June 19, 1951 R. CALABRESE 2,557,216

FLOOR SURFACING MACHINE

Filed March 13, 1947 2 Sheets-Sheet 1

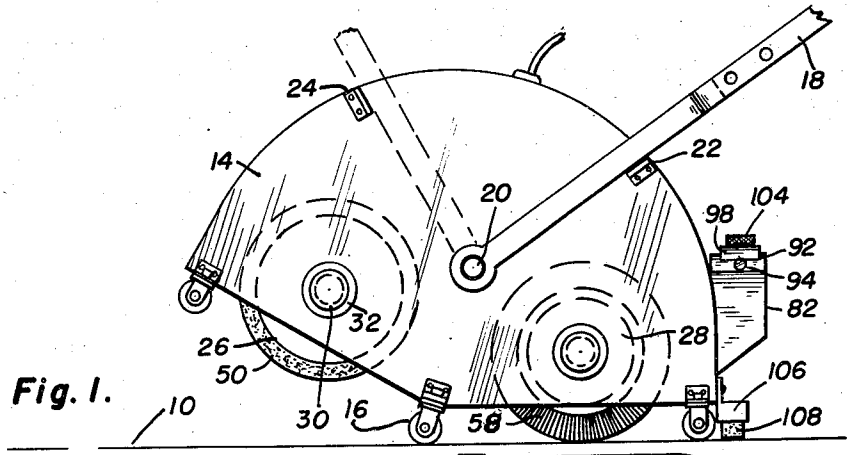


Fig. 1.

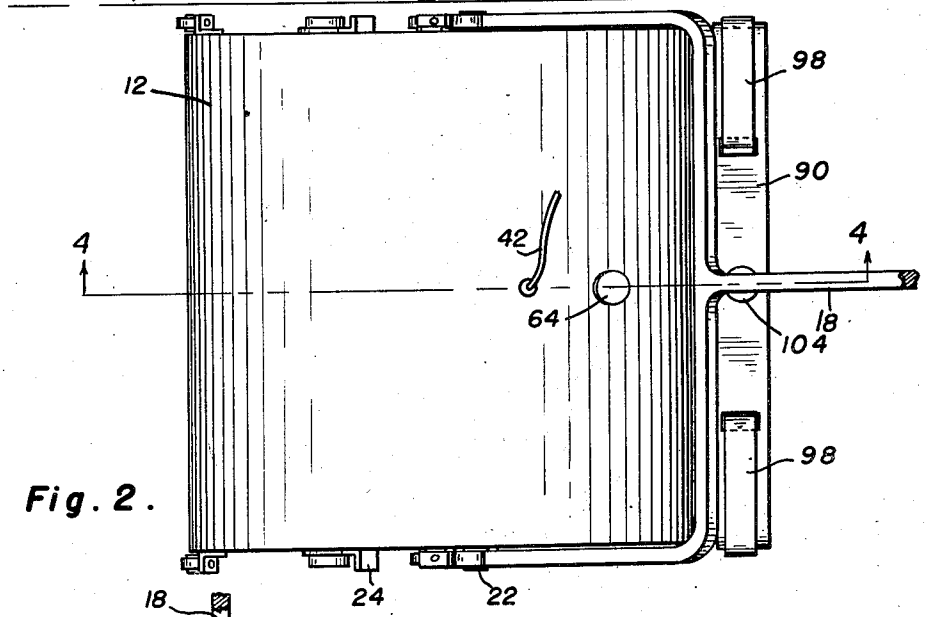


Fig. 2.

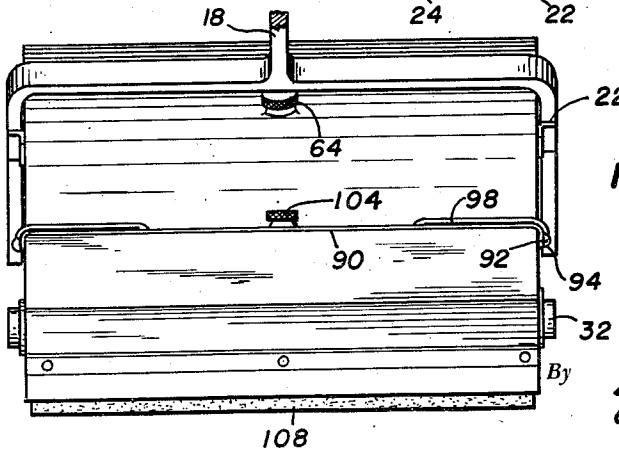


Fig. 3.

