June 29, 1943. E. L. BALLARD 2,323,082

FLOOR SURFACING MACHINE

Filed Dec. 10, 1941 3 Sheets-Sheet 1

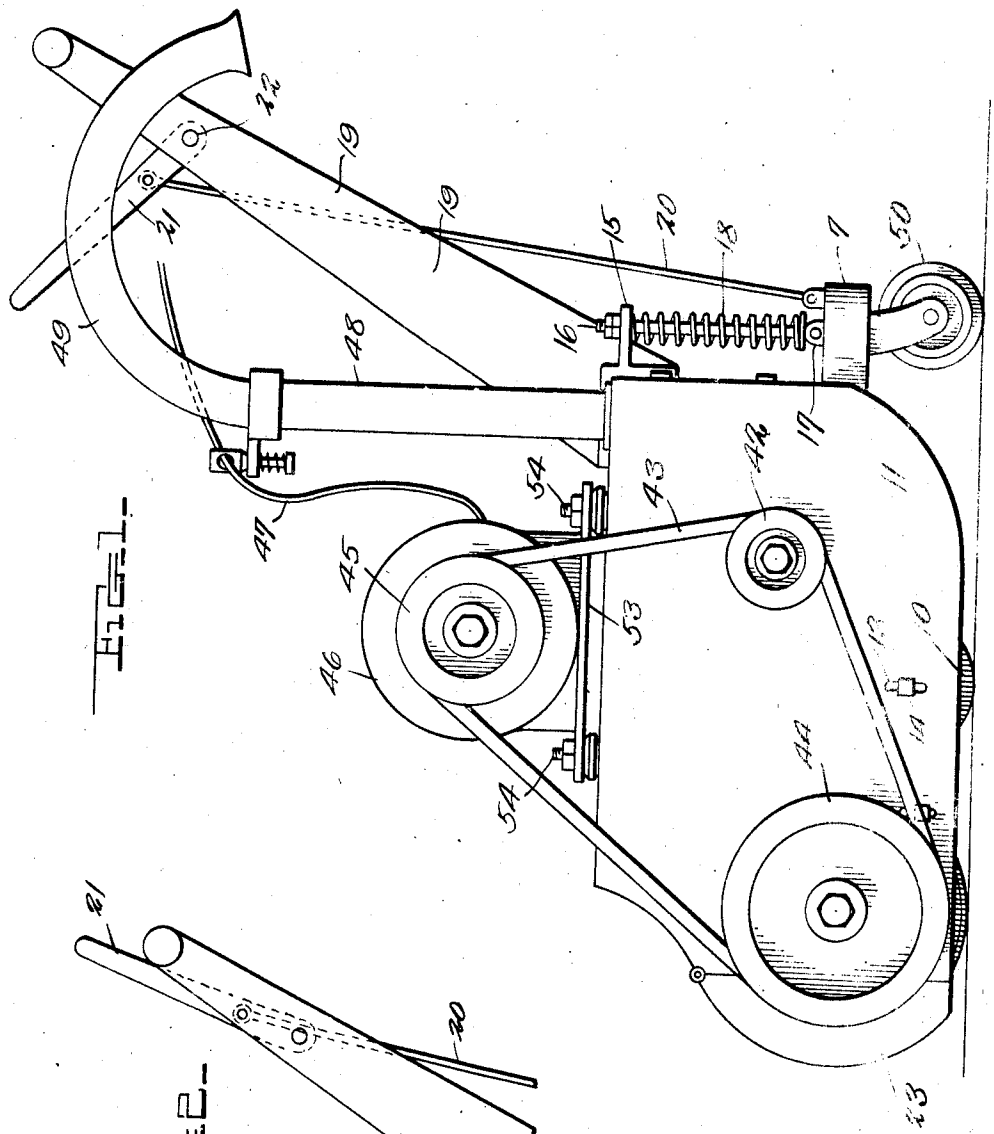


FIG. 1.

