Mar. 6, 1923. 1,447,382

A. W. GREEN

FLOOR FINISHING APPARATUS

Filed Dec. 20, 1921. 2 sheets-sheet 1

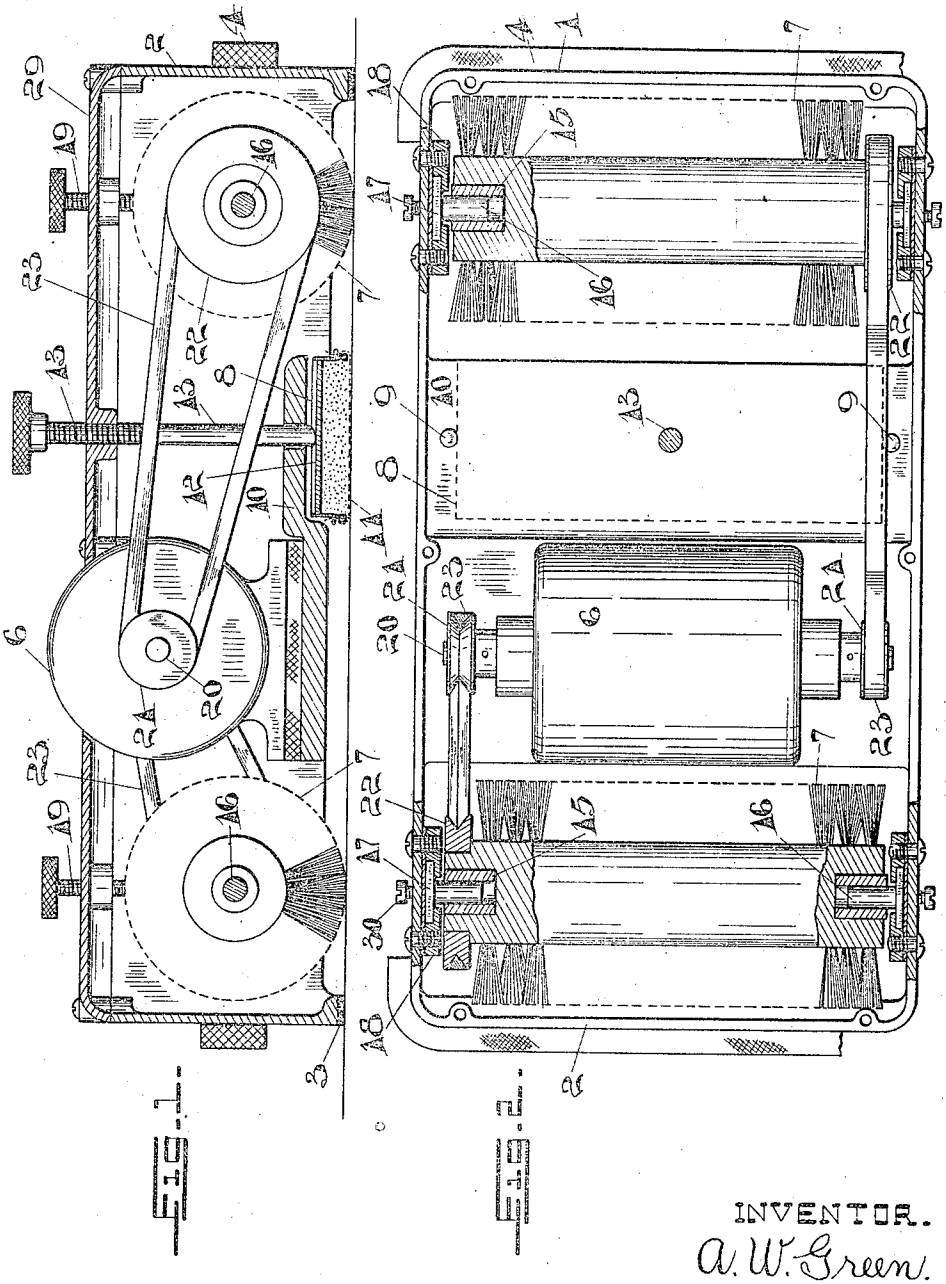


Fig. 1.

Fig. 2.

