Aug. 17, 1948. J. GORDON 2,447,172

FLOOR WAXING AND POLISHING MEANS

Filed Dec. 30, 1944 3 Sheets-Sheet 1

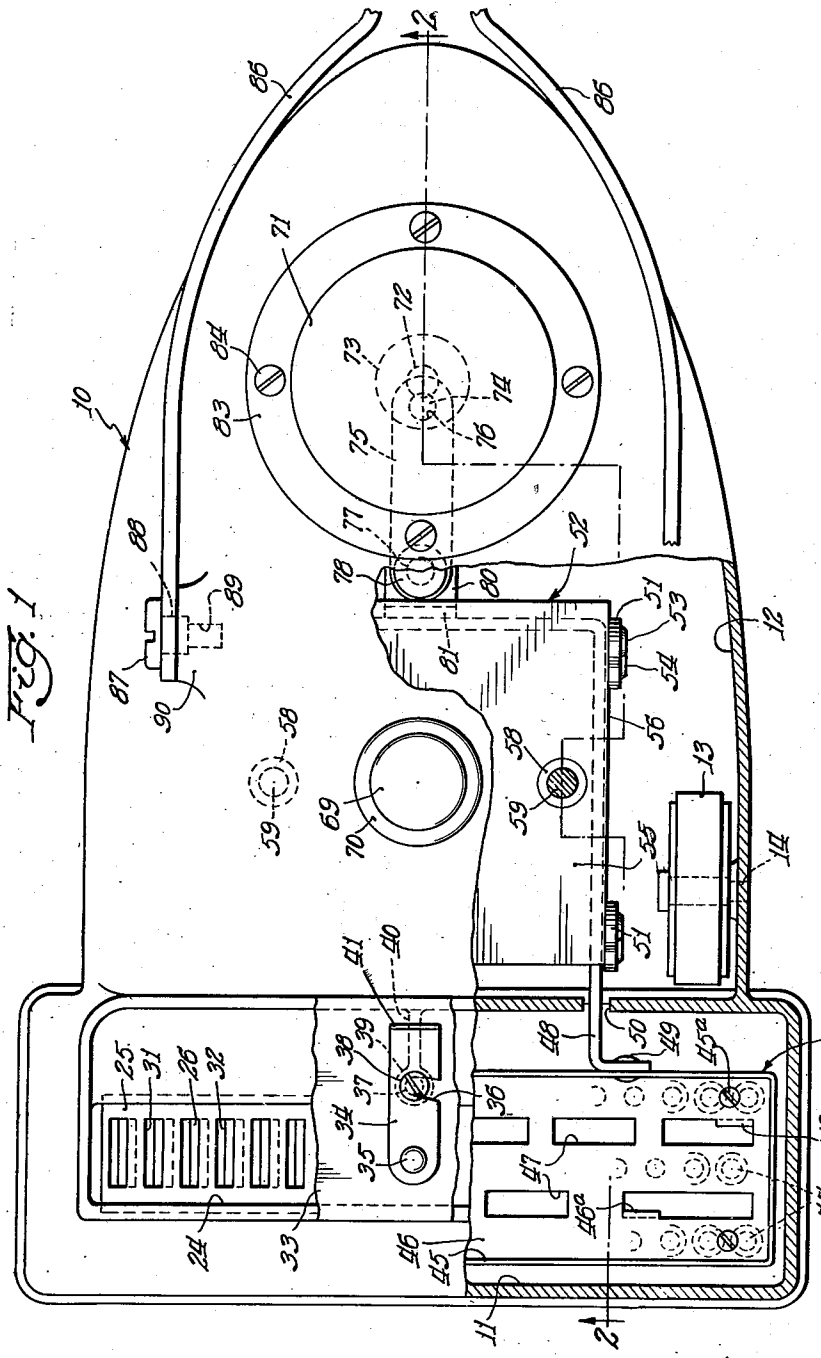


Fig. 1

Inventor:
James Gordon
By: A. Trevor Jones
Atty.

