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2,229,161

POLISHING MACHINE

Filed Sept. 11, 1939

2 Sheets-Sheet 1

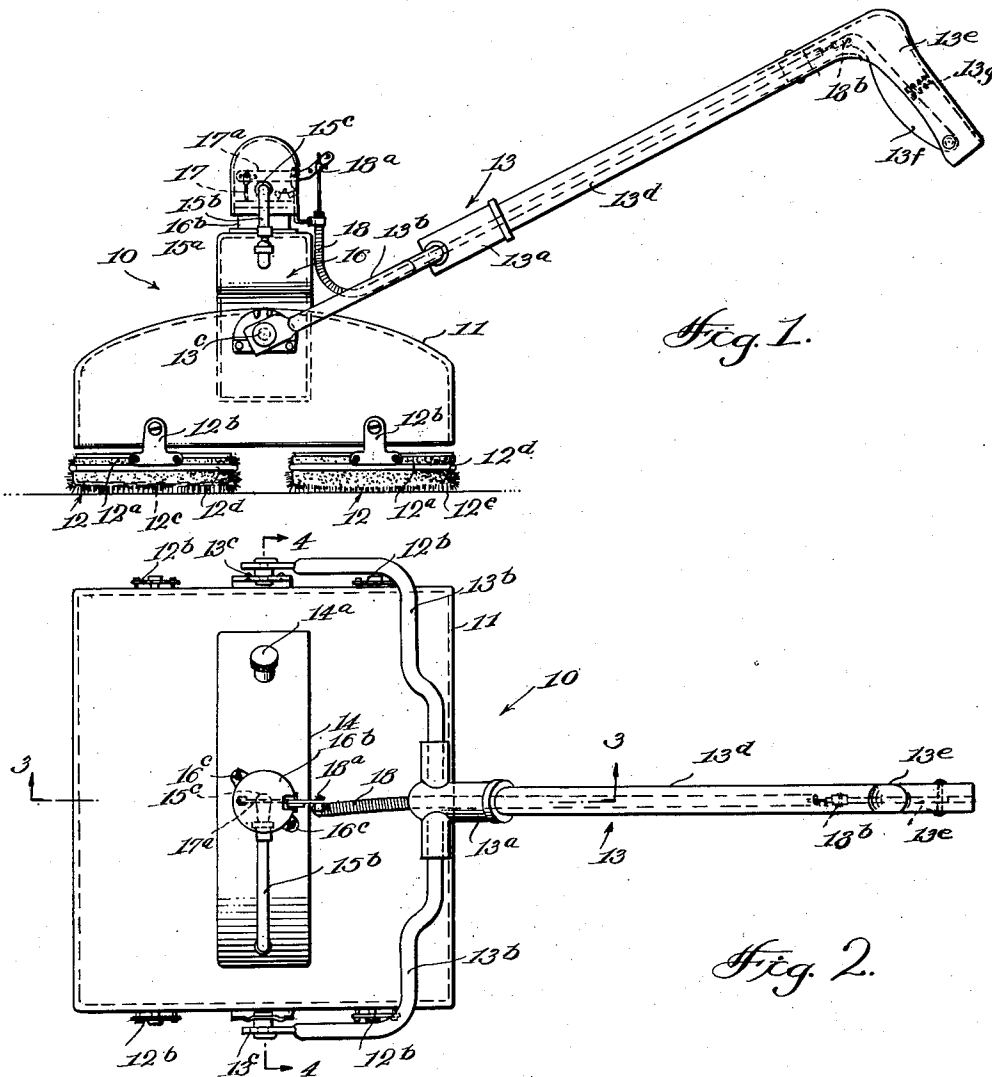


Fig. 1.

Fig. 2.

