

April 2, 1929.

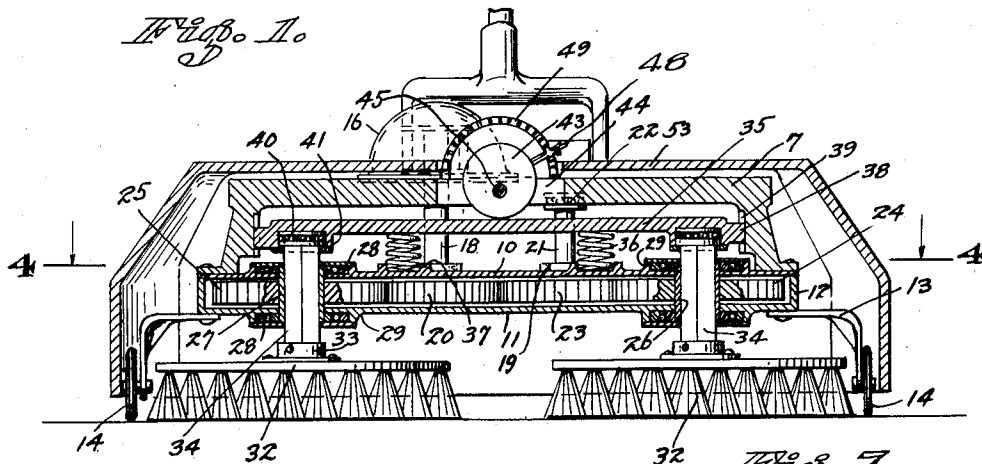
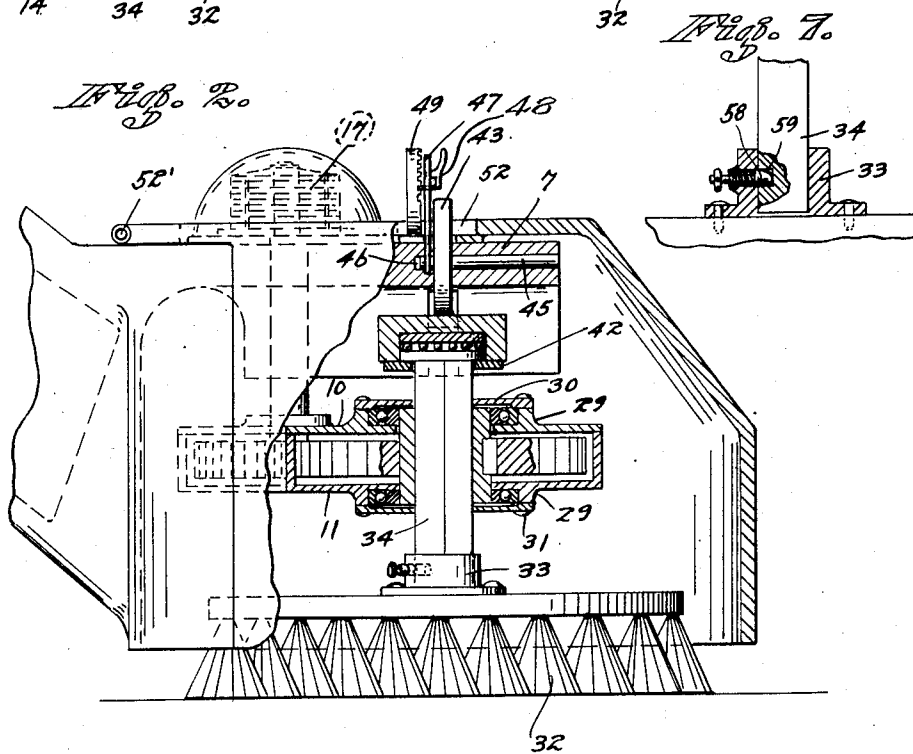
H. E. SCHOOLING

1,707,575

FLOOR POLISHING MACHINE.

