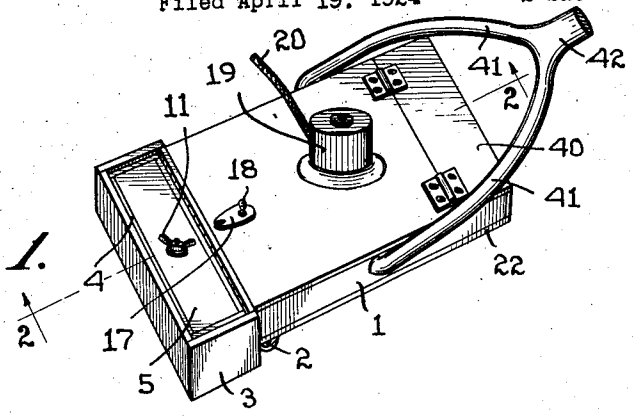
July 21, 1925. 1,547,115

E. GRANT

FLOOR WAXING AND POLISHING MACHINE

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Fig. 1.



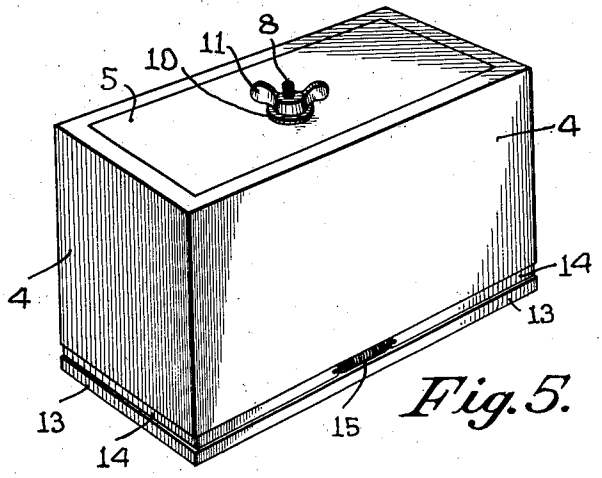


Fig. 5.

Fig. 6.

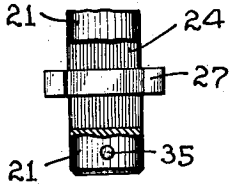


Fig. 7.

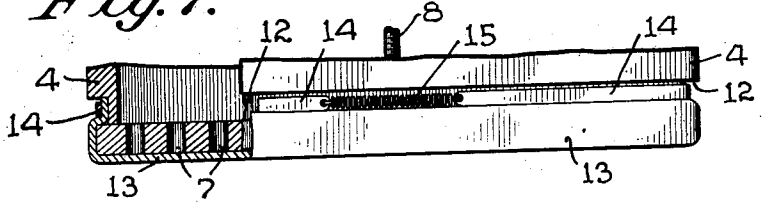
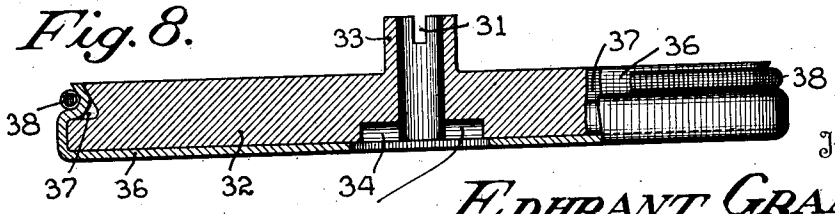


Fig. 8.



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July 21, 1925. 1,547,115

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FLOOR WAXING AND POLISHING MACHINE

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Fig. 2.

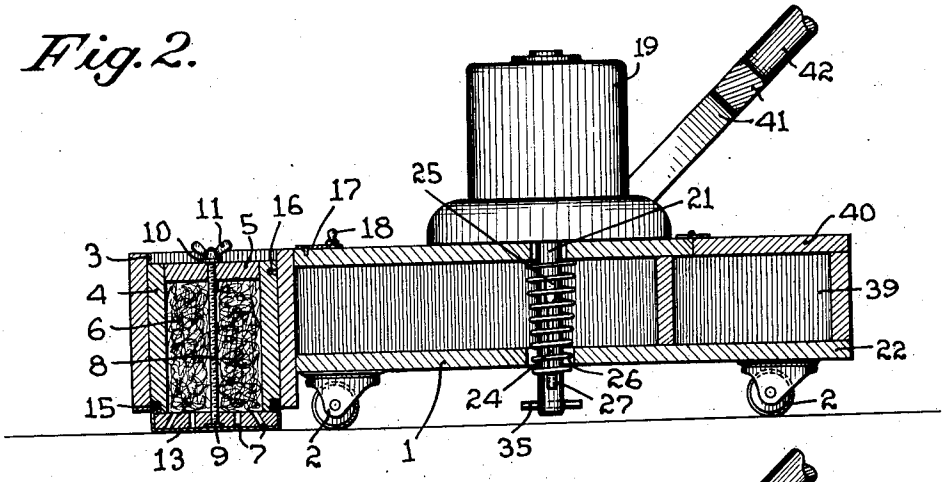


Fig. 3.