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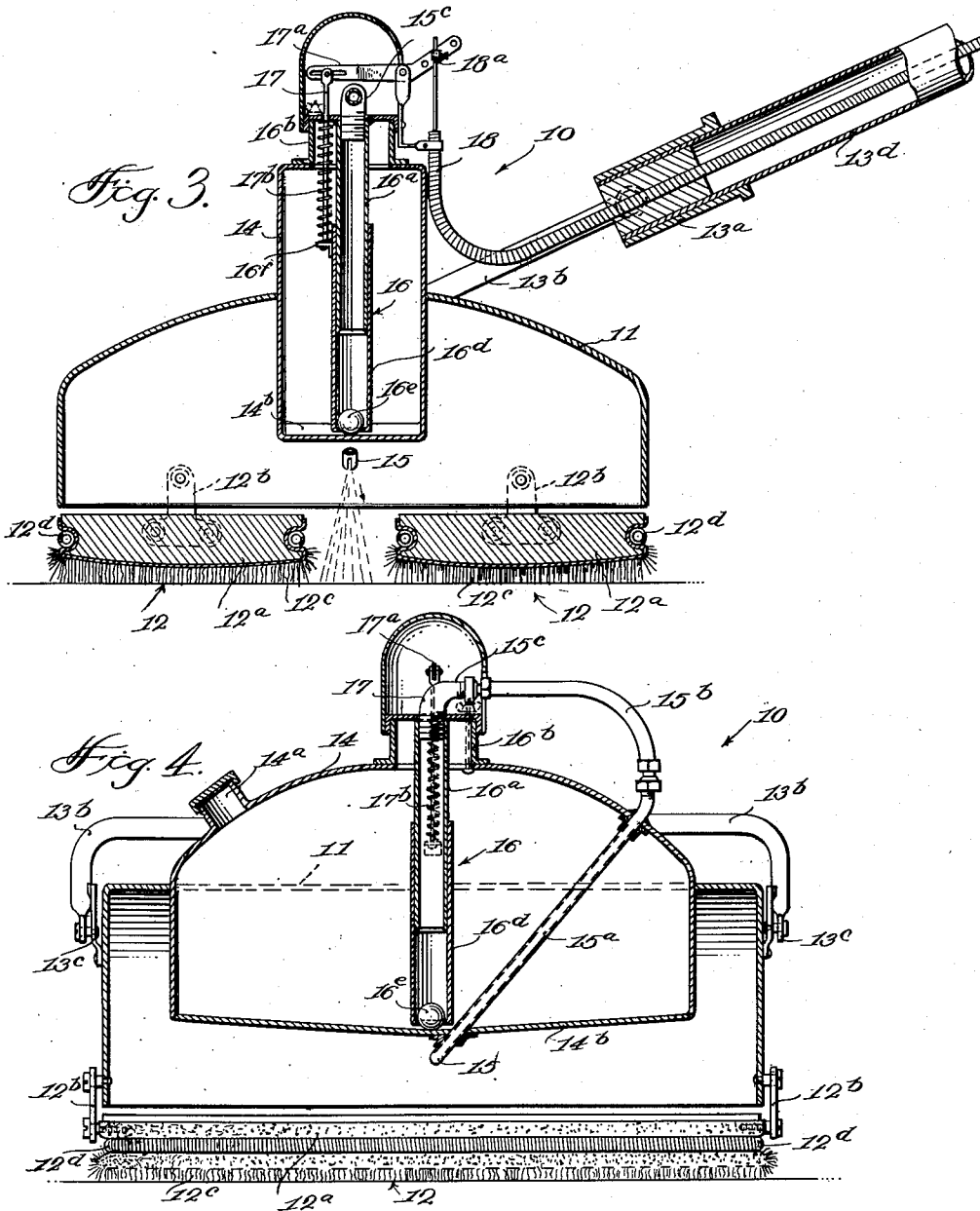
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POLISHING MACHINE

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3 Claims. (Cl. 91—25)

This invention relates to improvements in polishing machines and especially is concerned with a novel polishing machine including means for distributing polishing fluid directly upon the surface to be polished as the machine is manipulated thereover.

