April 17, 1934. C. E. WHITTENBERG 1,955,703

FLOOR WAXER

Filed Sept. 8, 1930

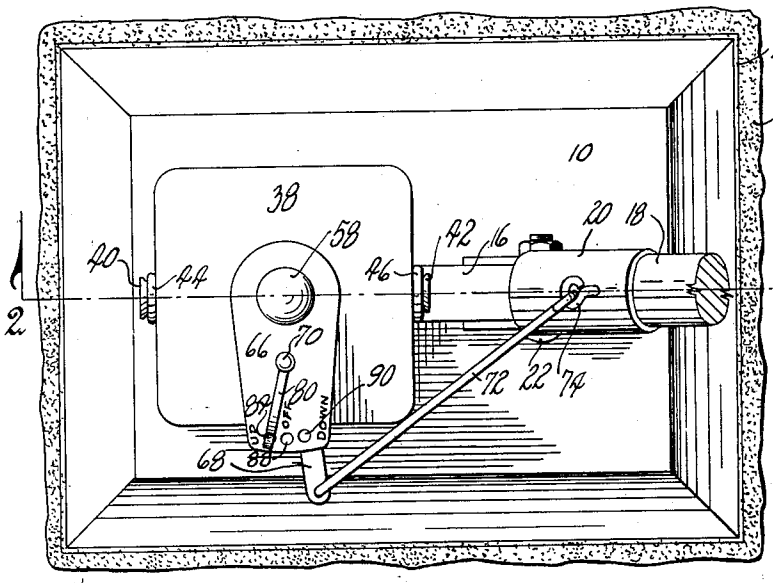


Fig. 1.

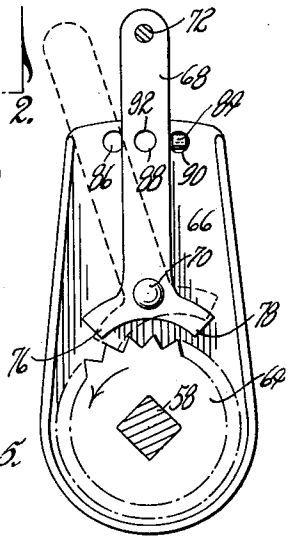


Fig. 5.

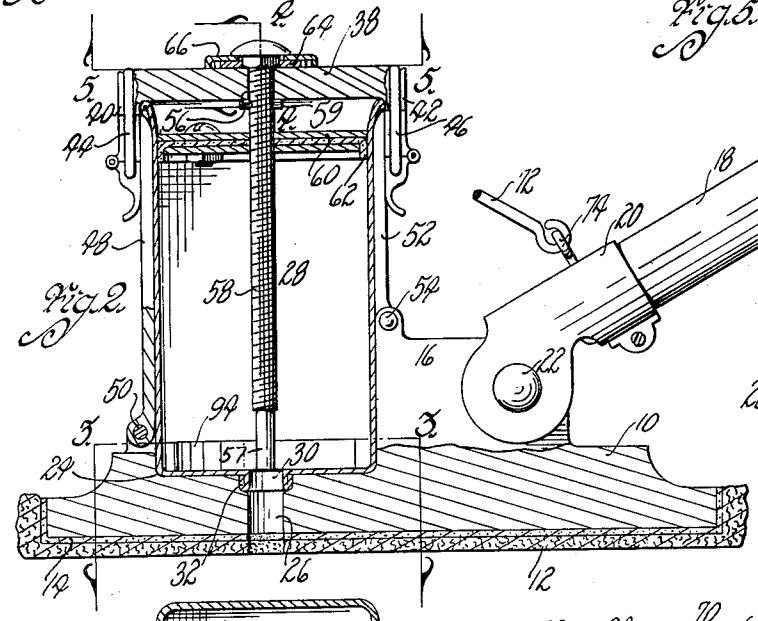


Fig. 2.

