Aug. 12, 1941. C. Y. McQUOWN 2,252,269

WAXING MACHINE

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Fig. 1.

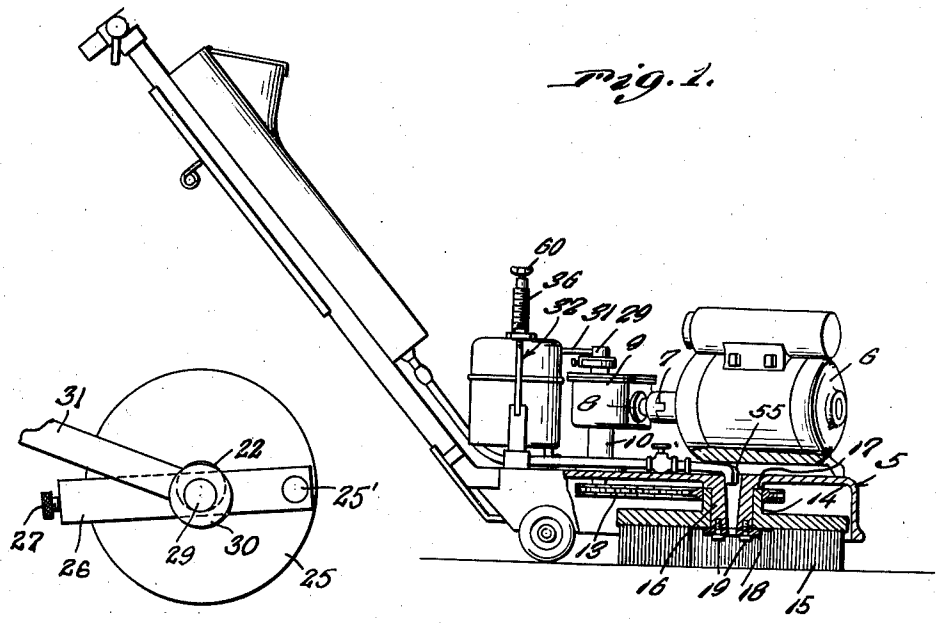


Fig. 7.

Fig. 2.

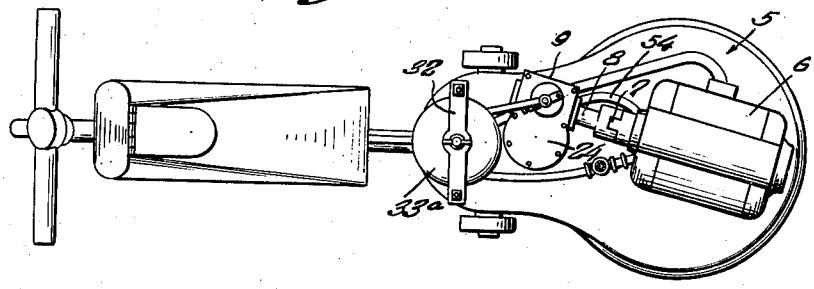
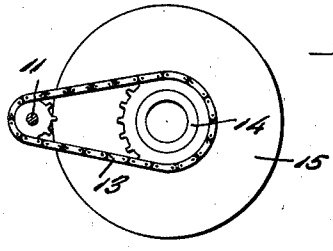


Fig. 3.



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Fig. 4.

