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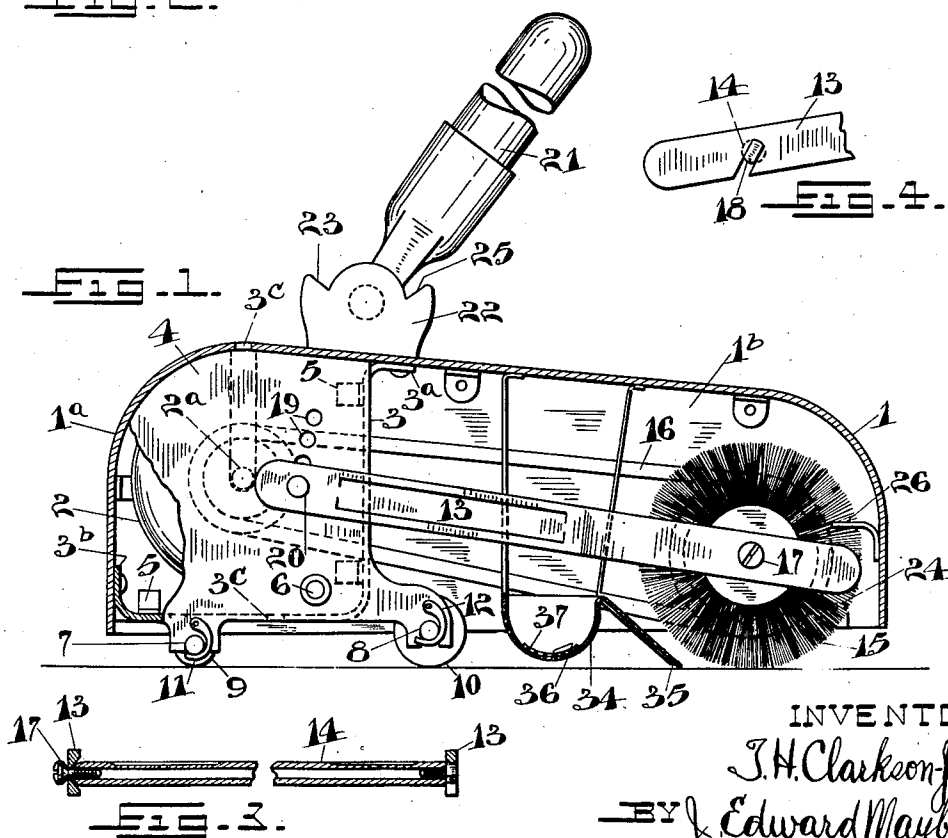
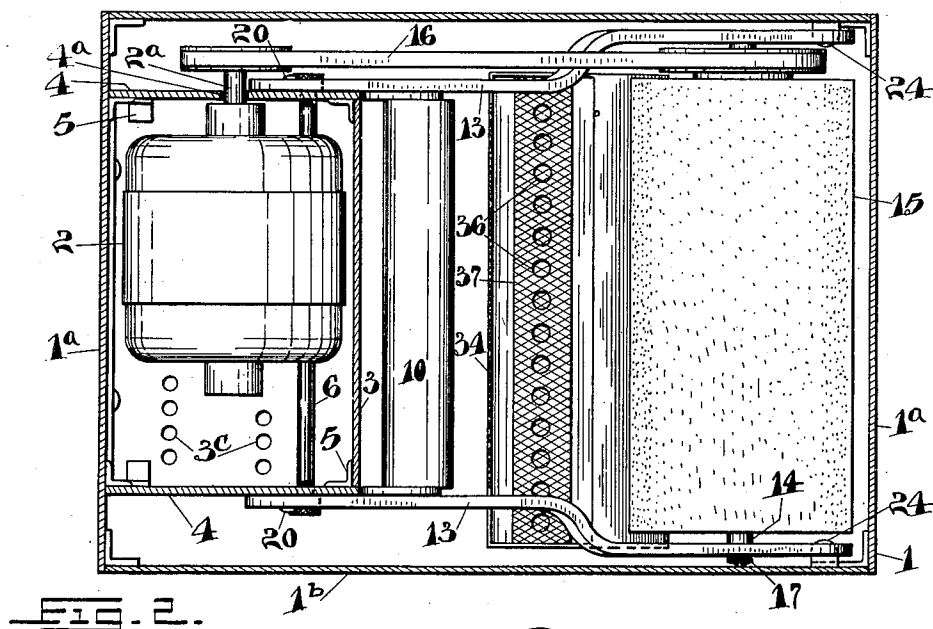
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T. H. CLARKSON-JONES