Aug. 17, 1948. J. GORDON 2,447,172

FLOOR WAXING AND POLISHING MEANS

Filed Dec. 30, 1944 3 Sheets-Sheet 2

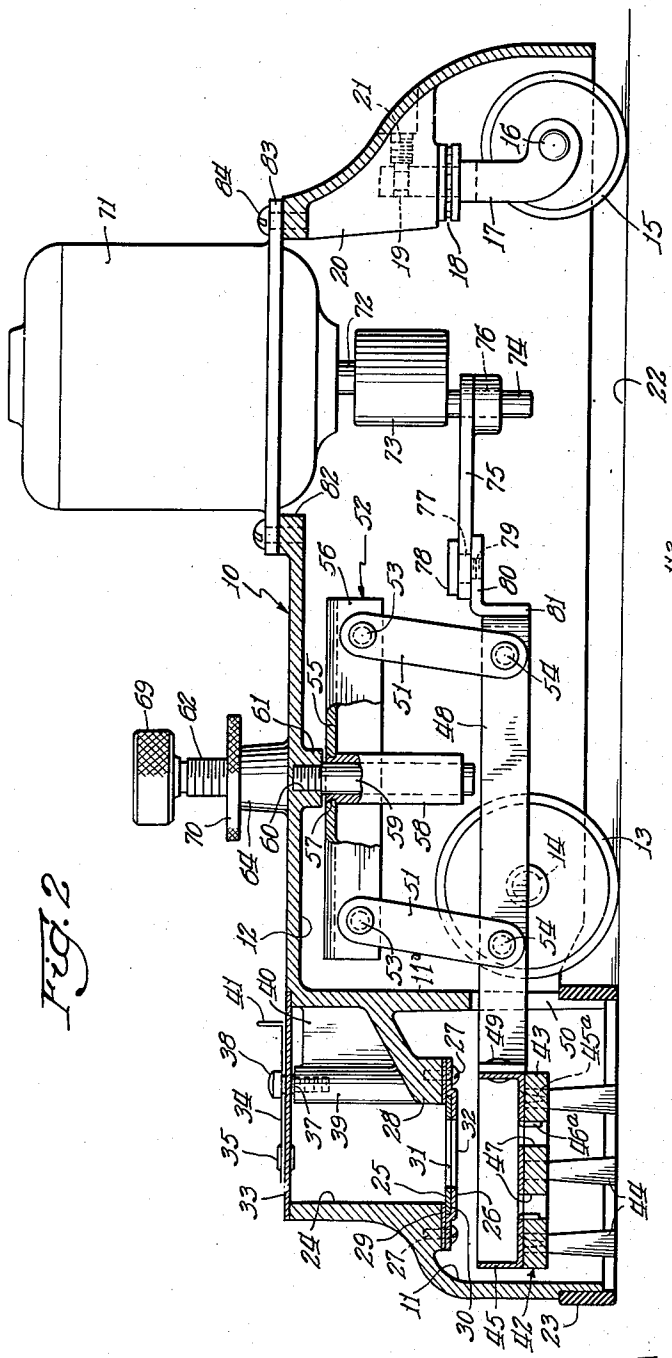


Fig. 2

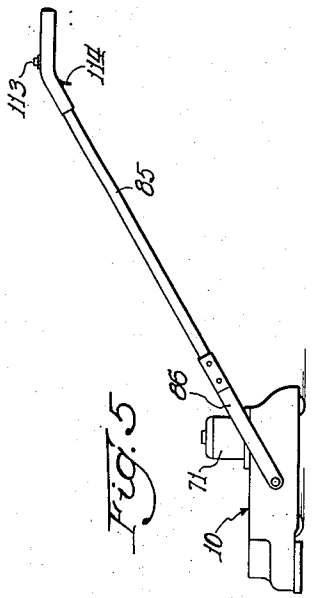


Fig. 5

Inventor:
James Gordon
By: A. Prewo Jones
Atty.

