

March 31, 1959

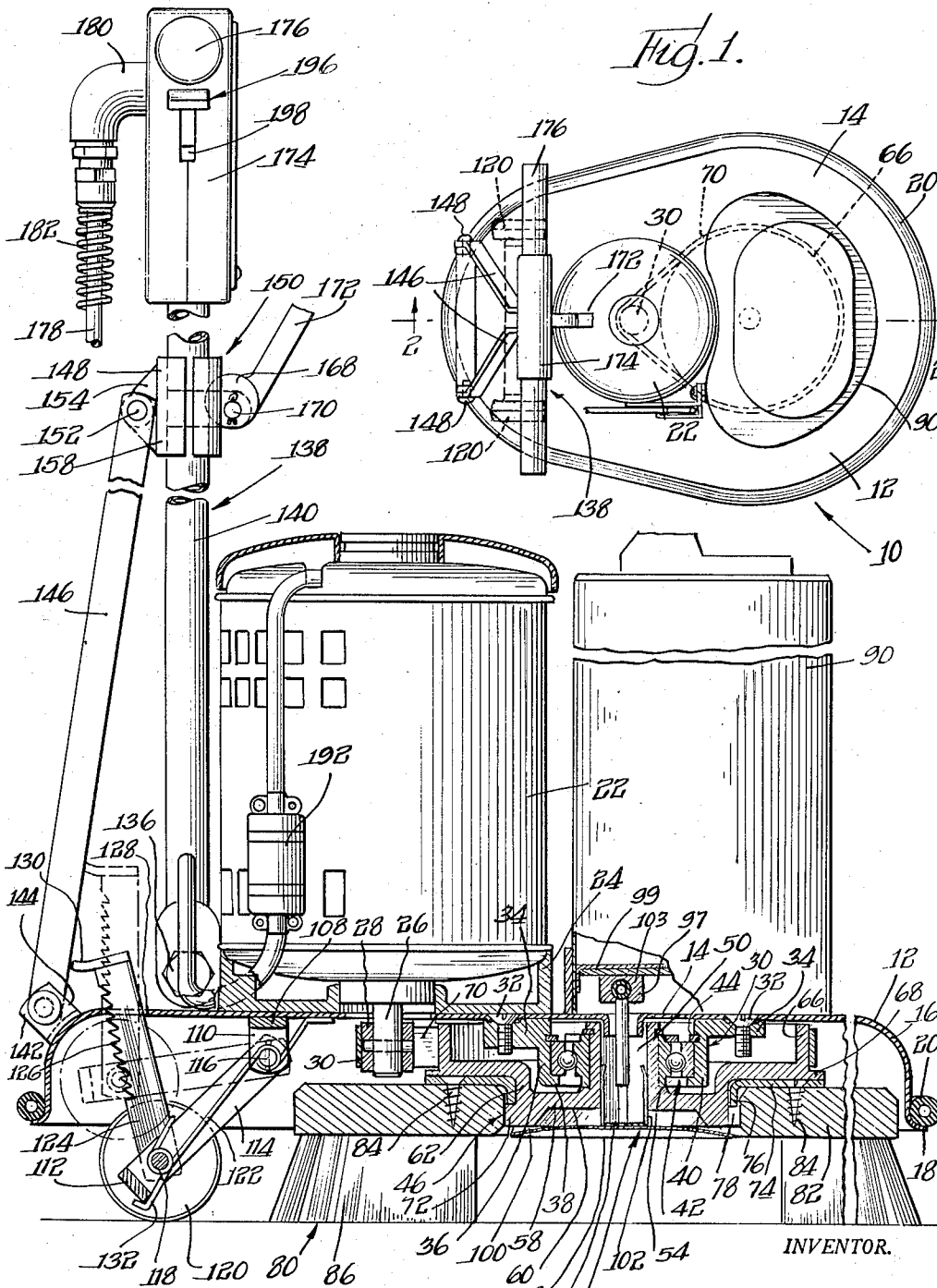
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2,879,528

FLOOR WORKING MACHINE

Filed April 23, 1953

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

Fig. 3.

