

March 25, 1930.

H. M. WOLGAMOOD
FLOOR FINISHING MACHINE

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2 Sheets-Sheet 1

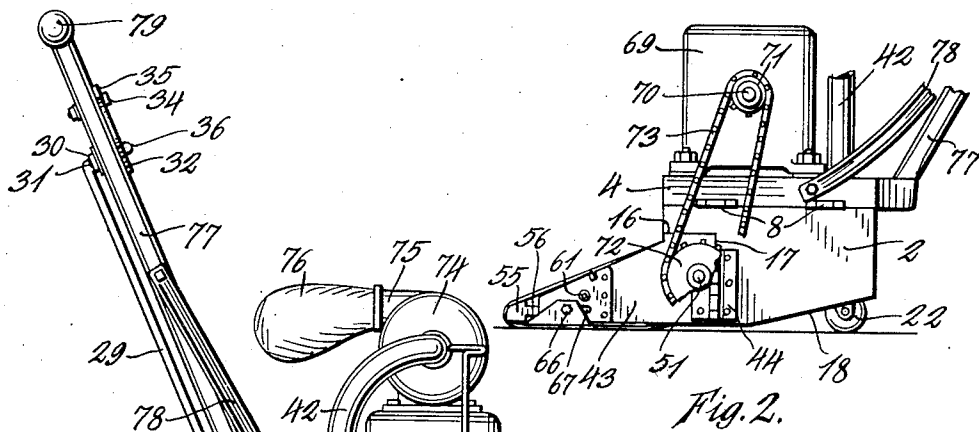
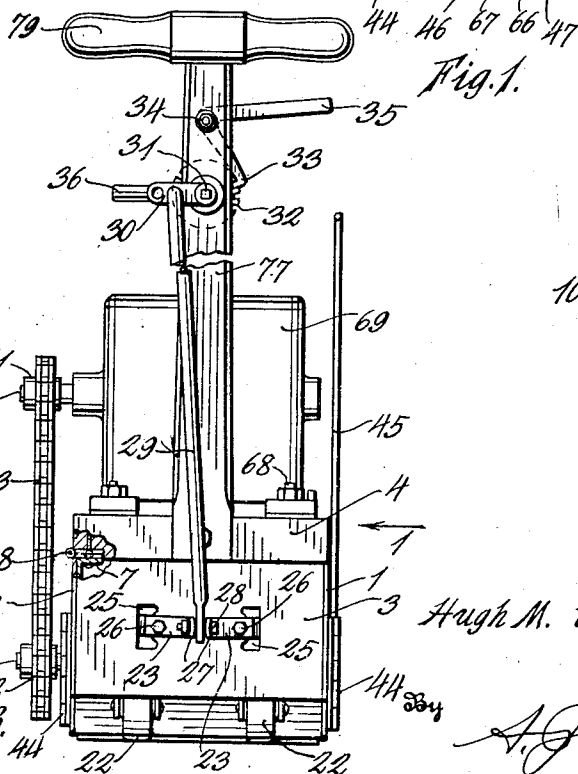
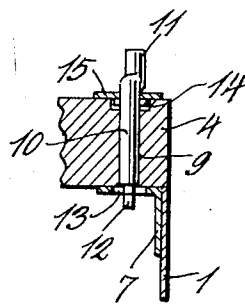


Fig. 4.

Inventor

Hugh M. Wolgamood.