Aug. 17, 1948. J. GORDON 2,447,172

FLOOR WAXING AND POLISHING MEANS

Filed Dec. 30, 1944 3 Sheets-Sheet 3

Fig. 3

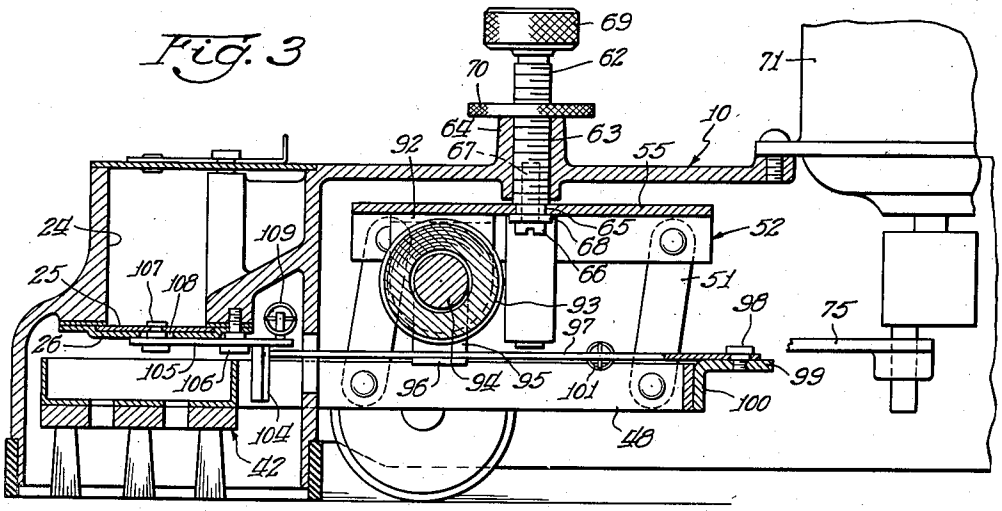
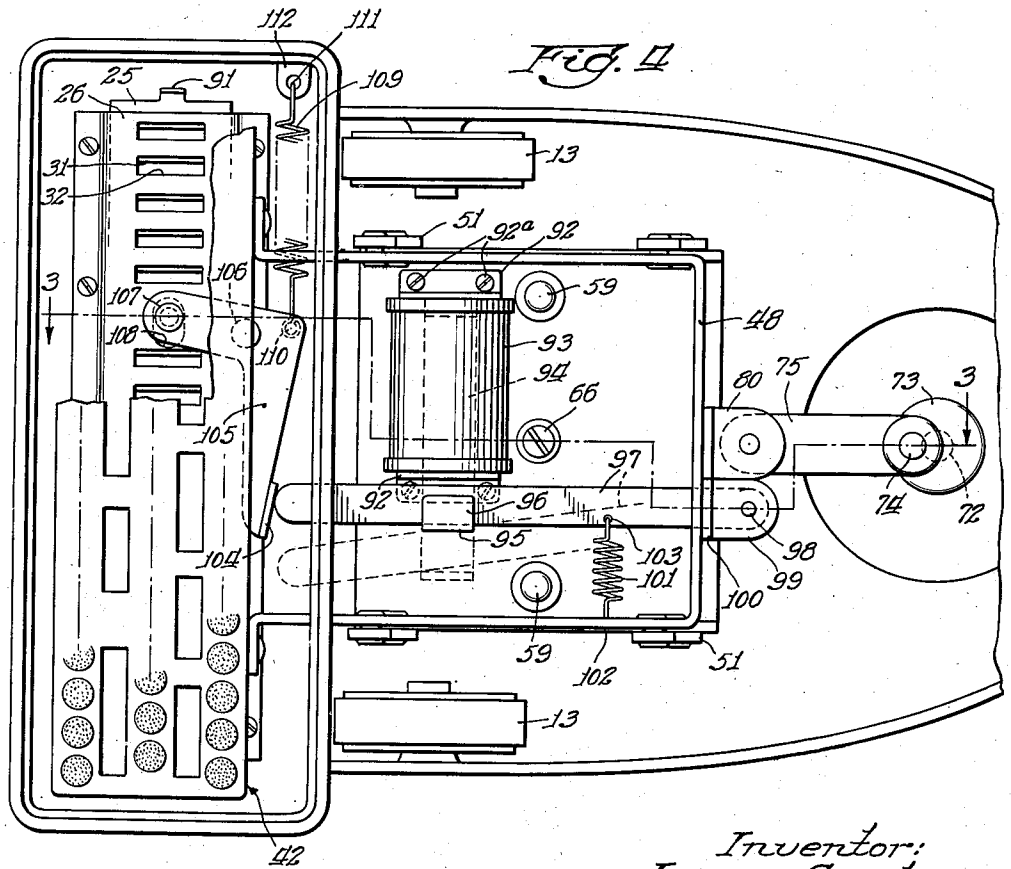


Fig. 4



Inventor:
James Gordon
By: A. Trevor Jones
Atty.

Patented Aug. 17, 1948

2,447,172

UNITED STATES PATENT OFFICE

2,447,172

FLOOR WAXING AND POLISHING MEANS

James Gordon, Chicago, Ill.

Application December 30, 1944, Serial No. 570,535

18 Claims. (Cl. 91—39)

1

This invention relates to polishing means more particularly for waxing and polishing floors and the like in domestic establishments for example.

The invention aims to provide a relatively light weight, portable machine for this purpose which simultaneously deposits the wax upon the floor and rapidly rubs it in, advantageously by a reciprocating or oscillating motion, which simulates hand rubbing while substituting the rapidity and uniformity of a relatively short stroke of operation for the customary pressure and length of stroke of conventional hand waxing.

It is well known that householders are becoming accustomed to and increasingly demanding light weight portable appliances, electrically operated, for performing a constantly greater number of tasks about the home, to relieve the time and drudgery of manual work. The care of wood floors with their inherently attractive appearance when waxed and polished, is a field which has been somewhat neglected and the demand for a portable electric waxing and polishing machine has heretofore not been met.

The machine of the present invention provides a remarkably simple and inexpensive device for this purpose which may be produced in quantities at low cost and which may be stored ready for instant use and handled by the housewife or householder in much the same way as the usual family vacuum cleaner for instance.

These and other objects and advantages will be apparent from the following description, taken together with the accompanying drawings, of illustrative structures embodying the invention, and in which drawings—

Figure 1 is a plan view of one form of the device with parts broken away for purposes of description;

Figure 2 is a longitudinal vertical sectional view taken on the staggered line 2—2 of Figure 1;

Figure 3 is a partial sectional view similar to Figure 2 but showing in addition a modification of the invention and being a section taken on the staggered line 3—3 of Figure 4;

Figure 4 is a bottom view of the structure shown in Figure 3; and

Figure 5 is a reduced general view of the machine, somewhat schematic.

Referring in detail to the illustrative construction shown in the drawings, the frame 10 is housing-like and somewhat similar in size and appearance to the casings or housings of domestic floor machines of various kinds. It may advantageously be constructed of a material such as aluminum or a substitute therefor, combining

2

lightness with strength. The frame is, in general, divided into two compartments 11 and 12, the compartment 11 being what may be called the housing for the appliance parts of the device and the compartment 12 the housing for the mechanism for operating the appliance parts and for mobilizing the machine.

