

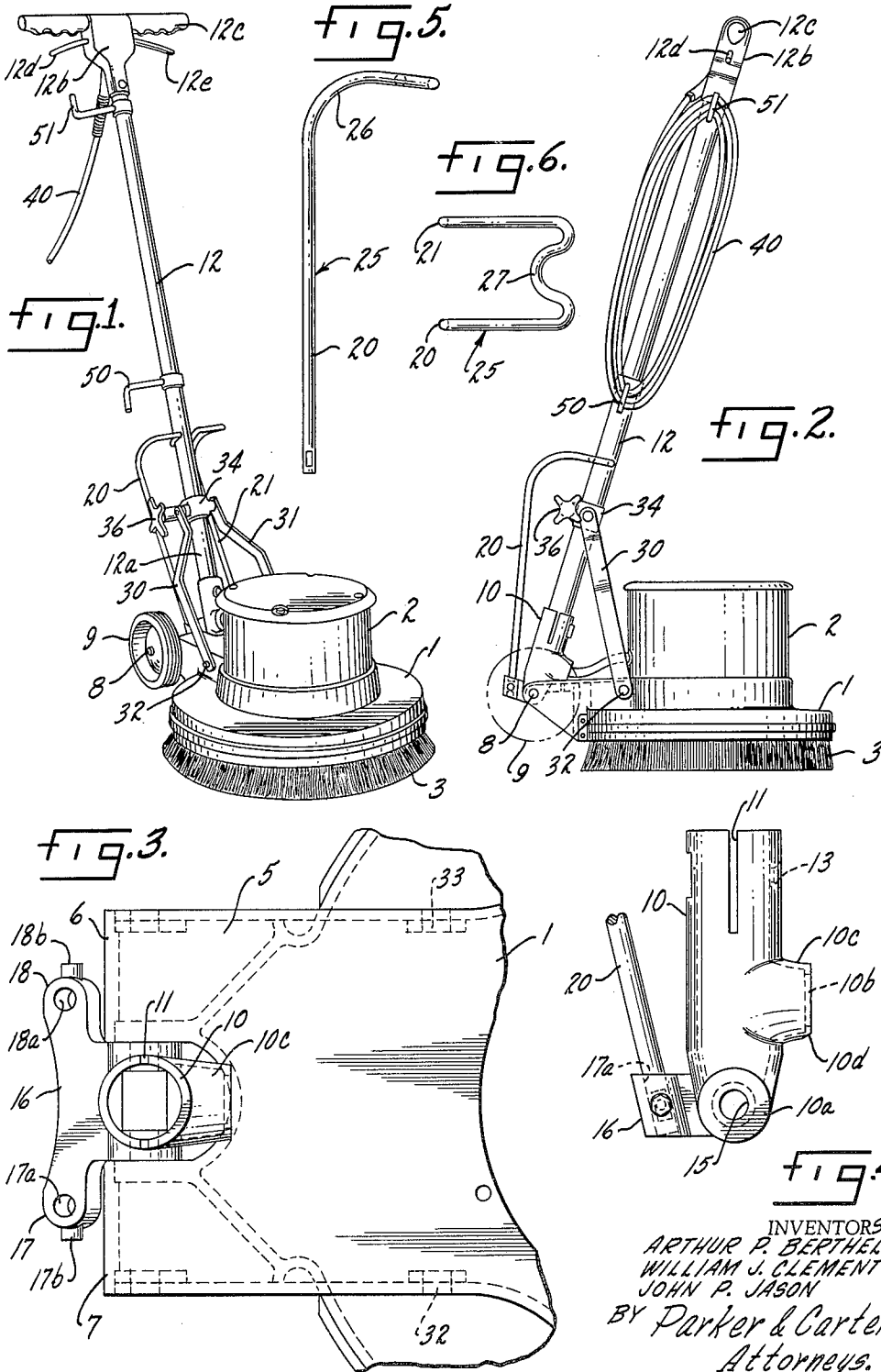
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HANDLE AND SKID MEANS FOR A FLOOR MACHINE

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HANDLE AND SKID MEANS FOR A FLOOR MACHINE

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This invention relates to floor machines and has particular relation to a floor cleaning and polishing machine assembly including means for easily and safely transporting the machine along irregular surfaces.

Another purpose of the invention is to provide a floor polishing machine assembly capable of storage without distortion of the brush element of such assembly.

Another purpose is to provide a floor machine having an element formed and adapted to permit the movement of the machine along irregular surfaces with ease and without damage to the machine.

Another purpose is to provide a floor polishing and cleaning assembly having provisions for storing said assembly without removal of the brush member thereof.

Another purpose is to provide a floor machine wherein parts thereof are employed and positioned to insure against distortion of a brush assembly portion during storage.

Floor polishing and cleaning machines are conventionally heavy structures in which a power source, such as an electric motor, is positioned above a rotary brush element. Wheels are provided for contact with the floor surface when it is desired to move the machine without polishing the floor. To move the machine up and down stairways and other irregular surfaces, however, is difficult since the wheels provided make balancing of the machine and control thereof during such movement hazardous and difficult to maintain. Accordingly it is one purpose of the invention to provide a floor polishing and cleaning assembly including a readily available and properly positioned skid upon which the machine assembly may be balanced and transported up and down stairways and similar irregular surfaces.