FLOOR TREATING APPARATUS

Filed April 7. 1923

2 Sheets-Sheet 1



INVENTOR

J. H. Clarke on Jones

BY *J. Edward Maybee.*
ATTY.

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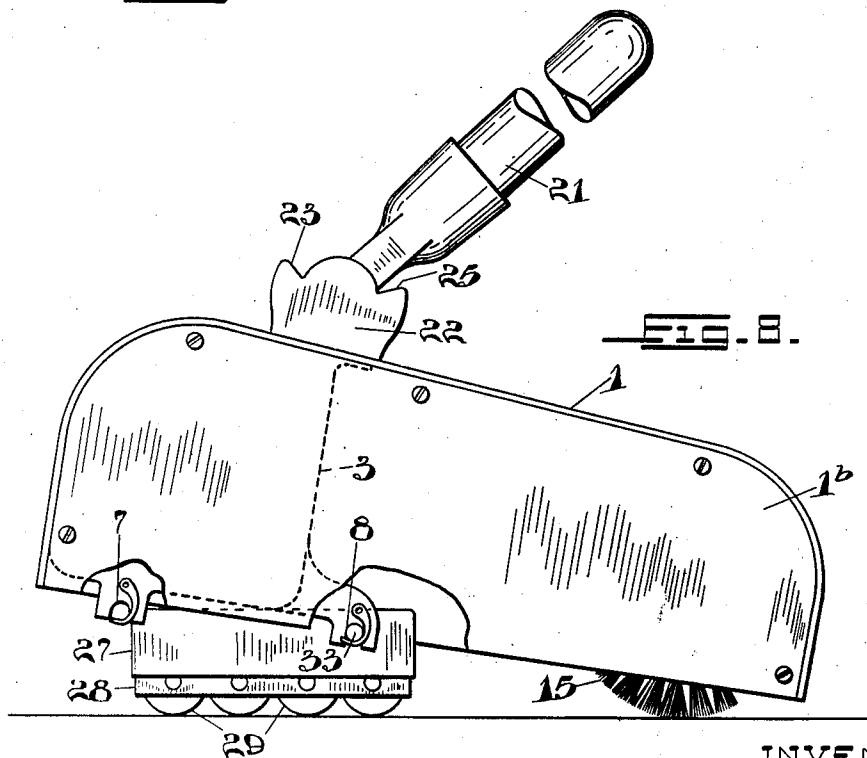
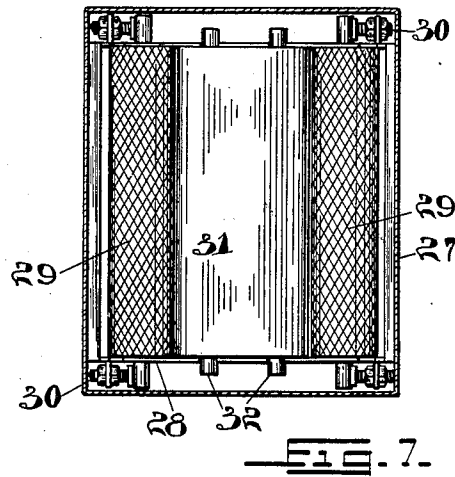
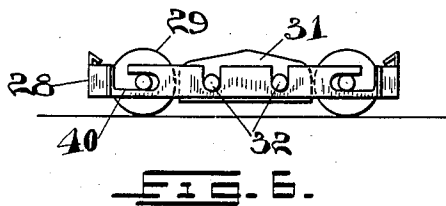
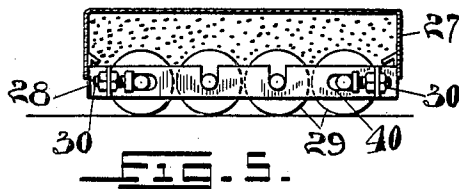
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T. H. CLARKSON-JONES

