June 8, 1926. 1,588,157

C. H. BEACH

FLOOR POLISHING MACHINE

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FIG. 1.

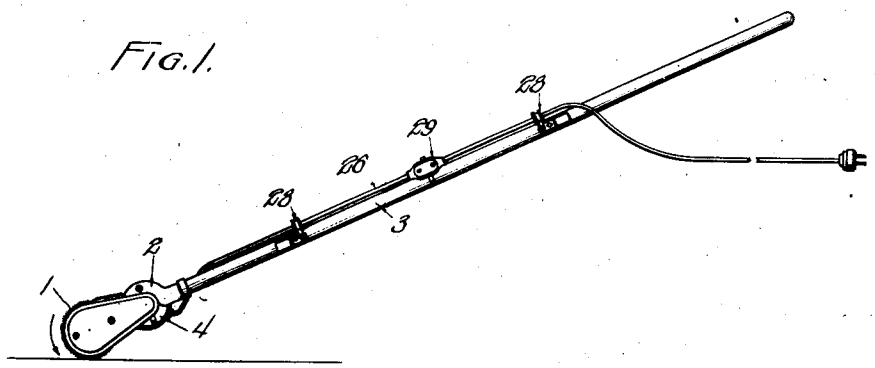
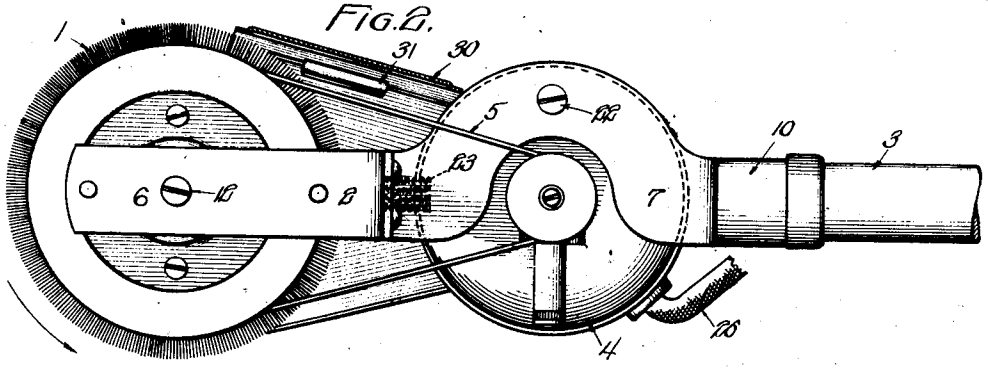


FIG. 2.



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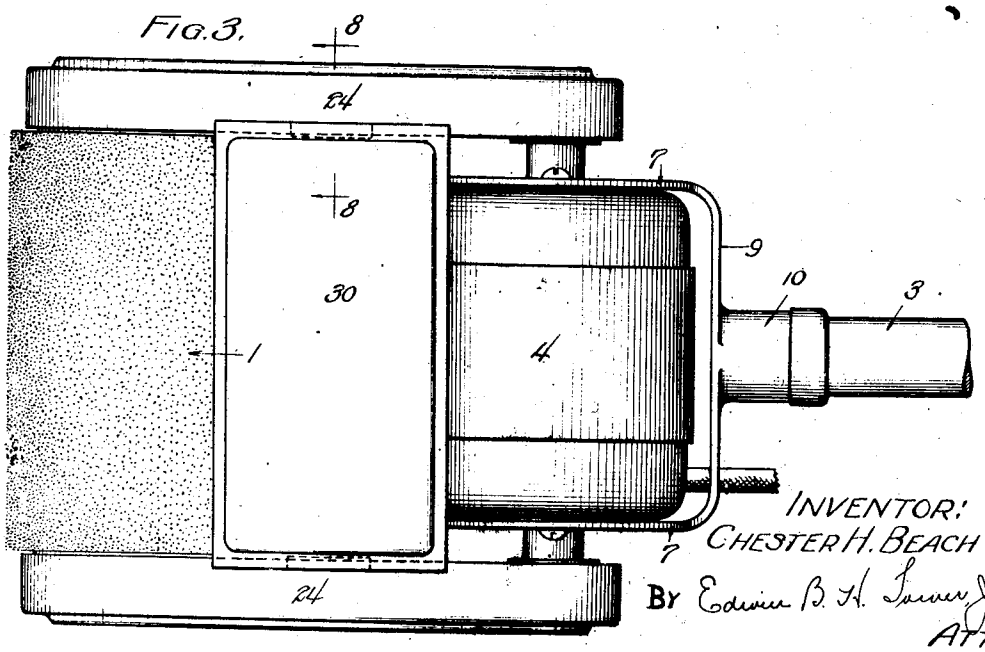

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FIG. 4.