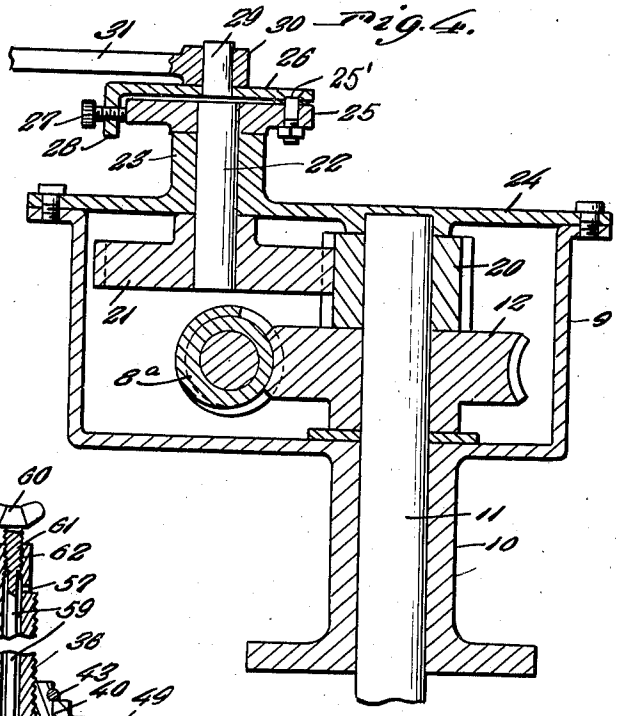


Fig. 5.

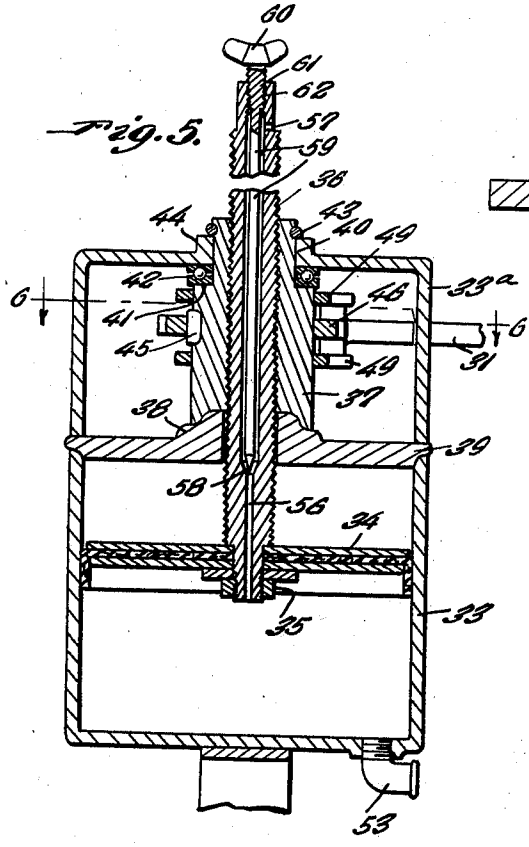
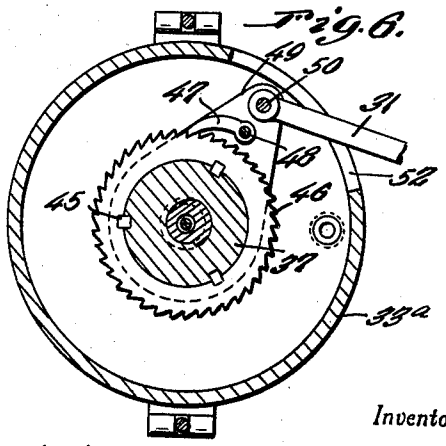


Fig. 6.



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UNITED STATES PATENT OFFICE

2,252,269

WAXING MACHINE

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Application June 17, 1940, Serial No. 341,066

4 Claims. (Cl. 91—39)

This invention relates to floor and analogous surface waxing machines, and an object of the invention is to provide a machine of this character that is substantially automatic in operation; will insure the spreading of an even film of paste wax over the area of the floor surface to be waxed; is equipped to facilitate the adjustment of the flow of the wax; and provides for the use of paste wax without resort to the melting thereof.

The invention, together with its objects and advantages, will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevational view of a waxing machine embodying the features of the present invention.

Figure 2 is a top plan view thereof.

Figure 3 is a plan view showing a chain and sprocket drive for the revolving brush forming part of the machine.

Figure 4 is an enlarged vertical sectional view through a gear case, with the gears therein shown in section, and the shafts shown in elevation.

Figure 5 is a sectional view through a wax dispenser.

Figure 6 is a horizontal sectional view taken substantially on the line 6—6 of Figure 5.

Figure 7 is a top plan view of the eccentric means for reciprocating the pitman.

Referring more in detail to the drawings it will be seen that in the contemplation of the invention a more or less conventional handle-equipped carriage forming part of a well-known floor surfacing machine may be utilized and consequently only such parts of the carriage will be referred to as deemed necessary for an understanding of this invention.

