June 29, 1926. 1,590,671

J. A. CAMPBELL

FLOOR SURFACING MACHINE

Filed August 2, 1924

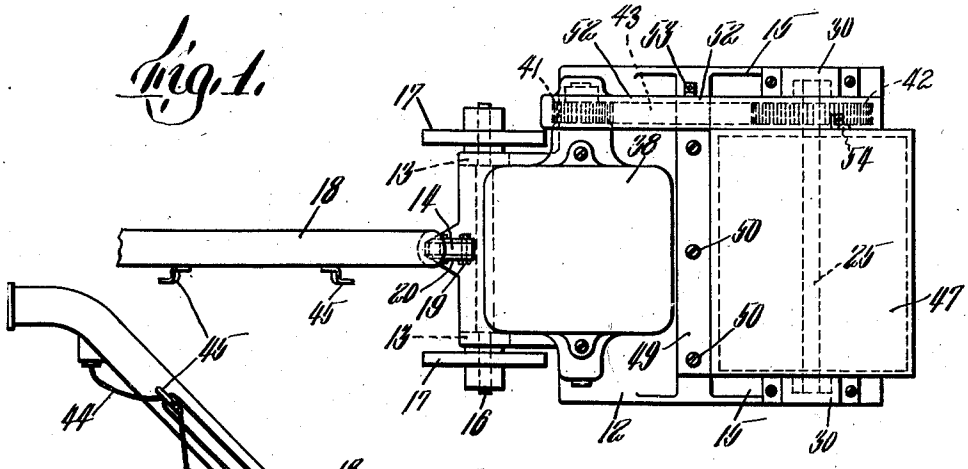


Fig. 1.

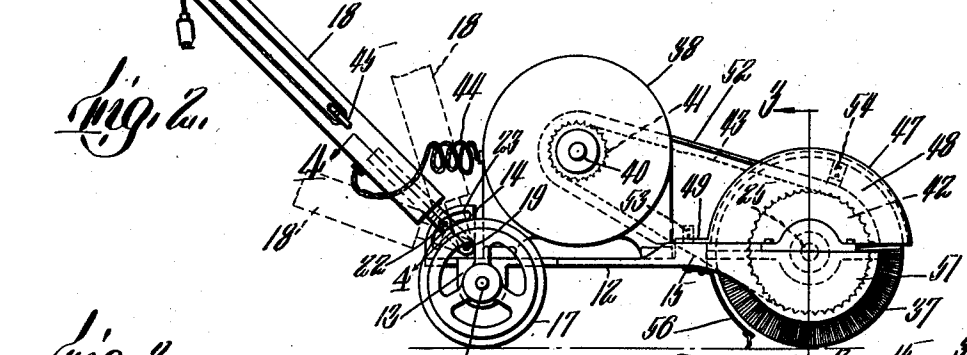


Fig. 2.

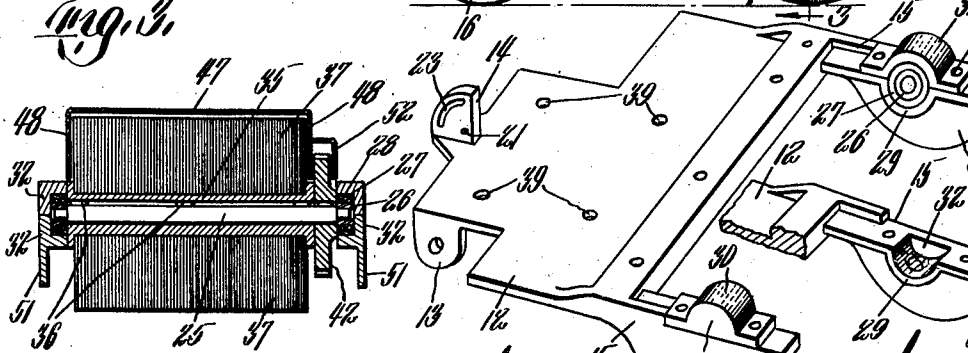


Fig. 3.