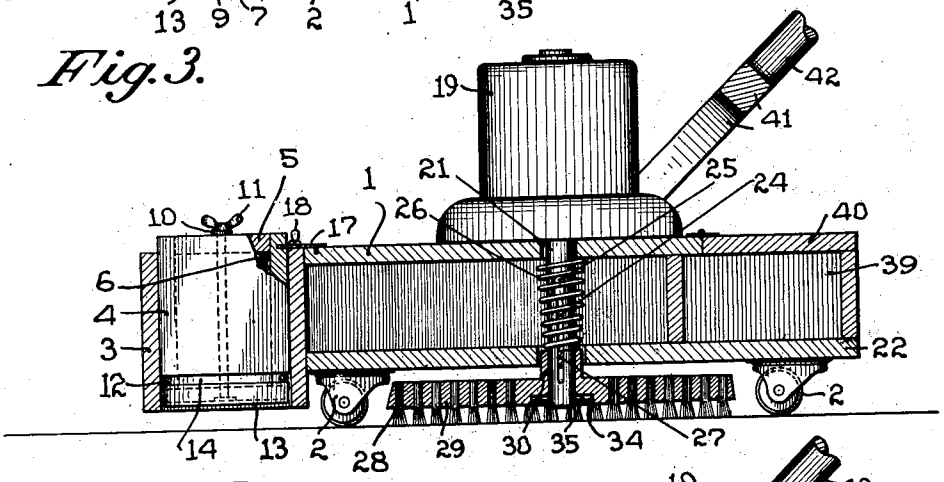
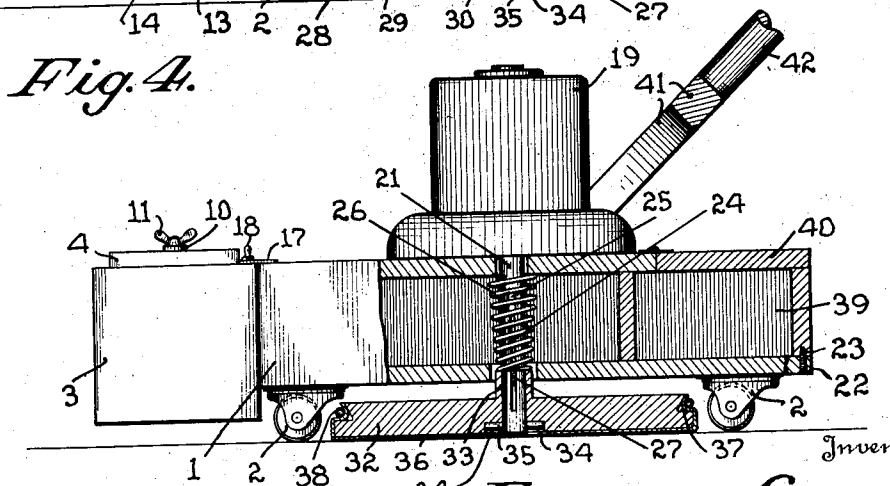


Fig. 4.



Inventor

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Patented July 21, 1925. 1,547,115

UNITED STATES PATENT OFFICE.

EPHRANT GRANT, OF KANSAS CITY, MISSOURI.

FLOOR WAXING AND POLISHING MACHINE.

Application filed April 19, 1924. Serial No. 707,654.

To all whom it may concern:

Be it known that EPHRANT GRANT, a citizen of the United States of America, residing at Kansas City, in the county of Jackson and State of Missouri, has invented new and useful Improvements in Floor Waxing and Polishing Machines, of which the following is a specification.

Heretofore the waxing of hardwood floors has been accomplished by putting the wax on, in some instances, by hand rubbing, and, in other instances, by means of a cloth, using a brush to rub it in and subsequently employing a weighted cloth for polishing. This work is tedious and inconvenient in many instances, especially in using a weighted brush to be dragged back and forth over the floor.