Filed Sept. 28, 1925

2 Sheets-Sheet 1



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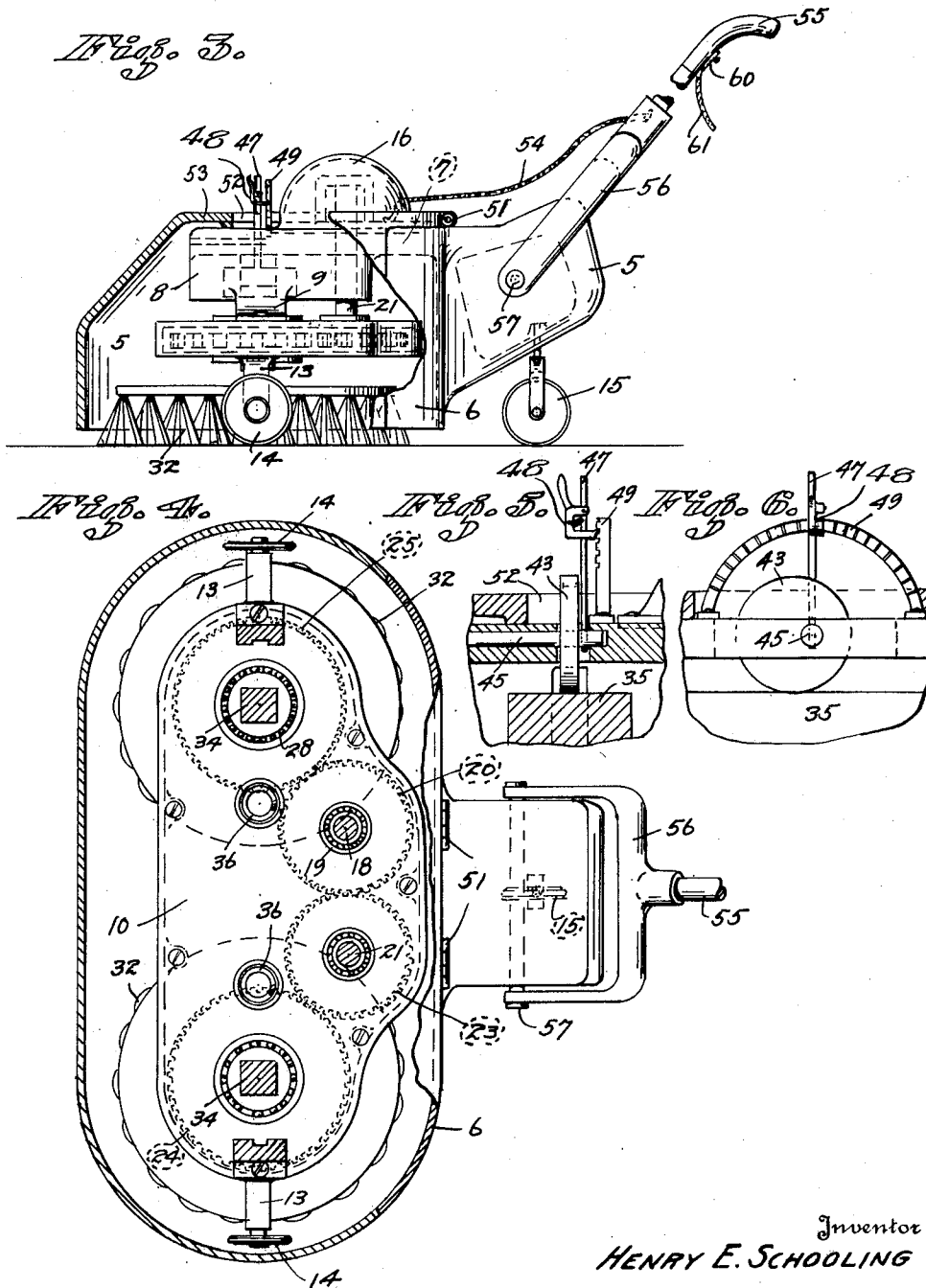
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UNITED STATES PATENT OFFICE.

HENRY E. SCHOOLING, OF NAPA, CALIFORNIA.

FLOOR-POLISHING MACHINE.

Application filed September 28, 1925. Serial No. 59,183.

The present invention relates to improvements in machines for operating upon floors for the purpose of either polishing or cleaning the same.

5 The general object of the invention is to provide in a floor polishing machine means for varying the degree of vertical pressure exerted by the brushes of the machine upon the floor whenever found necessary to do so; and further to provide for giving easy access to the working parts of the machine and protecting the operating mechanism from undue entrance of dust and foreign matter thereinto.

15 The above and other objects are accomplished by instrumentalities pointed out in the following specification.

The invention is clearly defined in the claim.

20 A satisfactory embodiment of the invention is illustrated in the accompanying drawings forming part of the specification and in which

25 Figure 1 is a vertical cross section of the device.

Figure 2 is an end elevation taken at right angles to Figure 1 with parts broken away to expose the relation of other parts.

30 Figure 3 is a view similar to Figure 2 but on a reduced scale, and looking at the other end of the device.

Figure 4 is a cross section through the casing taken approximately on the line 4-4 of Figure 1.

35 Figure 5 is a sectional detail showing the pressure control in side elevation.

Figure 6 is a view similar to Figure 5, and looking at right angles thereto, and

40 Figure 7 is a detail section showing the brush connecting device.

45 Referring now to the drawings 5 is a metallic handle support and balance block extending upwardly and rearwardly from the middle portion of a vertical wall 6. 7 indicates a horizontally disposed bracket arm extending forwardly from the upper side of wall 6 and peripherally provided with a depending circular skirt 8 opposite outer face portions of which carry downwardly and outwardly extending lugs 9 which are secured to opposite portions of an oblong cover plate 10 disposed above and conforming in contour to a base plate 11 connected to the cover plate 10 by the continuous vertical side wall 12 which cooperates with the cover and base plates to pro-