The compartment 12 is advantageously somewhat triangular in a horizontal plane, and mobilizing means are here represented by a pair of rubber-tired wheels 13 axled as at 14 in opposite longitudinal sides of the frame and a single similar wheel 15 axled as at 16 in a swiveling foot 17 at the tapered rear end of the device. The foot 17 may be of the well-known anti-friction caster type for easy swiveling purposes with a roller plate bearing 18, and the upper part 19 of which foot may be retained in a suitable socket portion 20 of the frame by a set-screw 21. The mechanism compartment 12 of the frame is desirably elevated somewhat above the floor 22, upon which the machine is intended to operate, by the wheels 13 and 15, but the appliance compartment 11 desirably projects nearer the floor and terminates in a band 23 of sponge rubber or the like which extends downwardly into contact with the floor and thus bounding the appliance compartment at this point to act somewhat as a suction cup for the appliance compartment and also to provide a buffer which will guard against scratching of furniture or other woodwork by the metal parts of the machine when in operation, the band 23 being arranged to project outwardly beyond the perimeter of the appliance compartment, this compartment at the same time being of a greater dimension transversely of the machine than the mechanism compartment 12.

Following more particularly the present invention and turning first to Figures 1 and 2, the appliance compartment 11 is formed at its upper end somewhat as a hopper-like reservoir 24 which is bottomed by a pair of relatively movable overlapping apertured plates 25 and 26, thus providing a sifter for a comminuted polishing material such as powdered wax which may be deposited in the reservoir 24 and will flow gradually through the apertured plates 25 and 26 as needed, somewhat as through a grating.

In this instance, the plate 26 has its margins fixed as by screws 27 to a downwardly projecting inner rim 28 of the reservoir 24, spacer strips 29 being inserted between the margins of the plate 26 and the rim. Medially, plate 26 has a depressed portion providing between itself and the spacer strips 29 a slot-like channel 30 in which

the flat plate 25 is slidingly received. The plates 25 and 26 have the usual sifter apertures 31 and 32 respectively therein which in one relative position of the plates 25 and 26 register and in other relative positions are out of register, either completely or partially, so as to cause gradual passage therethrough of the comminuted material, when relative movements of the plates 25 and 26 occur as more particularly later described.

A cover plate 33 is indicated for the reservoir 24, the cover plate having a rotatable latch member 34 which is pivoted to the cover as at 35 and is notched as at 36 to pass about the neck 37 and under the head of a lock bolt 38 here shown screw-threaded (Fig. 2) into a boss 39 formed integral with the interior surface of the reservoir 24, a web 40 reinforcing the boss. The latch 34 for convenience may have a thumb piece 41 by which the latch may be manipulated.

It will be understood that the reservoir 24 is almost as long transversely of the machine as the appliance compartment 11, both of which it will now be understood are elongate in this direction so as to define a relatively wide path of operation for the machine in its travel. Similarly elongate within the appliance compartment 11 and directly beneath the reservoir 24 is a brush 42 comprising a brush board 43 and a plurality of tufts 44 of a suitable polishing bristle, arranged in rows, and in this instance, in three rows, along the underface of the brush board 43 throughout its length. The brush 42 is supported by a brush holder 45 which is of substantially the same dimensional area as the brush board 43 and to the underface of which the brush board is secured as by screws 45*a* (Fig. 2.) The brush holder 45 is advantageously trough-shaped, as shown in the drawings, to catch the powdered wax, for example, as the latter is sifted down thereinto as already referred to, and both the bed 46 of the trough and the brush board 43, in register, are perforated at spaced apart intervals 47 to cause the wax to pass therethrough and through the brush to the floor adjacent the parts of the floor upon which the brush is operating at any particular time. Turned down struck out tongues 46*a*, which enter the perforations 47, help to locate the brush with respect to the holder, these tongues being struck out from the trough bed 46.

The brush holder 45, in turn, is carried by a movable support therefor here shown in the form of a yoke 48 of bar stock turned out at its free ends and riveted to the in-board side of the brush holder 45 as at 49. The wall 11*a* of the appliance compartment 11 is vertically slotted in two places as at 50 to pass the ends of the yoke 48 thereinto from the mechanism compartment 12 and to permit reciprocating movement in a horizontal plane as well as some oscillating movement in a vertical plane of the yoke and with it the brush holder and brush, as next described.

To this end the yoke 48, within the mechanism compartment, is suspended, by four parellel links 51, from a sub-frame 52 carried by the frame 10 within the mechanism compartment 12, the links 51 being articulated as at 53 with the sub-frame and as at 54 with the yoke. The sub-frame is advantageously in the form of an inversely channeled plate having a flat body 55 and down-turned flanges 56 at each side, to which flanges the links 51 are pivotally attached as shown. Adjacent each side of the sub-frame the body 55 is holed and has riveted therein as at 57 the upper end of a rigid sleeve 58 in which is telescopically received a downwardly projecting guide post 59 depending from the underface of the frame 10 as by being secured as at 60 into an internally threaded boss 61 on the underface of the frame.

