July 1, 1941. L. C. SMITH 2,247,970

POLISHING MACHINE

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FIG. 1.

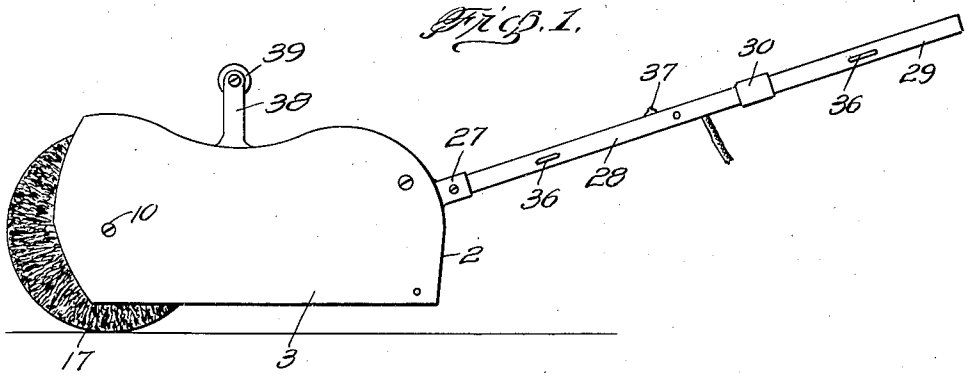
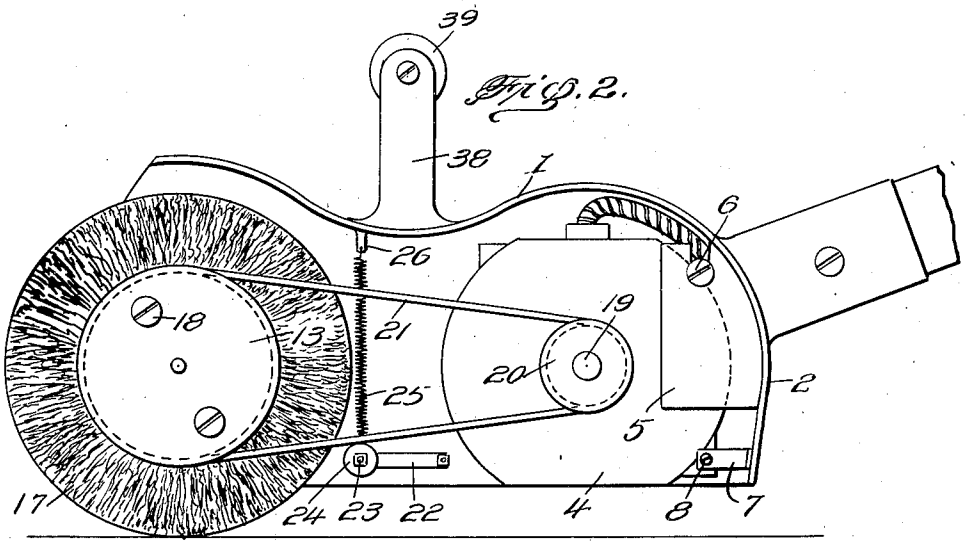


FIG. 2.



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Fig. 3.

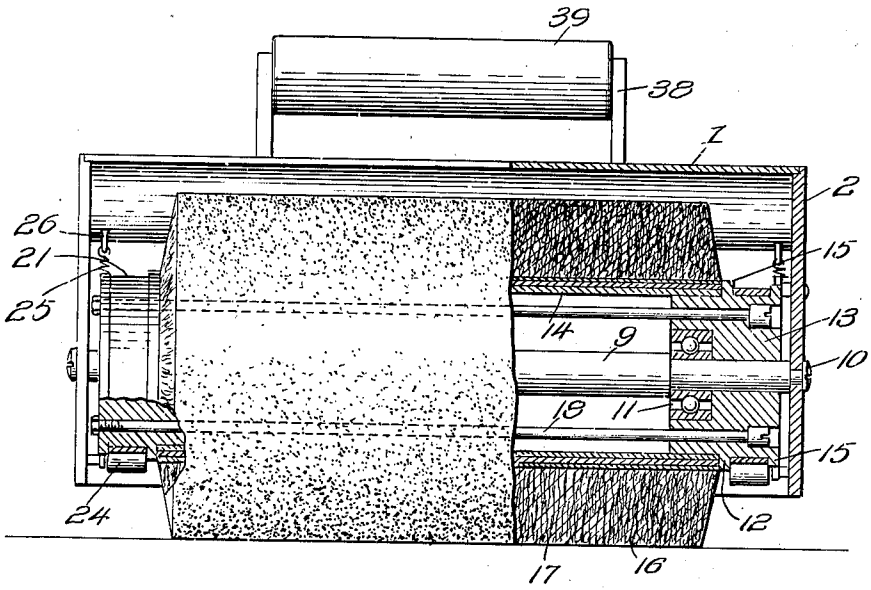


Fig. 4.

