April 6, 1926. 1,579,809

T. H. CLARKSON-JONES

POLISHING APPARATUS

Filed August 27, 1924 3 Sheets-Sheet 1

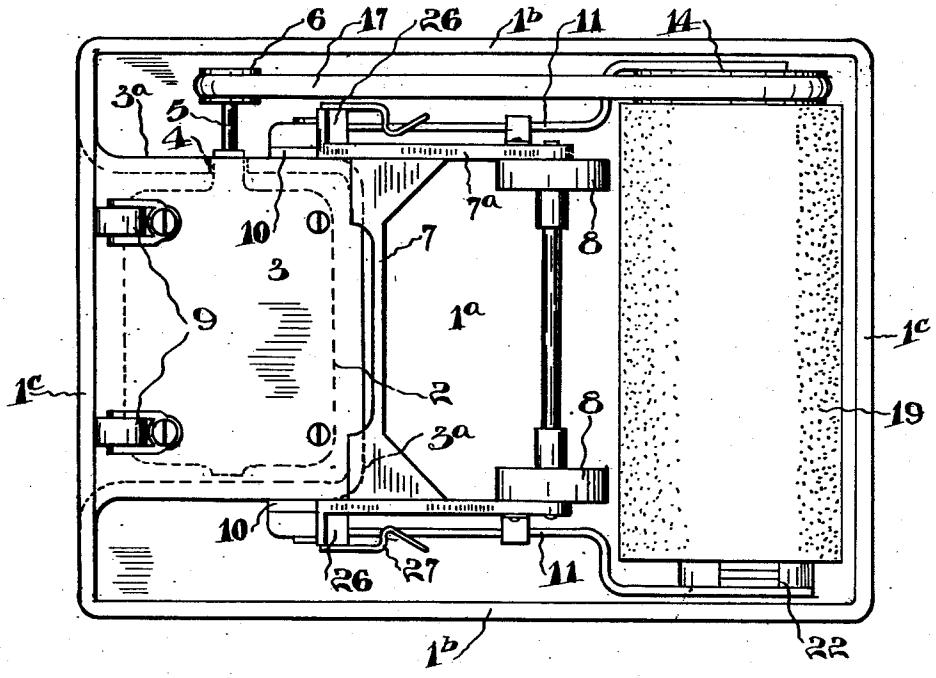


Fig. 7.

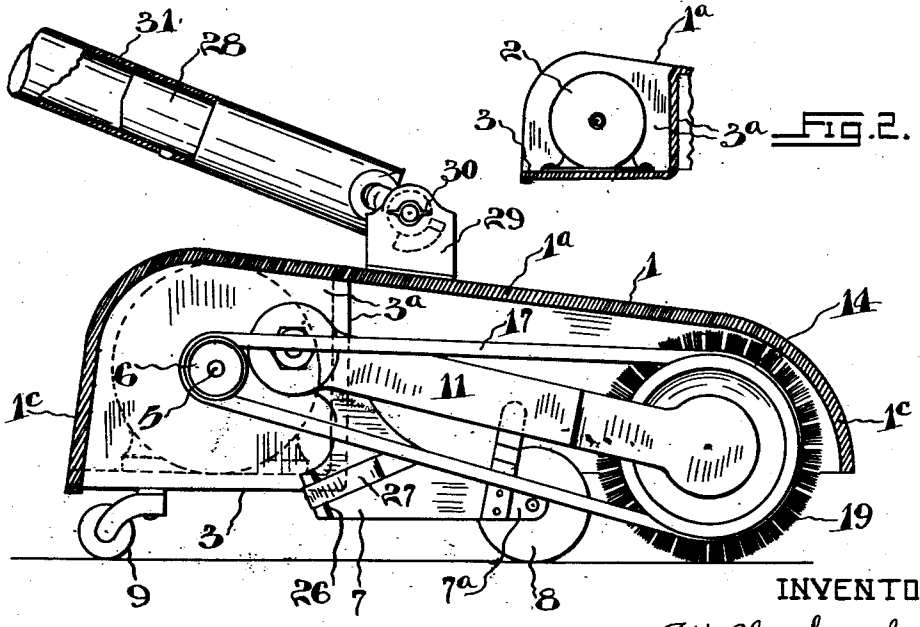


Fig. 1.