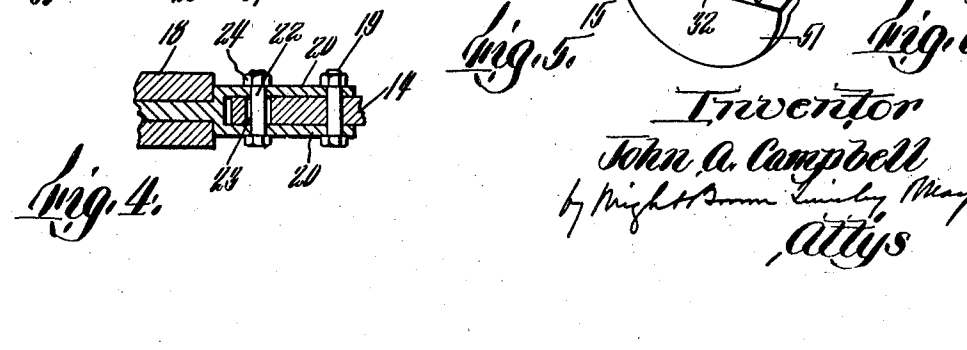


Fig. 5.



Fig. 6.

Fig. 4.

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UNITED STATES PATENT OFFICE.

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FLOOR-SURFACING MACHINE.

Application filed August 2, 1924. Serial No. 729,715.

The object of this invention is to provide a simple, durable, quietly running machine of light weight adapted to quickly impart a desirable surface to a floor. The machine of my invention is preferably adapted to polish a waxed wooden floor, although it may be adapted, as hereinafter described, to abrade a floor surface preparatory to polishing the same.

The invention is embodied in the improvements hereinafter described and claimed.

Of the drawings:—

Figure 1 is a top plan view of a floor surfacing machine embodying the invention.

Figure 2 is a side view of the same.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a perspective view of the platform portion of the machine.

Figure 6 is a view similar to a portion of Figure 5 showing one of the platform arms, the bearing supported thereby being removed.

The same reference characters indicate the same parts in all the figures.

In the drawings 12 designates a platform having at its rear end two downwardly projecting lower ears 13 and an upwardly projecting upper ear 14, and at its forward end two forwardly projecting spaced apart arms 15.

Inserted in orifices in the lower ears 13 is an axle 16 on which are mounted two traction wheels 17 constituting rolling supports on which the platform is oscillatable to raise and lower the arms 15.

18 designates a handle hinged to the upper ear 14 by a pintle 19 inserted in orifices in yoke arms 20 (Figure 4) fixed to the handle and in an orifice 21 (Figure 5) in the ear 14. The handle and ear are provided with clamping means whereby the handle may be fixed to the platform projecting inwardly therefrom at either of a number of different inclinations, as indicated by full and dotted lines in Figure 2, said means being preferably embodied in a headed bolt 22 inserted in orifices in the yoke arms 20 and in an arcuate slot 23 in the ear 14, the bolt being provided with a clamping nut 24 (Figure 4). When the nut is tightened the operator grasping the handle may swing the arms 15 either upward or downward to vary the pressure of the surfacing tool hereinafter described on a floor, and to remove the tool from the floor when the machine is being transported without action.

Mounted on the ends of a surfacing tool shaft 25, are bearings preferably provided by concentric annular members 26 and 27, between which are interposed anti-friction rolling members 28, as shown by Figure 3. The inner members 26 receive shouldered journal portions at the ends of the shaft 25. The outer members 27 are fitted in sockets with which the arms 15 are provided. Said sockets include fixed lower members 29 formed on the arms, as shown by Figures 5 and 6, and upper members 30 detachably secured by screws 31 to the arms 15. The members 29 and 30 form circular sockets conforming to the outer bearing members 27, said sockets being closed at the outer sides of the arms by head portions 32 (Figures 3, 5 and 6) and open at the inner sides of the arms.

The bearing members 26 and 27 inserted in the sockets are confined against outward movement by the closed ends of the sockets and against inward movement by the shoulders at the inner ends of the journal portions of the shaft.

To the tool shaft 25 is fixed a cylindrical surfacing tool, the construction of which depends on the character of the surface to be formed thereby on a floor. When the machine is adapted to polish wooden floors, which is its more important function, the surfacing tool is a cylindrical brush composed of a rigid hub 35 (Figure 3) fixed, as by keys 36, to the shaft 25, and bristles 37 of any suitable material fixed to and radiating from the hub, the outer ends of the bristles forming a cylindrical periphery. The showing of the tool in Figure 3 is somewhat conventional and it will be understood that there may be any suitable connection between the hub and the bristles.