FIG. 2.

E. L. Ballard,
INVENTOR.
BY C. A. Snow & Co.

June 29, 1943. E. L. BALLARD 2,323,082

FLOOR SURFACING MACHINE

Filed Dec. 10, 1941 3 Sheets-Sheet 2

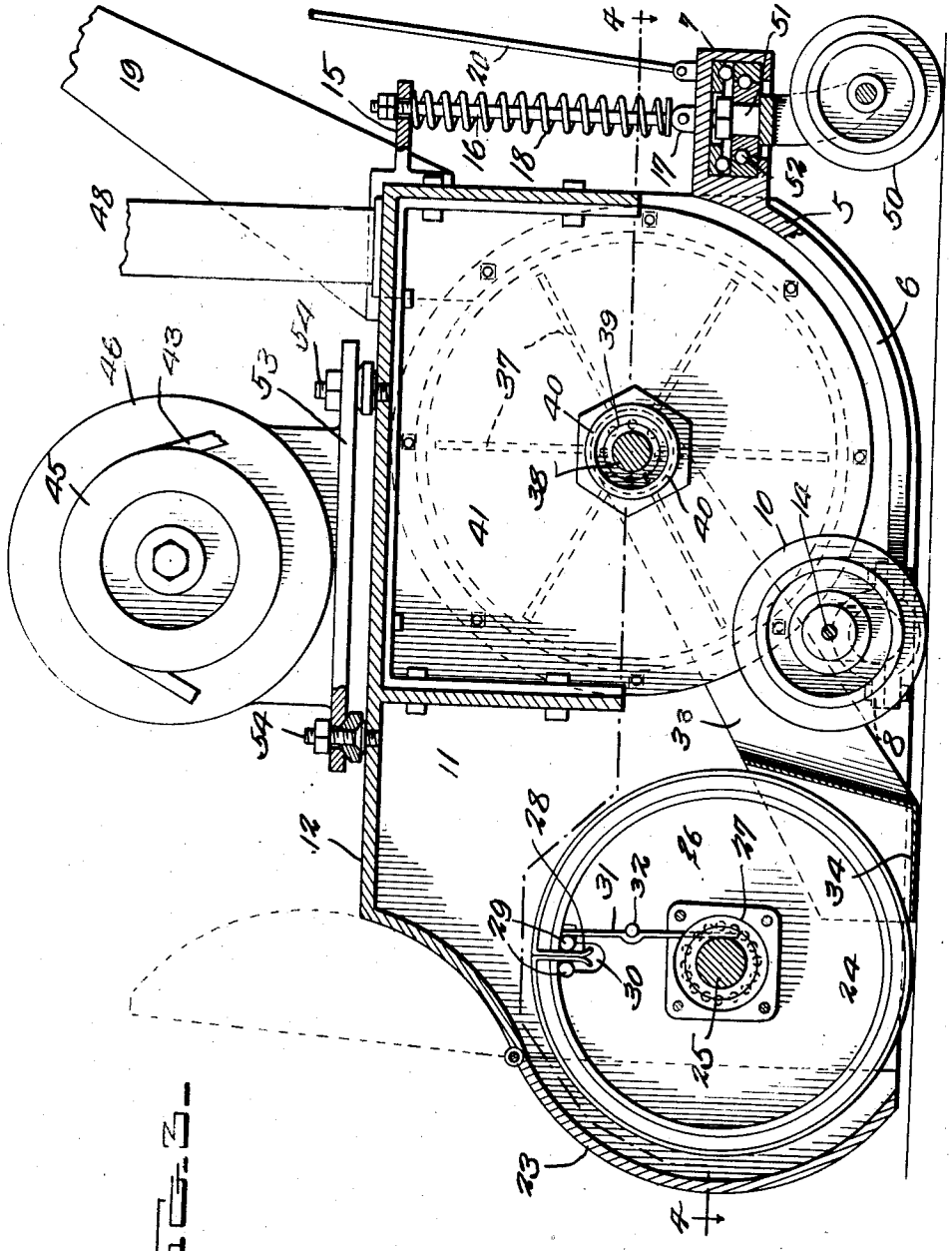


Fig. 2.