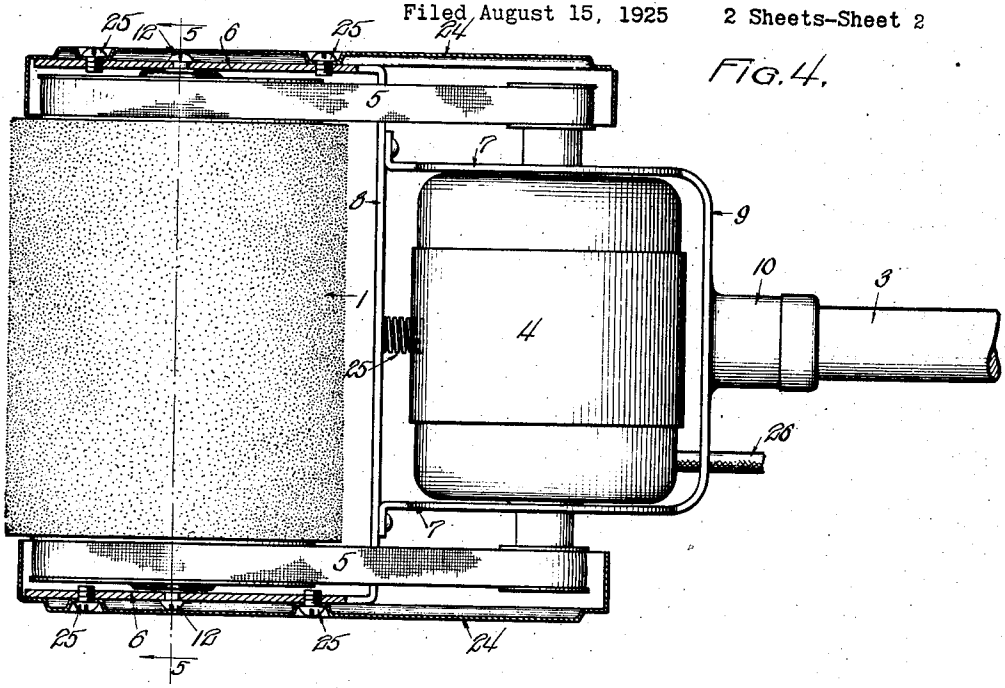
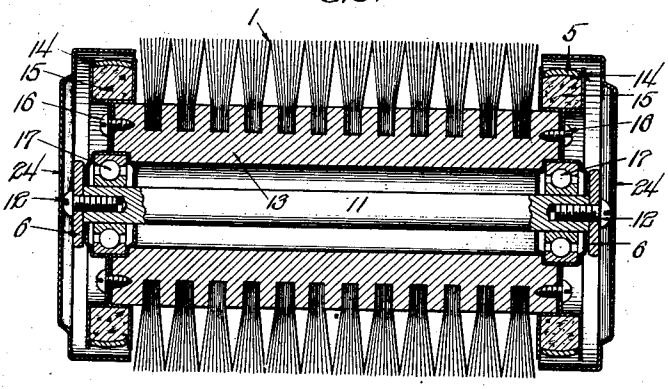


FIG. 5.



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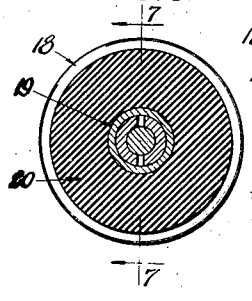

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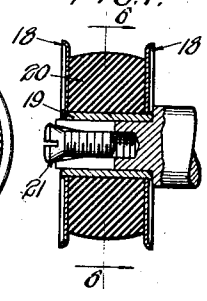

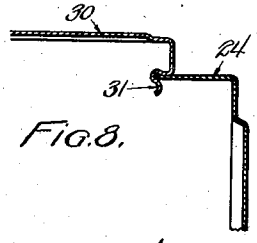

FIG. 8.

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UNITED STATES PATENT OFFICE.

CHESTER H. BEACH, OF RACINE, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO S. C. JOHNSON & SON, OF RACINE, WISCONSIN.

FLOOR-POLISHING MACHINE.

Application filed August 15, 1925. Serial No. 50,415.

This invention relates to a floor polishing machine.

The object of the invention is to provide a floor polishing machine which is simple, efficient and inexpensive, which is low and compact, and which is easy to guide, control and operate.

According to the invention, the machine is provided with a single cylindrical brush rotating on a horizontal axle and supporting the machine from the floor, a handle connected by a frame or yoke to said axle on each side of the brush and free to pivot vertically thereon, and a driving motor carried by the frame or yoke between the brush and the handle.

The motor provides the weight to give the brush sufficient pressure to polish the floor, and it is preferably arranged substantially in alinement with the brush and the handle.

The brush is normally driven in a direction to cause it to move forward away from the operator, so as to facilitate guiding and operating the machine.

The machine provided by this invention is particularly suitable for polishing floors in furnished rooms and general domestic and household purposes, as it may be passed under low objects and operated in small spaces, it may be readily carried from place to place, and it is easy to control and operate.

In order to explain the invention more particularly, the floor polishing machine illustrated in the accompanying drawings will be described.

The views in these drawings are as follows:

Fig. 1 is a side view of the complete floor polishing machine.

Fig. 2 is a side view with the belt cover removed.

Fig. 3 is a top view.

Fig. 4 is a plan view with the casing in section.