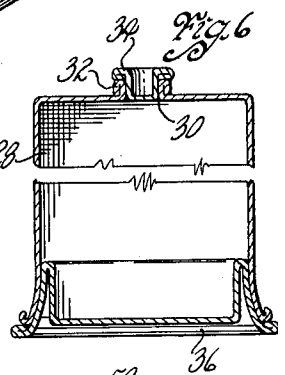


Fig. 6.

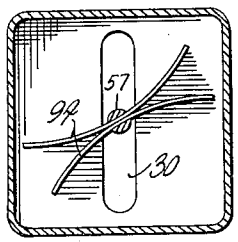


Fig. 3.

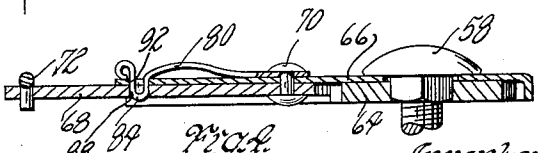


Fig. 4.

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UNITED STATES PATENT OFFICE

1,955,703

FLOOR WAXER

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Application September 8, 1930, Serial No. 480,474

4 Claims. (Cl. 91—39)

The object of my invention is to provide an improved hand operated floor waxing tool which is adapted to carry a container for wax and which is equipped with means for automatically feeding the wax to the surface to be treated continuously and uniformly during the operation of the tool.

A further object of the invention is to provide an improved floor waxing tool adapted to carry a wax container communicating with the spreading member and also having a pivoted handle which is pivotally connected with a ratchet device for operating a follower member in the container whereby wax within the container may be continuously and uniformly ejected through the communicating means as the spreader member is reciprocated.

Another object is to provide a tool of the character described upon which a container in which floor wax is marketed may be removably and replaceably mounted in such manner as to automatically supply the contents of the container to the waxing device as it is operated.

Another object of the invention is to provide improved ratchet operating means applicable to the container for actuating the follower device which is designed to eject the contents of the container, the ratchet device being adjustable for operating the follower in either direction or for rendering it inoperative at times.

With these and other objects in view my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a plan view of a floor waxing tool embodying my invention, the greater portion of the handle being broken away to economize space.

Figure 2 is a longitudinal view on the line 2—2 of Figure 1.

Figure 3 is a horizontal view through the lower part of the wax receptacle on the line 3—3 of Figure 2.

Figure 4 is a detail, vertical sectional view of the ratchet device on the line 4—4 of Figure 2.

Figure 5 is an inverted plan view of the ratchet device taken on the line 5—5 of Figure 2.

Figure 6 is a vertical sectional view of a special form of container or wax receptacle which is especially adapted for use in connection with my improved waxer.

My invention relates to a hand operated tool or implement such as is ordinarily employed for spreading wax in paste form on a floor or similar surface, and the present improvement relates to means for automatically supplying the wax to the floor or to the surface of the spreading member. In the use of hand operated tools it has been customary first to apply the wax to the surface and then to spread and polish the wax by reciprocating a tool over the surface to which the wax had been applied. The use of the present tool is designed to greatly facilitate this operation to save time and laborious effort and to insure that the wax will be uniformly applied.

In the accompanying drawing I have used the numeral 10 to designate a base plate which preferably is made of metal and is rather thick and heavy so that considerable weight is applied to the surface to be treated. The base plate 10 has its lower face and its edges covered with a suitable cover member 12 which may be composed of a wooly fabric or leather covered with wool or any other suitable material which will not damage the floor and which will be effective in spreading the wax. The cover member 12 may be applied to the plate 10 by means of a layer of adhesive 14.

On the central part of its upper surface, the base plate 10 is provided with a longitudinally arranged upstanding rib or ear 16 to which a handle 18 is pivotally attached. The handle 18 may be engaged in a socket 20 which is pivoted on a bolt 22 extending transversely through the ear 16.

The base plate 10 is formed at its upper face with a socket or seat 24 adapted to receive a wax receptacle and is also provided with a transversely arranged slotted feed opening 26 which extends through the base plate from the central part of the socket 24 and is also continued through the covering member 12.