E. L. Ballard,

INVENTOR.

BY C. A. Snow & Co.

June 29, 1943. E. L. BALLARD 2,323,082

FLOOR SURFACING MACHINE

Filed Dec. 10, 1941 3 Sheets-Sheet 3

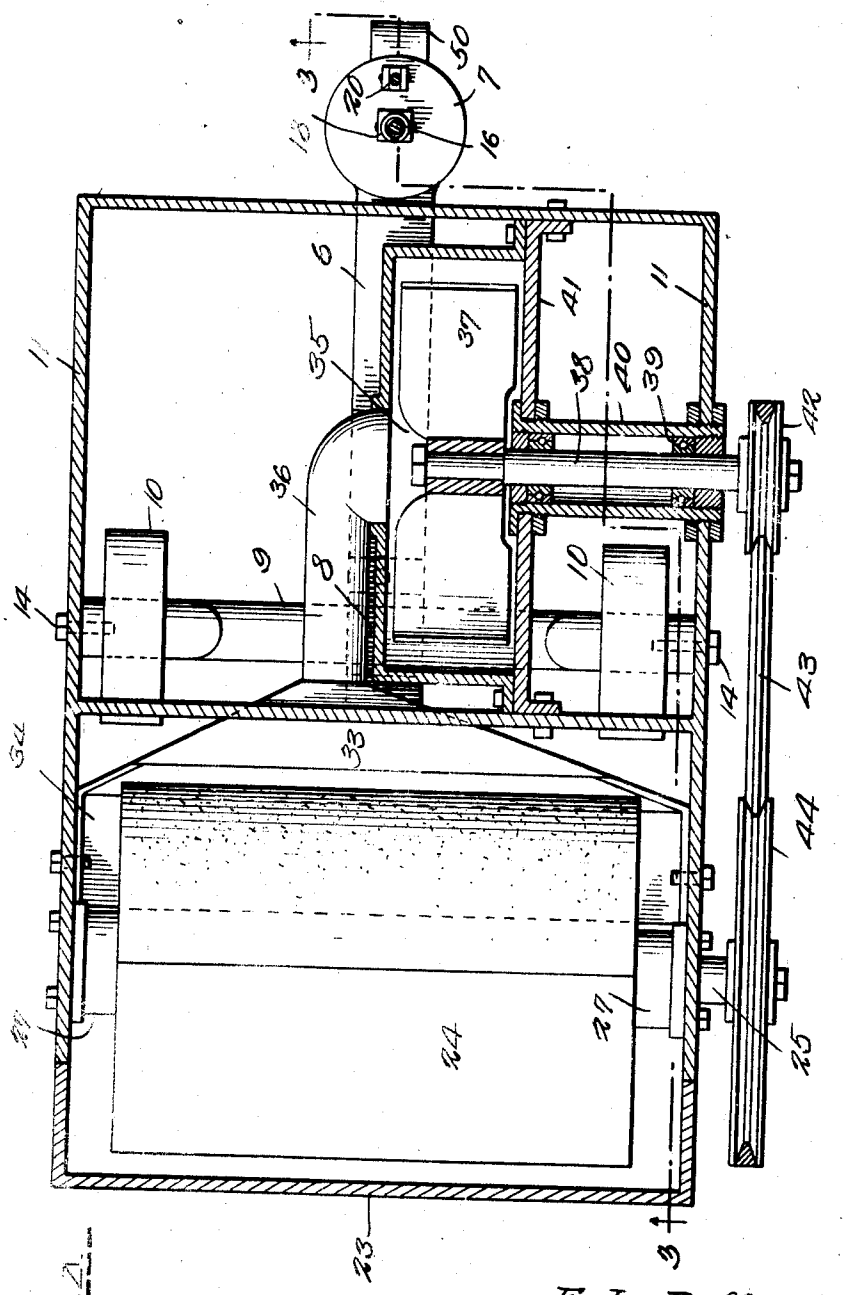


FIG. 4.

