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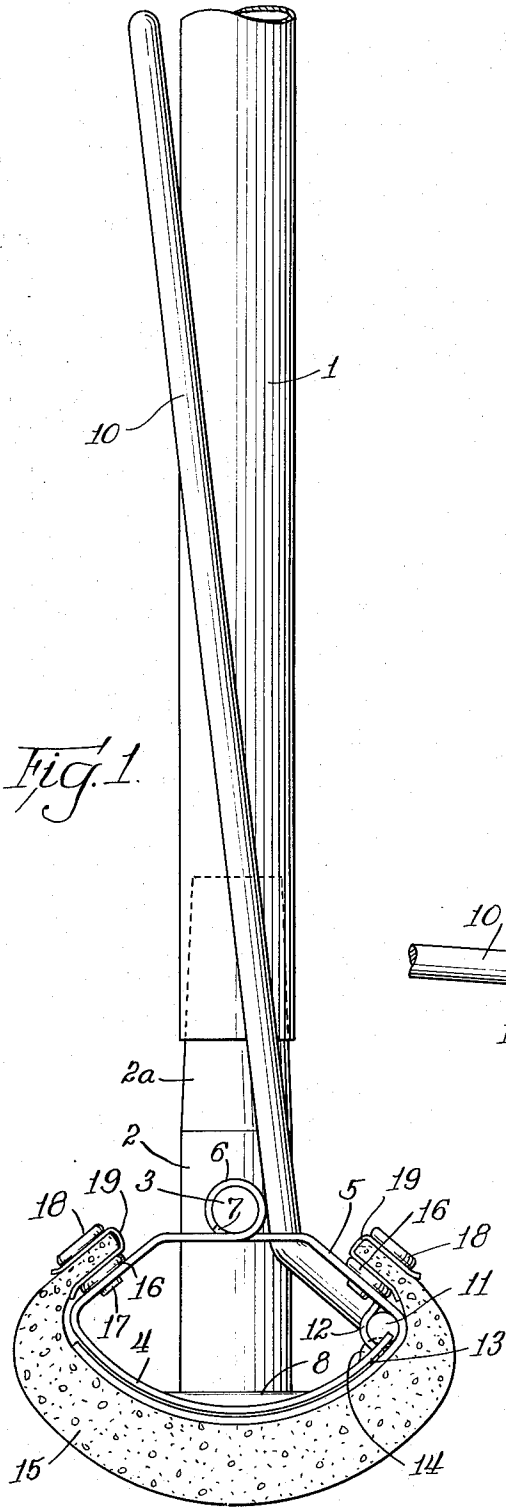
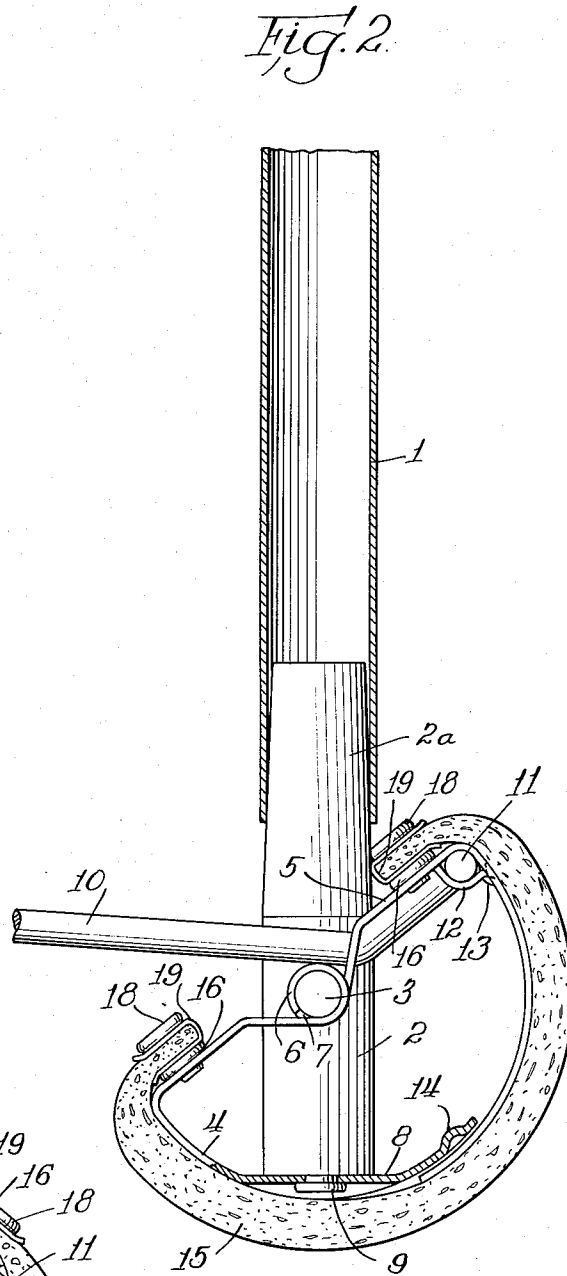
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SPONGE TYPE WRINGER MOP

