April 20, 1926. 1,581,824

H. AMSEL ET AL

APPARATUS FOR SCRUBBING, MOPPING, AND POLISHING FLOORS

Filed Dec. 7, 1925 2 Sheets-Sheet 1

Fig. 1.

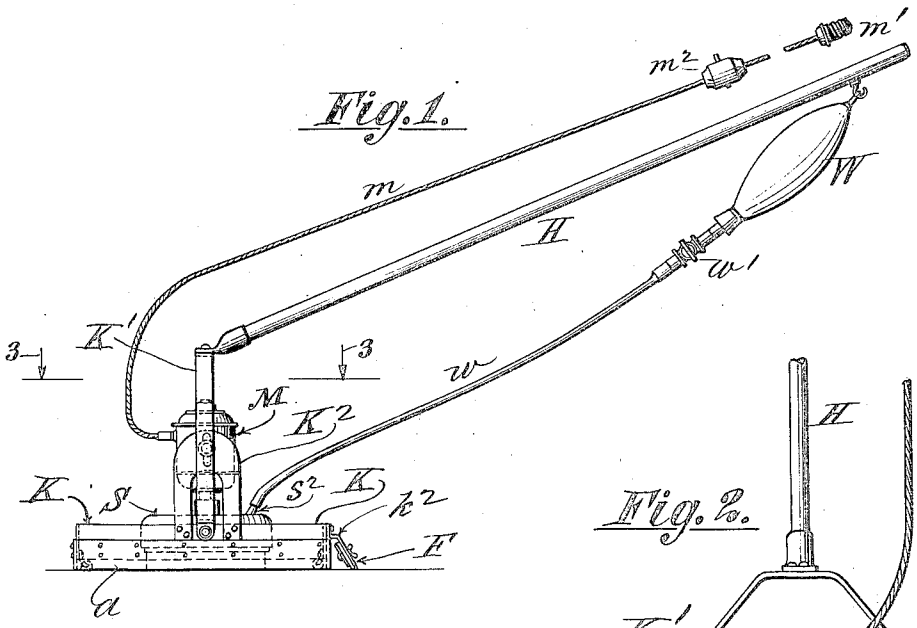


Fig. 2.

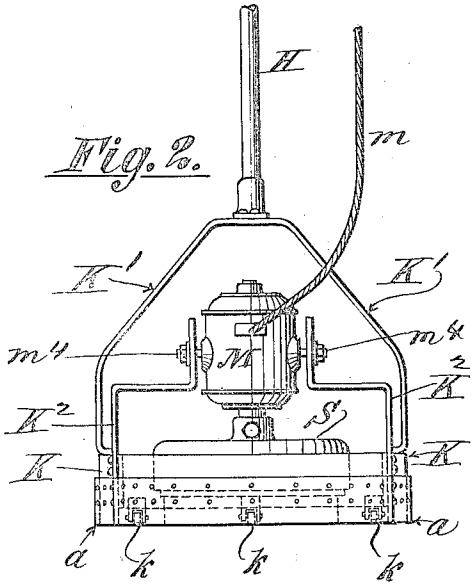


Fig. 3.

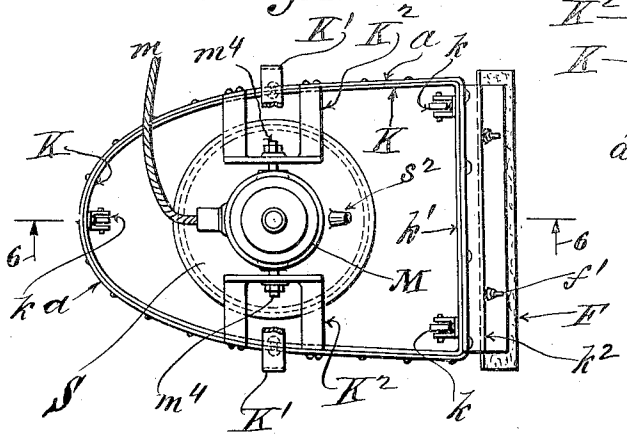


Fig. 5.