Inventor

Rocco Calabrese

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

June 19, 1951 R. CALABRESE 2,557,216

FLOOR SURFACING MACHINE

Filed March 13, 1947 2 Sheets-Sheet 2

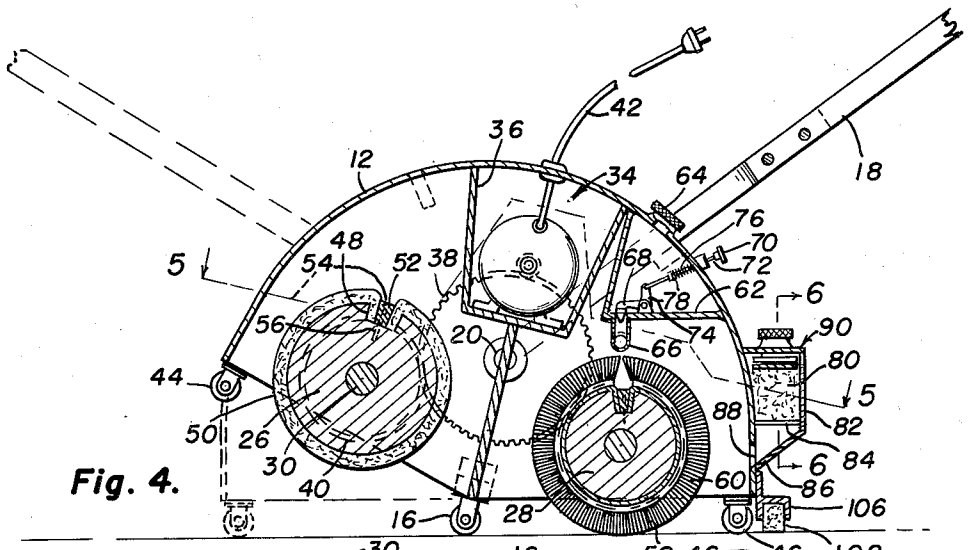


Fig. 4.

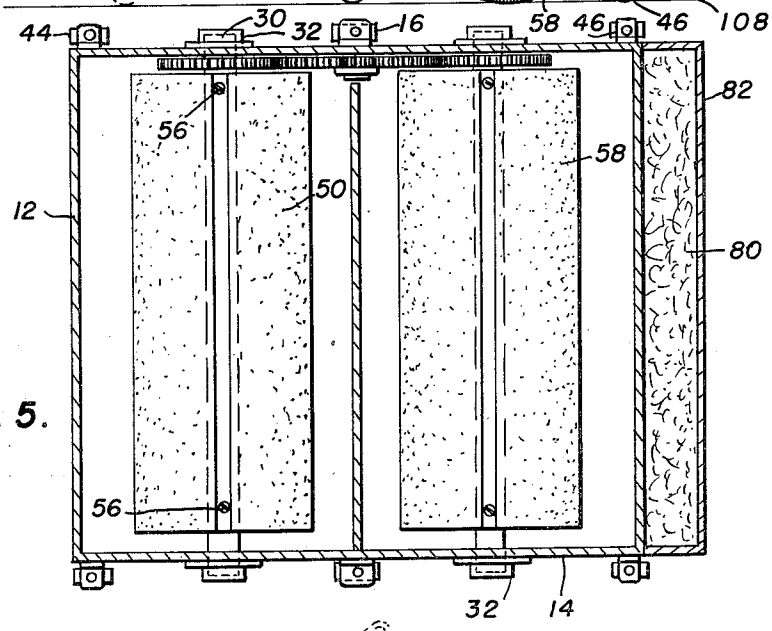


Fig. 5.