The sub-frame 52 is thus slidably adjustable on the two guide posts 59 within the frame but is secured and maintained against lateral movement therein. To prevent vertical movements of the sub-frame on the guide post 59 after an adjustment of its vertical position thereon has been made and at the same time to provide means for readily making such adjustment, the sub-frame as best seen in Figure 3 of the drawings carries centrally thereof an upstanding king pin 62 which has screw-threaded engagement as at 63 in a bearing 64 formed integrally with the upper wall of the frame. The king pin 62 is rotatable as at 65 in the body 55 of the sub-frame and is rotatably secured thereto by a screw bolt 66, the shank 67 of which is threadedly received in a tapped bore therefor in the lower end of the king pin 62. A washer 68 interposed between the head of the screw bolt 66 and the underface of the sub-frame prevents separation of the sub-frame from the king pin while permitting the latter to be rotated with respect to the frame and to the sub-frame to adjust the height of the latter vertically with respect to the frame. An adjusting knob 69 at the upper end of the king pin permits ready rotation of the latter, and the lock nut 70 which screws onto the king pin and into cooperation with the bearing 64 fixes the adjustment against accidental displacement. The adjusting knob 69 and the lock nut 70 are both desirably knurled about their peripheries to facilitate manipulation when an adjustment of the height of the sub-frame, and consequently of the brush 42 with respect to the floor 22, is desired to be made.

Further in accordance with the present invention, for operation of the brush, an electric motor 71 is mounted on the frame 10 with its driving shaft 72 vertical in the frame, to the rear of the sub-frame 56, just forward of the rear wheel 15, and thus accommodating itself to the tapered outline of the frame at this point.

To the motor driving shaft 72 is secured a wrist block 73 from which depends an eccentric pin 74. A pitman 75 is articulated as at 76 with the eccentric pin 74 and as at 77 with a stud 78 threaded as at 79 into the horizontal part 80 of an angular lug 81 suitably secured to the yoke 48 centrally thereof. The head of the stud 78 is desirably of sufficient size to lap the upper face of the pitman 75 so as to maintain the latter horizontal at all times and the eccentric pin 74 is downwardly elongated so that the end of the pitman encircles the latter and may slide up and down thereon without disengagement therefrom during adjustment of the sub-frame 56 vertically of the frame, whereby the operating connection of the motor to the yoke 48 is maintained without interruption in various adjusted positions of the sub-frame.

The frame 10 is shown cut away as at 82 to receive the motor 71 in a circular area conforming to the size and shape of the motor, and an annular flange 83 on the motor casing is secured as by screws 84 to the margins of this portion of the frame.

The machine may have the usual elongate handle common to floor devices of various kinds, and such as indicated at 85 (Fig. 5). The handle where attached to the machine may be fur-

cated as at 86, each furcation being articulated with the frame as by a pivot stud 87 passing through the handle furcation as at 88 and being threadedly received as at 89 in an attachment boss 90 formed integrally with the frame. The furcations of the handle thus straddle the motor 71 and the handle may be adjusted to various angular positions convenient for pushing the machine along the floor.

So constructed and arranged, the brush 42, when the motor is running, will vibrate back and forth over the floor and in polishing engagement therewith, the brush making rapid short strokes within the appliance compartment 11 of the device, which have a rubbing or polishing action on the floor. At the same time, the flowable polishing material passes through the brush and to the portion of the floor upon which the brush is working. It will be observed that the brush holder 45 is sufficiently wider (longitudinally of the machine) so that the wax falling from the reservoir 24 will drop into the brush holder in all positions of the stroke of the brush. The trough-like brush holder thus acts as a sub-reservoir. Operation of the machine and consequent vibration of the frame will cause the powdered wax for example to fall through the apertured plates 25 and 26 in relatively small portions continuously as the machine operates and through the perforations 47 in the brush. The plates 25 and 26 may be manually adjusted to provide any suitable degree of opening of the sifting apertures 31 and 32, the plate 25 projecting for this purpose beyond the plate 26, as best seen in Figure 4, and having advantageously a finger piece 91 for manual movement of the plate.

Also as so constructed and arranged, the links 51, from which the brush yoke is suspended, are of substantially the same length and thereby maintain the yoke and brush substantially horizontal at all times, while by this swinging arrangement the brush has both a reciprocatory motion in a horizontal plane and a slight oscillatory motion in an arc in a vertical plane, which is to say that as the links 51 swing back and forth under the influence of the pitman they act somewhat as a pendulum and the low point of their arc of movement is at the middle of each backward and forward stroke of the brush. This results in the brush 42 having both a lateral and a downward movement, the lowest point of downward movement occurring in the middle of each stroke of the brush and thus enhancing the rubbing and polishing action of the brush. Since the motor operates at relatively high speed and the brush may have a short stroke of say approximately one-half an inch in each direction, this downward and lateral polishing action is rapidly repeated in a short interval of time over a given floor area and accomplishes what with a slower stroke could only be accomplished by greatly enhancing the pressure and length of the stroke.