It is desirable that a special form of container be provided for the wax to be used with my improved tool and it is also desirable that the wax be packed at the factory in this special form of container and so sold on the market. This makes it convenient for the housewife or other operator to mount the container already filled with wax on the base plate of the tool so that the device can be quickly made ready for use.

The special form of container which I recommend is shown in Figure 6 in the condition in which it comes to the user. This container is designated generally by the numeral 28, which may be a tin can of any desired size and shape and preferably substantially square in cross sec-

tion for a reason which will be made clear. The cross sectional area of the container 28 is such that it will substantially fit the seat or socket 24 in the upper face of the base plate 10.

The container 28 is formed at one end with a transverse slotted opening 30 which corresponds substantially in size, shape and location with the slotted feed opening 26 of the base plate. The end of the container also is formed with outwardly turned lips or flanges 32 surrounding the margins of the opening 30 and these lips are adapted to enter the upper end of the feed opening 26 of the base plate when the container is placed in position as shown in Figure 2. The opening 30 of the container may be closed by means of a slip cover member 34 engaging within the lips 32 preliminary to the time when the container is placed in position on the tool.

The opposite end of the container 28 is entirely open and is adapted to be closed by a removable end member 36 which may be flanged in the usual manner for providing frictional engagement within the walls of the container. The end of the container having the removable end member 36 preferably constitutes the bottom of the container prior to the time that it is mounted on the tool because the substantially flat end composed of the member 36 is more convenient for storing or displaying the container.

When it is desired to mount the container on the tool the slip cover member 34 is removed, the container is inverted and is seated in the socket 24 in such manner that its open end 30 registers with the feed opening 26 of the base plate and the lips 32 project therein. The end member 36 is also removed from the container, leaving the then upper end entirely open.

A special cover plate 38 is provided for the upper end of the container which serves to close the open end thereof and also to carry certain operating mechanism. The cover member 38 is formed with two projecting lugs 40 and 42, one on each of two of its opposite sides, and these lugs are adapted to be engaged by clamping members designated by the numerals 44 and 46 respectively. The clamping member 44 is pivotally mounted on the upper end of an arm 48 which is pivoted by means of a pin 50 to the base plate 10 at the forward side of the socket 24. The clamping member 46 is carried by an arm 52 which is pivoted by means of a pin or bolt 54 at the rear side of the socket or seat 24 and in this instance is shown as being connected to the forward end of the ear 16.

By means of the clamping members 44 and 46 the cover plate 38 may be securely fastened to the upper end of the container 48 and this connection also serves to hold the container firmly in place on the base plate.

The cover member 38 is formed with a central opening 56 extending therethrough and through this opening a screw member 58 is projected and is adapted to extend substantially to the lower end of the container. The screw member 58 is threaded substantially throughout its length and has a threaded engagement with a plunger plate 60. The plunger plate 60 is fitted snugly within the container 48 in both directions and it may be provided with a cup leather 62 having a yieldable engagement with the walls of the container.

Any suitable arrangement may be provided whereby the plunger device, including the plate 60 and its cup leather 62, is held against rotation within the container. In the event the container is made angular in cross section as here shown and suggested, the plunger device will be held against turning movement by its sides fitting closely against the walls. In the event the container should be made circular in section, any suitable means may be provided for restraining the plunger device against rotation.

For the sake of safety the threads of the member 58 are terminated at a short distance above its lower end to limit downward movement of the plunger. Upward movement of the plunger is restrained by means of a pin 59 engaging the lower surface of the cover plate 38.

The cover plate 38 carries suitable ratchet devices associated with the screw member 58 and adapted to turn the latter member with a step-by-step movement as the tool travels in one direction, either forwardly or rearwardly in the normal reciprocation thereof. Inasmuch as the plunger device has a threaded connection with the screw member 58, and is held against rotation, it follows that the rotary movement of the screw will cause the plunger device to travel lengthwise of the container. This movement is utilized, during the downward travel of the plunger device for causing the contents of the container to be ejected through the slotted openings 30 and 26 so that the wax is received upon the surface to be treated and is subject to be spread by the reciprocating action of the cover member 12 of the base plate.