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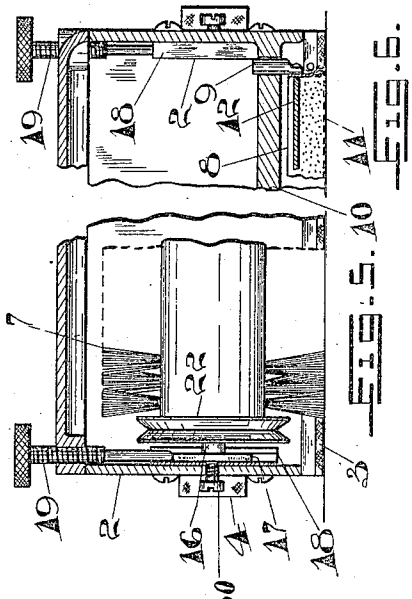
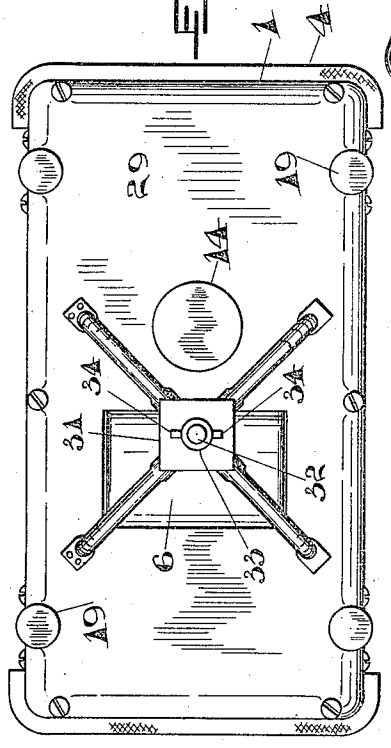


Fig. 5.

Fig. 4.



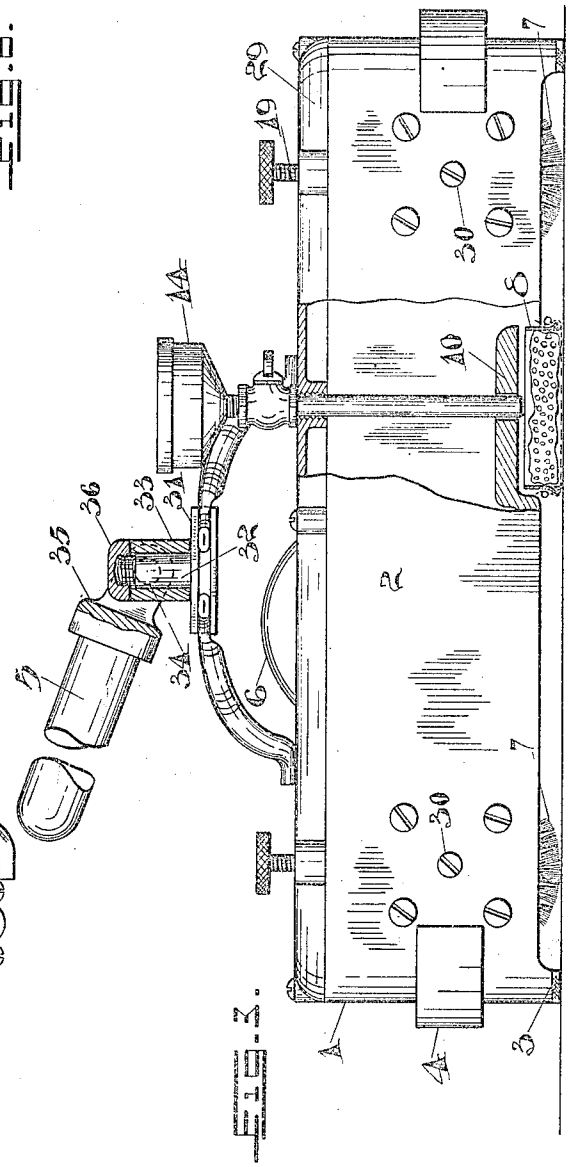


Fig. 2.

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Patented Mar. 6, 1923. 1,447,382

UNITED STATES PATENT OFFICE.

ANDREW W. GREEN, OF TORONTO, ONTARIO, CANADA.

FLOOR-FINISHING APPARATUS.

Application filed December 28, 1921. Serial No. 525,475.

To all whom it may concern:

Be it known that I, ANDREW W. GREEN, of the city of Toronto, in the county of York, Province of Ontario, Canada, a subject of the King of Great Britain, have invented certain new and useful Improvements in Floor-Finishing Apparatus, of which the following is a specification.