FLOOR TREATING APPARATUS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

THOMAS H. CLARKSON-JONES, OF TORONTO, ONTARIO, CANADA.

FLOOR-TREATING APPARATUS.

Application filed April 7, 1923. Serial No. 630,455.

To all whom it may concern:

Be it known that I, THOMAS H. CLARKSON-JONES, 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-Treating Apparatus, of which the following is a specification.

This invention relates to floor treating apparatus adapted for use in cleaning, waxing and polishing hardwood floors, and the like, and more particularly to the power driven type of apparatus and my object is to devise simple apparatus of this type using a horizontal cylindrical brush which will readily adjust itself to floors of uneven surfaces and in which the operating handle may be used to apply pressure of the brush against the floor or to relieve the load on the motor and driving connections when the motor is started. A further object is to evenly feed the wax to the floor without squeezing out the liquid ingredients thereof.

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

Fig. 1 is a longitudinal section of my improved apparatus;

Fig. 2 a horizontal section of the same;

Fig. 3 a longitudinal section of the brush spindle, partly broken away, showing the manner in which it is carried by the radius arms;

Fig. 4 a detail of the notched radius arm;

Fig. 5 a longitudinal section of the wax carrying receptacle showing the roller carrying frame in position therein;

Fig. 6 a side elevation of the roller carrying frame showing the spacer in position;

Fig. 7 a horizontal section of the wax carrying receptacle, showing the roller carrying frame and spacer in plan; and

Fig. 8 a side elevation of the carriage showing the method of attaching the waxing attachment.

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

1 is a carriage having the top, front and rear ends of its frame formed from a sheet metal stamping 1^a, the sides 1^b of the frame also being formed from stampings which are removably secured to the stamping 1^a. A

horizontal motor 2 is secured to a support 3 formed from sheet metal stampings. This support, formed as a motor housing, is adapted to substantially enclose the motor to prevent dust and dirt from reaching the motor and is formed with an integral end and bottom, each provided with a lip 3^a and 3^b respectively adapted to be suitably secured to the stamping 1^a. The latter and the bottom of the support are provided with ventilation holes 3^c to permit circulation of air through the motor housing. To close the sides of this support the sides 4 formed of sheet metal stampings are provided. These sides lie against the edges of the support 3 and are positioned thereon by means of the clips 5. A plurality of these clips are secured to each side 4 and are adapted to engage the inner surfaces of the support 3 and the stamping 1^a. A bolt 6 passing through holes formed in the sides 4 is provided with knurled nuts adapted to engage the latter and hold them in place. The sides 4 are formed with the open bearings 7 and 8 adapted to receive the spindles of the rollers 9 and 10, or other rolling supports, pivoted hooks 11 and 12 being provided to releasably hold the spindles in these bearings.

