

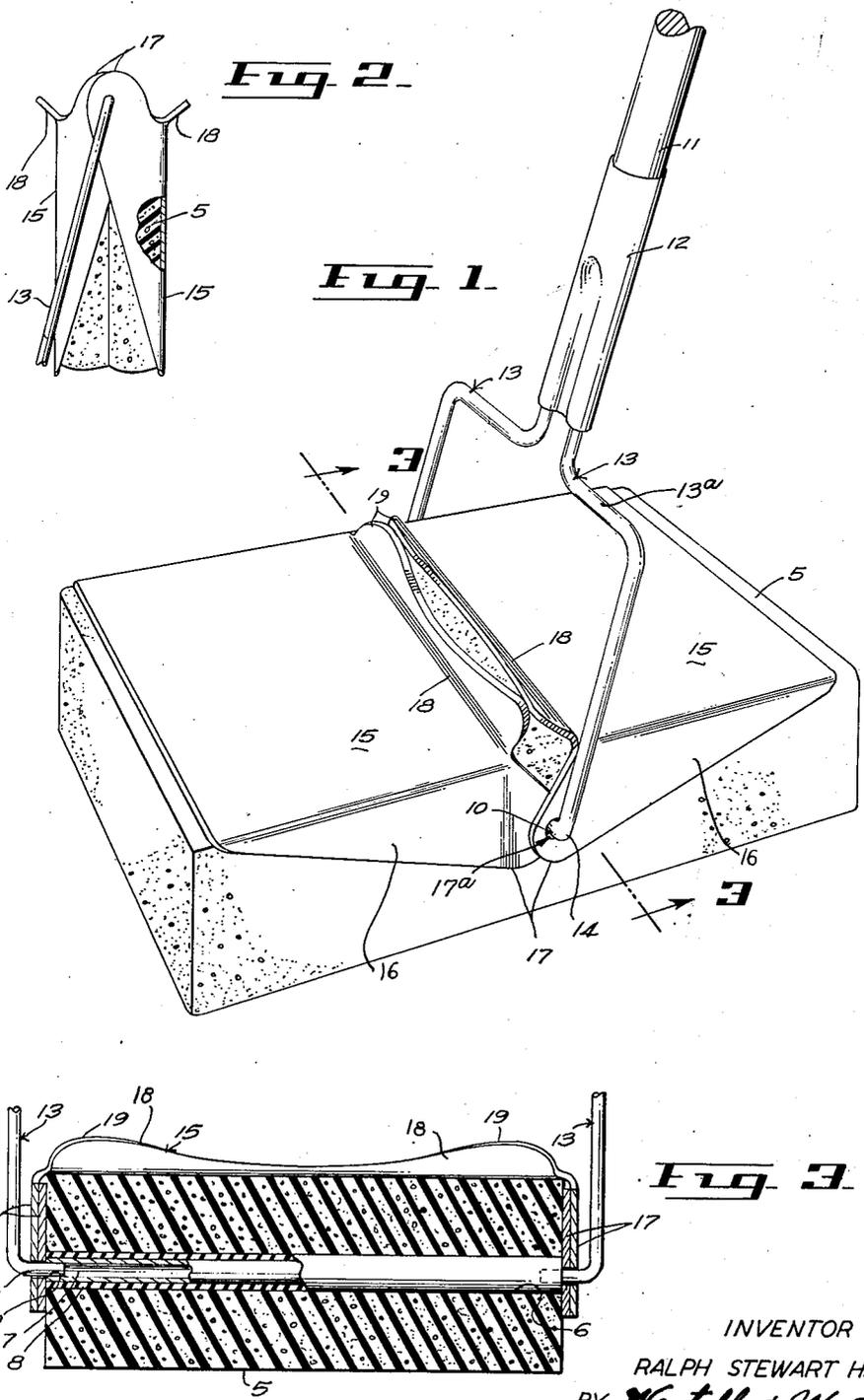
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SPONGE-TYPE MOP WITH TWO-PART HINGED BACKING PLATE

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SPONGE-TYPE MOP WITH TWO-PART HINGED BACKING PLATE

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2 Claims. (Cl. 15-119)

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This invention relates to mops of the type adapted for manual use in cleaning floors, ceilings, walls and the like.