Fig. 2.

INVENTOR

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T. H. CLARKSON-JONES

POLISHING APPARATUS

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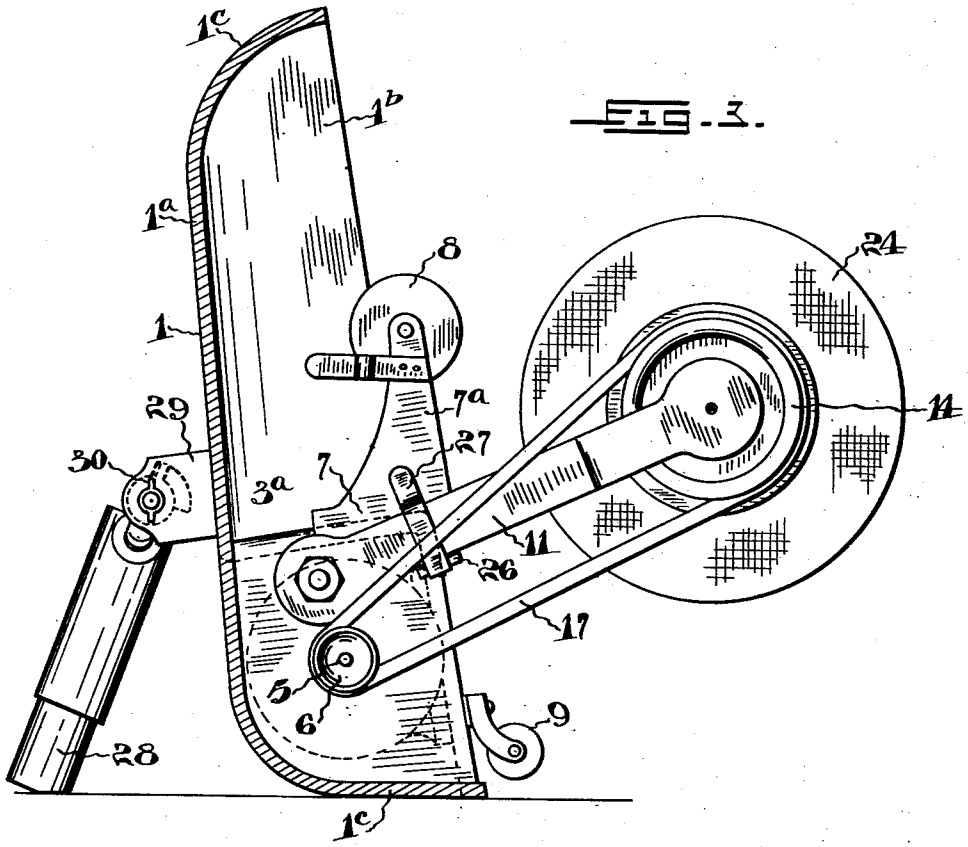


Fig. 3.

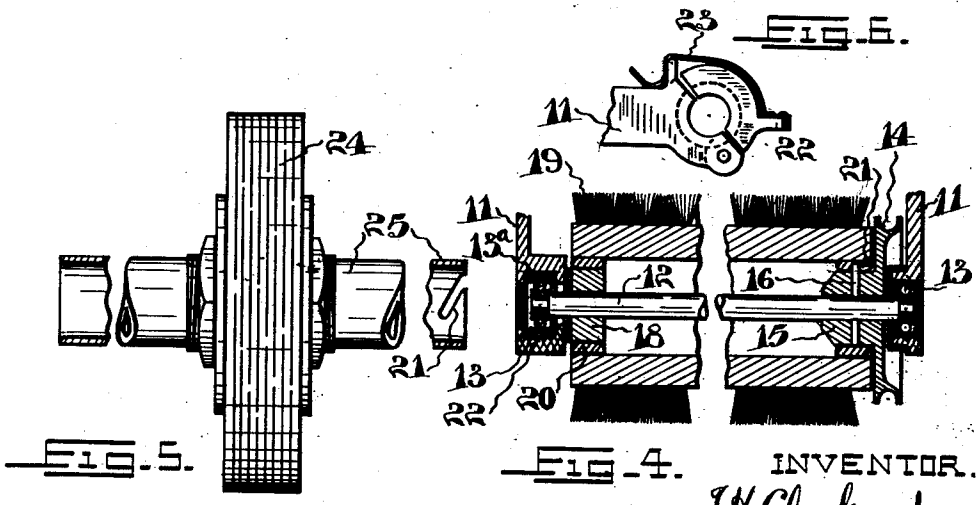


Fig. 5. Fig. 4.