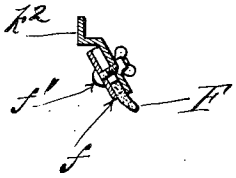
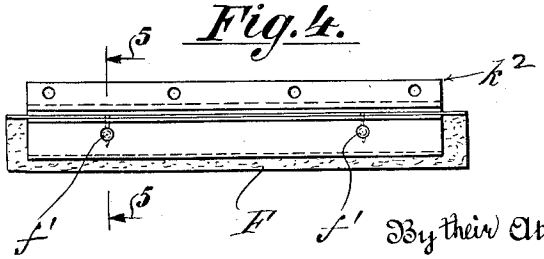


Fig. 4.



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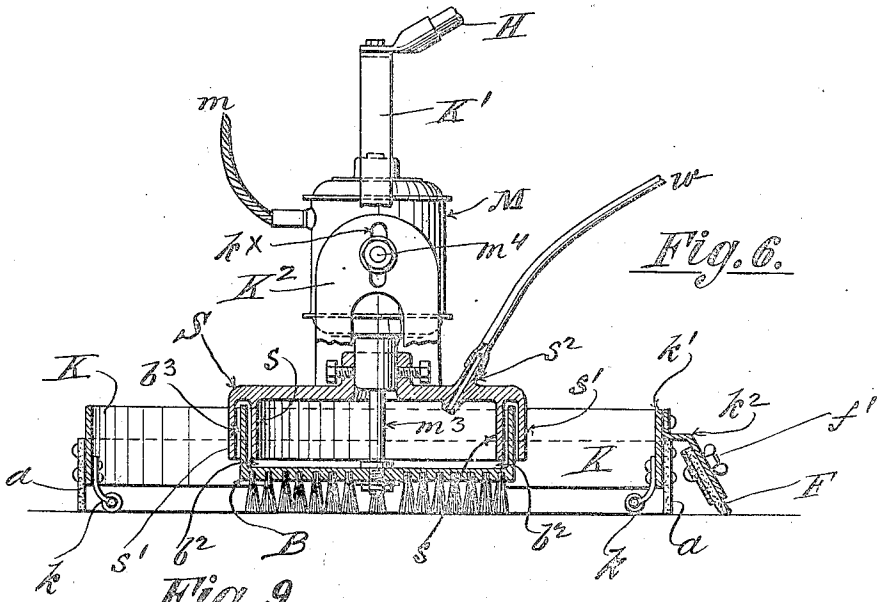


Fig. 6.

Fig. 9.

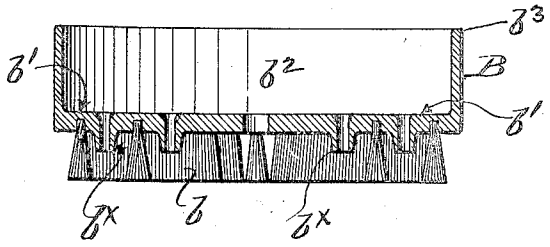
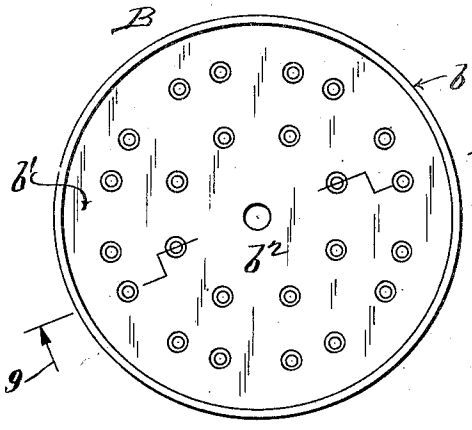
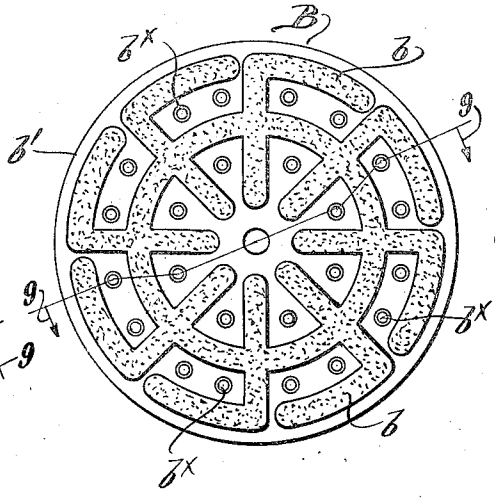


Fig. 7.