The present invention has for its purpose to provide, in a floor waxing and polishing machine, a structure which eliminates the above method and at the same time affording a machine which is easily operated and thereby obtaining much better results.

Another purpose is to provide a machine of this character including a perforated weighted container carried by the machine and allowed to be lowered in contact with the surface of the floor for applying the wax to the surface of the floor and after spreading the wax, the weighted wax container may be raised and supported in a raised position while the wax is rubbed in and then polished.

Still another purpose is the provision of means to be exchanged for a waxing brush for the purpose of polishing the floor electrically as the machine is moved over the surface of the floor. In fact, the polisher and the wax rubbing means are rotated as the machine is moved back and forth.

A further purpose is the provision of means, in a machine of this character, for holding the brush or the polishing means yieldably against the surface of the floor as the machine is reciprocated.

A still further purpose is the provision of means for holding a cloth on the polishing member.

It is to be understood that the particulars herein given are in no way limitative and that, while still keeping within the scope of the invention, any desired modifications of detail and desired proportions may be made in the apparatus according to the circumstances.

The invention comprises further features and combinations of parts to be hereinafter set forth, shown in the drawings and claimed.

In the drawings:

Figure 1 is a view in perspective of the improved floor waxing and polishing machine constructed in accordance with the invention, showing the weighted wax container as lowered in contact with the surface of the floor for applying wax, the brush and the polishing member of the machine being removed.

Figure 2 is a longitudinal sectional view through the machine on line 2—2 of Figure 1, also showing the wax applying container in contact with the floor.

Figure 3 is a longitudinal sectional view showing the wax applying container elevated from contact with the surface of the floor and showing a brush applied to the motor shaft for rubbing the wax in.

Figure 4 is a longitudinal sectional view through the machine, showing the brush removed and a wax polishing disk with a cloth applied, one end of the machine being in elevation to avoid again showing the wax container, although it is in a raised position in this instance.

Figure 5 is an enlarged detail perspective view of the weighted wax container.

Figure 6 is a detail view of a portion of the motor shaft and the keys for holding the brush or the polishing member fast with the shaft.

Figure 7 is a detail view of a part of the lower portion of the wax container, showing how a cloth is held over the under surface of the container, the cloth acting to retard excessive flow of the wax and yet permit the wax to be applied.

Figure 8 is a detail view of the polishing disk, showing how a cloth is held thereon.

Referring to the drawings, 1 designates the frame of the machine which is mounted upon caster wheels 2 which have rubber tires, as shown, so as to prevent marring the surface of the floor as it is being waxed. The forward wheels are stationary so as to

insure forward and backward movement of the machine while the rear wheel is capable of freedom of movement swivelly.

The forward end of the machine has a guide compartment 3 for the reception of a weighted wax container 4 which, plus its top 5, should weigh at least about three pounds more or less in order to insure applying the wax to the surface of the floor. The cover 5 telescopes within the container and may bear upon a filler 6, preferably of excelsior or the like, which acts to retard too free a flow of the wax. The bottom of the container is provided with perforations 7 to permit a gradual flow of the wax.

Rising from the bottom of the container is a bolt 8, its lower end being fixed in the bottom against movement, as shown at 9, and passes through the cover 5, there being a washer 10 and a wing nut 11 mounted upon the bolt above the cover to retain the cover in place. The wing nut may be adjusted for the purpose of compressing the excelsior in order to insure squeezing out the liquid wax when the supply diminishes.

The lower outer margin of the wax container is provided with a groove 12 and, when applying the liquid wax, a cloth 13 of any suitable material, preferably a gauze fabric, is stretched over the perforated bottom and the margin of the cloth is pressed into the groove 12 and held therein by the U-shaped metal clamps 14. The clamps straddle the container endwise and their arms and their transverse portions seat in the groove. The arms of one clamp extend toward the arms of the other clamp and the respective arms are connected by coil springs 15 to insure holding the clamps in position and at the same time retain the cloth or gauze fabric over the perforated bottom of the container. The cloth or gauze fabric may be any suitable thickness, preferably of a texture suitable to properly retard the flow of the liquid wax and to prevent the wax from being applied to the surface of the floor too freely.

One side of the container is provided with a slot 16 and pivoted upon the upper surface of the frame of the machine is a retaining plate 17 which has an upstanding lug or knob 18, whereby the retaining plate may be moved pivotally into and out of engagement with the slot 16. When the retaining plate is engaged with the slot, the wax container is supported in a raised position and when out of engagement, the container is in a lowered position, whereby the wax can be applied to the surface of the floor. In the operation, the container is supplied with sufficient wax and placed in a lowered position, in which case the machine may be moved back and forth over the surface of the floor, the wax being properly applied to the surface during these operations. After applying the wax, the container may be raised and supported in such raised position by means of the retaining plate.