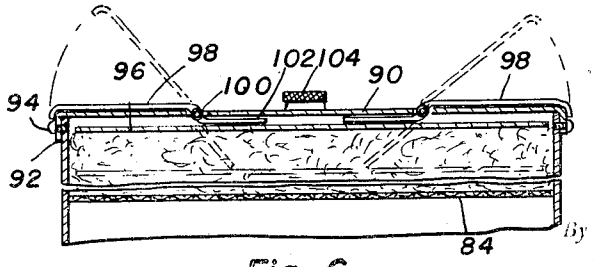


Fig. 6.

Inventor

Rocco Calabrese

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Patented June 19, 1951 2,557,216

UNITED STATES PATENT OFFICE

2,557,216

FLOOR SURFACING MACHINE

Rocco Calabrese, Raritan, N. J.

Application March 13, 1947, Serial No. 734,289

5 Claims. (Cl. 15—52)

1

This invention relates generally to floor surfacing machines, and more particularly to a combination floor washing, waxing and polishing machine comprising an open bottomed casing having the two halves of each of the lower edges of the end walls thereof disposed outwardly at an obtuse angle less than 180°, the device being equipped with casters and tiltable by means of a handle so that a pair of rollers equipped in a novel manner with floor-contacting coverings, may be made to selectively contact the floor, the machine including power means to rotate the rollers, together with a tank for containing fluid contents controllably distributable upon one of the rollers, with means to wipe the floor and to absorb excess wash water, which wash water may be expelled from the absorbent material used in the device by the operation of conveniently located levers.

It is a primary object of this invention to provide a machine of this character which may be used for a variety of purposes related to the cleaning and surfacing of floors.

It is another object of this invention to provide a device which may be extremely simple to adapt for different uses, by simply moving the handle of the machine to the opposite side thereof;

Another object of this invention is to provide simple and convenient means for expelling excess wash water which has been absorbed during the operation of the machine, this water-expelling means being effective in adapting the machine for rinsing the floor.

And another object of this invention is to provide a combination device of this character which may be used for waxing and polishing, as well as washing and rinsing a floor.

And a last object to be specifically mentioned is to provide a machine of this character which is relatively inexpensive and practicable to manufacture, which is extremely simple and convenient to use, and which will give generally efficient and durable service.

With these and other objects definitely in view, this invention resides in certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings which form a material part of this application, and in which:

Figure 1 is a side elevational view of this machine, with the handle portion being broken away to conserve space;

2

Figure 2 is a top plan view of the structure shown in Figure 1;

Figure 3 is a front elevational view of this machine;

Figure 4 is a transverse vertical sectional view of the machine, taken on the line 4—4 in Figure 2;

Figure 5 is a horizontal sectional view of this machine taken on the irregular section line 5—5 in Figure 4; and,

Figure 6 is a vertical sectional view, taken on the section line 6—6 in Figure 4.

Similar characters of reference designate similar or identical parts and portions throughout the specification and throughout the several views of the drawings.

Referring now to the drawings in detail, which drawings illustrate one preferred embodiment of this invention, it will be noted that the numeral 10 designates the floor upon which this machine is adapted to be used and that the casing 12 of the machine is substantially semi-cylindrical in shape, having end walls 14. This casing is open bottomed and the casing and side walls are cut away on one side of the longitudinal axis of the casing so that the angles between the two halves of the lower edges of the end walls of the casing are obtuse.

A pair of casters 16 are secured to the end walls at points colinear with the longitudinal axis of the semi-cylindrical casing, and a handle 18 is pivotally secured substantially centrally of each of the said end walls, the handle being bifurcated and terminally straddling the machine, pivot pins 20 being secured to the side walls in any suitable manner. A pair of bracket members 22 and 24 are secured on the end walls, as illustrated in Figure 1, to limit the movement of the handle 18.

From the foregoing, it will be understood how the movement of the handle 18 to the limiting positions abutting the brackets 22 and 24 will be effected in tilting the casing about the casters 16.

