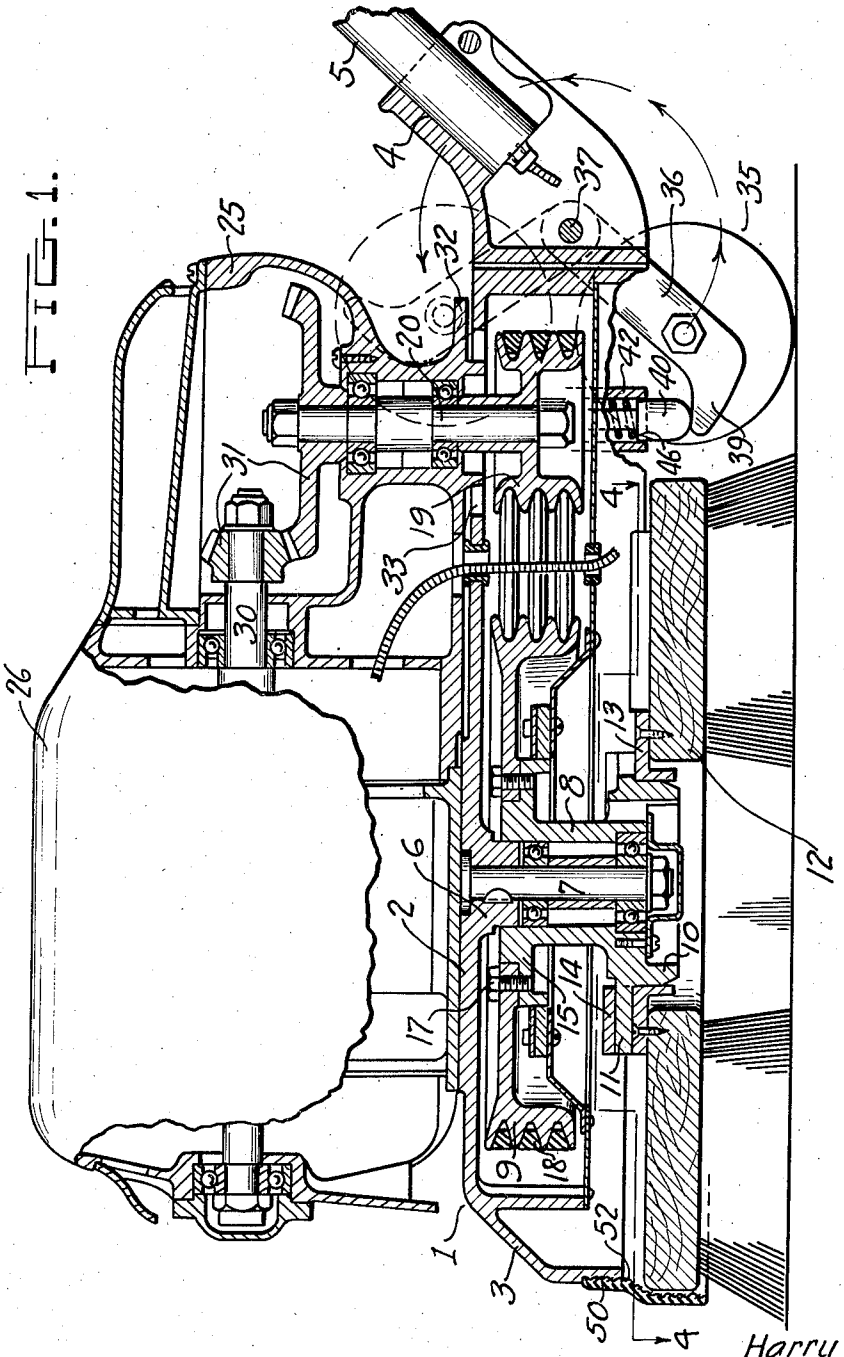
Jan. 3, 1939. H. L. MYERS 2,142,697

ROTARY SURFACING MACHINE

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FIG. 1.



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FIG. 2.