A. J. O'Brien
Attorney

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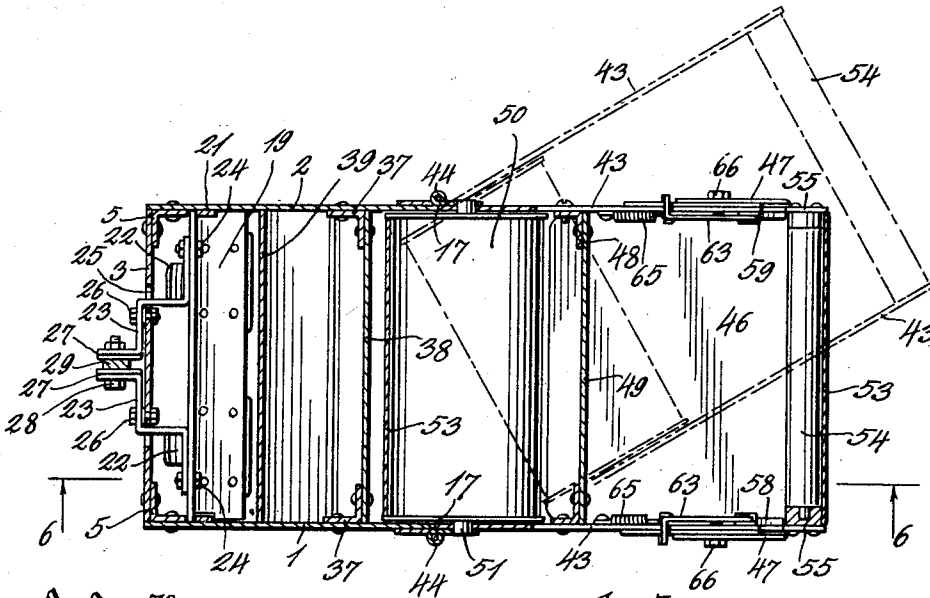
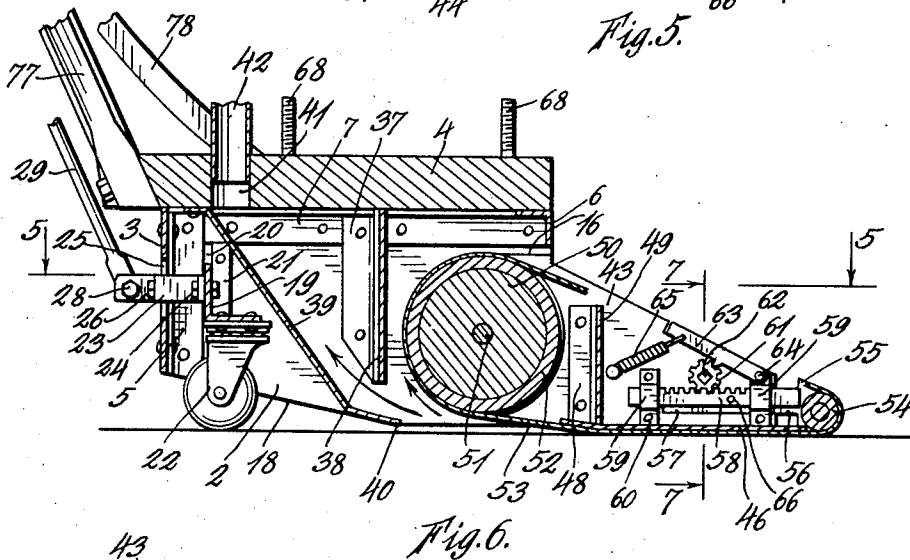
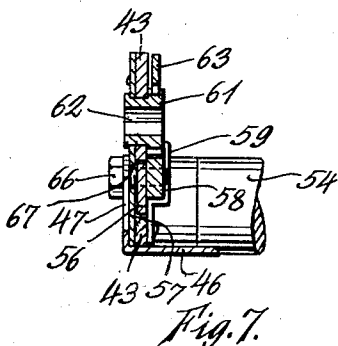
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FLOOR FINISHING MACHINE

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2 Sheets-Sheet 2



Inventor

Hugh M. Wolgammood.

பெயர்

A. J. O'Brien
Attorney

Attorney

UNITED STATES PATENT OFFICE

HUGH M. WOLGAMOOD, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO J. E. PICKARD, OF DENVER, COLORADO

FLOOR-FINISHING MACHINE

Application filed October 1, 1928. Serial No. 309,589.

This invention relates to improvements in machines for sanding and waxing floors and has reference more particularly to a sanding machine of a medium sized construction which shall be particularly well adapted for finishing the edges of floors after the latter have been sanded by a larger machine.

The use of sanding machines for finishing floors is now very common and where large floors are to be finished it is customary to employ a large machine that will do the work quickly. Such large machines, however, are not well adapted for use about the edges of the floor and therefore when the floor has been sanded by such a machine an unfinished strip is usually left around the four sides of the floor next to the base molding. It is the object of this invention, as above intimated, to produce a compact machine that shall be so constructed that it will be adapted to finish the edges of the floor and by means of which the floors can be sanded right up to the base board or base molding.