In accordance with the present invention there is mounted on the platform 5 of the carriage an electric motor 6, the armature shaft of which is connected through the medium of a flexible joint 7 with a shaft 8. The shaft 8 has a worm-equipped end 8*a* thereof disposed within a gear case 9 mounted on a pedestal 10 rising from the wheeled platform 5.

A vertical shaft 11 is journaled in the pedestal 10 and has its upper end journaled in the gear case 9. On said upper end of the shaft 11 is a worm wheel 12 with which the worm 8*a* is in constant mesh for transmitting drive from the motor 6 to the shaft 11.

The lower end of the shaft 11 extends downwardly through the wheeled platform 5 and at said end is connected through the medium of a chain and sprocket mechanism 13 (best shown in Fig. 3) with the hub 14 of a revolving brush or other wax-spreading tool 15.

As best shown in Fig. 1 the brush 15 has the hub 14 thereof journaled on a depending boss 16, depending from the platform 5 and retained on said boss 16 between a shoulder 17 and a retaining plate 18 secured to the lower end of the boss through the medium of screws or other fastening elements 19.

Also fixed to the end of the shaft 11 within the gear case 9 is a pinion gear 20 that is in mesh with a gear 21 on the inner end of a shaft 22. Shaft 22 is journaled vertically in an integral bearing 23 provided therefor on the removable cap 24 of the case 9.

The outer or upper end of the shaft 22 has fixed thereto for rotation therewith a disk 25 and pivoted to the disk 25, as at 25' is an arm 26. Arm 26 is secured at the desired position of rotative adjustment on the disk 25 through the medium of a set screw 27 threaded through the down-turned end 38 of the arm 26 and adapted to be threaded home against the periphery of the disk 25 as shown in Fig. 4.

The arm 26 is provided intermediate its ends with what may be termed an eccentric pin 29. Engaged with the pin 29 is the eye 30 on one end of a pitman rod 31.

Removably secured on the wheeled platform 5 through the medium of a suitable clamp indicated generally by the reference numeral 32 is a wax container 33.

The wax container 33 has a piston or follower 34 working therein and suitably secured as at 35 to the inner end of a piston rod 36.

Rod 36 is externally threaded and threads through an actuator column or nut 37.

As shown in Fig. 5 the column or nut 37 conformably seats on a formation 38 provided on a partition member 39, the peripheral edge of which is clamped between the meeting edges of the wall of the wax container 33 and the cap 33*a* for said container.

The upper end of the column or nut 37 is circumferentially reduced as at 40 and extends through a flanged opening provided therefor in the crown of the cap 33*a*.

Interposed between the shoulder 41 on the column or nut 37 and the crown of the cap 33*a* is a thrust bearing 42 while a split retaining ring 43 seats in a peripheral groove provided in the reduced extremity 40 of the column and against the flange 44 of the cap 33*a*, as shown in Fig. 5, to the end that the column or nut 37 is positively secured against axial or longitudinal movement, while at the same time is free to rotate for feeding or retracting the piston rod 36, dependent upon the direction of rotation of the column 37.

Keyed or otherwise secured as at 45 on the column 37 is a ratchet wheel 46 with which is engaged a dog 47 pivoted as at 48 between a pair of arms 49 mounted on the column 37 to rotate about the column as an axis.

At one end thereof the arms 49 have pivoted thereto as at 50 an end of the pitman rod 31, said end of the rod being accommodated in a slot 52 provided therefor in the skirt or periphery of the cap 33a (see Fig. 6).

From the above it will be seen that while drive is transmitted to the brush 15 for revolving the same, drive is also transmitted from the motor 6 through shaft 11, gearings 20, 21, shaft 22, and pitman rod 31 to the arms 49 causing the latter to oscillate. Obviously as the arms 49 oscillate dog 47 engaging the teeth of the ratchet wheel 46 this will cause a step-by-step rotative movement of the column or nut 37. By reason of the threaded engagement of the piston rod 36 and column 37 this rotative movement of the column 37 will cause the rod 36 to move axially through the column 37 and consequently the piston 34 to move in a direction for forcing the wax in the container 33 outwardly of the container through the outlet 53 leading from the bottom of the container as shown in Figure 5.