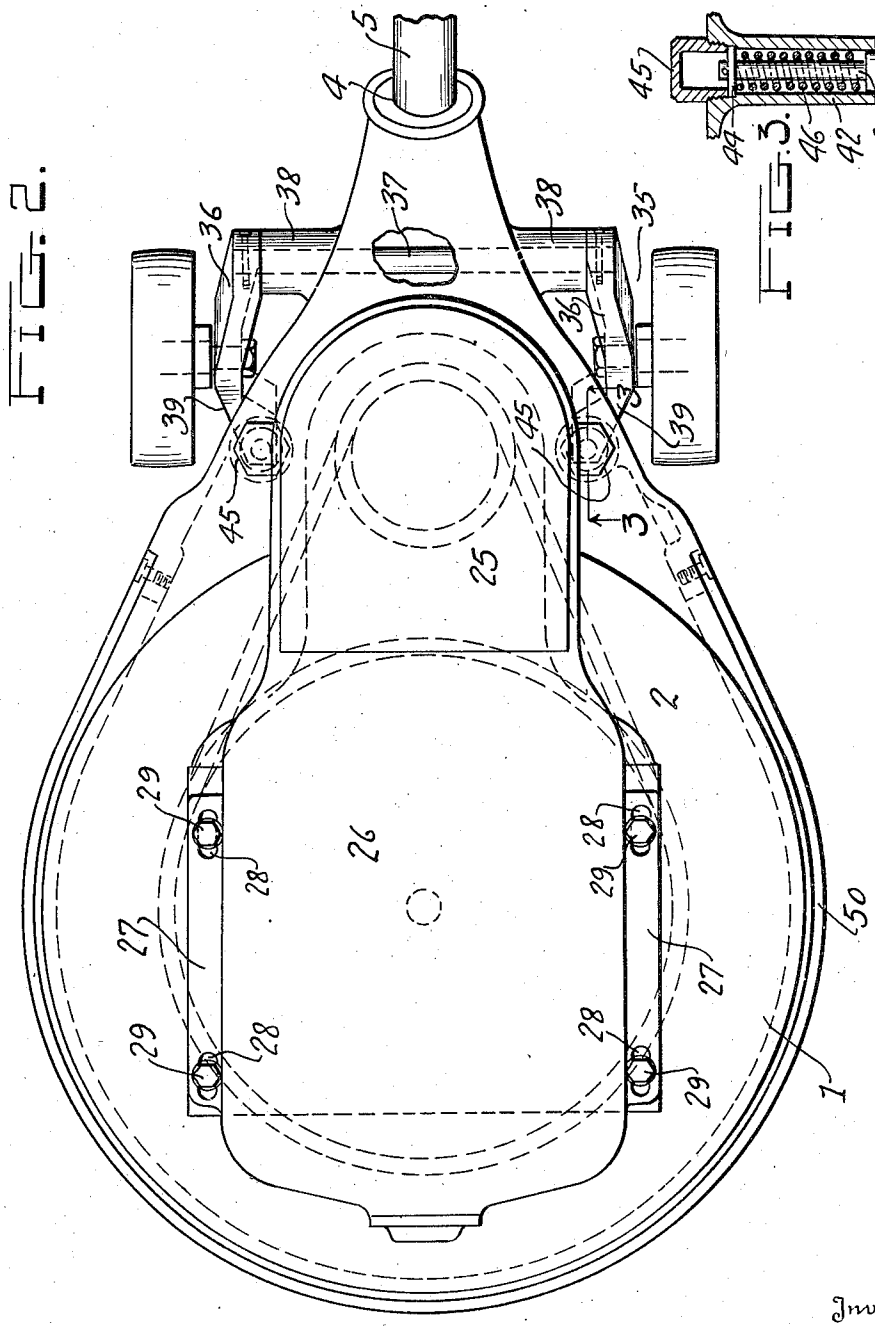


FIG. 3.

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ROTARY SURFACING MACHINE

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FIG. 4.