It is also an object of this invention to produce a machine of this type which shall be so constructed that the sand paper belt can be quickly and easily removed and replaced when necessary and which shall be provided with means for adjusting the rollers in such a way that the belt will be held taut, even if it has not been perfectly made.

It is a still further object of this invention to produce a machine that shall be so constructed that by simply applying a belt of cloth such as a carpet belt to the machine, the latter can be employed for waxing the floors, as well as for sanding them.

The above and other objects that will become apparent as the description proceeds are attained by means of a construction and arrangement of parts that will be hereinafter described in detail and reference for this purpose will now be had to the accompanying drawings in which the preferred embodiment thereof has been illustrated and in which:

Fig. 1 is a side elevation of the machine looking in the direction of arrow 1 in Fig. 3 and shows the machine in operative condition;

Fig. 2 is an elevation of the machine look-

ing in the direction of arrow 2 in Fig. 3, parts being broken away to better disclose the construction;

Fig. 3 is a rear elevation looking in the direction of arrow 3 in Fig. 1;

Fig. 4 is a section taken on line 4—4, Fig. 1; and shows a locking device or latch;

Fig. 5 is a section taken on line 5—5, Fig. 6;

Fig. 6 is a section taken on line 6—6, Fig. 5.

Fig. 7 is a section taken on line 7—7, Fig. 6.

The machine comprises a substantially rectangular casing which is formed from sheet metal and which has sides 1 and 2, a back wall 3 and a top or cover 4. The sides 1, 2 and back wall 3 are connected together by means of two corner angles 5 and the sides 1 and 2 have their front ends connected by means of an angle iron 6. Angles 7 extend along the upper inner edges of sides 1 and 2 and the upper inwardly extending flanges of angles 6 and 7 serve as a support for the top or cover 4, which is held in place on one side by means of hinges 8. The other side of cover 4 is provided with an opening 9 through which a rotatable latching pin 10 extends. The upper end of this pin is provided with a crank arm 11 and the lower end is provided with a hook 12, that is adapted to extend through an opening 13 in the flange of angle 7. A pin 14 extends through the latching pin 10 below the plate 15 and the latter is secured to the top 4 by means of screws. The opening 13 is elongated and when the latching pin is in one position the hook 12 can be readily removed and inserted, but when the pin is rotated ninety degrees, it will serve as a latch and will positively hold the cover member 4 in the position shown in the drawings. Side members 1 and 2 have a rectangular portion cut away from the lower front corners and the upper side of this cut-out has been indicated by numeral 16 and the vertical side by numeral 17. The lower rearmost ends of sides 1 and 2 are upwardly inclined as indicated by lines 18. Extending transversely between sides 1 and 2 is an angle bar 19 whose opposite ends project into slots 20 formed between the forward flanges of angles

