Nov. 5, 1940. G. W. FOUKE 2,220,401

DEVICE FOR CLEANING SURFACES

Filed June 16, 1938

FIG. 1

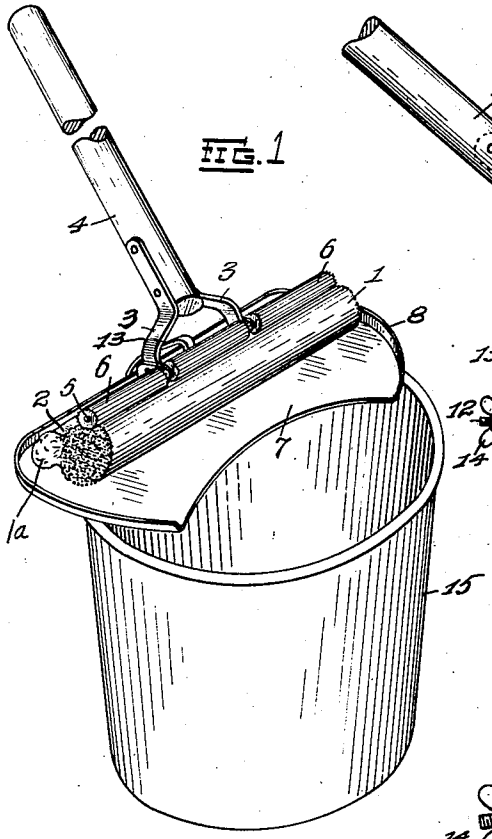


FIG. 2.

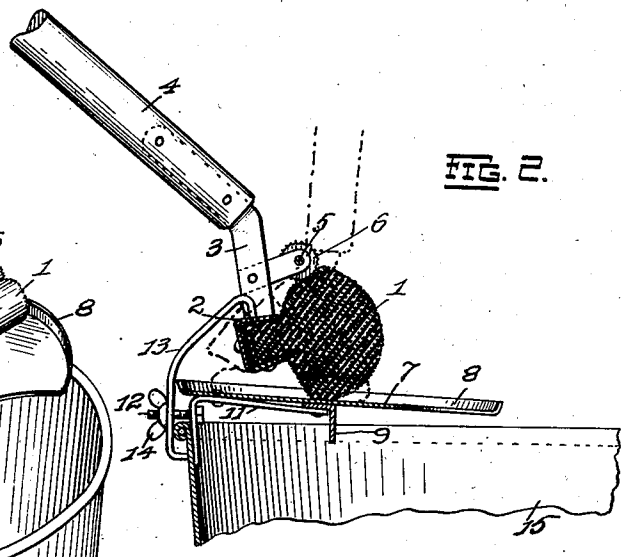


FIG. 6.

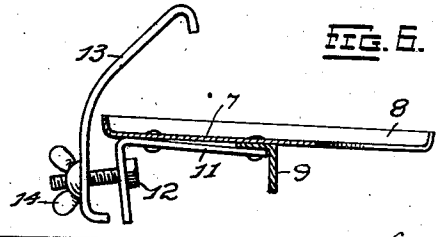


FIG. 3.

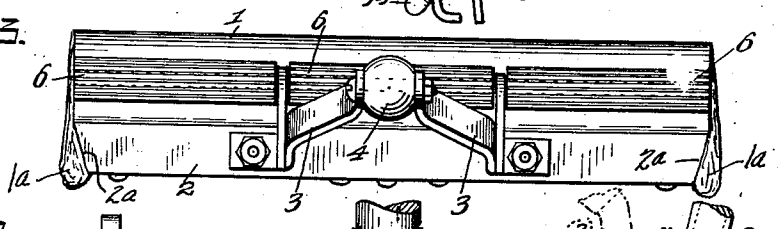


FIG. 7

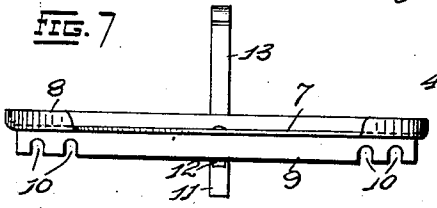


FIG. 5.