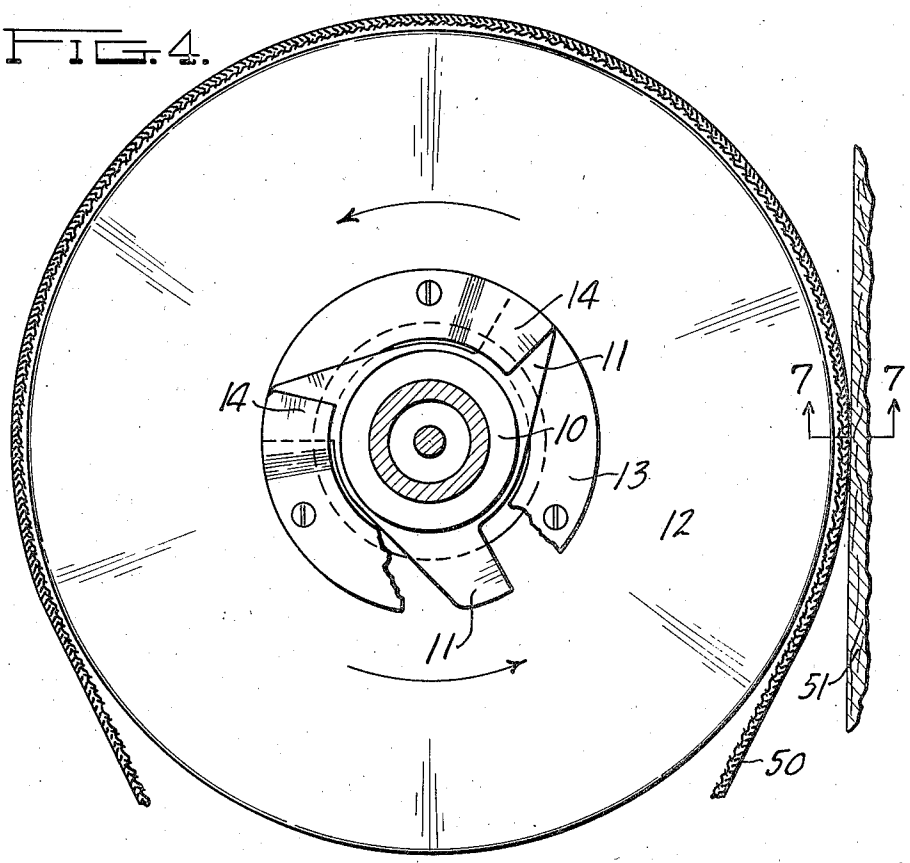


FIG. 5.

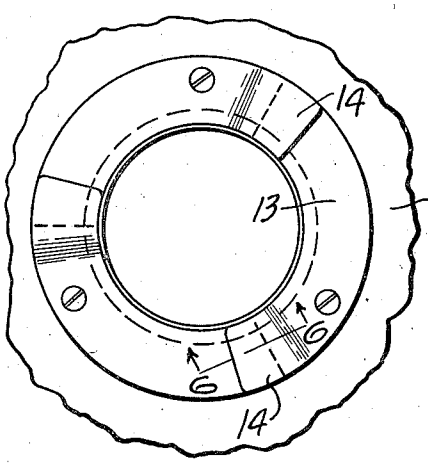


FIG. 6.

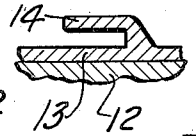
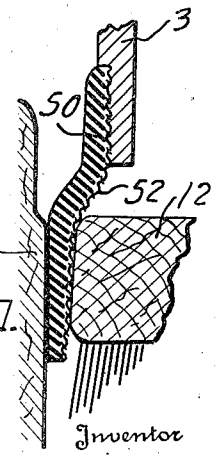


FIG. 7.



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UNITED STATES PATENT OFFICE

2,142,697

ROTARY SURFACING MACHINE

Harry L. Myers, Toledo, Ohio, assignor to The American Floor Surfacing Machine Company, Toledo, Ohio, a corporation of Ohio

Application January 28, 1937, Serial No. 122,679

2 Claims. (Cl. 15—49)

This invention relates to surfacing machines, and particularly to those of the rotary brush type.