Filed March 12, 1958

2 Sheets-Sheet 1



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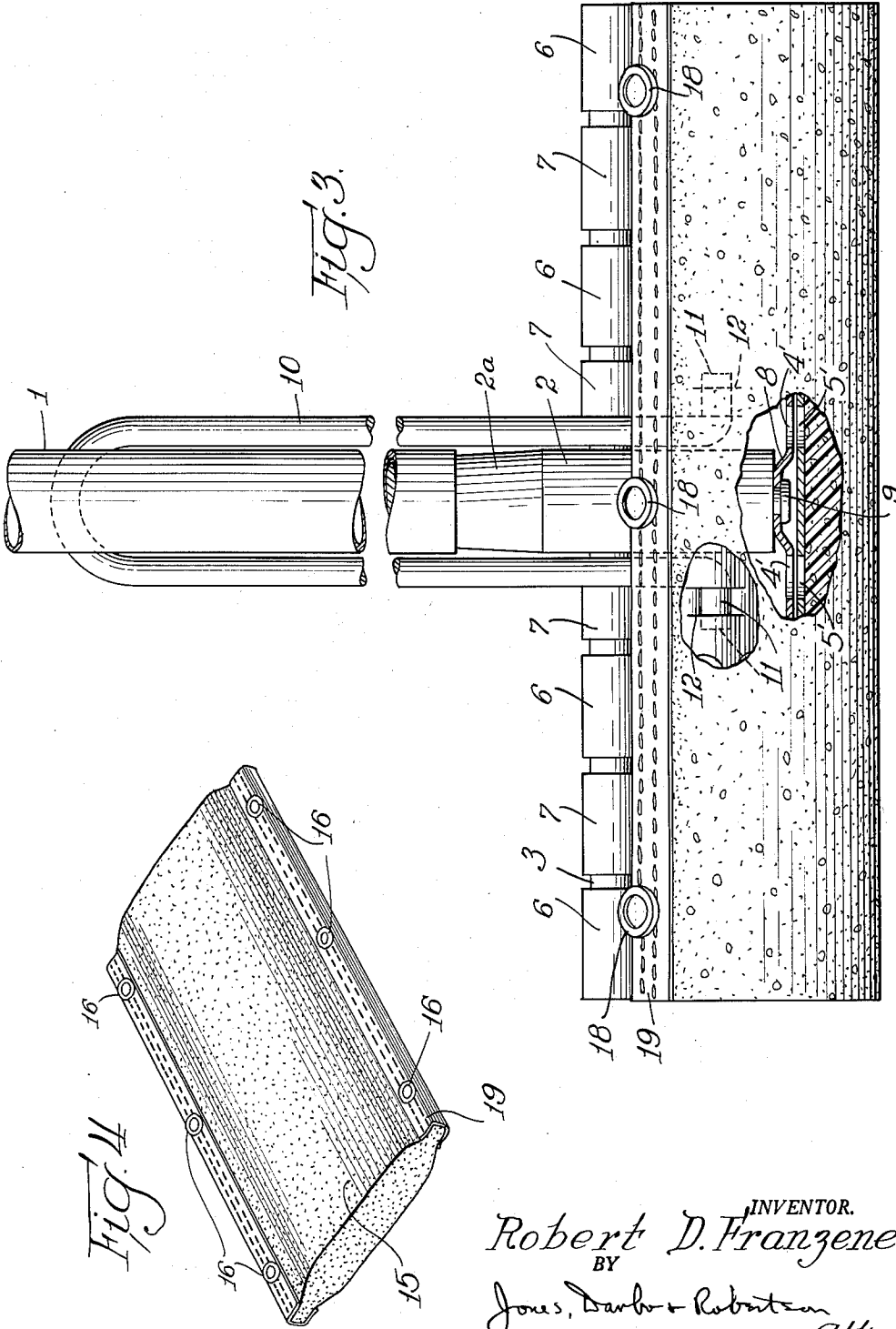
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SPONGE TYPE WRINGER MOP

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SPONGE TYPE WRINGER MOP

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4 Claims. (Cl. 15—119)

This invention relates to sponge mops and more particularly refers to such mops incorporating self-wringing devices.