E. L. Ballard,
INVENTOR.
BY C. A. Knowles.

Patented June 29, 1943 2,323,082

UNITED STATES PATENT OFFICE

2,323,082

FLOOR SURFACING MACHINE

Edwin L. Ballard, Lansing, Mich.

Application December 10, 1941, Serial No. 422,445

1 Claim. (Cl. 51—176)

This invention relates to floor sanding or floor surfacing machines, the primary object of the invention being to provide a machine of this character having means whereby the sanding drum thereof may be readily and easily adjusted with respect to the floor surface under treatment, insuring the proper surfacing of the floor.

An important object of the invention is to provide a machine of this character wherein the sanding drum and suction fan thereof are completely housed, thereby confining the dust and particles removed by the sanding drum, to the housing of the machine, and eliminating any possibility of the dust and particles, escaping to the atmosphere.

A still further object of the invention is to provide a sanding machine wherein the sanding drum is located in such a way that easy access may be had thereto, to permit the ready removal and replacement of the sanding paper.

Still another object of the invention is to provide a means for securing the sanding paper to the sanding drum, to insure against the sanding paper buckling or becoming loose from the drum, while the drum is in motion.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a side elevational view of a floor surfacing machine, constructed in accordance with the invention.

Figure 2 is a fragmental detail view illustrating the control lever in its uppermost position, elevating the sanding drum.

Figure 3 is a sectional view taken on line 3—3 of Figure 4.

Figure 4 is a sectional view taken on line 4—4 of Figure 3.

Referring to the drawings in detail the reference character 5 designates the main supporting frame of the machine which includes a curved forwardly extended arm 6, at the rear end of which is formed the bearing housing 7. At the forward end of the arm 6, is a bearing indicated at 8 in which the shaft 9 is mounted, the shaft 9 providing a support for the wheels 10 that in turn support the forward end of the main frame 5. The body portion or housing of the machine includes the side walls 11 and a top 12, the side walls 11 having vertical elongated openings 13 through which the bolts 14 pass, the bolts 14 extending into the ends of the shaft 9, securing the shaft 9 to the main housing in such a way that the housing may move vertically, with respect to the main supporting frame and wheels 10.

Extending from the housing, and disposed at a point intermediate the side walls thereof, is a plate 15 which is formed with an opening through which the bolt 16 extends, the bolt 16 having pivotal connection with the bearing housing 7, through the ears 17 that rise from the upper surface of the bearing housing 7. A coiled spring indicated at 18 surrounds the bolt 16 and has its lower end bearing against the ears 17, while the opposite end bears against the lower surface of the plate 15, thereby urging the housing upwardly. Handles indicated at 19 extend from the rear end of the main housing, and provide means whereby the machine may be readily moved over the floor surface.

Pivotally connected with the bearing housing 7, is a control rod 20 that extends upwardly and connects with the lever 21 that in turn is pivotally connected with the handle, at 22.

From the foregoing it will be seen that due to the construction and location of the control rod, when the lever 21 is swung from the position shown in Figure 1 of the drawings to the position shown by Figure 2, the rear end of the main housing will be tilted rearwardly, with the result that the forward end thereof is elevated, for purposes to be hereinafter more fully described.

The forward end of the body portion or housing of the machine is extended downwardly and provided with a curved hinged closure indicated at 23. This curved hinged closure 23, conforms to the shape of the sanding drum, which is indicated by the reference character 24, the sanding drum being mounted in the forward end of the body portion or housing of the machine, so that easy access thereto may be had, through the opening at the forward end of the body portion or housing, when the curved hinged closure 23 is elevated to the dotted line position, shown by Figure 3 of the drawings.