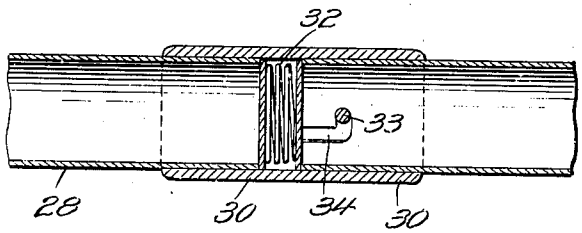
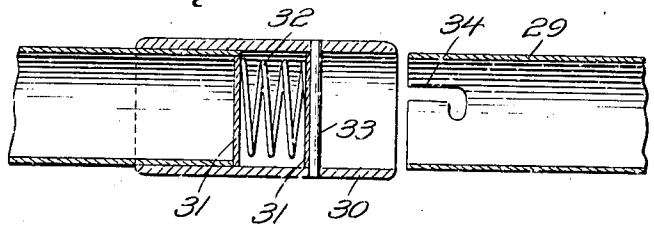


Fig. 5.



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POLISHING MACHINE

Leroy C. Smith, Peterboro, Ontario, Canada

Application June 14, 1939, Serial No. 279,200

1 Claim. (Cl. 15—98)

This invention relates to polishing machines, and its general object is to provide a machine that can be used for polishing surfaces of relatively great area, such as floors, table tops, vehicle bodies, etc., in an easy and expeditious manner, and with minimum effort on the part of the user, in that the machine is light in weight and can be readily handled and guided over the surface to be polished.

A further object is to provide a polishing machine of the motor driven rotary drum type, that includes a polishing element of sheep skin or other like thick wooly material, and the mounting means for the drum of the polishing element, together with the rotating means therefor, are detachably associated in a manner to materially facilitate the application and removal thereof with respect to the casing of the machine, as well as the polishing element with respect to the drum.

A still further object is to provide a polishing machine, that is simple in construction, inexpensive to manufacture, and extremely efficient in operation, use and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a side elevation of the polishing machine which forms the subject matter of the present invention.

Figure 2 is an enlarged fragmentary side view with one of the side walls removed.

Figure 3 is a front elevation, with parts broken away and in section.

Figure 4 is a fragmentary sectional view taken through the joint of the handle sections, with the latter connected together.

Figure 5 is a similar view with the handle sections separated.

Referring to the drawings in detail, it will be noted that in the form shown, the casing of my machine includes an open front and bottom, and the upper wall 1 is rounded forwardly and rearwardly from the downwardly rounded transverse central portion thereof, with the rearwardly rounded portion merging into an outwardly rounded rear wall 2. Secured to the upper and rear walls, are side walls 3 having straight lower edges and substantially rounded front ends, while the remaining edges of the side walls are shaped to follow the shape of the upper and rear walls, as well as recessed to provide shoulders receiving the outer edges of the latter walls, as clearly shown in Figure 3.

Mounted in the rear portion of the casing is an electric motor 4 provided with lugs formed on the housing thereof, and formed on and extending forwardly from the rear wall are bracket plates 5 having vertical slots extending from the upper ends thereof for the purpose of receiving screw bolts 6 threaded in lugs extending rearwardly from the upper portion of the motor housing. Cooperating with the bracket plates 5 and screw bolts 6 for securing the motor within the housing, are substantially L-shaped brackets 7 fixed to the rear wall and having the motor secured thereto by screw bolts 8 extending through the free ends of the brackets 7 and within lugs at the lower portion of the motor housing. Additional or other suitable means may be employed for securing the motor within the casing.

Bridging the side walls at the forward portion of the casing, is a shaft 9 having threaded bores in the ends thereof for receiving screw bolts 10 for securing the shaft to the side walls, as best shown in Figure 3, and the shaft is reduced from its ends for a portion of its length to provide abutting shoulders for bearings 11 mounted on the reduced portions and within recesses in the confronting faces of hub portions 12 for the drum of the polishing element. The hub portions are formed on or otherwise secured to pulley members 13 for rotating the drum which is provided by the hub portions and a hollow sheet metal cylinder 14 having the hub portions removable from, but snugly fitting within the ends thereof for mounting the cylinder 14 concentrically with respect to the shaft.