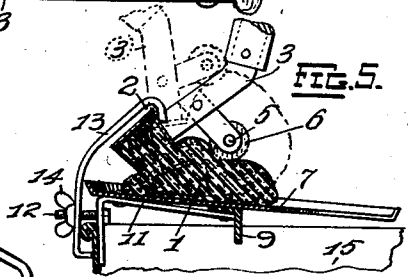
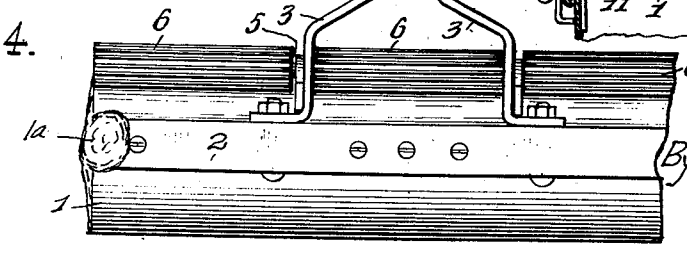


FIG. 4.



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UNITED STATES PATENT OFFICE

2,220,401

DEVICE FOR CLEANING SURFACES

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Application June 16, 1938, Serial No. 213,960

3 Claims. (Cl. 15—260)

This invention relates to devices for cleaning surfaces such as floors, windows, walls, etc., and consists particularly in novel means for expelling liquid from the cleaning part of the device after use.

The so-called self-wringing mops previously in use have utilized swabs of rags, yarn, or other fibrous, absorbent material and various bulky wringers or twisting mechanisms have been provided, these being of such heavy, bulky or complicated construction as to be impractical for use by the housewife, or being too delicate, or otherwise unsuited for the intended service. In addition, mops having rag or fibrous swabs large enough to hold sufficient cleaning water cannot be easily controlled in a manner to prevent slopping of dirty water against adjacent walls and furniture.

Accordingly, it is an object of the present invention to provide novel, simplified means for squeezing the soiled liquid from a scrubbing mop.

Another object is to provide a self-squeezing mop device of light, simple, durable construction which may be used with an ordinary galvanized bucket.

Another object is to provide a mop of the above type equipped with a self-wringing or squeezing device which is light and simple in construction, though durable, which occupies a relatively small space and which has practically no projections in position to strike and damage wall moldings and furniture.

Still another object is to provide a mop of the above type having a pliable cleaning part of relatively small size but constructed of material adapted to retain a relatively large quantity of cleaning water and to expel the same when pressure is applied thereto.

These objects and other more detailed objects hereafter appearing are attained substantially by the devices illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view showing a form of the novel mop device assembled with a common bucket or other receptacle.

Fig. 2 is a vertical section showing a portion of the structure in Fig. 1.

Fig. 3 is a side view of the device looking along the handle.

Fig. 4 is a top view of the device.

Fig. 5 is a view similar to Fig. 2, but showing the handle and squeezing mechanism swung around so as to expel cleaning liquid from the absorbent member.

Fig. 6 is a side view and section showing the separable part of the squeezing mechanism alone.

Fig. 7 is a view of the structure in Fig. 6 taken from the front side thereof.