Another advantage of the somewhat pendulum-like movement of the brush, already referred to, is that the brush in oscillating comes down on the particles of wax instead of pushing them away from it, thus contributing to economy of wax consumption as well as enhanced results.

In addition to the structure and function already described, the machine may include, if desired, in accordance with one aspect of the present invention and as shown in Figures 3 and 4, the addition of a modification thereto, which will be next described, the parts being otherwise the same as already referred to.

As shown in Figures 3 and 4, instead of depending upon mechanical agitation of the powdered wax in the reservoir 24, the plate 25 may be arranged to be electrically actuated and the mechanism here shown for this purpose may be employed. In this instance, suspended to hang from the plate-like body 55 of the sub-frame 52 as by brackets 92, secured by screws 92a, is a solenoid device 93, the armature 94 of which has connected thereto a hanger finger 95, the lower end of which is turned horizontally as at 96, which spans and takes under a pusher bar 97, the latter being pivoted as at 98 to the horizontal part 99 of a lug 100 suitably secured to the yoke 48.

A tension coil spring 101 anchored to the yoke at one end as at 102 and to the pusher bar 97 at the other end as at 103 normally retracts the pusher bar and with it the solenoid armature 94 when the solenoid is not energized. When however the coil of the solenoid has a current passed therethrough, by means of a suitable electric connection as is well known in the art and need not be here described, the armature 94 is pulled inwardly of the solenoid, and the hanger finger 95 of the armature pulls with it, against the action of the tension spring 101, the free end of the pusher bar from the position as shown for this bar in Figure 4, in broken lines, to the position shown in full lines.

In this latter position, each time the yoke 48 and with it the brush 42 moves forwardly, the pusher bar moves with it, sliding on the horizontal part 96 of the hanger finger 95, and hits the bumper member 104 of a bell crank lever 105 which is pivoted at 106 to the margin of the fixed sifter plate 26. The other end of the bell crank is articulated as at 107 with the movable plate 25, for this purpose passing freely through an elongate slot 108 in the fixed plate 26. The pusher member 97 thus acts as a tappet and the bumper member 104 as a tripper, for agitating the sifter plate or grating.

When the yoke 48 moves rearwardly during one-half of its cycle of movement, a tension spring 109 secured as at 110 to the elbow of the bell crank 105 and at its other end as at 111 to a lug 112 carried by the under wall of the appliance compartment 11, retracts the bell crank in this direction, and moves the movable plate 25 in the opposite direction to which it has been previously moved by the pusher bar 97, thus causing alternate movements in opposite directions of the sifter plate 25 with respect to the sifter plate 26 and intermittently opening and closing the sifter apertures 31 and 32 while at the same time agitating the powdered wax within the reservoir 24 and causing delivery of the wax in limited but continuous quantities to the brush holder 45 for passage through the brush to the floor.

It will be understood that it is not necessary that this agitation by means of the solenoid be carried on continuously during the entire operation of the machine, but generally only at intervals, since the brush holder 45 will itself act as an intermediate reservoir for the wax, and normal agitation of the device resulting from its operation will cause some of the wax to sift through from the reservoir 24 to the floor. An electrical connection for the solenoid 93 may have in circuit therewith a spring push-button switch such as 113 on the handle 85 (Fig. 5). Another switch 114 of the throw type may control the circuit to the motor, the circuit to the solenoid being in parallel therewith.

It is to be understood that the invention is not intended to be limited to details of construction and operation shown for purposes of exemplification, and, furthermore, that the invention is capable of embodiment in structures differing in degree of appropriation of one or more aspects thereof.

The invention having been described, what is here claimed is:

1. In a device of the class described, the combination with a frame, of polishing brush carried by the frame, a reservoir for a comminuted polishing material carried by the frame above said brush, said reservoir being bottomed by a pair of over-lapping plates each having apertures therein and one of said plates being movable in the plane thereof with respect to the other, a motor mounted on the frame, a connection between the motor and the brush for moving the brush with respect to the frame, and means operable by said motor for moving said movable plate whereby comminuted polishing material is delivered to the brush during movements thereof.

2. Structure of claim 1 wherein said last mentioned means includes a solenoid, a pusher member movable in one direction by energization of the solenoid, means including a bumper member in controlling connection with said movable plate and adapted to be intermittently engaged by said pusher member during each cycle of movement of the polishing means, means for retracting said pusher member out of the path of said bumper member upon deenergization of the solenoid, and means for retracting the movable plate between said intermittent engagements by said pusher member.

3. In a device of the class described, the combination with a frame, of a polishing brush carried by the frame, a reservoir for a comminuted polishing material carried by the frame above said brush, said reservoir being bottomed by a pair of over-lapping plates each having apertures therein and one of said plates being movable in the plane thereof with respect to the other to sift the polishing material through the brush, a motor mounted on the frame, a connection between the motor and the brush for moving the brush with respect to the frame, and means operable by said motor for moving said movable plate whereby comminuted polishing material is delivered during movements thereof, said brush being swingingly mounted whereby to have both a reciprocatory motion in a horizontal plane and an oscillatory motion in an arc in a vertical plane whereby to enhance its polishing action.