It is customary with machines of this character to provide a wheel support at the handle or control end of the machine frame to cooperate with the abrading or cleaning element to support the frame. While this wheel support is usually mounted to be swung out of usable position, and the operation of the machine, especially by a skilled operator, is usually carried on with said support in such out-of-use position, it is frequently desirable to operate the machine with the support in use. Such use is objectionable, however, due to the support effecting a substantially fixed predetermined spacing between the associated end of the frame and the surface operated on, while the abrading or cleaning means, as it becomes worn, permits a lowering of the portion of the frame supported thereby and effects a consequent tilting of the frame.

An object of the invention is the provision of simple and efficient means for preventing injury to walls, furniture or other articles with which the machine may have sidewise contact in use without interfering with the efficient operation of the machine.

Other objects and advantages of the invention will be apparent from the following detailed description thereof, and from the accompanying drawings, in which—

Figure 1 is a central vertical longitudinal section of a machine embodying the features of the invention, with parts broken away and parts in full; Fig. 2 is a plan view of the machine, with a part broken away; Fig. 3 is an enlarged sectional detail on the line 3—3 in Fig. 2; Fig. 4 is a fragmentary section on the line 4—4 in Fig. 1, with a part broken away, and showing the abutting relation of the machine to a baseboard; Fig. 5 is a fragmentary top plan view of the brush unit removed from the machine; Fig. 6 is an enlarged section on the line 6—6 in Fig. 5 and Fig. 7 is an enlarged section on the line 7—7 in Fig. 4.

Referring to the drawings, 1 designates the frame of a machine of the rotary brush type, such frame having a substantially flat deck portion 2 with a marginal depending flange 3 forming the frame with a bottom cavity in which certain of the operating parts are mounted. The front end portion of the frame is circular, having a diameter substantially that of the rotary brush means employed, and has its rear end portion gradually narrowing and terminating in a socket part 4 for a control handle 5, as well understood in the art.

The frame deck 2 is provided on its under side centrally of its curved forward end portion with a boss 6, which is centrally apertured to receive a spindle 7 that fixedly projects from the deck down into its hollow bottom. A hub sleeve 8 has a ball bearing mount on the spindle 7 and receives at its upper end the boss 6 and also at such end carries the large pulley 9. The hub sleeve at its lower end has a clutch head 10, which is provided around its periphery with a plurality of radially projecting clutch fingers 11 for driving engagement with the brush unit 12, in the present instance of ring-form. A clutch collar 13 is attached to the brush-back at its inner edge, and is shown as having a downturned annular flange at its inner edge forming a broadened cylindrical portion for centering engagement with the extended lower end of the clutch hub 10. The top of the collar 13 is provided with a series of angled clutch fingers 14, which engage over the clutch fingers 11 in a forward direction of rotation of the clutch head relative to the collar, as is apparent by reference to Figs. 4, 5 and 6, and cause the brush to turn with the head.

The hub sleeve 8 is provided near its upper end with an annular radially projecting flange 15 to which the pulley 9 is attached by screws 17. This pulley, in the present instance, is of the multiple V-curve type, and is driven by belts 18 from a small drive pulley 19 mounted in the rear restricted end of the bottom cavity of the deck on a drive spindle 20. The spindle 20 is journaled in vertical position in the rear end or gear box portion 25 of a motor housing 26, which is mounted on the deck 2 for adjusting movements lengthwise of the deck to effect desired adjustment of the drive pulley 19 relative to the pulley 9. For the purpose of such adjustment, the motor housing has the side flanges of its base provided with outwardly projecting flanges 27, which are lengthwise slotted, as at 28, to receive clamping screws 29 that are threaded into the deck. The shaft 30 of the motor rotor is in driving connection with the upper end of the spindle 20 through a set of bevel gears 31 in the gear box 25. A boss 32 concentric with the spindle 20 projects from the bottom of the box 25 into a guide slot 33 in the deck 2.

The rear end of the frame 1 is adapted to be supported by a truck 35 having a pair of axially aligned wheels, one at each side of the frame. The truck frame is of U-form and comprises the

opposite side arms 36, 36, and the connecting cross member 37 in the form of a shaft. The cross member 37 is journaled crosswise of the frame 1 in aligned bearings 38 provided in the skirt portion of the frame at the rear of the drive pulley 19, thus adapting the truck to be swung into lowered usable position under the frame or raised to inoperative position, as shown respectively by full and dotted lines in Fig. 1.