A motor 38, preferably a ¼ H. P. 40 degree G. E. motor is bolted to the platform 12, the latter being provided with holes 39 (Figure 5) for the reception of the attaching bolts. The driving shaft 40 of the motor is connected with the tool shaft 25 by driving connections preferably embodied in a sprocket wheel 41 fixed to the driving

shaft, a sprocket wheel 42 fixed to the tool shaft, and a drive chain 43 connecting said wheels.

A portion of the cable 44 which supplies current to the motor may extend through a portion of the handle. When the machine is not in use, the free end portion of the cable may be stored on hooks 45 on the handle, as shown by Figure 2.

The arrangement is such that the motor exerts downward pressure on the tool. This pressure may be varied by the operator through the handle, and the handle may be held in position to raise the tool from the floor when the machine is being inoperatively transported.

The machine preferably comprises also a hood composed of an arched body portion 47 covering the upper portion of the periphery of the tool and end portions 48 covering the upper portions of the ends of the tool, as shown by Figures 2 and 3. The hood is provided with a flange 49 attached by screws 50 (Figure 1) to the forward portion of the platform. Hood extensions overhanging the lower portions of the ends of the tool are provided by downwardly projecting ears 51 formed on the arms 15.

A guard 52 covering the exposed portions of the sprocket wheels and drive chain, is secured by a bracket 53 to the platform and by a bracket 54 to one of the end portions 48 of the hood, the brackets being screwed or bolted to the platform and hood end.

The machine may be adapted for scrubbing floors by substituting for the brush a scrubbing roll adapted to be used with water for rapidly cleansing floor surfaces. The machine may also be adapted for dressing floors by abrasion, without the use of water, by substituting for the brush a sanding roll which may consist of a cylindrical body and a facing of sand paper secured thereto. In either case, the hub portion of the tool is engaged with the shaft 25 as shown by Figure 3. The removal of the upper members 30 permits the removal of the shaft and the bearing members 26 and 27 from the sockets on the arms. The bearing members may then be removed from one end of the shaft to permit the substitution of a different tool for the one before used. After this substitution, the bearing members may be again secured in the arm sockets. An apron 56 may be secured to the platform in position to bear on the floor behind the tool and prevent the scattering of dust and water.

It will now be seen that when the upper socket members 30 are removed, and the bearing members 26 and 27 are placed on the journal portions of the tool shaft 25, said bearing members and journal portions may be deposited in the lower socket members 29, and then secured by the attachment of the upper socket members to the arms. The bearing members are secured against inward endwise movement by the shoulders, at the inner ends of the journal portions, and the bearing members and the shaft are secured against endwise movement in either direction, by the closed ends of the sockets. Provision is therefore made for conveniently removing a tool adapted for a given kind of work, and substituting therefor another tool adapted for a different kind of work.

The closed ends of the sockets prevent the admission of dust, raised by the tool, to the outer ends of the bearing members. The inner ends of the sockets are closed by end portions of the tool, said end portions including the end of the hub shown at the left in Figure 3, closing the inner end of one of the sockets, and the sprocket wheel 42 which is arranged to close the open end of the other socket. Dust raised by the tool is therefore excluded from the inner ends of the sockets. This exclusion of dust is an important factor in a floor-surfacing machine, particularly when the tool is adapted to abrade the surface of a dry floor.

I claim:—

A floor-surfacing machine comprising a wheeled carrying frame including spaced apart arms, sockets on the arms having closed outer ends at the outer sides of and integral with the arms, and open inner ends at the inner sides of the arms, a rotary tool adapted to act on a floor and including a hub, a shaft fixed to the hub and provided with shouldered journal portions projecting from the hub, and a driving wheel fixed to the shaft and bearing on one end of the hub, a motor on the frame, connections between the motor and driving wheel on the tool shaft, annular bearing members mounted on the journal portions of the tool shaft and inserted, with the journal portions, in said sockets, the bearing members being confined against inward movement by the shoulders of the journal portions of the tool shaft, and against outward movement by the closed ends of the sockets, said closed ends excluding dust raised by the tool from the outer ends of the bearing members, the open ends of the sockets being closed by an end portion of the tool hub, and by the driving wheel, so that dust raised by the tool is excluded from the inner ends of the bearing members.

In testimony whereof I have affixed my signature.

JOHN A. CAMPBELL.