The standard floor polishing and cleaning machines are often stored intact, i.e. with the brush assembly installed beneath the power motor. With the handle mechanisms of prior machines and the means for positioning such mechanisms at various angles from the base of the machine, the said handles have inclined away from the machine in storage. This, coupled with the outrigger arrangement for supporting the handle and the wheels of the machine, produces an imbalance which causes the brush member to take a "set" where it is compressed beneath the juncture of the handle and wheels with the base, the resulting "set" producing an irregular brush surface and a wobbling action of the machine in later use. To preclude this, it has been recommended in the past that the brush be removed from the machine during storage thereof. Temptation has, however, often been strong and irresistible, resulting in repeated storage of the machine without removal of the brush and consequent creation of the "set" in the brush. Accordingly, it is one purpose of the invention herein to provide a floor polishing machine assembly wherein the heavy cord normally employed with such machines and the upper portion of the handle thereof are positioned above the gravitational center of the power source and brush to balance the outrigger portion of the base and wheels and to provide for a uniform gravitational effect upon the brush assembly whereby all portions thereof are subjected to the same pressures and no portion of the brush may take a "set" different from the remaining portions of the brush.

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Other purposes will appear from time to time during the course of the specification and claims.

The invention is illustrated more or less diagrammatically in the accompanying drawings, wherein:

FIG. 1 is a perspective view;

FIG. 2 is a side view illustrating the machine assembly in storage;

FIG. 3 is a detailed view, on an enlarged scale, and illustrating a portion of the assembly;

FIG. 4 is a side detailed view illustrating another portion of the assembly on an enlarged scale over that of FIGS. 1 and 2;

FIG. 5 is a detailed side view illustrating one portion of the invention on an enlarged scale; and

FIG. 6 is a top plan view of the structure illustrated in FIG. 5.

Like parts are indicated by like numerals throughout the specification and drawings.

Referring now to the drawings, and particularly to FIG. 1, the numeral 1 designates a base which, in accord with standard practice, is circular in plan configuration. Mounted upon and upstanding from a central portion of the base 1 is a housing 2 in which a power source, such as an electrical motor (not shown) is mounted. A circular brush element 3 extends downwardly beneath the base 1 and suitable mechanism (not shown) is provided, in accordance with conventional practice, to enable the power motor within housing 2 to rotate the brush 3 upon supply of electric current to the motor within the housing 2.

Extending rearwardly from the base 1 is an outrigger base portion 5. A pair of spaced leg portions 6, 7 of the portion 5 have a bore extending therethrough to receive an axle or shaft 8. The opposite ends of the shaft 8 extend outwardly beyond the leg portions 6, 7 to receive wheels 9, only one of which is shown in FIG. 1. Pivoted on the shaft 8 is a handle-receiving fitting 10. The fitting 10 has a generally hollow upper portion which may be slotted at 11 and into which the lower portion of the handle shaft 12a of handle 12 is inserted. Suitable securing members may be threaded in opening 13 to pass through the wall of member 10 and to contact and retain the handle 12 within the socket of member 10.

Member 10 has a lower boss segment 10a apertured as at 15 to receive the shaft 8 and for pivotal mounting of the handle 12 and member 10 on the shaft 8.

Extending rearwardly from the member 10 is a skid-receiving element 16. It will be understood that the element 16 may conveniently be formed integrally with the member 10 without departing from the nature and scope of the invention. The member 16 has oppositely directed leg portions 17, 18, each of which is, in turn, angularly apertured as indicated at 17a, 18a, respectively. The apertures 17a, 18a receive the end portions of legs 20, 21 of the skid member indicated generally by the numeral 25. Securing elements 17b, 18b respectively hold the end portions of legs 20, 21 in the apertures 17a, 18a.

As may be best seen in FIGS. 1, 5 and 6, the skid member 25 comprises a pair of parallel leg elements or segments 20, 21, the opposite ends of which are curved in parallel planes, as indicated at 26, and thereafter joined by a waved or U-shaped cross portion 27. It will be observed that the concaved segment of cross member 27 is of a predetermined radius to just receive a circumference of tubular handle shaft 12a at a point intermediate the ends thereof.

A pair of retaining braces 30, 31 have their bottom edges pivoted to the outrigger base segment 5 at points 32, 33, respectively. The braces 30, 31 parallel each other upwardly from the base segment 5 for a substantial distance, sufficient to reach above, when the brace members 30, 31 are vertical, the upper level of the housing

2. Thereafter the brace elements have converging portions merging with shorter parallel portions spaced on opposite sides of a slide 34 surrounding the handle 12 between the skid segment 27 and the member 10. A manually operable lock member 36 is associated with slide 34 to provide for clamping the same at the desired position on handle 12.