Fig. 5 is a transverse section on the line 5—5 of Fig. 4.

Fig. 6 is a longitudinal section of the motor pulley on the line 6—6 of Fig. 7.

Fig. 7 is a transverse section on the line 7—7 of Fig. 6.

Fig. 8 is a section of the casing on the line 8—8 of Fig. 3 through the top plate and the belt casing.

The cylindrical rotary brush or rubber 1 has mounted or supported on the axle thereof a frame or yoke 2 to which an elongated handle 3 is connected in a fixed position.

The frame and the handle are free to turn or pivot vertically on the brush axle and only the brush engages the floor.

The frame or yoke carries an electric motor 4 which drives the brush at a high speed and provides the weight which gives the brush the pressure required to polish the floor.

The motor and the brush are connected at each side by a belt 5 which passes over corresponding pulleys on the motor and brush.

The brush rotates in a forward direction as indicated by the arrow and tends to move the polisher away from the operator.

The frame has front side bars 6, rear side bars 7, a middle cross bar 8 and a rear cross bar 9.

The rear side bars are arranged closer together than the front side bars and have a central upward arch.

The frame may be composed of two sections joined together and each formed from a single flat metal strip.

The front section forms the front side bars and the intermediate cross bar, and the rear section forms the rear side bars and the rear cross bar.

The handle is connected to the frame in a fixed position by being fastened in a socket 10 on the rear cross bar.

The brush rotates upon a removable spindle or axle 11 which is arranged between the front side bars and held in place by screws 12.

The brush has a cylindrical core or hub 13 which has fastened to each end thereof a pulley over which passes the belt 5.

The brush pulleys are each composed of two circular stamped metal disks 14 and a cork or other ring 15 arranged between these disks and forming the face of the pulley.

The disks are held together and the pulley fastened in position on the brush hub by screws 16.

The disks have the outer edges thereof spaced apart to provide a groove which receives the ring and these edges extend beyond the ring to form flanges between which the belt runs.

The inner edges of the disk are likewise

spaced apart to provide a recess in which is arranged a ball bearing 17 by which the brush is rotatably mounted on the spindle.

The motor has on each end of its shaft a pulley over which the belt 5 passes.

The motor pulleys are each composed of two circular stamped metal disks 18 mounted upon a sleeve or ferrule 19 and having a rubber or other ring 20 between them.

The ferrule or sleeve has its ends bent or turned over the disks to hold these disks in place.

The rubber ring is compressed between the disks and thereby its outer periphery is bulged to provide the pulley with a crowned face.

The disks extend beyond the rubber ring to form flanges to keep the belt in place.

The motor shaft has each end thereof slotted or split and a screw 21 threaded therein.

This screw expands the shaft and thereby fastens the pulleys in a fixed position thereon.

The motor is arranged within the frame between the rear side bars thereof and is pivotally suspended from the arches of said side bars by screws 22 which pass through these bars and are threaded into the motor casing.

The motor is mounted to be movable relative to the brush and is urged away from the brush by a spring 23 which is arranged between the middle cross bar 8 and the motor casing.

This spring is under continual tension and thereby keeps the belt taut and tight.

The belt drives are each covered or inclosed within a cover or casing 24 which is fastened to the frame by screws 25.

The motor is supplied with current through a conducting cord 26 which has one end connected to motor terminals and the other end provided with a connection plug to be inserted in a receptacle which is connected to a source of electricity.

The conducting cord is carried alongside the handle by rings or eyelets 28 mounted on the handle and is provided with a switch 29 for starting and stopping the motor.

The dust plate 30 carried by the belt casings and fastened thereto by snap catches 31, stops the dust and dirt thrown upwardly by the brush and indicates the top of the machine.

Of course, the machine which is herein set forth may be modified in various ways without departing from the invention embodied therein and hereafter claimed.

The invention is hereby claimed as follows:

1. A floor polishing machine comprising a single cylindrical brush rotating on a horizontal axle and supporting the machine from the floor, a handle connected by side bars to said axle on each side of said brush and free to pivot vertically thereon, a motor carried by said side bars and arranged between said brush and said handle and substantially in alinement therewith, and a driving belt connecting said brush and said motor on each side thereof.

2. A floor polishing machine comprising a single cylindrical brush rotating on a horizontal axle and supporting the machine from the floor, a frame connected to said axle on each side of said brush, a handle fixed to said frame and connected thereby to said axle and free to pivot vertically upon said axle, a motor carried by said frame between said brush and said handle and having its shaft parallel to said axle, and driving means connecting said brush to said motor.

3. A floor polishing machine comprising a single cylindrical brush supporting the machine from the floor, a frame having a front and a rear side bar on each side thereof, a removable spindle arranged between said front side bars and having said brush rotating thereon, a handle fixed to said frame and connected thereby to said spindle and free to pivot vertically upon said spindle, a motor arranged between said rear side bars and pivoted thereto, a belt drive connecting said brush and said motor on each side thereof, and a spring acting upon said motor to keep said belt drive tight.

In witness whereof, I have hereunto subscribed my name.

CHESTER H. BEACH.