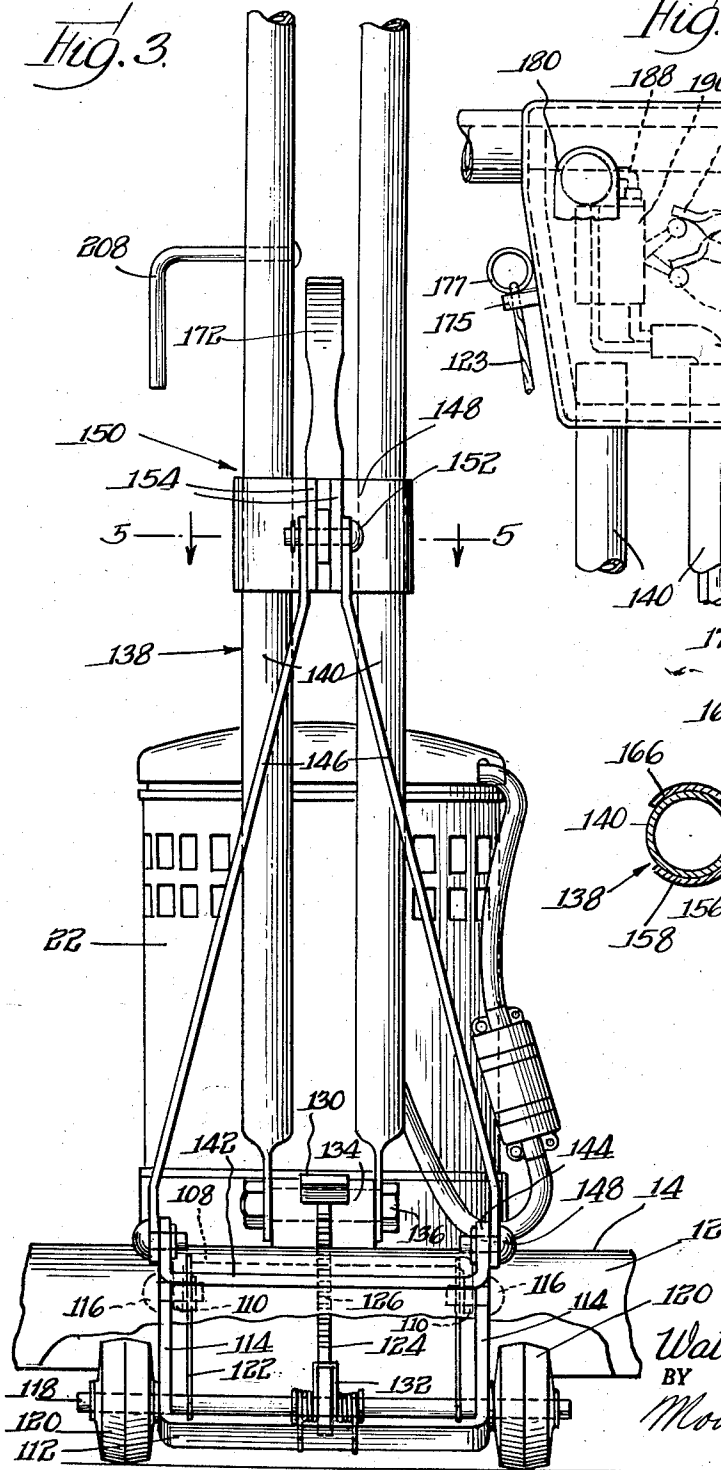


Fig. 4.

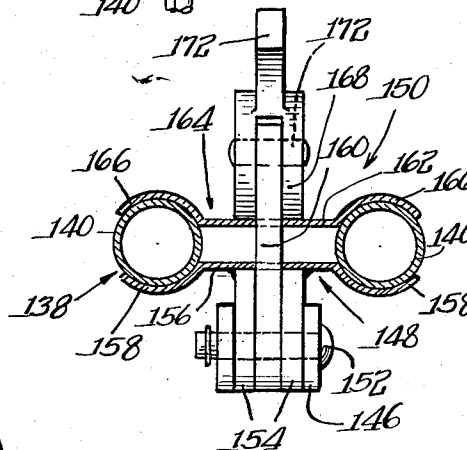
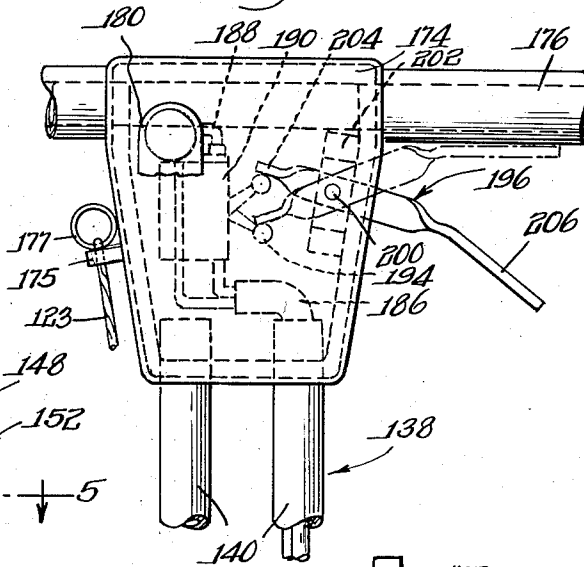


Fig. 5.