A pair of radius arms 13 are pivotally connected on the sides 4, the free ends of these arms being adapted to non-rotatably carry a horizontal spindle 14 as hereinafter described. On the spindle is journaled a cylindrical brush 15 provided with a grooved pulley adapted to be rotated by means of a belt 16 which also passes round a grooved pulley secured to the spindle 2^a of the motor 2. This spindle projects through a notch 4^a formed in one of the sides 4 so that that side may be removed as hereinbefore described without disturbing the motor support 3. When brushing a floor of uneven surface it is necessary to permit either end of the brush to rise or fall relative to the other end, whereby the brush will readily adjust itself to polish the low parts as well as the high parts of an uneven floor surface. Referring particularly to Fig. 4, it will be seen that one radius arm is provided with a hole through which passes a headed screw 17 which is threaded in the adjacent end of the spindle 14. To permit the screw 17 to slightly rock in the hole the latter is counterbored to provide clearance for the end of

the spindle and the portion of the screw head which engages the radius arm is conical in shape. The other radius arm is provided with a notch disposed at an angle which is inclined upwardly and towards the motor and adapted to receive a flat sided lateral projection 18 formed on or secured to the adjacent end of the spindle 14, whereby the projection may rock in the notch. With this arrangement it is obvious that the belt 16 will tend to pull the projection 18 towards the motor and thus prevent the projection from falling out the open end of the notch.

To adjust the pressure of the brush against the floor I provide the sides 4 with two series of oppositely arranged holes 19 adapted to receive the pivot pins 20 of the radius arms 13 whereby the latter may be pivoted in any two opposite holes. These holes are arranged on an arc substantially concentric with the axis of the brush and are also arranged relative to the axis of the motor 2 so that the pivotal connections of the radius arms may be shifted above the axis of the motor which causes the belt 16 to tend to pull the free ends of the radius arms towards the motor which results in a substantially downwardly directed pull being exerted on the free ends and thus apply pressure to the brush.

In machines of this type it is desirable to use a light motor requiring a small amount of current, which machines are heavily overloaded when they are started with the brush resting on the floor. To raise the brush off the floor and thus permit the motor to attain its speed before applying any load, I provide the following means. A handle 21, transversely journaled in a bearing 22, secured to the carriage 1, swings in a vertical plane and is adapted to engage a suitable part carried on the carriage, a lug 23 formed on the bearings 22, so that the carriage may be swung on the roller 9 to raise the end thereof that is adjacent the brush. Inwardly directed stops 24 secured to the sides 1^b and lying below and normally spaced from the free ends of the radius arms are adapted to engage the latter when the end of the carriage is raised, as described above, and thus raise the brush off the floor. These stops also limit the downward movement of the radius arms relative to the carriage when the device is lifted off the floor. To apply more than normal pressure to the brush the handle 21 is also adapted to engage a second lug 25, formed on the side of the bearing 22 opposite the lug 23, to rock the carriage on the roller 10 and lower the end thereof adjacent the brush. Stops 26 secured to the stamping 1^a and lying above and normally spaced from the free ends of the radius arms are adapted to engage the latter when they are lowered and thus apply pressure to the

brush. These stops are also adapted to limit the upward movement of the brush relative to the carriage.

When the device is used for polishing a waxed hard wood floor, or the like, a fine brush will be used but when it is desired to use the device for scrubbing purposes a very coarse brush will be substituted for the polishing brush. It will be noted that as the motor is carried within a housing the device is especially adapted for use as a scrubbing machine since the housing protects the motor from the water thrown up by the brush.

The waxing devices used in connection with the power driven types of apparatus now on the market are all similar in that they try to force the wax to the floor surface which causes the liquid in the wax to be separated therefrom and thus cause the other ingredients in the wax to become dry and hard and thus unfit for use. To evenly feed the wax without squeezing out the liquid ingredients I provide a waxing attachment adapted to carry the wax to the floor. This attachment includes a wax carrying receptacle 27 having a telescoping connection with a frame 28 which is formed with an open top and bottom. The receptacle is formed with an open bottom adapted to receive the frame 28 which is provided with open bearings formed as notches in which the spindles of the rollers 29 are journaled. From the above it is evident that when the rollers are in contact with the wax in the receptacle and with the floor the wax will be applied to the latter and to facilitate this the surfaces of the rollers are indented or grooved. It is also obvious that the weight of the receptacle will tend to constantly maintain the wax in contact with the surface of the rollers. To regulate the amount of wax being fed to the floor I provide the screws 30 for adjusting the outer rollers relative to the inner rollers to vary their spacing. These screws are carried in lugs formed on or secured to the frame 28, each screw being provided with a pair of nuts one at each side of a lug whereby the screw may be locked as adjusted. The frame is provided with horizontal slots 40 to receive the spindles of the outer rollers.