Conventional mops comprise essentially a slidable member composed of water absorbent material and having a surface adapted to be rubbed against the work to induce the friction required to dislodge the dirt. The water may be exuded from the member to coat with soap or detergent contained in or applied to the surface of the member, in response to pressure upon the member. Most effective utility of such devices for cleaning floors and the like requires that they be equipped with long handles and that some means be provided for frequently removing the dirt which tends to accumulate in the absorbent member. This function can best be performed by alternately compressing and releasing for normal expansion the absorbent member in the presence of relatively clean water. Mops of the prior art provide either a structurally separate press or apparatus associated directly with the mop which, upon actuation, is effective to extract the water and permit the ingress of clean water into the absorbent material. The cost of such apparatus is not only exorbitant but is in many instances difficult to manipulate.

It is a principal object of the present invention to provide a block of compressible sponge-like material having a handle pivotally connected thereto by a bail, in combination with a pair of elements pivotally related and associated with the handles to transmit pressure from the latter to the entire upper surface of the block.

Another object hereof is to provide a body of the type referred to, having relatively pivoted clamping elements normally overlying and slidably associated with the upper surface of the body, and adapted for pivotal contraction upon the body to compress the same and exude therefrom water theretofore absorbed during use of the device.

More specifically, an object of the invention is the provision of a backing for the compressible working member comprising a pair of pressure plates which may be pivoted in one direction upon the bail of the handle for relative movement about an axis coincident with the medial plane of the member to compel the latter to fold upon itself in said plane and compresses the member between the plates, in combination with means to resist pivotal movement of the plates in one direction from normal parallel relationship with the working surface of the member so as to transmit thereto pressure from a handle pivotally con-

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ected to the plates during normal utility of the device.

Still another object is to provide a bearing permanently secured in the compressible body to receive in pivotal relationship the bail of the handle whereby the angle between the latter and the working surface of the body may be freely varied so as to permit the application of pressure in the body from different directions while minimizing friction between the bail and body.

Numerous other advantages, such for example, as simplicity of construction, ease of operation, facility in use, and to a very important extent, economy of manufacture, will be apparent to those of skill in the art upon an examination of the following description read in the light of the accompanying drawings, in which:

Fig. 1 is a perspective view of a mop embodying my invention with the handle thereof partially broken away;

Fig. 2 is an end elevation of the device illustrating the parts thereof in their relationship during the operation of folding the absorbent body upon itself to exude water from the latter;

Fig. 3 is a transverse sectional view, taken on line 3-3 of Fig. 1, through the mop assembly depicting particularly the bearings for the handle and the relation of the backing plates.

Referring to the drawings more in detail, the numerals of which indicate similar parts throughout the several views, 5 designates a compressible body composed of sponge or functional equivalent material, adapted to absorb and retain water and from which the water may be expelled incident to compression of the body. The body is preferably rectangular in plan and may vary in thickness as well as in lateral dimensions. Parallel to, and equi-spaced both from the ends and from the top and bottom of the body is a hole 6 which extends completely through the latter above the center thereof. A metal tube 7, encased in a rubber tube 8 is projected through the hole 6, its ends terminating flush with the outsides of the body. The rubber tube 8 is secured permanently by an adhesive in the body so as to prevent both rotary and axial movement therebetween. It will thus be appreciated that the metal tube 7 is permanently installed in the body, its ends forming bearings 10 for a handle assembly about to be described.

The handle assembly comprises a rod 11 having a ferrule 12 clamped to its lower mop-engaging end. The ferrule 12 projects beyond the end of the rod 11 to accommodate therein corresponding ends of a pair of wire rods 13 upon

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which the ferrule 12 is clamped, so as to maintain the rod handle 11 and the wire rods 13 in rigid relationship. Externally of the ferrule, the wire rods 13 are bent laterally in opposite directions as at 13a so as to span the width of the body 5, and then downwardly to flank the sides of the latter. The ends of the rods 13 are bent at right angles to form spindles 14 which project pivotally into the bearings 10 formed by the opposite ends of the tube 7. It will thus be observed that pressure applied to the handle will be transmitted through the bail formed by the wire rods 13 and the tube 7, to the body.

In order to transmit pressure through the handle uniformly to the entire upper surface of the body, I provide a pair of backing plates 15 overlying opposite ends, respectively, of the upper surface of the body, each plate 15 being formed with depending lateral flanges 16 for performing the multiple functions of reinforcing the intermediate portions of the plates, respectively, of resisting lateral displacement of the plates with respect to the body, and to provide a mounting for means about to be described by which the plates are pivotally associated with the body. Forming extensions of flanges 16 of each plate 15 are ears 17 having openings 17a therein which are pivoted upon the spindles 14, respectively, comprising ends of the wire rods 13. The nearest adjacent edges of the respective plates 15 are inclined obliquely upward as indicated at 18 with the upper edges thereof abutting one another at two points as at 19 adjacent opposite longitudinal edges of the body when the plates are disposed in normal parallel relationship with the upper surface of the body, as illustrated in Fig. 1. As the points 19 at which the oblique edges 18 of the plates 15 contact one another, are located substantially above the bearings 10 for the bail 13—13, the abutting edges of the plates obviate upward movement of the outer ends of the plates about the common axis of the spindles. As the plates contact one another at spaced points, any tendency toward rocking action therebetween incident to variation in the application of pressure to the respective sides of the device through the handle 11, is prevented. The plates terminate short of the ends of the body when they are in normal relationship as seen in Fig. 1, so as to permit the sponge body to be moved over a floor closely against the base board without scratching the latter.