It is an object of this invention to provide a mop which presents a large sponge surface area to the floor upon which it is used and which may be flipped over by the user to present a new surface to the floor.

It is a further object to provide a mop having a sponge element which may be easily replaced.

It is a further object to provide a sponge element for a mop which is easily fabricated, and which has an efficient mopping action.

It is a further object to provide a mop wherein the wringing action has a cleansing effect upon the operative surfaces of the sponge element.

Other objects and advantages of the invention will become apparent from the description which follows and from the drawings in which:

Fig. 1 is a side elevation showing the mop assembly of the invention;

Fig. 2 is a side view, partly in cross-section, showing the mop in its wringing position;

Fig. 3 is a detailed front view of the mop head, partly in cross-section, and

Fig. 4 is a perspective view of the sponge element unmounted on the mop.

Referring to Fig. 1, a tubular mop handle 1 has affixed at the bottom thereof a cylindrical mop head support 2 having a tapered end 2a designed to be inserted into and frictionally retained within the handle 1. Thus, the mop head support 2 is essentially an extension of handle 1. A transverse shaft 3 is mounted in the support 2 and extends in opposite directions therefrom. A pair of arcuate wringer plates 4 and 5 are mounted upon the shaft 3 by means of dovetailing fingers 6 and 7, respectively, which encircle the shaft. Wringer plate 4 in the preferred form is stationary and is affixed to the end of the support 2 at a flat portion 8 of the plate by means of a bolt 9. The wringer plate 5 being hingedly mounted upon shaft 3 is free to rotate about the shaft. When the mop is in position for use, the wringer plates are in normally overlapping position. A U-shaped actuating lever 10 is affixed to the heel of the movable wringer plate 5 by means of outturned ends 11 and retaining straps 12. The lever is bent as shown, so that in the normal use position of the mop mechanism, it lies closely alongside the handle out of the way. The wringer plates preferably have a perforated structure to allow water to pass therethrough, the perforations being shown by the numerals 4' and 5'. A detent 13 on the movable plate is provided to engage a groove 14 in the fixed wringer plate to latch the mop in the operating position for normal use.

Although the mop described incorporates the preferred structure where one of the wringer plates is affixed to the handle of the mop, an alternate structure may be used where both plates are free to rotate about the shaft. Where this structure is used means must be provided for

the actuating lever to move one wringer plate in one direction at the same time it moves the other wringer plate in the other direction.

The mop sponge, itself, is a replaceable element 15 in the form of a generally sheet-form pad. Its thickness, even when wet, is much less than its width, this form being best adapted to the novel wringing method and mechanism employed with the mop herein described. The sponge element is provided with suitable means for fastening the edges to the respective wringer plates. The particular means shown includes snap fastener clasps 16 which are affixed to the sponge at suitable intervals along the longitudinal edges, cooperating clasps 17, the fastening portions of which are shown in Figs. 1 and 2, being fastened to the plates. Advantageously, the sponge element is provided with double clasp elements 16 and 18, these being identical and both sets being adapted to engage the cooperating clasps on the plates, whereby the sponge element may be turned over on the mop when one surface becomes worn or permanently soiled. The sponge is so fastened that it overlies the convex surfaces of the plates. As shown in Fig. 4, a binder 19 is sewn to two opposite edges of the sponge element in order to reinforce these edges and to prevent the clasps 16 and 18 from being pulled out of the sponge.

Although any generally sheet-form sponge may be used for the sponge element, it is preferred to use one fabricated from a pre-compressed sponge. The pre-compressed sponge is produced by taking a normal sponge in the dry state and passing it between compression rolls spaced at a fraction of the sponge's original thickness. The sponge emerges from the rolls in the form of a relatively thin compact sheet having the appearance of cardboard. The term "pre-compressed" as used herein in the specification refers to a sponge which has been subjected to this process. After the sponge has been pre-compressed, the reinforcing tape is sewn to the edges and the clasps affixed therein.