Mounted upon the frame of the machine in a conventional manner is a conventional form of electric motor 19 which is provided with the usual cord connections 20 for connection to a plug in the floor whereby a current from the service line may be conducted to the motor. The motor shaft 21 extends downwardly through the frame which is provided with a removable bottom 22 held in place by means of screws 23. The motor shaft has a vertical slot 24, the upper end of which has an enlargement 25. A coil extension spring 26 is mounted in surrounding relation to the motor shaft and is interposed between the top of the frame and a key 27.

In order to apply the key in the slot, the spring is first mounted upon the shaft and compressed toward the top of the frame to permit the key to be inserted through the enlargement at the top of the slot. After the key has been positioned transversely of the shaft, it is allowed to be moved downwardly of the slot by allowing the spring to expand. This key 27 also assists in retaining a wax rubbing brush 28 to rotate with the shaft. In fact, the wooden or other holder 29 for the bristles of the brush has a hub boss 30 provided with diametrically opposite slots which straddle the key 27 to hold the brush against movement relative to the shaft. A floor polishing disk 32 is provided and this disk has a hub boss 33 similar to that carried by the brush, therefore provided with similar diametrically opposite slots 31 like those in hub 30 which also may engage with the key 27 to hold the disk 32 rotatable with the motor shaft, that is, when the brush is moved.

The wooden portion of the brush and the floor polishing disk 32 on their under surfaces have diametrically opposite recesses or notches 34. When either the brush or the floor polishing disk is applied to the motor shaft with the hub boss engaging the key 27, the disk or the brush is pressed toward the frame, compressing the spring so that the motor shaft may project below the brush or the disk 32 sufficiently to insert a locking key 35 through an opening at the lower extremity of the motor shaft. After inserting the key, the spring is allowed to expand and in this instance the key 35 will seat in the opposite recesses or notches 34, thereby not only additionally causing the disk or brush to lock with the motor shaft but will also retain the disk or brush against downward movement on the shaft.

In order to remove the spring, in case it is necessary to replace it with a new one, the disk or brush is first removed from the shaft, then the bottom of the frame is de-

tached, in which case the spring may be compressed toward the under surface of the top of the frame to permit the key to position itself adjacent the enlargement at the upper end of the slot, whereby the key may be withdrawn. In applying a new spring, it is compressed toward the under surface of the top of the frame sufficiently to permit the key to be inserted through the enlargement and the spring allowed to expand. Both ends of the key 27 have heads which prevent movement of the key transversely of the shaft, that is, when it is engaging with the lower end of the slot. However, the heads are of a size to permit the insertion of the key 27 in either direction through the enlargement at the upper end of the slot.

The disk 32 has an annular groove 37 and when polishing the surface of the floor, after rubbing the wax in, a polishing cloth 36 of any suitable fabric is placed over the under surface of the disk and its margin is forced into the groove 37. A relatively pliable expansible coil spring 38 in the form of a band is stretched and engaged with the margin of the cloth to hold the margin in engagement with the groove 37.

The end of the frame opposite the end carrying the wax container has a compartment 39 provided with a hinged lid 40. This compartment is provided for the purpose of containing a bottle of an extra supply of wax or for containing a screwdriver or other tool or for containing extra cloths to be used on the polishing disk.

A suitable handle 41 provided with a forked end 42 is pivotally connected to the frame at opposite sides thereof, whereby the machine may be pushed back and forth over the surface of the floor.

After the wax is applied to the surface of the floor, the wax container is supported in an elevated position, then the brush is attached, the brush acting to rub the wax into the surface. After rubbing the wax in, the brush is removed and the polishing disk with its cloth is attached to the motor shaft and the machine again moved back and forth over the surface of the floor, thereby giving the surface of the floor a glossy finish.

The invention having been set forth, what is claimed is:

1. In a floor waxing and polishing machine, the combination with a frame including a revoluble member for engagement with the surface of the floor and provided at one end with a guide space, of a gravity wax container mounted in said guide space and provided with a perforated bottom, a fabric covering over the perforated bottom, and fibrous material in the container to avoid too free flow of the wax.

2. In a floor waxing and polishing machine, the combination with a frame provided with a revoluble floor engaging member and having a guide space at one end, of a gravity liquid wax container mounted in said guide space and provided with a perforated bottom, a fibrous material in the container to avoid too free a flow of the wax, and means adjustably mounted in the container for compressing the fibrous material for squeezing the liquid wax therefrom.