The members 13a of the bail are displaced from the points of pivoting the bail to the body, a distance less than the distance between said pivot points and the ends of the body, whereby they will contact one of the pressure plates when the handle is pivoted onto the body, as seen in Fig. 2. Thus, the handle may be utilized to apply pressure to the plate so engaged in compressing the body for expulsion of water therefrom as will appear.

The operation and utility of the device is further described as follows: With the body of absorbent material suspended from the handle 11 and bail 13—13 in substantially balanced position, the body may be easily manipulated in washing walls, floors, ceilings or the like. The body is first immersed in water and if desired, soap or detergent applied to the working surface thereof. The latter surface is then reciprocated upon the area to be cleaned in a manner of the utility of conventional mops. Any pressure applied either directly or obliquely to the working surface of the body through the handle

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11 will be uniformly distributed throughout the body. This result is assured by the immediate transmission of any pressure exerted, to the ears 17 thus tending to buckle the plate assembly in the middle. The abutment of the edges 19 of the oblique ends 18 of the respective plates 15, however, compels the plates to move against the body in parallel relationship and in unison.

An important feature of the device resides in the facility with which the absorbent body 5 may be compressed for extraction of water and dirt therefrom. As the axis of pivoting of the plates 15 extends through the body the folding of the plates 15 compels a corresponding folding of the ends of the body upon themselves, as indicated in Fig. 2. It will be appreciated that by manually pressing the ends of the plates together, the body is compressed so as to quickly and easily extract the water therefrom. Return of the plates to their normal positions permits the sponge-like body 5 to similarly assume its normal form incident to re-absorption of either water or air, thus preparing the body for its next cleaning utility.

Another feature of the device resides in the loose relationship between the plates 15 and the compressible body which permits the upper surface of the latter to slide freely against the under surface of the plates during the folding operation immediately above described. Thus the only stress placed upon the body incident to its compression in the manner indicated is that which results from its being bent about the axis of the bearing tube 7 which operation tends to stretch the portion of the block overhanging the tube, lateral stress, tending to tear or otherwise damage the upper medial portion of the body, due to any adherence between the plates and body, being completely obviated. The breaking or tearing of the components of the body adjacent the tube 7 is prevented by covering the portion with the elastic composition 8 previously referred to.

While it will be appreciated that the specific embodiment illustrated and described represents a presently preferred form of the novel structural features thereof, numerous changes in size, design, shape, number, proportion and relationship of the parts may be made, that the sponge-like body may be composed of natural sponge or any conventional substitute therefor, that any well-known expedients may be utilized to releasably secure the bail 13—13 of the handle in operative engagement with the body and plates 15 and that an auxiliary handle may be provided to induce and control variation in the angular relationship between the compressible body and handle 11 if desired, without departing from the spirit of my invention as defined by the appended claims.

What I claim and desire to secure by Letters Patent is:

1. A mop, comprising, in combination, a block of compressible liquid holding material, and means for normally supporting said block in operative position and permitting the same to be folded and compressed for squeezing liquid therefrom, said means including, a pair of pressure plates together being substantially coextensive with the top of the block, said plates including depending side flanges having overlapping ear portions provided with registering openings and also including at their inner adjacent edges upwardly and obliquely inclined portions whose marginal portions abut to hold the plates nor-

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mally in rigid horizontal alignment when working pressure is applied to the block, a bail element having inwardly directed spindle portions passing through said registering openings, means in the block for receiving said spindle portions which spindle portions constitute a transverse bearing pivot about which pivot the plates may be moved manually and angularly toward each other to compress the block, and a handle for said bail.

2. A mop according to claim 1, wherein, the means in the block for receiving the spindle portions of the bail cooperates with said spindle portions to hold the block assembled with the plates and said bail is formed with additional inwardly directed portions adapted to engage the rear surface of one of the plates whereby the handle connected to the bail acts as a lever when the opposite plate is subjected to counter pressure to fold the block into compressed position.

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