The sponge mop is wrung by pressing the actuating lever 10 downward. This causes the movable wringer plate 5 to rotate about the shaft 3, stretching the sponge laterally and, at the same time, causing it to compress transversely against the curvature of the wringer plates. This forces the absorbed water out of the sponge, generally from the interior of the sponge to the surfaces, causing the removal of accumulated dirt from the sponge. After the water has drained, the lever is returned to its original position along the handle 1 where it is kept in place by the detent and dimple arrangement. This permits the sponge, which is quite resilient when wet, to contract to its normal dimensions. It is then ready for use in further mopping operations.

The present wringer mop and its sponge element have a number of advantages over devices of this kind heretofore known. The wringing action is easily accomplished by depressing the lever and thereby effect the efficient wringing of the sponge. In many of the prior sponges, the wringing action is accomplished by the pressing of a plate against the bottom of the sponge. This tends to obstruct the escape of dirt from the sponge. In the herein described mop, the wringing action pressure comes from within the body of the sponge element, driving the water and dirt to the exterior and off the sponge, thus having a continual cleansing action thereon. The sponge elements are easily affixed and easily removable from the mop. Because dual sets of fastener clasps are provided, both surfaces of the sponge may be used for mopping action. Since the sponge elements are assembled in a pre-compressed form, they may be conveniently transported in that condition without the bulk normally possessed by the usual type of sponge.

In view of the fact that the sponge element has a large

surface in contact with the floor being mopped, it has a very fast water absorbing action. This results in the removal of water from the floor at a greater rate than with the sponge where only a small area is exposed. An additional feature is that in ordinary use the handle is held at an angle, resulting in the utilization of only one portion of the sponge surface at a time. When the sponge surface in use becomes somewhat loaded with dirt, the handle may be rotated to utilize the cleaner portion of the sponge.

Another advantage of the present mop is that, whereas in the usual type of mop the activating lever must be moved through an arc of about 270° in order to accomplish the complete compression of the sponge, in the present mop sponge it may be wrung completely dry by the movement of the activating lever through only a relatively small arc.

An additional advantage of the present form of sponge element is that when one surface of the sponge becomes permanently dirty and roughened through usage, it may be removed and used on its other side, using the alternating clasps for attaching the sponge element to the mop.

The mop is simple to construct and easy to use. The sponge elements may be easily removed and replaced.

Invention is claimed as follows:

1. A mop comprising a handle, a shaft affixed transversely in the lower portion of said handle and extending outwardly thereof, a pair of wringer plates each having a radial portion and an arcuate portion and being oppositely oriented with respect to each other, the distal ends of the radial portions of said plates being mounted on said shaft, one of said plates being pivotally mounted thereon, the arcuate portion of one of said plates being arranged to overlap the arcuate portion of the other of said plates when said mop is in operating position, a generally sheet-form sponge overlying the arcuate portions of said plates, one edge of said sponge being attached to one of said plates and the opposite end of said sponge being attached to the other of said plates, and an actuating lever engaging said pivotally mounted plate and adapted to pivot said plate relatively to said

other plate, whereby upon movement of said actuating lever in a direction to move one of said plates away from the other of said plates, said plates stretch said sponge laterally and compress it transversely, causing absorbed water to be expressed therefrom.

2. A mop comprising a handle, a shaft affixed transversely in the lower portion of said handle and extending outwardly thereof, a pair of wringer plates each having a radial portion and an arcuate portion oppositely oriented, the distal end of the radial portion of the first of said plates being mounted on said shaft and the arcuate portion of said plate being affixed to said handle, the distal end of the radial portion of the second plate being pivotally mounted on said shaft and the arcuate portion of said second plate being so arranged as to overlap the arcuate portion of said first plate when said mop is in operating position, a generally sheet-form sponge overlying the arcuate portions of said plates, one edge of said sponge being attached to one of said plates and the opposite edge of said sponge being attached to the other of said plates, and an actuating lever engaging said second plate and adapted to pivot said plate relatively to said first plate, whereby upon movement of said actuating lever in a direction to move one of said plates away from the other of said plates, said plates stretch said sponge laterally and compress it transversely, causing absorbed water to be expressed therefrom.

3. A mop according to claim 2 wherein said wringer plates are perforated.

4. A mop according to claim 2 wherein said sponge is demountably attached to said wringer plates.

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