To reduce the amount of wax used I may reduce the number of rollers 29 and substitute a filler or fillers therefor. I show for this purpose a filler 31 having a pair of pins 32 at each end thereof, the pins being adapted to be received in the open bearings for the spindles of the inner rollers as shown in Figs. 6 and 7 whereby this filler may be substituted for these rollers.

To obtain the best results it is desirable to distribute the wax and work it into the floor by means of the brush. The wax receptacle 27 is provided with a pair of laterally ex-

tending pins 33 adapted to be received in the open bearings 8 (see Fig. 8). The bottom of the motor support 3 rests on the waxing receptacle 27 to distribute the weight of the carriage on the latter so that the wax is constantly in contact with the roller 29.

To catch the dirt off the floor when scrubbing a pocket 34 is suitably suspended within the carriage in front of the brush. This pocket is provided with a flap 35 adapted to drag along the floor and direct the brush sweepings into the pocket. The bottom of the latter is provided with liquid drain openings 36 over which is suitably carried a meshed screen 37.

What I claim as my invention is:—

1. In floor treating apparatus, the combination of a carriage; a horizontal motor secured to the carriage and provided with a pulley; a pair of movable radius arms; a brush horizontally journaled on the radius arms and provided with a pulley; pivots for the radius arms located at opposite sides of the carriage above a plane intersecting the axis of the brush and the axis of the motor; and a driving belt passing round said pulleys, said belt owing to the location of the pivots of the radius arms tending to press the brush against the floor.

2. Floor treating apparatus constructed as set forth in claim 1 in which the radius arms are independent and in which rocking pivotal connections are provided between the brush and the radius arms whereby either end of the brush may rise or fall independently of the other.

3. In floor treating apparatus the combination of a carriage; a horizontal motor secured to the carriage and provided with a spindle; a pair of radius arms; a pulley secured to said spindle; a brush horizontally journaled at the free ends of the radius arms and provided with a pulley; and a belt carried by the said pulleys for driving the brush, the carriage being provided with two series of oppositely arranged holes, the holes being arranged on an arc substantially concentric with the axis of the brush, the radius

arms being adapted to be pivoted in any two opposite holes whereby the pressure of the brush against the floor may be adjusted.

4. In floor treating apparatus, the combination of a frame; a pair of radius arms pivotally connected with the frame, one of the said arms being provided with a notch and the other with a hole; a spindle carried by the free ends of the radius arms and having one end provided with flattened sides adapted to be received in the said notch and the other end adapted to fit in the hole; a brush journaled on the spindle; and means for rotating the brush.

5. In floor treating apparatus the combination of a frame; a pair of radius arms pivotally connected with the frame, one arm being provided with a counterbored hole and the other provided with a notch; a spindle provided with a lateral projection having its sides flattened and adapted to be received in the said notch; a screw adapted to be passed through the said hole and threaded in the adjacent end of the spindle so that this end of the spindle may rock relative to its radius arm and thus permit the projection to rock in its notch; and a brush journaled on the spindle.

6. In floor treating apparatus the combination of a frame; a pair of radius arms pivotally connected with the frame, one arm being provided with a counterbored hole and the other provided with a notch disposed at an angle inclined upwardly in the direction of the pivots of the radius arms; a spindle provided with a lateral projection having its sides flattened and adapted to be received in the said notch; a screw adapted to be passed through the said hole and threaded in the adjacent end of the spindle so that this end of the spindle may rock relative to its radius arm and thus permit the projection to rock in its notch; and a brush journaled on the spindle.

Signed at Toronto, this 29th day of March, 1923.

THOMAS H. CLARKSON-JONES.