In Figs. 1–7, inclusive, I have shown a form of the device in which a portion of the squeezing mechanism is separately formed and arranged for attachment to a bucket or other receptacle. The cleaning device or mop, itself, comprises an elongated head or cleaning portion having a part 1 of pliable, absorbent material and a three-sided metal stiffening member 2 extending along the top or back thereof and firmly secured thereto. I have found that the porous, rubber material known in the trade as "Air Foam" is particularly suited for this purpose because of its high absorbent properties, its durability and smoothness, and its ability to retain a large quantity of liquid without substantial spilling. Projecting upwardly at an angle from one side of stiffening member 2 are brackets or straps 3 to which is secured a handle 4 for propelling the device over the surface to be cleaned. Projecting laterally from each strap 3 and rigidly secured thereto is a small arm 4, these arms carrying, at their outer ends, a rod 5 jacketed as at 6 with relatively thick cylinders of rubber or other soft material. Stiffening channel 2 is recessed at each end as at 2a, and portions 1a of the rubber project therethrough to form protecting bumpers.

The separate squeezing mechanism comprises a sheet metal plate 7 having an upward flange 8 extending partially therearound and a depending flange 9 provided with spaced slots or recesses 10. Secured to the bottom of plate 7 is an angle strip 11, carrying a threaded bolt 12. Carried on bolt 12 is a combination bracket and fulcrum element 13 secured in position by a wing nut 14. Parts 11 and 13 form a clamp for receiving the edge of a common bucket 15 therebetween and nut 14 draws the clamping members tightly into position, as shown in Fig. 2. Slots 10 in the under edge of depending flange 9 receive spaced portions of the upper edge of the bucket for stabilizing the plate. A plurality of these slots are provided for cooperating with buckets of different sizes. When thus assembled, the upper portion of hook or fulcrum element 13 is spaced slightly above plate 7, as shown.

In order to squeeze liquid from the absorbent cleaning part of the device, stiffening member 2 is inserted between the upper extremity of fulcrum element 13 and plate 7, as shown in Fig. 2. Plate 7 and element 13 then function to hold the cleaning member in position while handle 4 is swung in a clockwise direction about hook

13 as a fulcrum. This causes rubber cylinders 6 on rod 5 to squeeze absorbent member 1 between themselves and plate 7, which functions as a backing structure, to expel liquid from the cleaning part. The expelled liquid drains downwardly and inwardly along plate 7 and drops into the bucket over the unflanged edge thereof. Due to the relatively long lever arm 4 which is grasped by the operator, only relatively light force need be applied thereto.

In each of the forms the rubber cleaning member extends a substantial distance on both sides of the metal stiffening part so as to prevent this part from striking wall moldings and furniture. In addition, the rubber coatings on the squeezing member 5 in the first form, and member 21 in the second form, also form bumpers to prevent marring of walls and furniture legs. Substantial squeezing pressure may be applied to the rubber cleaning member through these soft, squeezing elements without injury to the cleaning member. There is provided a light, easily handled mop device with easily used, sanitary squeezing means.

The device may be modified in various respects as will occur to those skilled in the art and the exclusive use of all such modifications as come within the scope of the appended claims is contemplated.

I claim:

1. A wringer device for mops comprising a backing plate having a squeezing surface for engagement with the mop and a projection on the reverse surface adjacent an edge thereof, a rigid strip having a clamping portion adjacent said projection and a hook-shaped part extending around said edge and over the squeezing surface of said plate, and means for clamping together said projection and the clamping portion of said strip to secure the device to a supporting wall.

2. A wringer device for mops comprising a backing plate having a squeezing surface for engagement with the mop, a projection near an edge of the reverse surface of said plate, a strip element having a hooked part adjacent said squeezing surface and a clamping portion adjacent said projection, and a bolt for drawing together said projection and said clamping portion to secure the device to a supporting wall.

3. A wringer device for mops comprising a backing plate having a squeezing surface for engagement with the mop, recessed structure on the reverse surface of said plate for resting the device at spaced points on the upper edge of a bucket, a bracing strip extending along said reverse surface and bent away from said surface adjacent an edge thereof to form a clamping lug, a separately formed strip having a hook element adjacent said squeezing surface and a portion adjacent said lug, and a bolt for drawing together said lug and said clamping portion of said strip to secure the device to the edge of the bucket.

GEORGE W. FOUKE.