The handle 12 includes shaft 12a, an end control block 12b and a manually operable cross member 12c. Control levers 12d, 12e may be associated with the block 12b and extend outwardly therefrom adjacent the handle member 12c for ease of engagement by the machine operator. An electrical conduit or cable 40 has a major portion extending outwardly from the block 12b and carrying at its outer end a suitable connector (not shown) for connection with a source of electrical energy. The opposite end of cable 40 extends from the block 12b through the handle shaft 12a and into member 10 from whence it passes outwardly through a passage 10b about which an extension 10c is formed. A lower edge segment 10d of the extension 10c may be chamfered for purposes which will appear hereinafter. From the outlet passage 10b the cord 40 extends into housing 2 for connection with the power motor therein. Hook elements 50, 51 are spaced on and extend outwardly in parallel relationship from the handle shaft 12a to receive the major portion of cable 40 when the machine assembly of the invention is to be stored. It will be understood that the upper hook 51 may, when desired, be dispensed with and the cable 40 may be wrapped about a lower hook 50 and the cross portion 12c of handle 12 without departing from the nature and scope of the invention.

The use and operation of the invention are as follows:

When the assembly of the invention is to be stored, the cable 40 is wound about hooks 50, 51 or about a lower hook 50 and the cross handle portion 12c, the lock member 36 is rotated to free the sleeve 34 on handle shaft 12a and the handle is moved into the position illustrated, for example, in FIG. 2. In this position the chamfer edge 10d of the extension 10c on member 10 is brought into abutting relationship with an opposed portion of outrigger base segment 5 and serves as a stop for the movement of the handle 12 across the housing 2 and base 1. The braces 30, 31, being spaced apart, do not impede the forward movement of handle assembly 12 by impingement upon either it or upon housing 2. If desired, the member 36 may then be rotated to lock the handle in the storage position illustrated in FIG. 2. It will be observed that the weight of the upper portion of the handle and the substantial weight of the cable employed with these machines is thus moved into a position substantially overlying the gravitational center of the base 1 and housing 2, thus distributing the overall weight of the assembly toward the center and precluding the concentration of weight forces on one side of the brush 3 and precluding any resulting "set" therefrom.

The skid 25 is easily and simply removed and installed in the assembly of the invention by means of attaching elements 17b, 18b. When installed, as illustrated, the operator, desiring to move the assembly of the invention along an irregular surface, rotates lock 36 to free the slide 34 thereon and rotates the fitting 10 about its pivot on shaft 8 forwardly and toward the base 1, as illustrated in FIG. 2. When the desired position of handle 12 is reached, the member 36 is rotated to lock the slide 34 on handle shaft 12a and the operator presses downwardly on handle portion 12c to tilt the base, housing and brush assembly upwardly and to cause the assembly to rest upon the elongated leg portions 20, 21 of skid 25. Thereupon the assembly of the invention may be slidably moved along an irregular surface and may be, for example, transported either up or down a stairway

with ease and with balance and safety, the spaced parallel runners 20, 21 supporting and balancing the weight of the machine and the curved portion 26 and wheels 9 cooperating to provide for an ease in transition from one rise to another of such an irregular surface regardless of the direction of movement.

Whereas we have shown and described an operative form of the invention, it should be understood that this showing and description are to be taken in an illustrative or diagrammatic sense only. There are many modifications in and to the invention which will be apparent to those skilled in the art and which will fall within the scope and spirit of the invention. The scope of the invention should, therefore, be limited only by the scope of the hereinafter appended claims.

We claim:

1. A floor polishing machine comprising a circular base, a housing upstanding from a central portion of said base, a motor in said housing, a rotatable circular brush member depending from said base, an outrigger portion on and extending laterally from said base above the plane of said brush member, an axle extending laterally through said outrigger portion, a fitting pivoted on said axle intermediate its ends, said fitting having a hollow slotted upper portion, a handle shaft having one of its ends seated within and secured to said fitting upper portion, a hollow extension intermediate the ends of said fitting and extending toward said housing, the open area within said extension communicating with the area within said fitting, a cross bore in the lower portion of said fitting, said cross bore being formed and adapted to receive said axle, a rearward extension on said fitting adjacent said cross bore, oppositely disposed leg portions on said rearward extension, apertures through said leg portions, said apertures lying in a plane diverging from the plane of said handle shaft, a skid member having a pair of parallel leg portions, said leg portions having their free ends secured in said apertures, the opposite ends of said leg portions being curved at parallel planes toward said handle shaft, said skid member including a cross portion joining the opposite ends of said leg elements and lying in a curved path, the radius of said path being such as just to receive the circumference of said handle shaft at a point intermediate the ends of said handle shaft, wheel elements rotatably mounted on the opposite ends of said axle outwardly of said outrigger portion and having their periphery in alignment with the lower surface of said base, said hollow fitting extension being formed and adapted to abut said outrigger portion and to serve as a stop for movement of said handle shaft toward said base whereby, when said hollow extension is in engagement with said base, the upper portion of said handle shaft is positioned above the gravitational center of said base.

2. The structure of claim 1 characterized by and including a sleeve slidable on said handle between said fitting and said skid member cross portion, means for locking said sleeve to said handle, and a yoke pivotally secured to said sleeve and to said outrigger portion within the periphery of said base.

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