This invention relates to floor finishing apparatus adapted for use in polishing hardwood floors, and the like, and more particularly to the power driven type of apparatus, and my object is to so construct the apparatus that it may be cheaply manufactured and yet be durable and efficient. Further objects I have in mind will hereinafter appear.

I attain my objects by means of the constructions hereinafter described and illustrated in the drawings in which—

Fig. 1 is a longitudinal section of the apparatus;

Fig. 2 a plan view of the same with the cover removed;

Fig. 3 a side elevation of the same, partly in section;

Fig. 4 a plan view;

Fig. 5 a detail in cross section of part of the apparatus; and

Fig. 6 a detail in cross section showing the method of carrying the waxing attachment.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

1 is a carriage comprising a frame 2 provided with suitable gliders 3. The carriage is also provided with a furniture protector 4 and a handle 5. To the frame 2 is suitably secured a horizontal motor 6. A cylindrical brush 7 horizontally journalled on the frame 2 is adapted to be rotated by the motor 6 in any suitable manner.

To wax the floor I provide a wax carrying attachment 8 removably carried by the frame 2. The wax carrying attachment includes an open top and bottom casing having upwardly extending pins 9 adapted to be received in holes formed in a transverse member 10 formed on or secured to the frame 2. A porous member 11 underlying the casing and suitably secured thereto is adapted to spread the wax evenly on the floor. A follower 12 fitted in the wax carrying casing 8 is adapted to be engaged by a screw 13 to apply pressure to the wax, which has been spread on the upper side of the porous member 11, to feed the wax to the porous member. The screw 13 is threaded in the frame 2 and its upper end is provided with a knurled head. It will be noted that with this arrangement that the wax carrying attachment may be easily removed for re-filling or if it is desired to use the apparatus for only brushing the floor. It will readily be seen that the pins 9 will permit the waxing attachment to float relative to the floor and maintain contact therewith despite any irregularities of the floor.

If a floor is to be treated with a cleaning fluid a sponge saturated with the fluid may be placed in the wax carrying casing 8 and held in position by a suitable outer covering and the apparatus run over the floor. Preferably a hopper 14 having a valve controlled tube forming a suitable communication with the sponge chamber is detachably secured to the frame 2. With this construction the sponge may be maintained in a saturated condition and would not have to be removed until the cleaning operation was finished.

To obtain the best results it is desirable to brush the floor as it is being waxed. To enable the apparatus to be used efficiently while travelling in either a forward or reverse direction I provide a pair of cylindrical brushes 7 horizontally journalled on the frame 2. These brushes are located one at each side of the transverse member 10 on which the waxing pad 8 is removably carried.

To apply any desired pressure to the brushes 7, I mount them on the frame 2 so that their upward movement may be limited. Each end of each brush is provided with a bushing 15 adapted to receive a journal 16 secured to or formed on a slidable member 17 which is guided in the vertical guide members 18 secured to the frame 2. Adjustable screws 19 threaded in the frame 2 are adapted to engage the slidable members 17 to limit the upward movement of the members and thus apply pressure to the brushes.

To hold the brushes 7 in their adjusted position the set screws 30 are provided. These set screws are threaded in the frame 2, their inner ends being adapted to engage the slidable members 17 to lock the latter in any desired position.

I prefer to rotate the brushes 7 by the motor 6 in the following manner. The motor is provided with a spindle 20. A grooved

pulley 21 is secured to each end of the motor spindle and to one end of a brush 7 is secured a grooved pulley 22, to the opposite end of the other brush is secured another grooved pulley 22. An endless belt 23 is carried by each set of these pulleys to transmit power to the brushes. It is evident that with this construction each brush may be of sufficient length to overlap the space required for the driving connection of the other brush as shown in Fig. 2. It will also be noted that the brushes may be easily and quickly removed to clean them by removing the belts 23 and loosening the set screws 30 which will permit the slidable members 17 to drop out of their respective guide members 18.

To avoid accidents and to protect the working parts when the device is in use, the carriage 1 is provided with depending sides and ends to substantially enclose the brushes 7. The gliders 3 are formed of felt or rubber strips suitably secured to the bottoms of the depending ends. Preferably the carriage is provided with a removable cover 29.