3. In a floor waxing and polishing machine, the combination with a frame including a revoluble member for engagement with the surface of the floor and provided at one end with a guide space, of a gravity wax container mounted in said guide space and provided with a perforated bottom, a fabric covering over the perforated bottom, fibrous material in the container to avoid too free flow of the wax, and means on the frame for supporting the container in a raised position out of engagement with the floor.

4. In a floor waxing and polishing machine, the combination with a frame provided with a revoluble floor engaging member and having a guide space at one end, of a gravity fluid container mounted in said guide space and provided with a perforated bottom, a fibrous material in the container to avoid too free a flow of the wax, means adjustably mounted in the container for compressing the fibrous material for squeezing the fluid therefrom, and means on the frame for supporting the container in a raised position out of engagement with the floor.

5. In a floor waxing and polishing machine, a frame provided with a revoluble floor engaging member and having a guide space at one end, a gravity liquid wax container mounted in said space and provided with a perforated bottom, a fabric covering over the perforated bottom, means for clamping the covering to the bottom, said means comprising a groove adjacent the lower margin of the container, U-shaped clamps straddling the container in directions longitudinally thereof and seated in the groove to clamp the covering in position, and tensioned means connecting the arms of the U-shaped members to retain them in the groove.

6. In a floor waxing and polishing machine, a frame provided with a revoluble floor engaging member and having a guide space at one end, a gravity liquid wax container mounted in said space and provided with a perforated bottom, a fabric covering over the perforated bottom, means for clamping the covering to the bottom, said means comprising a groove adjacent the lower margin of the container, U-shaped clamps straddling the container in directions longitudinally thereof and seated in the groove to clamp the covering in position,

tensioned means connecting the arms of the U-shaped members to retain them in the groove, an absorbent material in the container to avoid too free flow of the liquid wax, and means for compressing the absorbent to squeeze the liquid wax therefrom to insure equally distributing the wax over the surface to be waxed.

7. In a floor waxing and polishing machine, a frame provided with a revoluble floor engaging member and having a guide space at one end, a gravity liquid wax container mounted in said space and provided with a perforated bottom, a fabric covering over the perforated bottom, means for clamping the covering to the bottom, said means comprising a groove adjacent the lower margin of the container, U-shaped clamps straddling the container in directions longitudinally thereof and seated in the groove to clamp the covering in position, tensioned means connecting the arms of the U-shaped members to retain them in the groove, and means for holding the container in a raised position out of engagement with the surface of the floor.

8. In a floor waxing and polishing machine, a frame provided with a revoluble floor engaging member and having a guide space at one end, a gravity liquid wax container mounted in said space and provided with a perforated bottom, a fabric covering over the perforated bottom, means for clamping the covering to the bottom, said means comprising a groove adjacent the lower margin of the container, U-shaped clamps straddling the container in directions longitudinally thereof and seated in the groove to clamp the covering in position, tensioned means connecting the arms of the U-shaped members to retain them in the groove, means for holding the container in a raised position out of engagement with the surface of the floor, an absorbent material in the container to avoid too free a flow of the liquid wax, and means for compressing the absorbent to squeeze the liquid wax therefrom to insure equally distributing the wax over the surface to be waxed.

9. In a floor waxing and polishing machine, a frame provided at one end with means for applying wax to the surface to be polished, a revoluble driven shaft, a floor engaging member carried by and rotating with the lower end of the shaft which is provided with a vertical slot, a key in the lower end of the slot and having a fixed connection with the floor engaging member, and resilient means in surrounding relation with the shaft and interposed between the top of the frame and said key to hold the member yieldably in contact with the surface of the floor.

10. In a floor waxing and polishing machine, a frame provided at one end with means for applying wax to the surface to be polished, a revoluble driven shaft, a floor engaging member carried by and rotating with the lower end of the shaft which is provided with a vertical slot, a key in the lower end of the slot and having a fixed connection with the floor engaging member, resilient means in surrounding relation with the shaft and interposed between the top of the frame and said key to hold the member yieldably in contact with the surface of the floor, the upper end of the slot having an enlargement to permit the key to be inserted in the slot transversely of the shaft subsequently to having compressed the resilient means, whereby the resilient means upon expanding will move the key toward the lower end of the slot, and supporting casters for the frame, whereby the machine can move over the surface as the member is revolving.

In testimony whereof he affixes his signature.

his
EPHRANT × GRANT.
mark

Witnesses:
E. A. LOTHROP,
G. H. WILSON.