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3 Sheets-Sheet 3

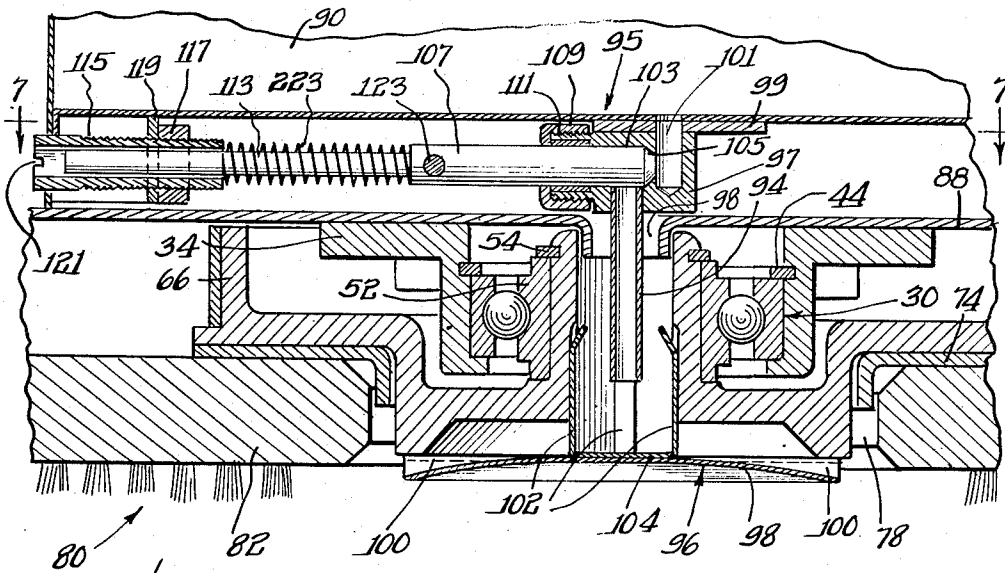


Fig. 6.

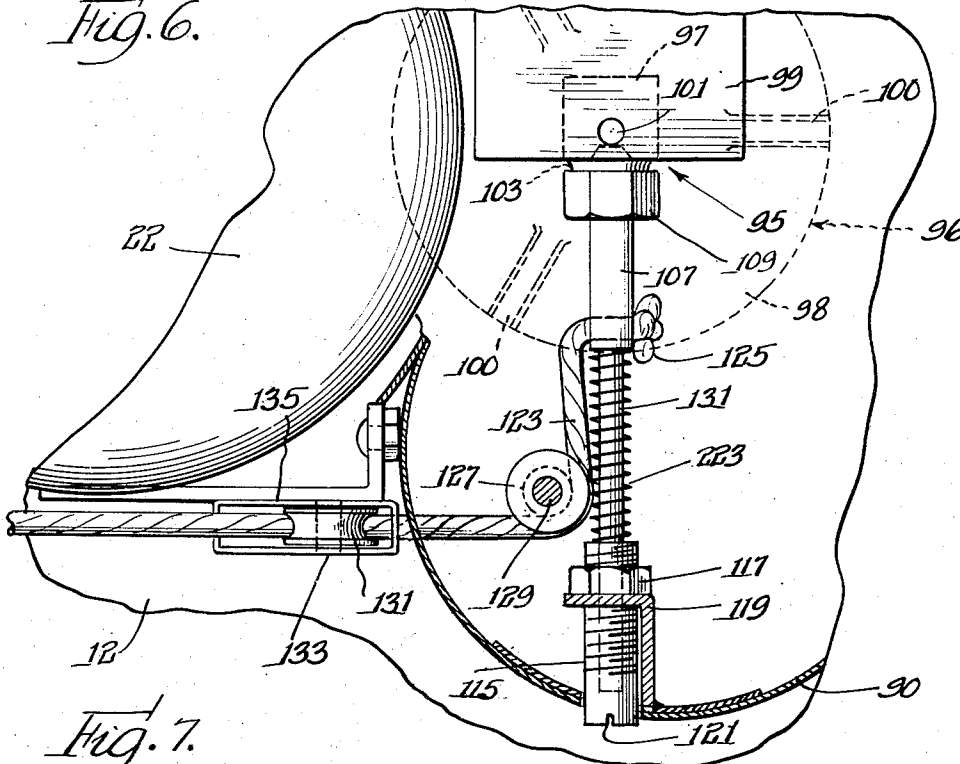


Fig. 7.

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2,879,528

FLOOR WORKING MACHINE

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Application April 23, 1953, Serial No. 350,638

11 Claims. (Cl. 15—50)

This invention is concerned with a floor working machine, for example, a floor polishing machine.

Floor polishing or other types of floor working machines heretofore have been of two general types. They have been either divided weight machines, or concentrated weight machines, the latter sometimes being known as motor weighted machines.

In motor weighted or concentrated weight machines, the entire weight of the machine is supported by the brush. The brush is rotatable about a substantially vertical axis and is secured against tilting or up and down movement relative to the machine. The brush is the only part of the machine that touches the floor, and the handle is made rigid with the machine so that the machine may be tilted one way or another. Such tilting of the machine causes the weight to be supported more by one part of the brush than by another, and this results in movement of the machine along the floor. The movement can be controlled quite closely, and a concentrated weight machine thus is well adapted for working on small floors or floors of an irregular shape. In the hands of a skilled operator, a concentrated weight machine is a rapid and efficient machine for working floors, but considerable skill is required by the operator to effect movement of the machine along the floor in exactly the manner desired.