5 and the vertical strips 21. Secured to the lower flange of angle 19 are two casters 22, whose rollers are preferably formed from composition material. Z-shaped levers 23 have their inner ends pivoted to the vertical flange of angle 19 by means of bolts 24 and extend outwardly through openings 25 in the end wall 3. These levers have a portion which lies parallel with the end wall and this is provided with an opening for the reception of the pivot bolt 26. The outer ends of the levers which have been designated by numeral 27 project outwardly at right angles from the end wall and are perforated for the reception of a bolt 28 which extends through an opening in the lower end of the lever 29. The upper end of this lever is pivotally attached to a crank arm 30 which is mounted on the end of a rod 31 that extends through an opening in the handle. A ratchet wheel 32 is secured to the rod 31 at the front of the handle and the teeth of this ratchet wheel are adapted to be engaged by the pawl 33 on the end of a detent lever which is pivoted at 34. This lever has a handle portion 35 by means of which it can be moved into and out of operative position. The front end of rod 31 is bent at right angles as indicated at 36 and this portion forms a handle by means of which rod 31 may be rotated. It is evident that when rod 31 is rotated, the connecting rod 29 will be moved upwardly and downwardly and that this, in turn, will rotate the levers 23 about their pivots 26 so as to move the angle iron 19 with its attached casters upwardly and downwardly and to thereby adjust the position of the machine in a vertical direction. Short pieces of angle iron 37 extend downwardly on the two opposite inner surfaces and a plate 38 is secured to these angle irons so as to form a partition that extends from the top 4 to within a short distance of the lower edge of sides 1 and 2. A plate 39 extends from the top of the housing downwardly and forwardly and terminates at 40, a short distance below the lower edge of plate 38. Top member 4 is provided with an opening 41 to which a conduit 42 is connected. This conduit extends to the intake opening of a centrifugal fan to which reference will hereinafter be made. Secured to the housing thus described is a portion comprising two substantially triangular side members 43 whose wide ends are so formed that they will fit into the cut or opening which is bounded by sides 16 and 17 in the manner shown in Figs. 1 and 2. One of these members 43 is secured to side 2 by means of a hinge 44 and the other member 43 is secured to side 1 by a similar hinge from which the hinge pin has been removed and replaced by an elongated rod 45, whose upper end is provided with a handle portion. By removing the rod 45, the hinge can be disconnected in a manner quite evident and this is done whenever a new sand paper belt or carpet belt is to be put in place as will hereinafter appear. Sides 43 are connected by means of a base plate 46, whose opposite edges are bent upwardly in the manner indicated by reference numeral 47. Secured to the inner surface of each plate 43, is an angle 48 and these two angles are connected by means of a plate 49 which serves to connect the side members 43 and also forms a transverse partition between them. A roller 50 which may be of wood or other suitable material, is provided with a shaft 51 which extends through and is journaled in suitable bearings in the side members 43. The outer surface of this roller is preferably covered with a rubber tube 52, which serves to give greater traction between its surface and the sand paper belt 53, which is employed in connection with it. Another roller 54 has its ends pivoted in suitable bearings in the movable side members 55. These bearings have rearwardly extending tongues 56, that slide in slots 57 in the side members 43. A rack 58 is secured to each of the tongues 56 and this is guided in loops 59 that are secured to the inner surfaces of sides 43 by rivets 60. A pinion 61 is rotatably connected to each side member and is so located that it meshes with the teeth in the rack 58. This pinion has a rectangular opening 62 for the reception of the squared end of a wrench by means of which it can be rotated. A pawl or detent 63 is pivoted at 64 and is held against the surface of the pinion by the action of a coil spring 65. By rotating the pinion 61 the corresponding end of the roller 54 can be moved forwardly or rearwardly so as to increase or decrease the distance between the axes of rollers 50 and 54. The bolts 66 which pass through openings in the upwardly turned portions 47 of plate 46 and into the racks 58 extend through guide slots 67 and serve to clamp the parts in adjusted position so as to hold them against accidental movement. When the sides 43 and rollers 50 and 54 are moved to the dotted line position in Fig. 5, the sanding belt can be readily applied in place after which the parts are moved back to full line position and the rod 45 inserted in the hinge so as to hold them positively in this position. The tension of the belt is adjusted by means of the rack and pinion device already described. Projecting upwardly from the top 4 are four bolts 68 by means of which the motor 69 is secured to the member 4. The motor shaft 70 is provided with a sprocket wheel 71 that is connected to a similar sprocket wheel 72 on the end of shaft 51 by means of a sprocket chain 73. Centrifugal fan 74 is secured to the top of the motor and has its impeller connected with the motor shaft by means of a belt so that whenever the motor rotates, the fan will also rotate. The intake

port of this fan is connected by means of conduit 42 to the interior of the casing and the outlet port of the fan which has been indicated by reference numeral 75 is connected with a dust bag 76 of ordinary construction.

5 When the motor is operating the roller 50 will be rotated in a clockwise direction (Fig. 6) which will give the underside of the sanding belt a motion rearwardly in the direction indicated by the arrow in Fig. 6. The friction between the abrading surface of the belt and the floor tends to pull the machine forwardly so that it becomes self-propelled. The suction produced by the action of the fan causes a large stream of air to flow inwardly through the opening between the edges of plates 38 and 40 and this air stream carries with it the particles abraded from the floor surface, which, after passing through the fan, are captured in the dust bag 76 in the manner now common with vacuum devices of this type. The handle, by means of which the machine is guided, has been designated by reference numeral 77 and this is braced to the sides of member 4 by means of braces 78. The end of the handle may be provided with a cross bar 79, which is grasped by the hands of the operator while operating the machine.