A pair of rollers 26 and 28 are provided with terminal journals 30 which are mounted in suitable bearings 32 mounted in any suitable manner on the end walls of the casing, these rollers being thereby rotatively located in parallel spaced relation on opposite sides of the longitudinal axis of the casing. It is preferred that these rollers be mounted approximately midway of the length of each half of the lower edges of the end plates, in order to simplify the structure of the machine. A prime mover, generally represented by the numeral 34 is mounted on the brackets 36 se-

cured in the upper portion of the casing 12, and this prime mover is equipped with suitable reduction gears, terminating in the gear 38 which is rotatively mounted on a shaft supported terminally on the end plates of the casing, and adapted to simultaneously engage gear wheels mounted on the rollers 26 and 28, these gear wheels being indicated by the dotted lines 40 on one of the rollers 26. When the prime mover 34 is an electric motor, electric leads 42 will be provided and a suitable complement of a relatively long flexible cable and switch means will be used.

Pairs of casters 44 and 46 are secured adjacent the corners of the casing 12, and these casters will, of course, contact the floor when the device is used, one pair of casters being inoperative while the other pair of casters is in contact with the floor.

The roller 26 is illustrated as adapted for polishing a floor, while the roller 28 is shown as adapted for washing the floor and for certain other uses, and it will be noted that each of these rollers is longitudinally slotted as at 48. The roller 26 is shown equipped with a covering of felt or similar material 50, the felt being of rectangular form prior to its application to the roller and the ends 52 thereof being depressed into the longitudinal slots 48, while an elongated wedge 54 is inserted in clamping relation with the ends 52 of the felt. A pair of screws 56 may be used to retain this elongated wedge 54 in proper clamping position.

This simple structure, as recited in the immediately preceding paragraph, allows the removal and replacement of the roller coverage without removal of the rollers from the casing, it being only necessary to turn the roller so that the screws 56 are disposed towards the open side of the casing, whereupon the wedge 54 may be removed and the felt 50 replaced.

Similar structure may be used for the brush 58, illustrated as applied to the roller 28, in the case of the brush there being a rectangular shaped strap member provided with bristle members on one side thereof, the ends of the strap member, illustrated at 60, being secured by a wedge similar to that illustrated at 54.

A tank 62 is secured interiorly of the casing 12, and disposed above the roller 28, the tank having an inlet port 64 and an outlet 66 of T-form, adapted to distribute the contents of the tank 62 along the entire length of the brush 58. The fluid contained in the tank 62 will ordinarily be water, soap solution or liquid wax, and the flow of the fluid from the tank is controlled by a valve 68 which may be manually operated by the hand grip 70. The hand grip 70 is secured to the outer end of a rod 72, the inner end of this rod being pivotally secured to a bell crank 74 and the valve 68 is secured to one arm of this bell crank, while the bell crank is pivotally secured to the base of the tank 62. In order that the valve 68 is biased into closed position, there is provided a helical spring 76 which is compressed between a shoulder 78 on the rod 72 and the side of the casing 12.

Absorbent material 80 is provided in a container 82, of box-like form, secured on one side of the casing 12 and disposed longitudinally thereof. It will be noted that the floor of this container 82 is foraminous, being represented as comprising a screen 84 and the container is provided with a sloping lower plate of baffle character, as represented at 86, while the adjacent portion of the casing 12 is apertured as at 88,

allowing excess wash water to enter the container for absorption by the absorbent material 80. The lid 90 of the container 82 is provided with depending end flanges 92, to facilitate the securement of this lid to the container, by screws 94. The absorbent material 80 will preferably be of definitely elastic character and a floating pressure plate 96 of rectangular form of a length and width slightly less than the inside dimensions of the container 82 is placed on top of this absorbent material, being depressible by a pair of levers 98 which are offset at points intermediate the ends thereof adjacent the pivotal attachment pins 100 which are used to secure these levers to the container top 90. If reference is had to Figure 6, it will be seen how the inner offset ends 102 of each of these levers is adapted to contact the top of the floating plate 96, the outer ends of the levers being adapted to lie flat upon the top 90 when the plate 96 is in non-depressed position and are raised into the positions indicated in dash lines in Figure 6 when it is desired to depress the plate, thus compressing the absorbent material 80 to expell the moisture therefrom. In order to make the top 90 with the attached levers easily removable, a hand grip 104 is provided centrally of the top 90.