vide a closed casing, a pair of oppositely disposed angular shaped bracket arms 13 extend outwardly and downwardly from the casing and carry at their lower end portions 60 rubber tired traction wheels 14 which cooperate with the caster wheel 15 depending from support 5 to support the lower side of vertical wall 6 in spaced relation to a floor and to effect easy progressive back and forth 65 and turning movements of the machine under the guidance of the operator. A dome 16 upon the bracket 7 provides a housing for vertically arranged electric motor 17 supported by bracket 7. The motor shaft 18 70 extends vertically downward through a bearing 19 in cover plate 10 and into the casing where it is fastened to a drive spur gear wheel 20. A vertical stub shaft 21 has its upper end arranged in a ball bearing 22 in 75 the lower face of bracket 7, and extends vertically downward thru cover plate 10 and into the casing. A toothed idler 23 is secured to stub shaft 21 and corresponds in construction to gear wheel 20 with which it meshes. A second pair of spur gear wheels 80 24, 25 are disposed within the casing. These gear wheels correspond in size and are provided with a greater number of teeth than gear wheels 20 and 23 with which they mesh 85 and are driven thereby. Non-cylindrical sleeves 26, 27 having non-cylindrical bores extend through correspondingly shaped openings in the hubs of gear wheels 24, 25 and through openings in the cover plate 10 90 and base plate 11. Ball bearings 28 surround the outer ends of sleeves 26, 27 and support the same. The bearings are disposed within seats 29 on the outer faces of the cover and base plates 10, 11 and are retained by cover plates 30 attached to the 95 plates by screws 31. 32 indicates a pair of downwardly extending rotatable circular polishing brushes which operate upon the floor to be treated. Centrally disposed 100 sockets 33 carried by these brushes connect the same to non-cylindrical shafts 34 slidably fitted in the bores of the sleeves 26, 27 and rotatable therewith. A vertically slidable cross bar 35 is disposed upon a yieldable support provided by the compression 105 springs 36 which are disposed in sockets 37 on the cover plate 10, and tongues 38 on the opposite ends of the bars are disposed in grooves 39 in the lugs 9, and operate to guide 110 the cross bar in its vertical movements. Ball bearings 40 are disposed in sockets 41

in the cross bar 35 for the upper ends of the shafts 34 and cap plates 42 retain the parts against displacement. The cam disk 43 of a pressure control device is disposed in an orifice 44 of bracket arm 7 and bears on the cross bar 35 and the eccentrically disposed shaft 45 to which the disk is secured is located in a bearing 46 extending inwardly from the outer end of the bracket arm 7. The shaft operating handle 47 through which the disk 43 is turned to vary the pressure on brushes 32, is provided with a locking dog 48 which operates to lock the disk of the pressure regulating device in any of its adjusted positions by engaging one of the notches of a segment 49 carried by the bracket arm 7. 51 indicates a metal canopy extending forwardly and downwardly from the upper edge of back wall 6 to which it is hinged as indicated by 51. The lower edge of canopy 51 forms a continuous extension of the lower edge of back wall 6 and embraces the entire area between the outer faces of the traction wheels 14 and from a point forwardly of the brushes to the back wall 6. An opening 52 in the top 53 of the canopy affords access to the handle 47 when the canopy is in its normal lowered position, in which position the said canopy serves as a protective covering for the parts, and when thrown upwardly and rearwardly on its hinge, the normally covered parts are readily accessible for oiling, inspection and the like. The current supply for the electric motor 17 is conveyed by the cable 54 which is attached to the upwardly and rearwardly extending shank 55 attached to the yoke 56 which is connected by pivot pins 57 to handle support 5.

When the device is used as a floor polisher or the like brushes of suitable character in point of flexibility are attached to the lower ends of shafts 34. In this connection it will be noted, on referring to Figure 7, that the sockets 33 of the brushes carry spring actuated latch bolts 58 which detachably connect the brushes to the shafts 34 by interlocking with the shafts as by entering a recess 59 in the shaft as shown in Figure 7. The operator by applying a push or pull force to the handle causes the device to move in the required direction. The passage of current to the motor may be controlled by a switch 60 on handle 55 to which is connected one end of an electric cord 61. In the operation of the motor the brushes 32 are rotated in opposite directions as the wheels 14 and 15 carry the device over the floor. In polishing or otherwise operating upon a floor desired results may frequently be had more expeditiously by varying the brush pressure upon the surface being treated, as for instance when different areas of the floor surface are markedly defaced. In connection with the present device an increase in brush pressure may be readily had by turning handle 47. It being obvious that, when the parts are positioned as shown in Figure 3 for instance, a movement of handle 47 in one direction will cause the disk 43 to force the cross bar 35 downwardly which movement will be transmitted to the brushes. In this manner the pressure on the brushes may be increased to any degree within the weight limit of the machine.

Although I have shown and described one embodiment of my invention, it is to be understood that the same is susceptible of various changes; and I reserve the right to employ such as may come within the scope of the appended claim.

I claim:

A floor polishing machine comprising a frame, means for movably supporting said frame, a bar slidably carried by said frame and being movable toward and away from the supporting surface, shafts rotatably and non-slidably carried by said bar, said shafts being vertically movable with respect to said frame, brushes carried by said shafts and contacting with the supporting surface, means for actuating said shafts, and vertically adjustable means disposed at the center of said bar for causing said brushes to exert the required pressure upon the surface to be polished, and spring means between said bar and frame for keeping said bar in contact with said adjustable means.

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