Fig. 8.





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UNITED STATES PATENT OFFICE.

HENRY AMSEL AND BARNETT M. WARREN, OF NEW YORK, N. Y.

APPARATUS FOR SCRUBBING, MOPPING, AND POLISHING FLOORS.

Application filed December 7, 1925. Serial No. 73,602.

To all whom it may concern:

Be it known that we, HENRY AMSEL and BARNETT M. WARREN, both citizens of the United States, and residents of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Scrubbing, Mopping, and Polishing Floors, of which the following is a specification, sufficient to enable those skilled in the art to which the invention appertains to utilize the same.

The object of our invention is to afford simple but effective means whereby the surfaces of floors, etc., may be conveniently and expeditiously cleaned and polished with a minimum expenditure of time and effort in manipulation,—the invention consisting in the specific combination and arrangement of parts and devices herein described and claimed, whereby hand labor is practically eliminated as compared with past methods, and other advantageous results attained as hereinafter fully set forth.

In the accompanying drawings we illustrate a practical embodiment of the essential features of our invention, in apparatus adapted to both washing and polishing of floor surfaces, although we do not limit ourselves to the identical form and construction of parts shown herein by way of exemplification, since changes may be made in minor details, and equivalent mechanical expedients resorted to, with like results, and without departing from the spirit and intent of our invention in this respect.

With this understanding:—

Fig. 1, represents an elevation of the left side of our combined floor scrubbing, mopping and polishing apparatus;

Fig. 2, is a front elevation thereof, upon a larger scale;

Fig. 3, is a plan thereof, upon the same scale as Fig. 2, and taken upon plane of line 3—3, Fig. 1;

Fig. 4, is an elevation in detail, and upon a larger scale and detached, of the inner side of the mop;

Fig. 5, is a transverse section taken upon plane of line 5—5, Fig. 4;

Fig. 6, is a central vertical sectional elevation, taken upon general plane of line 6—6, Fig. 3, but upon a larger scale, and broken away in part;

Fig. 7, is a plan or top view of the cylindrical brush member, detached;

Fig. 8, is a view of the under side thereof;

Fig. 9, is a section thereof taken upon plane of line 9—9, Figs. 7 and 8.

What may be designated as the basic support of our apparatus is the carriage frame K, mounted upon a plurality of rollers k, k, and preferably, although not necessarily, of ovate general horizontal configuration with a truncated rear portion k', as shown more particularly in Fig. 3, of the drawings. The brackets on which the rollers k, k, are journalled support the carriage frame K, a sufficient distance above the floor F, to afford ample clearance, the intervening circumferential space being closed by an apron a, of elastic resilient rubber, or equivalent material, adapted to effect a contactual seal with the floor surface and function as a dam for the retention of water within the area of the carriage frame F, as may be understood by reference more particularly to Figs. 3 and 6, of the drawings.

A bifurcated brace K′, rigidly attached at its ends to the sides of the carriage frame K, has rigidly attached to its apex the manipulative handle H, which projects rearward and upward at a convenient angle, as indicated more particularly in Fig. 1, of the drawings.

Also rigidly attached to the side members of the carriage frame K, are bifurcated upright brackets K^2, K^2, between which an electric motor M, is positioned, as illustrated more particularly in Figs. 2 and 3, of the drawings, in which m, represents the flexible electric circuit cable provided with the socket m', and switch m^2.

To the lower extremity of the vertical shaft m^3, (Fig. 6) of the motor M, is rigidly secured a rotative brush B, preferably of circular configuration, all the bristles of which contact simultaneously with the floor surface, and indirectly constitute the means of support for the electric motor M, which latter thus functions also as a weight utilized in insuring a substantial and effective contactual engagement of the brush bristles with the surface to be treated. To this end, trunnion studs m^4, m^4, on opposite sides of the motor M, protrude through vertical slots k^x, (one of which is shown in Fig. 6) formed for the purpose in the upper portions of the afore-

said upright brackets K^2, K^2, of the carriage frame K, thus allowing the motor to adapt itself to stress and inequalities of floor surface, etc., in use. The full broad area of contact of the bristles b, of our rotary disc brush B, is a distinctive feature of our invention as compared with the limited peripheral contact of the horizontal axis cylindrical brushes heretofore known and used in the art, which simply roll over the surface treated, whereas in our form of brush the contact of the bristles is continuous, and the motion horizontal as related to its vertical axis, thus utilizing the whole of the bristle area of the brush.