As here shown, a ratchet wheel 64 is mounted on the upper face of the cover plate 38 and is suitably fixed to the upper end of the screw member 58.

A finaged shield member 66 pivotally engages the upper end of the screw member 58, covers the ratchet wheel 64 and extends laterally of the cover plate 38.

A ratchet lever 68 is pivoted near one end of the under side of the shield member 66, the pivot being indicated by the numeral 70. The free end of the lever 68 projects beyond the free end of the shield member 66 and is pivotally connected by means of a link 72 with the handle 18 of the tool. The pivotal connection of the link 72 to the handle may be effected by means of an eye 74 carried by the socket 20 of the handle.

The ratchet lever 68 is provided at its inner end with suitable means for engaging the teeth of the ratchet wheel 64. If desired this engaging means may be composed of two projections 76 and 78 projecting in opposite directions from the pivot 70 and adapted for selective use in engaging the ratchet wheel for turning it in opposite directions.

In the practical use of this tool, a container such as 28, filled with substance such as wax to be used on a floor surface, is mounted on the base plate 10 as shown and described and the cover plate 38 is applied to its upper end and clamped thereto. It is to be understood that previous to applying the cover plate 38, the plunger device is caused to assume a position at the upper end of the threaded member 58. When the cover plate 38 is mounted on the container the threaded member 58 is forced down through the contents of the container and the plunger device enters the open upper end thereof. The end from which the end member 36 has been removed preferably is flared outwardly for convenience in inserting the plunger device.

The tool is reciprocated over a floor surface to be treated by alternate pushing and pulling force applied manually to the free end of the handle 18. This reciprocating movement causes the han-

dle 18 to swing through an arc in a vertical plane on its pivot 22 and such swinging movement causes an oscillation of the ratchet lever 68 through the pivotal connection of said ratchet to the handle by means of the link 72.

Ordinarily the ratchet devices are arranged so that the oscillating movement of the lever 68 will cause the ratchet wheel 64 to be rotated in one direction with a step-by-step movement, thus turning the screw member 58 and causing the plunger device to travel slowly downwardly within the container 28. The result of this movement is to gradually force wax from the container 28 through the slotted openings 30 and 26 so that it is delivered to the floor surface and is spread thereon by the cover member 12 of the base plate. It is obvious that this will result in a constant and uniform application of the wax during the use of the tool whereby the best results are obtained with a minimum of effort on the part of the operator.

I have provided a controlling means for the ratchet devices including a spring latch member 80 pivoted at 70 on the upper face of the shield 66. The latch member 80 is provided at its free end with a downwardly projecting stud 84, which is adapted for selective engagement in one or another of three holes formed near the free end of the shield member and designated by the numerals 86, 88 and 90.

At times it may be desirable to place the ratchet devices in inoperative position and for that purpose the stud 84 of the latching member is caused to enter the central opening 88 in the shield member and to project into an alined opening 92 in the ratchet lever shown in Figure 5. When the parts are thus placed, the ratchet lever 68 is held in neutral or inoperative position whereby neither one of the projections 76 or 78 is permitted to engage the ratchet wheel 64.

For procuring the normal downward travel of the plunger device, the stud 84 of the latch member is caused to engage in one of the holes 86 or 90 of the shield member and project down past the edge of the lever 68. This serves to hold the lever 68 to one side or the other of its central position so that one or the other of the projections 76 or 78 can engage the ratchet wheel when the lever is oscillated in one direction. Each oscillatory movement of the ratchet lever in the operative direction will first cause a slight idling movement of the lever on its pivot 70 to cause one of the projections 76 or 78 to engage a tooth of the ratchet wheel, then the ratchet engages the projecting stud 84 and a continuation of the oscillatory movement will thereafter cause the shield member 66 to travel with the lever and the force thus applied through one of the projections 76 or 78 will cause a rotary movement of the ratchet wheel 64 and screw member 58.