Divided weight machines are provided with wheels. The wheels support part of the weight of a divided weight machine, while the brush supports the remainder. The handle of such a machine is pivotally mounted for movement in a predetermined plane. The wheels allow the machine readily to be pushed along in a straight line, and a divided weight machine therefore is well suited for use on large floors or for use by relatively unskilled operators.

In order to effect uniform brush wear, and hence to provide for long brush life and economy of operation, the brush must engage flat against the surface of the floor. If the dimensions of a machine were chosen so that a new brush would engage flat against the surface of the floor, then the machine would have to tip about the wheel axles to maintain the brush in contact with the floor, and the brush thus would tend to engage the floor unevenly and to wear unevenly with resulting unsatisfactory action and short brush life. It has heretofore been thought absolutely necessary to provide resilient or adjustable shafts, such as shafts employing universal joints, to maintain the brush of a divided weight machine flat against the floor throughout an extended period of operation. This is substantially the direct opposite of concentrated weight machines wherein a rigid shaft must be used to maintain the brush position relative to the remainder of the machine constant (except for relative rotation about the axis) in order for the machine to be steered and moved by throwing the weight to a greater or lesser degree on any particular part of the brush.

It is an object of this invention to provide a practical

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floor working machine usable at will as a divided weight machine or as a concentrated weight machine.

Another object of this invention is to provide a divided weight or concentrated weight floor polishing machine convertible from one to the other from above the machine without necessitating its being turned over or being lifted from the floor.

A further object of this invention is to provide, in a divided weight or concentrated weight floor working machine, an improved wheel mounting for effecting change between a concentrated weight machine and a divided weight machine.

Another object of this invention is to provide a floor working machine having a handle which is selectively rigid with the machine for using the machine as a concentrated weight machine, or pivotal relative to the remainder of the machine for use of the machine as a divided weight machine.

A more specific object of this invention is to provide, in a floor working machine, improved means for making the handle selectively rigid or pivotal relative to the remainder of the machine.

Another object of this invention is to provide, in a floor working machine, a new or improved brush drive mechanism.

A more specific object of this invention is to provide, in a floor working machine, a rigid, integral pulley and brush support.

Other and further objects and advantages of the present invention will be apparent from the following description when taken in connection with the accompanying drawings wherein:

Fig. 1 is a top view of a machine embodying the principles of my invention;

Fig. 2 is a sectional view of the machine taken along the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary view of the machine from the rear;

Fig. 4 is a fragmentary view of the top portion of the handle;

Fig. 5 is a horizontal sectional view of the handle cam mechanism as taken along the line 5—5 of Fig. 3;

Fig. 6 is a fragmentary sectional view showing the valve mechanism; and

Fig. 7 is a view of the valve mechanism from above.

The floor working machine as herein shown and described includes a base 10 including a sheet metal shell or housing 12 having a substantially flat upper portion 14 curving into a depending skirt 16. The skirt 16 has an outwardly turned lower edge 18 supporting a circumferential rubber bumper 20 for preventing damage to furniture and walls.

An electric motor 22 of any suitable type is mounted on shell 12 by a frame 24 with the motor shaft 26 projecting down through a suitable opening in the shell 12. A pulley 28 of relatively small diameter is fixed on the depending end of the shaft 26 by any suitable means such as a pin 30 passing through the pulley and through the shaft. A circular casting 30 is secured to the under side of the shell or housing 12 by means such as screws 32 extending through the shell and threaded into tapped openings in suitable projections or ears 34 on the casting 30. It will be understood that the projections or ears 34 could take the form of a continuous flange or ring if so desired. The casting 30 is provided with a cylindrical section 36 having interned flange 38 around the bottom thereof.

The outer race 40 of a ball bearing 42 fits in the cylinder 36 and is held down against the flange 38 by a snap ring 44 snapped into a suitable annular groove in the inner face of the cylinder 36.

A combination pulley and brush mount 46 is supported by the ball bearing 42 and includes a central cylindrical

portion 48 having a hollow central bore 50. The inner race 52 of the ball bearing 42 fits on this cylinder 48 and is held against a lower shoulder thereon by a snap ring 54 snapped into a suitable annular groove adjacent the top of the cylinder 48.

The combination pulley and brush mount 46 includes a wall 58 extending radially outwardly from the bottom of the cylinder 48. The wall 58 is formed with a central frusto-conical recess 60 communicating with the central bore or opening 50 and opening downwardly of the combination pulley and brush mount.

A cylindrical wall 62 extends upwardly from the outer edge of the radial wall 58 and turns radially outwardly to form a brush mounting plate 64. A cylindrical flange forming a belt receiving surface or pulley 66 extends upwardly above a peripheral shoulder 68 on the outer edge of the brush mounting plate 64. An endless belt 70 is passed around the pulley 28 on the motor shaft and the pulley 66 forming an integral part of the pulley and brush mount for driving the latter.