The pulley members include annular ribs or flanges 15 and the inner flanges are disposed in abutting relation with the ends of the cylinder 14 as well as the ends of a cylinder 16 of the polishing element, the latter cylinder being made from cardboard or other inexpensive material and is sleeved on the cylinder 14. Glued or otherwise secured to the cylinder 16 and surrounding the same, is a piece 17 of sheep skin or the like having the wool thereon and the wool is beveled inwardly at its ends, as best shown in Figure 3.

The pulley members 13 are each provided with

a pair of bores for receiving connecting rods 18 extending through the cylinders, and it will be obvious from Figure 3 that the connecting rods secure the parts together, as well as the polishing element on the cylinder 14, due to the binding engagement of the inner flanges with the cylinder 16, consequently the polishing element is held against endwise or rotary movement with respect to the cylinder 14, and will therefore rotate therewith, yet can be readily applied and removed with respect thereto, and the cylinder 14 is carried by the pulley members that are mounted for rotation on the reduced portions of the shaft 9, through the medium of the bearings 11. The connecting rods are provided with kerfed heads at one of their ends, and which are countersunk within one of the pulley members, while the opposite ends of the rods are threaded to receive nuts.

The armature shaft 19 of the motor extends through the ends of the housing thereof and secured to said ends are pulleys 20 having belts 21 trained about the same, as well as the pulley members 13, as best shown in Figure 2, with the result it will be seen that the polishing element will be rotated when the motor is running, and that the drum is driven at both of the ends thereof.

I also provide means for retaining the belts taut, and the belt tighteners in the form shown, include arms 22 having one of their ends pivoted to the side walls and extending inwardly from the opposite ends thereof, are shafts 23 having rollers 24 journaled thereon and held in constant engagement with the belts, through the instrumentality of coil springs 25 connected to the shafts and studs 26 formed on and depending from the upper wall of the casing, as clearly shown in Figure 2.

Formed on and extending centrally and rearwardly from the rear wall 2, is a socket member 27 having mounted and secured therein the inner section 28 of a sectional handle for my machine. The sections are preferably of tubular formation, as shown in Figures 4 and 5, and the outer section is detachably associated with respect to the inner section. For that purpose, the inner section has secured thereto and extending beyond its outer end a sleeve 30 having mounted therein a pair of disks 31, with a coil spring 32 between the disks and urging them apart, as shown in Figure 5 for holding the outer disk normally in engagement with a pin 33 bridging the sleeve. The outer section has diametrically opposed bayonet slots 34 in the inner end thereof, and by that construction, it will be obvious that when it is desired to attach the outer section with the inner section, the outer section is inserted in the sleeve for the disposal of the pin 33 in the bayonet slots 34 and is held accordingly by the outer disk bearing against the inner end of the outer section, as shown in Figure 4.

The cord or conductors 35 for the motor extend through the inner section of the handle and through an opening adjacent to its outer end, as shown in Figure 1, for connection to a suitable source of electric current, such as an outlet, as will be apparent. I preferably provide the handle sections with hook members 36 for holding the cord in wrapped condition, when the machine is not in use, and a switch 37 carried by the inner section of the handle is provided for controlling the motor.

Secured to and rising from the downwardly rounded transverse central portion of the top of the casing is a bail type handle that includes a pair of parallel uprights 38 having a gripping member 39 secured to and bridging the upper ends thereof, and this handle is primarily designed for lifting the machine, as well as for guiding and applying pressure thereto when using the machine on an elevated surface, such as a table top, vehicle body, and the like. It will be obvious that the outer section 29 of the other handle is primarily designed for use with the inner section, when the machine is used for polishing floors. It will be noted as best shown in Figures 1 and 3, that the polishing element is of sufficient thickness to retain the casing elevated above the surface to be polished.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:

In a polishing machine including side walls, a shaft secured to and bridging the side walls and being reduced from its ends to provide shoulders, and a polishing roll comprising a hollow sheet metal cylinder, pulley members journaled on the reduced portions of the shaft and abutting the shoulders, inner and outer belt receiving flanges on each pulley member and the inner flanges being disposed substantially centrally of the pulley members, the portions of the pulley members inwardly of the inner flanges providing hubs for the cylinder, a polishing element sleeved on the cylinder and having its ends flush with the ends of the cylinder, said hubs being mounted within the ends of the cylinder with the inner flanges abutting the ends of the polishing element and the cylinder, and rod like means detachably associated with the pulley members and extending therethrough and the cylinder for urging and securing the hubs on the shaft against the shoulders and the inner flanges against the ends of the cylinder and the polishing element.

LEROY C. SMITH.