To allow the handle 5 to swing to any desired angle in a horizontal plane I provide the carriage with a supporting member 31 which is provided with an upwardly extending pin 32. A collar 33 journalled on the pin 32 is provided with diametrically opposite pins 34 extending therefrom. The lower end of the handle 5 is provided with a yoke 35 having holes formed therein to receive the pins 34. It is evident that with this arrangement the handle may be swung vertically on the horizontal pins 34 and swung in a horizontal plane on the vertical pin 32. To lock the handle at any desired angle in a horizontal plane a cap 36 threaded on the upper end of the pin 32 is adapted to engage the upper end of the collar 33 and thus releasably lock it in any desired horizontal position. To change the position of the handle relative to the carriage, the cap 36 is first disengaged from the collar 33 and then the handle is swung in a horizontal plane to the desired position thus rotating the collar on the pin 32 and then the collar is again locked by means of the cap. The fact that the handle may be adjusted to any horizontal angle enables the operator to work into awkward corners and other places such as stairways where a device with merely an ordinary bent handle could not operate and thus entirely obviate the necessity for hand work.

In the operation of this machine I depend on speed rather than pressure for polishing. The machine may thus be made light in weight and small in size thus rendering it particularly adapted for household use so that it may also be used for polishing furniture.

What I claim as my invention is:—

1. In floor finishing apparatus the combination of a carriage; a horizontal motor secured to the carriage; vertical guides secured to the carriage; members mounted in the guides; releasable means for locking the members; and a brush journalled on said members and adapted to be rotated by the motor, the locking means being adapted to hold the brush in any vertical position relative to the floor.

2. In floor finishing apparatus the combination of a carriage; a horizontal motor secured to the carriage; vertical guides secured to the carriage; members mounted in the guides; adjustable screws limiting the upward movement of the members; and a brush journalled on said members and adapted to be rotated by the motor.

3. In floor finishing apparatus the combination of a carriage; two brushes horizontally journalled on the carriage; a horizontal motor secured to the carriage and provided with a spindle; means connected with one end of the spindle for driving one of the brushes; and means connected with the opposite end of the spindle for driving the other brush, each brush being adapted to overlap the driving means of the other brush.

4. In floor finishing apparatus the combination of a carriage; two brushes horizontally journalled on the carriage; a horizontal motor secured to the carriage and provided with a spindle; a pulley secured at each end of the motor spindle; a pulley secured to the end of one brush; a pulley secured to the opposite end of the other brush; and a belt carried by each set of pulleys, each brush being adapted to overlap the pulley carried by the other brush.

5. In floor finishing apparatus the combination of a carriage; a horizontal motor secured to the carriage; brushes horizontally journalled and vertically movable on the carriage one at each side of the motor, the brushes being adapted to be rotated by the motor; and means for positively and adjustably limiting the upward movement of the brushes relative to the floor, the carriage being adapted to engage the floor so that it supports itself.

6. In floor finishing apparatus the combination of a carriage; a wax carrying attachment slidable vertically on the carriage; and means for applying pressure to the wax.

7. In floor finishing apparatus the combination of a carriage; a wax carrying attachment removably carried by the carriage and provided with a porous member at its underside; a follower fitted in the attachment and means adapted to engage the follower for applying pressure to the wax to feed it to the porous member.

8. In floor finishing apparatus the combination of a carriage provided with holes

on its underside; a wax carrying attachment provided with upwardly extending pins adapted to be received in said holes; a follower fitted in the attachment; and a screw threaded in the casing and adapted to engage the follower.

9. In floor finishing apparatus the combination of a frame provided with depending sides and ends; gliders adapted to support the frame; a motor secured to the frame; and a brush journalled on the frame and adapted to be rotated by the motor, the sides and ends being extended downwardly to substantially enclose the brush.

10. In floor finishing apparatus the combination of a carriage provided with floor finishing means; a supporting member secured to the carriage and provided with an upwardly extending pin; a collar vertically journalled on the pin; a handle horizontally journalled on the collar so that the handle may swing horizontally and vertically; and a cap threaded on the upper end of the pin and adapted to engage the end of the collar and thus releasably lock it in any desired horizontal position.

11. In floor finishing apparatus the combination of a carriage; a horizontal motor secured to the carriage; brushes horizontally journalled and vertically adjustable on the carriage, one at each side of the motor; and means connected with the motor for driving each brush, each brush being adapted to overlap the driving means of the other brush.

Signed at Toronto, Canada, this 22nd day of December, 1921.

ANDREW W. GREEN.