The combination pulley and brush mount is provided at its lower edge with a plurality of lugs 72 extending radially outwardly from, and arcuately spaced about, the lower portion of the wall 58. A brush drive plate 74 in the form of a sheet metal ring and having an internal depending flange 76 fits over the cylindrical wall 62 and against the brush mounting plate 64 where it is held in place by the lugs 72, suitable openings or discontinuities being provided in the flange 76 to allow the ring or brush drive 74 to be moved upwardly to a position above the lugs 72. A slight relative rotation of the combination pulley and brush mount and the ring and brush drive plate 74 firmly locks the latter in place. Suitably radially extending stops 78 preferably are provided on the cylindrical wall 72 for limiting such relative rotation to maintain the ring or brush drive plate 74 firmly mounted on the combination pulley and brush mount.

A brush 80 is fixed to the ring or brush drive plate 74 and comprises a ring or back 82 of wood or other suitable material which is held against the ring 74 by any suitable means such as screws 84 extending through the ring or brush drive plate 74 and threaded into the ring or back 82. The ring or back 82 mounts a plurality of bristles 86 in ring-like array and projecting downwardly from the back, the bristles being secured in the back in any suitable or desirable manner.

The shell or housing 12 is provided with a downwardly extending cylindrical stub 88 providing an opening in the shell and extending into the opening 50 of the combination pulley and brush mount. A container or reservoir 90 is secured by any suitable means such as a bracket on the top of the shell 12. The reservoir 90 is in fluid communication with a discharge spout 94 extending into the cylindrical stub 88 and by means of a valve 95. The valve 95 includes a block 97 fixed on a suitable plate 99 on the bottom of the reservoir 90. The block is provided with a vertical bore 101 opening into the reservoir 90 and into a horizontal bore 103 having a frusto-conical seat 105. A slug or piston 107 having a tip cooperating with the seat 105 is received in the bore 103, a suitable nut 109 and suitable packing 111 preventing axial leakage along the slug. The spout 94 previously mentioned extends radially into the block 97 into communication with the bore 103 and offset from the bore 101.

A piston rod 113 of reduced diameter extends from the slug or piston 107 into a sleeve 115 threaded through a nut 117 held by a bracket 119 on the reservoir 90. A screwdriver slot 121 in the end of the sleeve 115 provides for adjustment thereof. A coil spring 223 encircles the rod 113 and is compressed between the sleeve and stud. Adjustment of the sleeve determines the force tending to close the slug against its seat.

A cord 123 or other flexible member extends radially through the slug and is held against retraction therefrom

by a knot or fastener 125. The cord passes around a pulley 127 mounted on an axle 129 which may be on the bottom of the reservoir, and around another pulley 131 which is mounted on an axle 133 carried by a bracket 135. This bracket may be mounted on the under side of the reservoir.

For the sake of convenience, the cord may terminate near the handle of the machine as later will be described. Obviously, pulling on the cord opens the valve so that fluid may flow from the reservoir at a controlled rate.

The container or reservoir 90 may take any convenient size and shape (it preferably is kidney-shaped in section to fit partially around the motor) and is adapted to contain any floor working fluid such as sealer or varnish, cleaning fluid, or polishing fluid such as wax. At least a portion of the top of the container is removably mounted to provide for filling the container, although any suitable filling aperture could be provided.

In order to provide for proper distribution of fluid passing from the container 90 through the center of the brush 80, I have provided a deflector 96. This deflector takes the form of a concave-convex, circular plate 98 positioned beneath the frusto-conical recess 60 in the combination pulley and brush mount. The plate is provided with a plurality of flat struck out fingers 100 arcuately spaced about the plate 98 for centering the same relative to the frusto-conical recess 60. The plate is held in place by a plurality of spring fingers 102 frictionally gripping the interior of the central bore or opening 50 in the combination pulley and brush mount and extending upwardly from a small central base 104 which is suitably fixed to the plate 98. Upward movement of the fingers 102 is limited by the radial, struck out fingers 100 with the periphery of the plate 98 positioned adjacent the outer edge of the frusto-conical recess 60.

The fluid passing from the container 90 drops on to the plate 98 from which it is spun centrifugally. The concave-convex configuration of the plate 98 and the frusto-conical configuration of the recess 60 causes the fluid to be thrown slightly downwardly as well as outwardly so that it readily passes into working position beneath the bristles 86 of the brush 80 without forming pools on the floor and without piling up unduly on the bristles.

A U-shaped bracket 108 (Figs. 2 and 3) having a relatively wide bight portion and short depending arms 110 is suitably affixed to the under side of the shell or housing 12 near the rear thereof and pivotally carries a U-shaped bracket 112 of substantially the same width and having relatively long arms 114. The arms 114 are pivotally mounted on the arms 110 by a pair of headed studs 116 held in place by any suitable means, for instance cotter pins. An axle 118 extends across the bracket 112 near the bight portion thereof and rotatably mounts a pair of wheels 120.