4. In a device of the class described, the combination with a frame, of a polishing brush carried by the frame and adjustable vertically therein, a reservoir for a comminuted polishing material carried by the frame above said brush, said reservoir being bottomed by a pair of over-lapping plates each having apertures therein and one of said plates being movable in the plane thereof with respect to the other, a motor mounted on the frame with its driving shaft vertical, a connection between the motor and the brush for moving the brush with respect to the frame, and means operable by said motor for moving said movable plate whereby comminuted polishing material is delivered adjacent said brush during movements thereof.

5. In a portable device of the class described, the combination with a frame, of parallel links depending from the frame, a polishing brush carried by the frame through the intermediation of said links and movable with respect to the frame, said brush being swingingly mounted on said links whereby to have both a reciprocatory motion in a horizontal plane and an oscillatory motion in an arc in a vertical plane whereby to enhance its polishing action, a motor mounted on a frame, a connection between the motor and polishing brush for moving the polishing brush with respect to the frame, a reservoir in the frame for a flowable polishing material mounted above said polishing brush and arranged to pass said material through said polishing brush and between bristle groups of said brush during operation of the device, and mobilizing means for the frame.

6. In a portable device of the class described, the combination with a frame, of a brush holder supported by said frame for movement therein, a brush carried by the brush holder, a motor mounted on the frame, a connection between the motor and brush holder for moving the brush holder with respect to the frame, a reservoir in the frame above the brush holder for a flowable polishing material, said brush holder being trough-like to receive said material from said reservoir, means for sifting said material from said reservoir to said brush holder means during operation of the device, perforations in said brush holder, and mobilizing means for the frame.

7. In a device of the class described, the combination with a portable housing-like frame, a pair of vertical guide posts depending from and within the frame, a sub-frame vertically movable on said guide posts, a king pin upstanding on said sub-frame between said posts, a bearing in the upper part of the frame passing said king pin threadedly therethrough, a clamping ring threaded on said king pin and cooperating with said bearing to fix said adjustment, a plurality of parallel links articulated with the sub-frame and depending therefrom, a yoke suspended from and articulated with said links, a motor carried by the frame and having its driving shaft vertical therein, an eccentric on said shaft, a pitman connecting said eccentric and said yoke arranged to operate with said yoke in a horizontal plane, and a polishing brush actuated in said plane by said yoke, whereby said brush has both a reciprocatory movement in a horizontal plane and an oscillatory movement on an arc in a vertical plane.

8. In a device of the class described, the combination with a portable housing-like frame, a plurality of parallel links articulated with the frame and depending therefrom, a yoke suspended from and articulated with said links, a motor carried by the frame and having its driving shaft vertical therein, an eccentric on said shaft, a pitman connecting said eccentric and said yoke arranged to operate with said yoke in a horizontal plane, and a polishing brush actuated in said plane by said yoke, whereby said brush has both a reciprocatory movement in a horizontal plane and an oscillatory movement on an arc in a vertical plane.

9. In a device of the class described, the combination with a portable housing-like frame, a sub-frame, a king pin upstanding on said sub-frame, a bearing in the upper part of the frame passing said king pin threadedly therethrough, a clamping ring threaded on said king pin and cooperating with said bearing to fix said adjustment, a plurality of parallel links articulated with the sub-frame and depending therefrom, a yoke suspended from and articulated with said links, a motor carried by the frame and having

its driving shaft vertical therein, an eccentric on said shaft, a pitman connecting said eccentric and said yoke arranged to operate with said yoke in a horizontal plane, and a polishing brush actuated in said plane by said yoke, whereby said brush has both a reciprocatory movement in a horizontal plane and an oscillatory movement on an arc in a vertical plane.

10. In a device of the class described, the combination with a portable housing-like frame, of a sub-frame means for suspending the sub-frame in the frame for vertical adjustment therein, a plurality of parallel links articulated with the sub-frame and depending therefrom, a yoke suspended from and articulated with said links, a motor carried by the frame and having a driving shaft, an eccentric on said shaft, a pitman connecting said eccentric and said yoke arranged to operate with said yoke in a horizontal plane, and a polishing brush actuated in said plane by said yoke, whereby said brush has both a reciprocatory movement in a horizontal plane and a slight oscillatory movement on an arc in a vertical plane.

11. In a device of the class described, the combination with a portable housing-like frame, a pair of vertical guide posts depending from and within the frame, a sub-frame vertically adjustable on said guide posts, a king pin upstanding on said sub-frame between said posts and supporting the sub-frame, means carried by the frame and cooperating with the king pin to fix said adjustment, a plurality of pairs of parallel links articulated with the sub-frame and depending therefrom, a yoke suspended by and articulated with said links, said sub-frame, yoke and links forming a parallelogram, a motor carried by the frame and having a driving shaft therein, an eccentric on said shaft, a pitman connecting said eccentric and said yoke arranged to operate said yoke in a horizontal plane, and a polishing element actuated in said plane by said yoke, whereby said element has both a reciprocatory movement in a horizontal plane and an oscillatory movement on an arc in a vertical plane with the yoke maintained horizontal.