Fig. 6.

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April 6, 1926. 1,579,809

T. H. CLARKSON-JONES

POLISHING APPARATUS

Filed August 27, 1924 3 Sheets-Sheet 3

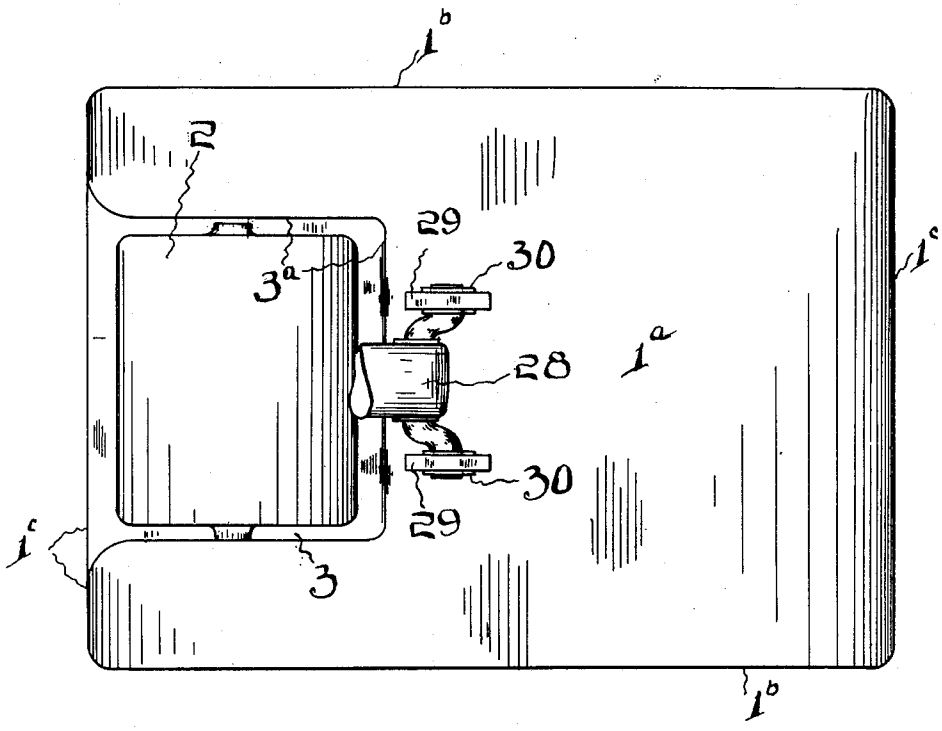


FIG. 8.

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Patented Apr. 6, 1926. 1,579,809

UNITED STATES PATENT OFFICE.

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

POLISHING APPARATUS.

Application filed August 27, 1924. Serial No. 734,530.

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 Polishing Apparatus, of which the following is a specification.

This invention relates to polishing apparatus adapted for use in polishing hardwood floors and more particularly to the power driven type of apparatus, and my object is to devise simple apparatus of this character using a horizontal cylindrical brush which will readily adjust itself to floors of uneven surfaces. A further object is to provide apparatus of this type which may be used for polishing or buffing other articles.

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

Fig. 1 is a side elevation of my improved apparatus, the carriage being shown in section;

Fig. 2 a longitudinal sectional detail, on a reduced scale, of the carriage;

Fig. 3 a view similar to Fig. 1 showing the carriage in its upright position;

Fig. 4 a cross section of the floor polishing brush showing its detachable connection with its shaft and showing the means for permitting one end of the shaft to rock relative to the other;

Fig. 5 a cross section of another type of polishing tool;

Fig. 6 a detail in side elevation of the free end of one of the radius arms;

Fig. 7 a plan view of the underside of the apparatus; and

Fig. 8 a top plan view of the apparatus.