It is obvious that the parts may be so arranged that either forward or rearward movement of the handle 18 will result in a downward ratcheting of the plunger device and that the latch member 80 should be suitably positioned with respect to one of the lateral holes 86 or 90 to accomplish the desired result.

If desired, an opposite positioning of the latch member 80 may be employed for causing a reverse operation of the ratchet devices, and a consequent upward travel of the plunger device. On the other hand the plunger device may be repositioned at the upper end of the screw member 58 manually when the cover plate 38 is removed for the purpose of supplying a new container.

A suitable agitator 94 may be fixed to the lower end of the threaded member 58 for the purpose of stirring up and insuring a free feeding of the contents of the container in the use of the device.

It is obvious that the container may be of any desired size and shape and that it may be arranged in any suitable position on the base plate, whereby its contents will be ejected as the tool is operated.

After the operation of spreading the wax has been completed the ratchet devices may be placed in inoperative position by inserting the stud 84 of the latch member in the central opening 88. Then, if desired, the tool may be employed for polishing the waxed floor by putting the base plate 10 on a suitable piece of polishing material in the usual manner.

Some changes may be made in the construction and arrangement of the parts of my device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

1. A floor waxing tool comprising a base plate having a suitable floor engaging surface, a handle pivotally attached to said base plate, a wax container adapted to be mounted on said base plate, communicating means permitting the passage of wax from said container to the lower surface of said base plate, a plunger device in said container held against rotary movement, a screw member in said container having threaded engagement with said plunger device whereby the latter is caused to advance in the container as the screw member is turned, reversible ratchet devices for causing step-by-step rotation of the screw member, and operative connections between said ratchet devices and the handle for causing said plunger device to travel in one direction or another as the handle is oscillated.

2. A floor waxing tool comprising a base plate provided with a suitable floor-engaging surface, a handle pivoted on said base plate, said base plate being formed with a seat in its upper surface and with a feed opening extending from said seat to the floor-engaging surface, a wax container removably and replaceably mounted in said seat and having an opening communicating with said feed opening, a screw member rotatably mounted in said container, a plunger device having a threaded engagement with said screw member and restrained against rotary movement in the container, a ratchet wheel fixed to said screw member outside of the container, a plate pivoted axially of said screw member and wheel, a ratchet lever pivoted to an intermediate portion of said plate and having a part arranged for engagement with said wheel, and a link pivotally connecting the free end of said lever to said handle.

3. A floor waxing tool comprising a base plate provided with a suitable floor-engaging surface, a handle pivoted on said base plate, said base plate being formed with a seat in its upper surface and with a feed opening extending from said seat to the floor-engaging surface, a wax container removably and replaceably mounted in said seat and having an opening communicating with said feed opening, a screw member rotatably mounted in said container, a plunger device having threaded engagement with said screw member

and restrained against rotary movement in the container, a ratchet wheel fixed to said screw member outside of the container, a plate pivoted axially of said screw member and wheel, a ratchet lever pivoted to an intermediate portion of said plate and having a part arranged for engagement with said wheel, a link pivotally connecting the free end of said lever to said handle, and a latch member for holding said lever in inoperative position relative to said plate.

4. A floor waxing tool comprising a base plate provided with a suitable floor-engaging surface, a handle pivoted on said base plate, said base plate being formed with a seat in its upper surface and with a feed opening extending from said seat to the floor-engaging surface, a wax container removably and replaceably mounted in said seat and having an opening communicating with said feed opening, a screw member rotatably mounted in said container, a plunger device having a threaded engagement with said screw member and restrained against rotary movement in the container, a ratchet wheel fixed to said screw member outside of the container, a plate pivoted axially of said screw member and wheel, a ratchet lever pivoted to an intermediate portion of said plate, said lever having oppositely arranged projections for selectively engaging the teeth of said ratchet wheel, for turning the latter in either direction, a link pivotally connecting said lever to the handle, and adjustable means engaging the plate and lever for selectively positioning the latter for its various points of engagement with the ratchet wheel, or for an intermediate neutral position.

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