What may be designated as the back b', of the brush B, constitutes the floor of a receptacle b^2, the annular flange b^3, forming the wall thereof; and this floor b', is perforated and formed with extraneously protuberant spouts b^x, which are funnel-shaped internally to facilitate the discharge of water from said receptacle b^2, to the spaces between the bristles b, as will be understood by reference more particularly to Figs. 8 and 9, of the drawings.

S, is a splash hood rigidly attached to the lower portion of the motor M, as shown more particularly in Fig. 6, of the drawings, and formed with concentric flanges s, s', (Fig. 6,) which straddle the annular wall b^3, of the brush receptacle b^2, and thereby confine the water thereto and prevent external splash. Said splash hood S, is also formed with a nipple and duct s^2, for the attachment of a flexible hose w, connected with a container W, for water to be supplied to the brush receptacle b^2, the flow being controlled by a cock w', said container being suspended on the manipulative handle H, as indicated in Fig. 1, of the drawings.

On the straight rear portion k', of the carriage frame K, is mounted a follower mop F, for the purpose of absorbing moisture remaining adherent to the floor surface after the passage of the apron a. This follower mop F, consists of a pad of felt or other suitable absorbent material secured by a clamp plate f, and screws f' to a bracket k^2, rigidly attached to said rear member k', of the carriage frame K.

When our apparatus is to be used for floor polishing the supply of water is of course omitted; and the mop F, may be removed temporarily from its bracket k^2.

The manipulation and control of our apparatus is simple and convenient through the medium of the handle H, and connections, and may be effected by a person in upright position, thereby obviating the drudgery and discomfort incidental to scrubbing, mopping or polishing by hand as heretofore.

While suitable for domestic use also, our apparatus is especially adapted to the requirements of public buildings, hostelries, factories, and office buildings and other localities having large floor areas to be treated; and the results attained are much more effective and satisfactory than can be attained by hand labor, while the resultant economy of time and labor incidental to its use is an important factor of utility.

What we claim as our invention and desire to secure by Letters Patent, is:—

1. In a floor scrubbing, mopping and polishing apparatus, a carriage frame, a motor mounted thereon for freedom of movement in a vertical direction relative to the frame within fixed limits, and a brush carried by the rotatable shaft of the motor.

2. In a floor scrubbing, mopping and polishing apparatus, a carriage, a motor mounted thereon for freedom of movement in a vertical direction relative to the frame, and a brush carried by the rotatable shaft of the motor, and interfitting portions on the motor casing and brush allowing of relative freedom of movement therebetween and constituting a combined water receptacle and splash preventing means.

3. In floor scrubbing, mopping and polishing apparatus, the combination of a carriage frame, a floor contacting apron extending around said frame, an electric motor mounted on said frame by means which permits limited vertical movement thereon, a rotary disc brush mounted on the lower extremity of the shaft of the motor, the disc of said brush being perforated and formed with an upwardly extending peripheral flange constituting a water receptacle, a splash hood affixed to the lower portion of the motor casing and formed with concentric flanges which straddle the said flange on the brush disc, and means for introducing a liquid into said receptacle through said splash hood.

4. In floor scrubbing, mopping and polishing apparatus, a carriage frame, a floor contacting apron extending around said frame, an electric motor mounted on said frame for freedom of vertical movement relative to said frame, a rotary disc brush mounted on the lower extremity of the shaft of the motor, the disc of said brush being perforated and being formed with an upwardly extending peripheral flange constituting therewith a liquid receptacle, a splash hood affixed to the lower portion of the motor casing and formed with concentric flanges which straddle said flange of the brush disc, means for introducing a liquid into said receptacle through said splash hood, and a follower mop mounted on the rear of said carriage frame to the rear of and outside of said apron.

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