1 is a carriage having the top 1^a, sides 1^b and ends 1^c of its frame or casing formed integrally. A horizontal motor 2 is secured to a support 3 which is formed at the rear end of the carriage and integral therewith. The support is so located that the motor driving mechanism, hereinafter described, will be carried within the casing while the motor will be on the outside of the casing to protect it from the dust and wax on the floor. This is accomplished by forming a compartment along the rear end of the casing and intermediate the sides thereof.

The sides and the forward end of the support are connected, by substantially vertical walls 3^a, with the top 1^a which arrangement completely closes off the motor from the interior of the casing.

One of the side walls 3^a is provided with an opening 4 for the passage of the motor spindle 5 which has a driving pulley 6 secured thereto.

A member 7, secured to the inner side of one or more of the motor compartment walls 3^a, is provided with forwardly extending arms 7^a in which a transverse shaft is carried. This shaft carries the anti-friction wheels 8. At the rear end of the underside of the support 3 is suitably carried one or more caster wheels 9. The member 7 is also provided with a pair of lugs 10 located at opposite sides of the motor compartment. To these lugs are pivotally connected, in any suitable manner, a pair of radius arms 11. A shaft 12 is journalled, by means of ball bearings 13, in the free ends of these arms. The ball bearings are provided with felt washers and are so constructed that the inner ball races thereof may rock or swivel relative to the outer races which permits one end of the shaft 12 to rock relative to the other. The above type of ball bearing is known in that are and is therefore only briefly described.

The shaft 12 is driven by the motor 2 as follows: A pulley 14 provided with a hub 15 is secured by means of a pin 16 with the shaft. A belt 17 formed of rubber, or any other elastic material, is passed around the pulleys 6 and 14. The shaft, adjacent the end remote from the pulley 14, is provided with a hub or collar 18, the purpose of which will hereinafter appear.

19 is a floor polishing brush comprising a tubular hub in which the brush bristles are set and at each end of this hub is suitably secured a bushing 20. These bushings are adapted to freely slide over the hubs 15 and 18. One of the bushings is formed with a slot or notch 21 adapted to receive the pin 16 to form a drive connection between the brush and the pulley 14. To position the brush on the shaft and hold it from moving laterally thereon, the slot 21 is inclined axially of the bushing.

To permit the brush 19 to be mounted on the shaft 12 the end of the latter remote from the pulley is removably carried in the

free end of its radius arm. This is accomplished by covering the outer race of the ball bearing with a cup 13ª adapted to be received in a semi-circular recess formed at the outer or free end of the radius arm. The latter is provided with a hinged cap 22 also having a semi-circular recess formed therein to engage the other half of the cup. Any suitable means for releasably locking the cap in its closed position may be used. In Fig. 6 of the drawings is shown a spring 23, carried by one part of the arm and adapted to snap over a lug formed on the other part, to lock the cap.

When the brush 19 is used the carriage is placed in a horizontal position with its wheels, casters and the brush in engagement with the floor. Referring to Fig. 1, it will be noted that the pivotal connections of the radius arms are above the center of the pulley 6 so that the belt 17 has a tendency to hold the brush in engagement with the floor. From the description it is obvious that if the center of the brush strikes an obstruction the radius arms will permit the brush to ride over it and if either end of the brush engages a portion of the floor higher than that engaged by the opposite end of the brush the ball bearings 13 will permit that end of the brush to rock relative to the other end. This is an advantageous feature as otherwise the low portion of the floor would not be polished unless the machine was twisted around to suit each low spot on the floor.

It is desirable to produce apparatus of this nature which can be easily and readily adapted for polishing other things such as silverware, or shoes and for these purposes I provide a buffing tool 24. The buffing tool is suitably secured to a tubular spindle 25 which is adapted to fit on the hubs 15 and 18 and is provided with an inclined slot 21 adapted to receive the pin 16.

The buffing tool may be substituted for the floor tool 19 by merely unsnapping the spring lock 23, then swinging the cap to its open position, lifting the end of the shaft 12 to remove the ball bearing from the recess in the radius arm and then removing the brush 19 from the shaft. The spindle is then positioned thereon with its notch 21 in engagement with the pin 16 and the above operations are reversed to lock the shaft in the radius arm.