It is an object of the present invention to provide a novel polishing device especially suited for use on floors which includes a chassis carried on polishing elements movable over the surface to be polished by means of a handle, and in combination therewith a polishing fluid reservoir, and means for causing discharge of polishing fluid from said reservoir onto the surface to be polished, the fluid being discharged in the immediate locality of the polishing element.

Another object of the present invention is to provide in a structure of the type above mentioned a novel means remotely controlled for causing discharge of a polishing fluid upon the surface to be polished in the vicinity of the polishing elements.

An advantage of the novel remote operating and controlling device according to the present invention is that it permits free swinging motion of the handle of the device whereby ordinary use of the polishing machine in the same manner as if no control and operating device were provided is permitted.

A feature of the novel polishing device according to this invention is its comparative simplicity and ruggedness of construction which, in the first instance, permits manufacture under conditions of mass production with concomitant economies and, in the second instance, minimizes cost of upkeep and/or repair.

Other objects, advantages and features of the new and improved polishing machine according to the present invention will be apparent to those skilled in this art during the course of the following description.

Regarded in certain of its broader aspects the novel polishing machine according to the present invention comprises in a device of the type including a carriage mounted on polishing elements and provided with a handle for manipulating the machine upon the surface being polished, and a polishing fluid tank on said carriage connected to a discharge jet therebeneath located near the polishing elements and a remotely controlled manually operated pump for causing and controlling discharge of polishing fluid from said jet.

In order to facilitate a fuller and more complete understanding of the present invention a

specific embodiment thereof herein illustrated will be hereinafter described, it being clearly understood, however, that the illustrated embodiment, although presently preferred, is provided solely by way of example of the practice of this invention and not by way of limitation thereof except insofar as the invention is recited in the subjoined claims.

Referring then to the drawings,

Figure 1 is substantially a side elevational view of the presently preferred embodiment of this invention,

Fig. 2 is substantially a top plan view of the device shown in Fig. 1,

Fig. 3 is a vertical sectional view of Fig. 2 taken along the line 3—3, and

Fig. 4 is a vertical sectional view of Fig. 2 taken along the line 4—4.

It will be noted in the drawings that the preferred embodiment of the present invention generally designated by the numeral 10 comprises a casing 11 essentially rectangular in horizontal cross-sectional outline mounted on spaced polishing elements, each generally designated by the numeral 12. Each polishing element comprises a substantially rectangular block 12a attached by rocking brackets 12b to parts of the casing 11. The bottom surfaces of the blocks 12a are covered by a suitable polishing material such as lamb's wool, so called terry cloth or the like 12c which is held in place by an intrinsically resilient band 12d received in slots formed in marginal portions of the block substantially as shown in the drawings.

The device is provided with a handle generally designated by the numeral 13 which comprises a shank portion 13a mounted on yoke elements 13b connected by pivotal mounting means 13c to parts of the casing 11 whereby the handle can be freely swung relative to the casing during use of the device. A tubular handle extension element 13d received in the shank 13a terminates in a pistol grip 13e which, it will be noted, is cut away in its under portions to receive a pivoted arm 13f normally pressed outwardly by the spring 13g.

A polishing fluid reservoir 14 mounted in upper parts of the casing 11 is provided with a filling orifice 14a having a suitable closure for sealing the same substantially as shown. It is to be noted that the bottom of the reservoir 14 slopes centrally downwardly for purposes which hereinafter more clearly will be apparent.

A discharge jet 15 positioned centrally within the casing 11 and beneath the reservoir 14 above described communicates with the interior of the

reservoir through the pipe 15a and flexible coupling 15b which is in turn connected to the elbow 15c communicating with the discharge orifice of the pump generally designated at 16 which, as later will be described, abstracts fluid from the reservoir and ejects same through the discharge orifice.