A pair of springs 122 encircles the pins 116 and engages the axle 118 and the under side of the shell or housing 12 so as normally to urge the bracket 114 and the wheels 120 into the raised position shown in dashed lines in Fig. 2. A ratchet 124 is pivotally mounted on the axle 118 near the center thereof and is provided with a plurality of ratchet teeth 126 along one edge thereof. The ratchet 124 extends up through a slot 128 in the shell or housing 12 and is provided at its upper end with a toe plate 130. A coil spring 132 encircles the axle 118 and abuts the bight portion of the bracket 112 and also abuts the ratchet 124 to maintain the ratchet teeth 126 in engagement with the rear edge of the slot 128 as may be seen in Fig. 2.

When the machine is to be used as a divided weight machine, the wheels are depressed by pushing on the toe plate of the ratchet 124 with the foot. The large number of ratchet teeth allows the wheels to be lowered any desired amount so that the brush may be flat against

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the floor at all times regardless of how much it has worn. When the machine is to be used as a concentrated weight machine, the operator engages the toe plate 130 with his toe to push the ratchet 124 forward to disengage the teeth 126 from the rear edge of the slot 128. The spring 122 then raises the bracket 114 and wheels 120 to the dashed line position shown in Fig. 2 so that all the weight of the machine is carried by the brush 80.

A bracket 134 is suitably fixed on top of the shell or housing 12 and may comprise a part of the motor mounting bracket 24 if so desired. A bolt 136 passes through the bracket 134 and pivotally mounts a handle 138. The handle comprises a pair of elongated tubular members 140 which are spaced apart and are flattened and apertured at their lower ends to fit on opposite sides of the bracket 134 and receive the bolt 136. When the machine is used as a divided weight machine, the handle 138 is free to pivot about the bolt 136, but does not pivot from side to side, in order that the machine may be steered by means of the handle.

A U-shaped bracket 142 having a relatively wide bight portion and relatively short legs 144 is suitably affixed to the shell or housing 12 near the rear end thereof and pivotally supports a pair of brace arms 146 by means of pins 148. The brace arms are provided with parallel sections at opposite ends, and intermediate these sections are diagonally arranged to extend in from the arms 144 of the U-shaped bracket 142 to a rear clamp member 148 (Figs. 2, 3, and 5) of a handle lock 150. The brace arms 146 are pivotally connected to the handle lock by means of a pin 152 passing through the upper ends of the brace arms and also through a pair of ears 154 projecting rearwardly from the rear clamp 148. The rear clamp is in the form of a substantially flat plate or bar 156 extending substantially between the handle tubes 140 and provided at its opposite end with curved sections 158 complementary in shape to the handle tubes 140 and engaging these tubes. The ears 154 are welded or otherwise suitably affixed to the flat plate portion 156 as readily may be seen in Fig. 5.

A bar 160 extends forwardly from the plate 156 to which it may be welded or otherwise suitably secured (such as by extending through the plate 156 and receiving the pin 152) through a slot in a similar plate 162 of a front clamp 164 having curved end portions 166. An eccentric cam 168 is pivotally mounted on the end of the bar 160 by a pin 170 and is provided with a lever arm 172. When the lever arm is pivoted down, the cam merely contacts the plate 162 while the bar 160 loosely holds the front and rear clamps together so that they are free to slide up and down along the handle tubes 140. The handle is thus free to pivot for use of the machine as a divided weight machine. When the lever arm 172 is pivoted to a raised position as shown in Figs. 2 and 3, the cam 168 bears against the front clamp plate 162 so that the front and rear clamps are urged toward one another. This causes the curved clamping portions 158 and 166 to grip the handle tubes 140 aggressively so that the clamp 150 cannot slide along the handle 138. Therefore, the handle is rigid relative to the machine, and the machine may be tipped one way or another by means of the handle to effect steering and movement thereof as a concentrated weight machine.

The tubes 140 of the handle 138 are interconnected at their upper ends by a split casting 174 held together in any suitable manner and provided with suitable openings at the lower end for receiving the upper ends of the tubes 140. The tubes are held in place in the casting 178 by any suitable means. A handle bar 176 comprises a hollow tube and is held in the upper part of the casting 174 in the plane of the handle 140 and at right angles to these tubes so that the handle bar may be grasped by an operator's two hands for steering and moving the machine.

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The end of the cord 123 may pass through a guide 175 on the casting 174 and be attached to a ring 177 for easy manipulation of the valve from the handle. It will be understood that suitable guide means (not shown) are provided for the intermediate part of the cord, or the cord may pass longitudinally through one of the handle tubes 140.