When the apparatus is used for polishing articles the carriage is set in an upright position, (see Fig. 3) with its wheels and casters off the floor so that the articles may be easily held against the brush or buffer tools. In this position the carriage is rested on the rear end 1ᶜ and by positioning the motor adjacent this rear end it tends to steady the apparatus. The radius arms are swung down from the carriage casing and abutments 26, formed on the member 7, limit the downward movement of the arms. These abutments are preferably rubber covered and spring clips 27 are secured thereto for releasably locking the arms in engagement with the abutments.

To balance the weight of the carriage and the radius arms with their tools the rear end 1ᶜ is adapted to position the carriage at an incline to its resting surface whereby the upper end of the carriage is at one side of its resting surface while the polishing tool is at the other side thereof. To support the carriage in this position I provide a stub 28 carried on a fork pivotally carried on brackets 29 which are secured to the carriage. This stub is adapted to swing in a vertical plane and the bearings in the brackets are arranged transversely of the carriage. Any suitable means, such as a projection secured to the stub working in an arcuate slot formed in the brackets, may be used to limit the swing of the stub and a wing nut 30 is provided to releasably lock the stub as adjusted. The free end of the stub is adapted to engage the surface on which the rear end 1ᶜ is resting on.

The fork in which the stub 28 is carried is turned down adjacent its ends to receive the tubular end 31 of a handle (not shown). The stub is adapted to extend into the tubular end when the handle is being used to push the device along the floor.

What I claim is:—

1. In combination a housing, the said housing being adapted to sit in an upright position on its end; a part extending rearwardly from the back of the housing adapted to engage the floor when the housing is in its upright position to form with the end of the housing a stable support for the housing; a horizontal shaft carried by the housing; and a polishing tool secured to the shaft.

2. In combination a housing, the said housing being adapted to sit in an upright position on its end; a part extending rearwardly from the back of the housing adapted to engage the floor when the housing is in its upright position to form with the end of the housing a stable support for the housing; a horizontal shaft carried by the housing; and a polishing tool secured to the shaft, the rear end of the housing being inclined to give the housing as a whole a backward inclination when sitting on said end.

3. In combination a housing, the said housing being adapted to sit in an upright position on its end; a part extending rearwardly from the back of the housing adapted to engage the floor when the housing is in its upright position to form with the end of the housing a stable support for the housing; a pair of radius arms pivotally connected to the housing to swing to and

from the housing; a shaft rotatably mounted on the free ends of the radius arms; a polishing tool connected to the shaft; and means for limiting the outward swing of the radius arms when the housing is in its upright position.

4. In combination a housing, the said housing being adapted to sit in an upright position on its end; a part extending rearwardly from the back of the housing adapted to engage the floor when the housing is in its upright position to form with the end of the housing a stable support for the housing; a pair of radius arms pivotally connected to the housing to swing to and from the housing; a shaft rotatably mounted on the free ends of the radius arms; a polishing tool connected to the shaft; and means for limiting the outward swing of the radius arms when the housing is in its upright position, the end of the housing being inclined to give the housing as a whole a backward inclination when sitting on the aforesaid end.

5. In combination a housing, the said housing being adapted to sit in an upright position on its end; a part extending rearwardly from the back of the housing adapted to engage the floor when the housing is in its upright position to form with the end of the housing a stable support for the housing; a pair of radius arms pivotally connected to the housing to swing to and from the housing; a shaft rotatably mounted on the free ends of the radius arms; a polishing tool connected to the shaft; abutments for limiting the outward swing of the radius arms when the housing is in its upright position, the end of the housing being inclined to give the housing as a whole a backward inclination when sitting on the aforesaid end; and a spring clip for releasably locking each radius arm in engagement with its abutment.

6. In combination a housing adapted to be supported on one end on the floor and having an open side; a pair of radius arms pivotally connected with the housing to be swung into and out of the housing; and a polishing tool rotatably carried on the free ends of the radius arms.

7. In combination a housing adapted to be supported on one end on the floor and having an open side; a pair of radius arms pivotally connected with the housing to be swung into and out of the housing; a horizontal polishing tool rotatably carried on the free ends of the radius arms; and means for releasably locking the radius arms in their outward position.

Signed at Toronto, Canada, this 21st day of August, 1924.

THOMAS H. CLARKSON-JONES.