The details of the pump generally designated by the numeral 16 will now be described, reference being made especially to Figs. 3 and 4 wherein it will be perceived the pump comprises a vertically extending tube 16a open at both ends and mounted at the top on a cap 16b which is attached to an opening formed in the reservoir by fastening means 16c. A second tube 16d concentric the first tube 16a fits thereon snugly whereby a sliding but substantially fluid-tight juncture is provided. A check valve 16e is mounted in the bottom of the tube 16d in a manner such that the valve is opened when the tube is disposed in close proximity to the bottom 14b of the reservoir. An ear 16f is mounted on and projects from the upper portion of the tube 16d and is attached to the connector rod 17 which in turn is attached to an end of a bell crank lever 17a substantially as shown. A spring 17b sleeved around the connector 17 normally urges downwardly a tube 16d and it will be evident that the tube 16d can be moved upwardly thereby permitting the check valve 16e to close on operation of the bell crank lever 17a.

A Bowden connector 18 attached at one end 18a to the bell crank lever 17a passes upwardly within the handle 13 and is operatively connected at its opposite end 18b to the lever arm 13f hereinabove described, in a manner such that movement of the lever arm 13f within the pistol grip handle 13e against the action of the spring 13g causes the bell crank lever 17a to be moved thereby raising the tube 16d.

Having described the construction of the novel polishing device according to the present invention its mode of operation now will be described, reference again being made to the accompanying drawings and to the elements thereof designated by the above reference characters. The reservoir 14 is filled with appropriate polishing fluid and the device is moved onto the surface to be polished. The lever 13f is pressed inwardly with respect to the pistol grip 13e whereby counter-clockwise motion is imparted to the bell crank lever 17a causing the tube 16d to be moved upwardly. Inasmuch as the bottom of the tube 16d in its normal position is in relatively close proximity of the bottom 14b of the reservoir, the valve 16e is open and fluid within the reservoir is permitted free entrance to the interior of the tube. When the tube 16d is moved upwardly the valve 16e closes and accordingly the fluid within the tube is passed through the elbow 15c, the flexible connector 15b and the tube 15a discharging through the jet 15 onto the surface which is to be polished. The lever 13f is operated at such intervals as it is desired to dis-

charge polishing material upon the surface. It of course will be apparent that polishing is effected by moving the device over the surface by means of the handle 13 whereby the polishing elements 12 distribute the polish and shine the surface.

It is to be understood of course that this invention is capable of extended application and is not confined to the precise illustrated forms nor described construction and, therefore, such changes and modifications may be made therein as do not affect the spirit of the invention nor exceed the scope of the appended claims.

Having thus described the present invention, what it is desired to secure by Letters Patent is:

1. A polishing machine comprising polishing elements; a housing mounted on said elements; a swinging handle connected to said housing for moving the device on the surface being polished; a reservoir for polishing fluid attached to said housing; a discharge jet located near said elements connected to said reservoir; a pump, fed from said reservoir for ejecting fluid through said jet, said pump comprising a vertically reciprocable cylinder dipping in fluid within said reservoir, a gravity-sensitive check valve in the base of said cylinder abutting against the bottom of said reservoir and opened thereby; and means including a Bowden connector operatively attached to said cylinder and terminating in said handle for remotely controlling and operating said pump.

2. In a polishing machine of the type including a carriage mounted on polishing elements and provided with a handle for manipulating the machine upon the surface being polished; the improvements which comprise a polishing fluid tank on said carriage; a discharge jet beneath said carriage near said polishing elements; a pump comprising a downwardly spring-pressed vertically reciprocable cylinder within said reservoir internally communicating with said jet, a check valve in the bottom of said cylinder closing when the cylinder is moved upwardly; and a remote control for operating said pump.

3. In a polishing machine of the type including a carriage mounted on polishing elements and provided with a handle for manipulating the machine upon the surface being polished; the improvements which comprise a polishing fluid tank on said carriage; a discharge jet beneath said carriage near said polishing elements; a pump comprising a downwardly spring-pressed vertically reciprocable cylinder within said reservoir internally communicating with said jet, a check valve in the bottom of said cylinder closing when the cylinder is moved upwardly; and a remote control for operating said pump, said control comprising a Bowden connector operatively connected to said cylinder for reciprocating same, and a lever mounted on parts of said handle for operating said Bowden connector.

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