30 When the sprocket chain 73 is to be applied or removed the latch comprising latching pin 10, is moved to inoperative position, after which the top 4 is tilted about hinges 8, thereby shortening the distance between shafts 51 and 70, so that the sprocket chain may be quickly removed or replaced.

40 If it is desired to employ the machine for waxing a floor, this can be readily accomplished by applying to the outside of the abrading belt a belt formed from cloth, such, for example, as old carpets and this cloth belt will then be operated in contact with the floor surface and if wax is to be applied to the outer surface of this belt the machine will function to wax and polish the floor.

45 From the above description it will be apparent that I have produced a machine of a very simple and substantial construction that is especially well adapted for use in sanding the edges of floors where it is necessary to come close to the base boards or base moldings and which can also be readily transformed by the simple application of a cloth belt so as to function as a waxing and polishing machine.

50 Having described the invention what is claimed as new is:

1. A machine of the class described comprising, in combination, a casing having two sides, a back and a top, said sides being longer than the top and each formed of two separate parts, one part of each being tapered and projecting forwardly beyond the front edge of the top, means for connecting the two tapered side portions to form a unitary assembly, said means comprising a plate ex-

tending from one side to the other, means for hingedly connecting the part formed by the two tapered side portions to the rear portion of the casing, a roller rotatably mounted between the tapering sides near the rear end thereof, a second and smaller roller rotatably connected to the pointed ends of the tapered side portions, means for rotating one of said rollers, an abrasive belt enclosing the rollers, and means for independently adjusting the position of the ends of the smaller roller with respect to the larger roller.

2. A machine of the class described comprising, in combination, a casing having two sides, a back and a top, said sides being longer than the top and each formed of two separate parts, one part of each being tapered and projecting forwardly beyond the front edge of the top, means for connecting the tapered portions of the sides, said means comprising a plate extending from one side to the other, means for hingedly connecting the part formed by the two tapered side portions to the casing, a roller rotatably mounted between the tapering sides, a second and smaller roller rotatably connected to the pointed ends of the tapered side portions and means for independently adjusting the position of the ends of the smaller roller with respect to the larger roller, said means comprising a rack secured to each end of the roller, a pinion rotatably mounted in each of the side members and operatively related to the rack and a pawl adapted to engage the teeth of the pinion to hold the same against accidental rotation in one direction.

3. A machine of the class described comprising, in combination, a casing having two spaced substantially parallel sides, a back and a top, said sides being each formed of two separate parts, one part of each being tapered and projecting forwardly beyond the front edge of the top, means for holding the tapered portions of the sides in spaced relation, a bottom plate extending between and connecting the lowermost edges of the tapered side portions, a roller located between the tapered side portions and journaled in bearings in the latter, a bearing slidably connected to the front end of each of the tapered side portions, a roller having its ends journaled in said bearings, means for independently adjusting the position of each of said bearings, means for latching said bearings in adjusted position, means comprising a hinge for connecting the part carrying the rollers to the casing, a motor secured to the top, means for operatively connecting the motor with one of the rollers, a suction fan driven by the motor and means for connecting the intake port of the fan with the interior of the casing at a point to the rear of the roller.

4. A machine of the type described comprising, in combination, a casing portion di-

vided by a transverse partition into two compartments, a suction fan supported on said casing, a conduit extending from the intake port of the fan to one of said compartments, an assembly carrying two spaced rollers, a belt enclosing the rollers, means for rotating one of said rollers, and means comprising a hinge for securing the assembly to the casing so that it may swing away for the purpose of removing and replacing the belt.

5. A machine of the class described comprising, in combination, a casing, an assembly carrying two spaced rollers, a belt enclosing the rollers, means including a hinge for securing the assembly to the casing so that it may swing away from the casing for the purpose of removing and replacing the belt, means for latching the assembly in operative relation with respect to the casing, a suction fan connected with the interior of the casing and a motor carried by the casing and connected with the suction fan and with one of the rollers for simultaneously operating the roller and the fan.

In testimony whereof I affix my signature.
HUGH M. WOLGAMOOD.