Outlet 53 has connected thereto a wax conduit 54 that has a discharge end 55 extending into the bore of the boss 16 as shown in Fig. 1 so that the wax discharging therefrom will pass through the boss 16 onto the surface to be waxed in a manner to spread an even coat of the wax over such surface, with the coat of wax being subject to the action of the brush 15 as the machine is pulled or pushed over the surface being so treated.

To facilitate re-filling of the container 33 and to permit the escape of air from the container as the piston 34 is being reinserted into the container, the piston rod 36 has an air-bleed passage 56 therethrough, the passage 56 opening at one end through the inner end of the rod 36 and at an opposite end opening laterally through the rod adjacent the outer end of the rod and as indicated at 57.

Interposed in the air passage 56 is a valve seat 58 to accommodate a needle valve 59. At its outer or handle-equipped end 60 the needle valve 59 has a threaded section 61 that engages an internally threaded section 62 at the outer end of the piston rod 36 whereby any desired adjustment of the needle valve 59 may be readily made.

In actual practice it will be found that a waxing machine embodying the features of the present invention will substantially automatically spread paste wax evenly under the brush 15 without requiring any melting of the wax prior to the issuance of the same onto the floor or other surface being waxed and that the discharge of the wax may be readily controlled by the operator.

It is thought that a clear understanding of the construction, manner of operation, utility, and advantages of a surface-waxing machine embodying the features of the present invention will be had without a more detailed description thereof.

It is also to be understood that while I have herein shown and described the preferred embodiment of the invention, it is in no wise intended to restrict the invention to the precise details of construction, combination and arrangement of parts other than as may be required by the prior art and scope of the appended claims.

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

1. In a mobile surface-waxing machine, a platform having a surface-engaging brush rotatably mounted thereunder, said platform and brush having means for the passage of wax therethrough onto the surface to be treated, and means for supplying wax to the surface including a receptacle for wax mounted on the platform, a follower having a sliding fit in said receptacle, and power means mounted on the platform and operatively connected with said brush and said follower for simultaneously driving the same whereby to revolve the brush at the same time the follower is being caused to move in a direction for forcing wax from said container.

2. In a surface-waxing machine of the character described, a mobile platform, a surface-engaging brush revolubly mounted on said platform, a wax dispensing device mounted on the platform for dispensing wax onto the surface to be treated, said wax-dispensing device embodying a movable follower, a shaft rotatably mounted on said platform, a driving connection between said shaft and said brush, a driving connection between said shaft and said follower for causing the latter to shift in a direction to dispense the wax, and means for rotating said shaft.

3. In a surface-treating machine of the character described, a dispenser including a receptacle, a follower having a working fit in said receptacle, and means for operating said follower including a rotative actuator for the follower, a driven shaft, supporting means for said driven shaft, dog and ratchet mechanism connected with said actuator for imparting step-by-step rotation thereto, and a driving connection between said driven shaft and said dog and ratchet mechanism including a pitman rod pivotally connected at one end thereof with said dog and ratchet mechanism, and an adjustable eccentric connection between a second end of the pitman rod and said driven shaft.

4. In a surface-treating machine of the character described, a dispenser including a receptacle, a follower having a working fit in said receptacle, and means for operating said follower including a rotative actuator for the follower, a driven shaft, supporting means for said driven shaft, dog and ratchet mechanism connected with said actuator for imparting step-by-step rotation thereto, and a driving connection between said driven shaft and said dog and ratchet mechanism including a pitman rod pivotally connected at one end thereof with said dog and ratchet mechanism, and an adjustable eccentric connection between a second end of the pitman rod and said driven shaft, said adjustable eccentric connection embodying a disk on one end of the driven shaft, an arm pivoted at one end thereof to said disk and provided at an opposite end thereof with means for engaging the disk to secure the arm at the desired position of rotative adjustment relative to the axial center of said disk, and a stud on said arm intermediate the ends thereof and with which the second-named end of said pitman rod is engaged.

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