On the lower edge of the casing 12, adjacent the brush 58, a channel member 106 is provided for the attachment of a wiper blade 108, this wiper blade being ordinarily of sufficiently deformable material to allow the attachment thereof in the journal member 106 by simply pressing the same into the channel member. This wiper blade 108 extends longitudinally of the casing 12 and depends a distance approximately equal to the height of the roller or caster 46. The operation of this machine will be clearly understood from a consideration of the foregoing description of the mechanical details thereof, taken in connection with the above recitation of the objects sought to be achieved by this invention but, in recapitulation, it may be noted that the polishing felt 50 or the brush 58 may be made to selectively or alternatively contact the floor while the prime mover 34 causes relatively rapid rotation of the same. When the device is used for polishing, without the addition of wax, the valve 68 will, of course, be closed and the handle will be disposed as to the left in Figure 4. When the device is to be used for waxing floors, a liquid wax may be placed in the tank 62 and the valve 68 intermittently operated or opened to allow application of the wax to the brush 58, the final polishing being accomplished by either the brush 58 or the felt 50 with the valve 68 in closed position.

When the device is to be used for washing, water or soap solution is placed in the tank 62 and the valve 68 intermittently opened. In this connection it will be noted that absorption by the absorbent material 80 may be allowed or prevented by the manipulation of the levers 98, there being no absorption when the levers are in raised position and the plate 96 depressed into position compressing the absorbent material, absorption being accomplished by disposing the levers into the positions shown in full lines in Figure 6. The action of the viper blade 108 is clearly suggested by the name given thereto, but it should be noted that this wiper blade is particularly useful during rinsing operations, and it may be further noted that during such rinsing operations the levers 98 will be in elevated position so that the absorbent material will be compressed, since

it is of no benefit to have the rinsing water absorbed.

Many and various useful modifications may be made in the exact form and proportioning of the various elements of this invention, all within the scope and spirit thereof and though there has been shown a particular embodiment of this invention, this application is not limited to this particular embodiment, but it is desired to include in the scope of this invention the construction, combination and arrangement of parts and portions substantially as set forth in the appended claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. A floor surfacing machine comprising a hollow casing having end walls of obtuse angled sectoral shape, a pair of casters secured to said walls substantially at the axis of the casing, a pair of rollers within said casing and terminally secured to said end walls on opposite sides of said axis, a handle pivoted on said casing whereby said casing may be tilted to allow said rollers to selectively engage said floor, one of said coverings being of brush form, and a body of absorbent material mounted adjacent said one of said coverings, said absorbent material being out of contact with the floor and removably retained in a container on said casing, and said casing having an aperture adjacent said container.

2. A machine according to claim 1 and including means to compress said absorbent material.

3. A floor surfacing machine comprising a hollow casing having end walls of obtuse angled sectoral shape, a pair of casters secured to said walls substantially at the axis of the casing, a pair of rollers within said casing and terminally secured to said walls on opposite sides of said axis, a handle pivoted on said casing whereby said casing may be tilted to allow said rollers to selectively engage said floors, one of said rollers being of

brush form, and a body of absorbent material mounted adjacent said one of said rollers, said absorbent material being out of contact with the floor and removably retained in a container on said casing, and said casing having an aperture adjacent said container, said container having a foraminous panel adjacent said aperture to admit water swept upwardly by said one of said rollers into the container for absorption by said material, a floating pressure plate on top of said material, and levers pivoted on said container to depress said plate for compression of said material to expel moisture therefrom.

4. A machine according to claim 3 and wherein said panel is the floor of said container, and a baffle beneath said container and disposed outwardly of said aperture to deflect said water toward said foraminous floor panel.

5. A machine according to claim 3 and wherein said container has a removable top panel, and said levers are mounted on said top panel.

ROCCO CALABRESE.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
701,985	Ackerman	June 10, 1902
920,136	Henning	May 4, 1909
990,775	Reid	Apr. 25, 1911
1,046,742	De Matteis	Dec. 10, 1912
1,480,662	Caine	Jan. 15, 1924
1,581,824	Amsel	Apr. 20, 1926
1,791,812	Harrison	Feb. 10, 1931
2,243,985	Sparklin	June 3, 1941

FOREIGN PATENTS

Number	Country	Date
111,317	Switzerland	Jan. 2, 1926