relatively small, but due to its hardness it has wearing qualities commensurate with the wearing qualities of the relatively larger skids 48, 49 of less hard material.

The skids 48, 49 have forward and rearward curved edges 53, 54, so as to cause them to rise over obstructions, and by means of the skids 48, 49 and the block 51, the motor has a three point support on its rear side. It is stably supported on its rear side, as shown in Fig. 6, with the sanding disc in such position that it cannot be injured, and with the switch in such position that it is not engaged by the floor. In any event, the switch is protected as it is disposed between the ball and the motor housing in such position that it cannot engage the floor.

The sander will rest, as shown in Fig. 6, when it is put on its rear side on the floor, and if it is pulled by means of the cord 15 it will slide along the floor on the skids 48, 49, without damage to

the motor or sanding disc. It will thus be observed that the guard performs the functions of protecting the motor against injury, and providing a suitable support for the motor, without possibility of injury to the gear housing or sanding disc, and of deflecting the air loaded with dust and abrasive particles from the face of the operator.

While I have illustrated a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a sanding machine, the combination of an electric motor with a gear housing and suitable gearing for driving a drive spindle at a predetermined speed, said drive spindle having a sanding disc, and said motor having ventilation conduits extending through it, with a guard member carried by said motor for deflecting the discharged air from the direction of the operator of the sander, said guard member being provided with a pair of skids whereby the sander may be drawn about upon a stable supporting surface of said skids without damage to the sanding disc or motor.

2. In a sanding machine, the combination of an electric motor with a gear housing and suitable gearing for driving a drive spindle at a predetermined speed, said drive spindle having a sanding disc, and said motor having ventilation conduits extending through it, with a guard member carried by said motor for deflecting the discharged air from the direction of the operator of the sander, said guard member being provided with a pair of skids whereby the sander may be drawn about upon the stable supporting surface of said skids without damage to the sanding disc or motor, and said motor being provided with an auxiliary hardened block to form, with said skids a three point support for the motor.

3. An accessory for sanding machines comprising a guard member provided with a cylindrical contacting surface for engaging the motor of a sander, and with a plurality of inwardly extending attachment lugs for attachment to the motor, said member also having a curved baffle providing, with the exterior surface of the motor, an extension of the air discharge conduit from the motor to deflect the air from the direction of the operator.

4. An accessory for sanding machines comprising a guard member provided with a cylindrical contacting surface for engaging the motor of a sander, and with a plurality of inwardly extending attachment lugs for attachment to the motor, said member also having a curved baffle providing, with the exterior surface of the motor, an extension of the air discharge conduit from the motor to deflect the air from the direction of the operator, and said member being provided on its outer surface with a pair of stable supporting legs whereby the motor is adapted to provide a stable supporting surface for the sander.

FRANS O. ALBERTSON.