12. In a device of the class described, the combination with a portable housing-like frame, a plurality of parallel links articulated with the frame and depending therefrom, a yoke suspended from and articulated with said links, said frame, yoke and links forming a parallelogram, a motor carried by the frame and having its driving shaft therein, driving means between said shaft and said yoke arranged to operate said yoke in a horizontal plane, and a polishing brush actuated in said plane by said yoke, whereby said brush has both a reciprocatory movement in a horizontal plane and an oscillatory movement on an arc in a vertical plane with said yoke maintained horizontal.

13. In a device of the class described, the combination with a portable housing-like frame, suspension means articulated with the frame and depending therefrom, a yoke suspended by and articulated with said suspension means, a motor carried by the frame and having its driving shaft therein, driving mechanism between said shaft and said yoke arranged to operate said yoke, a polishing brush actuated by said yoke, a reservoir in the frame for a supply of polishing material, and means for passing said material from said reservoir through said brush.

14. In a device of the class described, the combination with a portable housing-like frame, a sub-frame, means for suspending the sub-frame in the frame for vertical adjustment therein, a plurality of pairs of parallel links articulated with the sub-frame and depending therefrom, a yoke suspended from and articulated with said links, said sub-frame, yoke and links defining a parallelogram, a motor carried by the frame and having a driving shaft, an eccentric on said shaft, a pitman connecting said eccentric and said yoke arranged to operate with said yoke in a horizontal plane, and a polishing brush actuated in said plane by said yoke, whereby said brush has both a reciprocatory movement in a horizontal plane and a slight oscillatory movement on an arc in a vertical plane with the yoke maintained horizontal.

15. In a device of the class described, the combination with a portable housing-like frame, a sub-frame, means for suspending the sub-frame in the frame for vertical adjustment therein, a plurality of pairs of parallel links articulated with the sub-frame and depending therefrom, a yoke suspended from and articulated with said links, said sub-frame, yoke and links defining a parallelogram, a motor carried by the frame and having a driving shaft, an eccentric on said shaft, driving mechanism between said shaft and said yoke, and a polishing brush actuated in said plane by said yoke, whereby said brush has both a reciprocatory movement in a horizontal plane and a slight oscillatory movement on an arc in a vertical plane with the yoke maintained horizontal.

16. In a polishing device of the class described, the combination with a frame, of parallel links articulated with and depending from the frame, a brush carrying means articulated with and carried by the links, said frame, links and brush carrying means defining a parallelogram, a brush rigidly carried by the brush carrying means, a motor mounted on the frame, and a connection between the motor and brush carrying means for moving the polishing brush with respect to the frame, whereby said brush is swingingly mounted to have both a horizontal motion and upward and downward motion while maintaining the brush horizontal to enhance its polishing action.

17. In a polishing device of the class described, the combination of a frame, a polishing tool carried by the frame, a motor mounted on the frame, a connection between the motor and polishing tool for moving the polishing tool, a reservoir in the frame for a supply of polishing material, a manually operable switch on the frame, and motor actuated means carried by the frame and energizable by manual actuation of said switch for discharging portions of said material from said reservoir during operation of the device.

18. In a portable floor polishing machine, the combination with a housing frame, of a rear wheel for the frame adjacent the longitudinal center line thereof, a pair of wheels carried by the frame forwardly of said rear wheel and spaced laterally outwardly of said rear wheel, a polishing brush carried by the frame forwardly of said pair of wheels, the polishing brush extending laterally beyond said pair of wheels at each side of the device, wax supply means carried by the frame in delivery relation to said brush and substantially laterally coextensive with said brush, said wax supply means including wax containing means arranged for direct delivery of wax from said wax containing means to said brush at a multiplicity of relatively closely spaced places throughout the lateral extent of the brush, and a

handle secured to the frame intermedially of the extreme laterally extending portions of the brush, whereby both said brush and said wax supply means extend laterally of said wheels and said handle securing means at each side of the device, said wheels, brush and wax supply means being all housed within said frame.

JAMES GORDON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
452,150	Wetherbee	May 12, 1891
798,532	Sanders	Aug. 29, 1905
1,105,508	Gilbert	July 28, 1914
1,176,154	Lowy	Mar. 21, 1916
1,186,433	Peralta et al.	June 6, 1916
1,417,768	Radimak	May 30, 1922
1,445,976	Sealund	Feb. 20, 1923
1,568,602	Harris	Jan. 5, 1926
1,578,421	Garton	Mar. 30, 1926
1,588,943	Clark	June 15, 1926
1,635,480	Jacobson	July 12, 1927
1,661,510	Sproston	Mar. 6, 1928
1,707,575	Schooling	Apr. 2, 1929
1,718,695	Lacy	June 25, 1929
1,732,641	Coon	Oct. 22, 1929
1,762,637	McCarthy	June 10, 1930
1,969,290	Alder	Aug 7, 1934

FOREIGN PATENTS

Number	Country	Date
18,120	Great Britain	July 31, 1914