A flexible drop cord 178 (Fig. 2) of the usual type enters the handle casting 174 near the top thereof through a conventional fitting 180. A spring 182 on the fitting 180 encircles the drop cord 178 to prevent sharp bends in the drop cord near the fitting. One wire 184 (Fig. 4) of the drop cord passes directly into a cable 186 passing through one of the handle tubes 140, while the other wire 188 is connected through a switch 190 to the cable. The cable passes from the tube 140 near the bottom thereof as may be seen in Fig. 2 and leads through a suitable separable connector 192 to the motor 22.

The switch 190 is of the type having a switch actuating lever 194 extending from the side thereof and interiorly spring biased to switch-open position. A manual or finger grip lever 196 projects from the casting through a suitable slot 198 in the side thereof and is pivotally mounted on a pin 200 carried by a suitable bracket 202 in the casting. The lever 196 comprises a flat bar twisted at the inner end as at 204 to bear on the end of the switch lever 194 and twisted over a considerable extent at the outer end to provide a finger grip 206. When it is desired to operate the machine, the operator grasps the handle bar 176 and engages the finger grip 206 of the lever 196 to squeeze the grip against the under side of the handle bar, thereby moving it from the full line position shown in Fig. 4 to the dashed line position, thereby depressing the switch lever 194 and closing the switch to energize the motor. Release of the finger grip 206 allows it to drop gravitationally, aided by the internal bias of the switch lever 194 to open the switch.

The handle 138 is provided with a pair of spaced apart cable anchor hooks 208, only one of which is shown (Fig. 3). These cable anchor hooks are of substantially conventional construction and are provided for the usual purpose of supporting the drop cord 178 which is wound about them when the machine is taken out of operation.

It will be seen that the floor working machine herein disclosed and described is readily converted from a divided weight machine to a concentrated weight machine by engaging the toe plate 130 of the ratchet with the toe to allow the wheels 120 to rise, and by raising the cam lever 172 to lock the handle cam lock and thereby render the handle rigid relative to the remainder of the machine. Conversely, the machine readily is converted from a concentrated weight machine to a divided weight machine by pushing down on the ratchet toe plate 130 with the toe to lower the wheels, and by lowering the cam lever to release the handle cam lock and thereby to allow the handle to pivot. The cam for locking the handle provides a positive lock and is simple and swift in action. The large number of teeth on the ratchet allows the wheels to be lowered to any desired distance so that the brush is maintained flat against the floor at all times regardless of the amount of wear on the brush. This mode of maintaining the brush flat against the floor obviates the necessity of providing a resilient or universal joint shaft for mounting the brush as was heretofore thought necessary in divided weight floor working machines.

By using the same rigid brush mount at all times, the working fluid can be fed through the center of the brush for efficient distribution as herein disclosed. The particular baffle means shown for spreading the fluid spreads the fluid efficiently and the spring finger mounting of the baffle plate allows the same to be removed for cleaning. The rigid brush mounting further makes possible applicant's improved combination pulley and brush mount

which is of simplified construction and reduces the number of parts, thereby leading to simplified assembly and greater strength.

The particular example of my invention shown and described herein is to be understood as illustrative only and as not forming a limitation on the invention. Various modifications are possible and form a part of my invention insofar as they fall within the spirit and scope of the appended claims.

I claim:

1. A floor working machine comprising a body having an opening therein, floor working means, means for carrying said floor working means for engagement with a floor and on said body means for rotation about an axis fixed relative to said body means, roller means, means for supporting said roller means from said body in a raised position out of contact with a floor, means for maintaining said roller means in an adjustable lowered position in engagement with a floor to support part of the weight of said machine and to maintain said floor working means flat against said floor, the roller supporting means including a ratchet extending up through said opening, means for operating said ratchet from above said body to raise or lower said roller means, handle means pivotally connected to said body means for guiding said machine, means for locking said handle means relative to said body, said handle locking means and said means for operating said ratchet being capable of operation independently of each other, spring means tending to raise said roller means to said raised position, a portion of said body adjacent said opening being engageable with said ratchet for holding the same in any desired position, and spring means biasing said ratchet against said ratchet engaging body portion.

2. A floor working machine comprising body means, floor working means, means for carrying said floor working means for engagement with a floor on said body means for rotation about an axis fixed relative to said body means, roller means, means for supporting said roller means from said body means in a raised position out of contact with a floor, means for maintaining said roller means in an adjustable lowered position in engagement with a floor to support part of the weight of said machine and to maintain said floor working means flat against said floor, means for moving said roller means between said two positions, a handle, means pivotally mounting said handle on said body means, brace means, means for pivotally mounting said brace means on said body means spaced from the pivotal mounting of said handle, means mounted on said handle for movement along said handle, means pivotally connecting said brace means to said movably mounted means, and means for locking said movably mounted means on said handle to lock said handle relative to said body means, whereby said handle can be made rigid with said body means for operation with said roller means out of contact with the floor for operation of said floor working machine as a motor weighted machine, and said handle can be pivoted with said roller means in engagement with the floor for operation of said machine as a divided weight machine.