The sanding drum 24 is mounted on the shafts 25 that are secured to the heads 26 of the sanding drum that are slightly spaced from the ends of the sanding drum, as shown by Figure 3 of the drawings.

These shafts 25 operate in bearings 27 that are

bolted to the side walls of the body portion or housing.

The sanding drum is of the usual and well known construction, and is formed with a slot extended longitudinally thereof, through which the ends of the sanding cloth, indicated at **28**, extend, the ends of the sanding cloth being gripped between the rods **29** that are mounted in the openings **30** of the heads **26**. These rods **29** are held in clamping relation with respect to each other, gripping the ends of the sanding cloth, by the action of the spring arms **31** which are shown as having their upper ends engaging one of the rods **29**, the opposite ends thereof engaging the shafts **25**, while the intermediate portions of the spring arms engage the pins **32** extening laterally from the heads **26**. Thus it will be seen that due to this construction, the spring arms are tensioned to cause the rods to firmly grip the sanding cloth.

Mounted within the housing, is a dust conduit **33** which has a wide, open mouth, the bottom **34** thereof being disposed in parallel spaced relation with the floor surface, over which the machine is moving. This dust conduit **34**, extends rearwardly, and connects with the suction fan housing **35**, through the pipe **36**. The reference character **37** designates the suction fan which operates within the fan housing **35**, the suction fan **37** being secured to the inner end of the fan shaft **38** where it operates in bearings **39** supported within the tube **40** secured between one of the side walls of the fan housing, and the wall **41** that forms one wall of the fan housing.

Mounted on the outer end of the shaft **38**, is the pulley **42** over which the belt **43** operates, the belt **43** also operating over the substantially large pulley **44** mounted on the sanding drum shaft **25**.

The belt **43** also operates over the pulley **45** secured to the shaft of the motor **46** which is supplied with electric current from a suitable source of electricity supply, through the wires **47** that are shown as connected with the motor **46**.

Communicating with the suction fan housing **35**, is an exhaust pipe **48** that has an upper curved end **49** to which a bag or receptacle, may be secured, so that the dust and particles removed by the sanding drum, may be collected, and readily removed.

At the rear end of the frame **5**, is a caster **50**, the shaft **51** of which operates on the bearings **52** mounted in the bearing housing **7**, whereby the machine may be readily and easily guided and controlled.

It might be further stated that the motor **46** is mounted on the base **53** and held in position on the body portion or housing, by means of bolts **54**.

From the foregoing it will be seen that by moving the lever **21** to various positions, the sanding drum may be moved into and out of contact with the surface over which the machine is moving. It will also be noted that the pressure on the sanding drum may be regulated by the operation of the lever **21**.

What is claimed is:

A floor sanding machine comprising a wheel-supported bearing frame, a sanding drum housing mounted for pivotal tilting movement on the bearing frame, a sanding drum mounted at the forward end of said sanding drum housing, the rear end of the bearing frame extending beyond the rear of the sanding drum housing, a plate extending rearwardly from the sanding drum housing and disposed adjacent to the top of said housing, said plate having an opening formed therein, a bolt pivotally connected to the bearing frame and being disposed within the opening, the upper end of the bolt extending beyond said plate, a nut on the upper end of the bolt adapted to rest on the plate, restricting upward movement of the drum housing with respect to said bearing frame, a spring coiled around the bolt and engaging the lower surface of the plate, the lower end of the spring resting on the bearing frame, normally urging the plate and drum housing upwardly, whereby the sanding drum is urged into engagement with the floor surface under treatment, handles mounted on the drum housing, and a control rod connected with the bearing frame and adapted to operate to elevate the sanding drum to its inactive position by tilting the sanding drum housing.

EDWIN L. BALLARD.