The truck 35 when in usable position has the common axis of its wheels disposed in advance of the axis of the frame shaft 37 and provides a yielding support for the rear end of the machine frame due to the free ends of its arms 36 terminating in extensions 39 and having upward thrust contact with respective cushioned stops 40 carried by the frame 1. Each stop 40, in the present instance, is in the form of a plunger operating in and projecting from the lower end of a cylindrical guide 42 on the respective side of the frame 1, and such plunger has a stem 43 projecting upward therefrom through a guide 44 in the top portion of said cylinder. The guide 44 is of washer-like form and held in shouldered position within the guide 42 by a plug 45 threaded into the latter. A coiled compression spring 46 encircles the stem 43 between the plunger 41 and guide 44 and acts to exert an outward yielding pressure against the plunger.

When the machine is in use with the truck 35 down in usable position, the truck cooperates with the brush unit to support the machine frame in proper parallel relation to the surface operated on, thus constituting a supplemental frame support. The tension of the spring 46 should be such as to permit the truck to raise and the machine frame to maintain a level instead of a tilted position with respect to the surface on which it is operated, as the brush bristles shorten from wear. In other words, the truck, when in usable position, does not have a fixed stop relative to the machine frame, but has a yielding stop of predetermined tension which permits the truck to change its supporting position relative to the machine frame to compensate for wear of the brush unit or other abrading or cleaning unit employed.

In machines of this class the brushing or abrading unit usually projects under and beyond the front and side edges of the frame to enable working close to a wall or other obstruction. In order to prevent such projecting edge from having injurious contact with a wall or other stationary object when the machine is being operated, the frame flange 3 is provided at its front and side edges with a flexible skirt strip 50 which preferably extends down to slightly below the lower edge of the brush-back, as shown in Fig. 7. This protecting strip should be of a cushioning nature to soften the impacts of the brush-back against an obstructing member, such as shown at 51 in Figs. 4 and 7, and should at the same time have its inner brush-back contacting surface of a nature to present a minimum of friction to the rotation of the brush in contact therewith. The strip should also be comparatively thin to permit close work at the side of an obstructing member. I have found that all of these advantages are present in the use of a comparatively thin sheet-like strip of soft rubber which is faced on its inner side with a strong durable non-elastic flexible material 52 such as thin sheet metal, fabric or the like. This material, in addition to offering considerably less resistance to a turning of the brush unit 12 when held in close contact therewith than would be the case with rubber, serves as a flexible reinforcement or carrying body of considerable tensile strength for the rubber, which is preferably vulcanized thereto.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent, is:

1. In a machine of the class described, a frame having a circular edge portion, a work unit rotatable in a horizontal plane beneath said frame and having an unyielding edge portion projecting outwardly in exposed position beneath said circular edge portion of the frame, and a pliant skirt suspended from the outer side of the circular edge portion of said frame and projecting outwardly and downwardly around the exposed edge portion of said unit in protecting relation thereto and normally spaced therefrom but adapted to be moved into contact therewith by striking against an exterior object, said skirt having a soft rubber shock absorbing outer portion opposed to said unit and having an inner unit coacting surface portion of a nature which offers less frictional resistance to a turning of the unit in coaction therewith than would a soft rubber material.

2. In a machine of the class described, a frame having a circular edge portion, a work unit rotatable in a horizontal plane beneath said frame and having an unyielding edge portion projecting outwardly in exposed position beneath and beyond the said circular edge portion of the frame, and a pliant skirt suspended from the circular edge portion of said frame without the exposed edge portion of said unit and having an outer shock absorbing surface of rubber-like material and an inner surface of fabric which latter offers less frictional resistance to a turning of the unit in coaction therewith than would a rubber-like material, said skirt including a restricted neck portion which is fixed to the outer edge portion of said frame, and an expanded depending portion which extends outwardly and downwardly around the exposed edge portion of said unit in protecting relation thereto and normally spaced therefrom and adapted to be moved into contact therewith by striking against an exterior object.

HARRY L. MYERS.