3. A floor working machine comprising body means, floor working means, means for carrying said floor working means for engagement with a floor on said body means for rotation about an axis fixed relative to said body means, roller means, means for supporting said roller means from said body means in a raised position out of contact with a floor, means for maintaining said roller means in an adjustable lowered position in engagement with a floor to support part of the weight of said machine and to maintain said floor working means flat against said floor, means for moving said roller means between said two positions, a handle, means pivotally mounting said handle on said body means, brace means, means for pivotally mounting said brace means

on said body means spaced from the pivotal mounting of said handle, means mounted on said handle for movement along said handle, means pivotally connecting said brace means to said movably mounted means, and a cam eccentrically mounted on said movably mounted means on said handle to lock said handle relative to said body means.

4. A floor working machine comprising body means, floor working means, means for carrying said floor working means on said body means for rotation about an axis fixed relative to said body means with said floor working means positioned for engagement with a floor, roller means, means for supporting said roller means from said body means in raised position out of contact with a floor, a ratchet for maintaining said roller means in an adjustable lowered position in engagement with a floor to support part of the weight of said machine and to maintain said floor working means flat against said floor, said ratchet extending at least in part above said body means for operation above said body means, handle means, means pivotally mounting said handle means on said body means, brace means, means pivotally mounting said brace means on said body means and spaced from the pivotal mounting means for said handle means, means slidably mounted on said handle means, means pivotally connecting said brace means to said slidably mounted means, and an eccentric cam on said slidably mounted means for locking said slidably mounted means on said handle means to lock said handle means relative to said body means.

5. A floor working machine as set forth in claim 4 wherein the body means is provided with a slot, and the ratchet extends through said slot above said body means.

6. A floor working machine comprising body means, an integral pulley and floor working means support having an axial opening therethrough, means for rotatably mounting said integral pulley and floor working means support on said body means for rotation about an axis fixed relative to said body means, means for feeding a floor working fluid through said body means and through said opening onto a floor, floor working means carried by said support, motor means carried by said body means, a belt driven by said motor means and passed over said integral pulley and floor working means support for rotating said floor working means, roller means, means for supporting said roller means from said body means in a raised position out of contact with a floor, means for maintaining said roller means in an adjustable lowered position in engagement with a floor to support part of the weight of said machine and to maintain said floor working means flat against said floor, means for moving said roller means between said two positions, handle means pivotally connected to said body means for guiding said machine, means for locking said handle means relative to said body, said handle locking means and said means for moving said roller means each being capable of operation independently of each other, and a deflector positioned beneath the opening in said integral pulley and floor working means support for spreading the working fluid passing through said opening.

7. A floor working machine comprising body means, an integral combination pulley and floor working means support having an axial opening therethrough, means for supporting said integral combination pulley and floor working means support from said body means for rotation about a fixed axis, floor working means carried by said support, motor means carried by said body means, a belt driven by said motor means and passed over said pulley for rotating said floor working means, a deflector carried by said integral combination pulley and support beneath the opening thereof, said deflector including a plate and a plurality of spring fingers extending upwardly therefrom for frictionally fitting in the opening in said

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integral combination pulley and support for spreading floor working fluid fed through said opening, roller means, means for supporting said roller means from said body means in a raised position out of contact with a floor, means for maintaining said roller means in an adjustable lowered position in engagement with a floor to support part of the weight of said machine and to maintain said floor working means flat against said floor, means for moving said roller means between said two positions, and handle means connected to said body means for guiding said machine.

8. A floor working machine comprising body means, a floor working means support, means rotatably mounting said floor working means support on said body means, said floor working means support having an axial opening therethrough and a frusto-conical recess in a lower face thereof in open communication with said opening, means for rotating said floor working means support, floor working means on said support, a substantially circular plate having a downturned peripheral edge, and upwardly extending resilient means on said plate interfitting with the opening in said support for maintaining said plate adjacent the frusto-conical recess in said support, said frusto-conical recess and said plate cooperating centrifugally to distribute a floor working fluid fed through said axial opening.

9. A floor working machine as set forth in claim 8 wherein the resilient means on said plate comprises a plurality of resilient fingers frictionally fitting into the axial opening in the support, and said plate is provided with a plurality of projections engaging said support for properly positioning said plate.

10. A floor working machine comprising body means, a floor working means support, means rotatably mount-

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ing said floor working means support on said body means, said floor working means support having an axial opening therethrough, means for rotating said floor working means support, floor working means on said support, a plate, a plurality of upstanding resilient fingers on said plate frictionally fitting in said axial opening and positioning said plate beneath said opening, and means for positioning said plate a proper distance beneath said opening for centrifugally distributing a floor working fluid fed through said axial opening.

11. A floor working machine comprising body means, a floor working means support, means rotatably mounting said floor working means support on said body means, said floor working means support having an axially extending opening therethrough, means for rotating said floor working means support, floor working means on said support, a plate, and means for securing said plate beneath said opening in said floor working means support for rotation with said support centrifugally to distribute a floor working fluid fed through said opening.

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