July 7, 1942. H. V. REYNOLDS 2,288,647

WRINGER TYPE MOP

Filed Nov. 23, 1938

FIG. 1

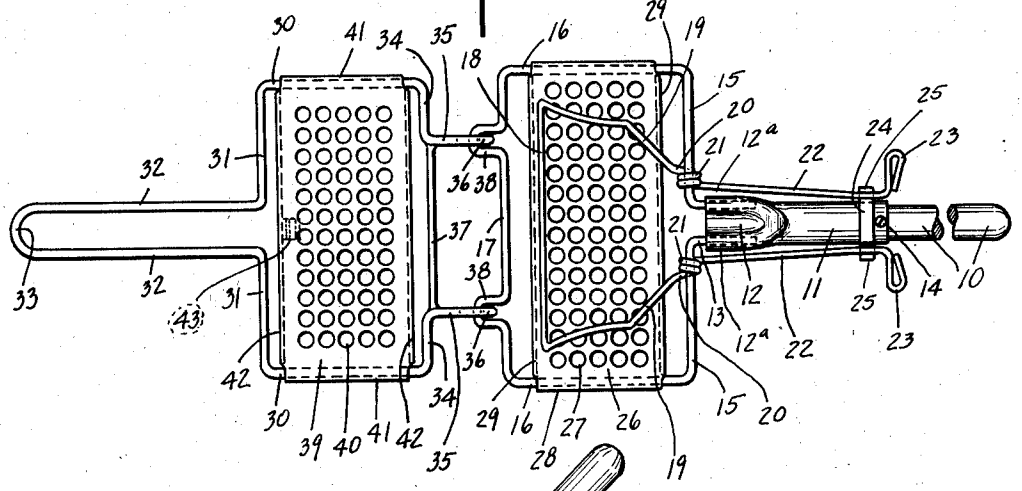


FIG. 2

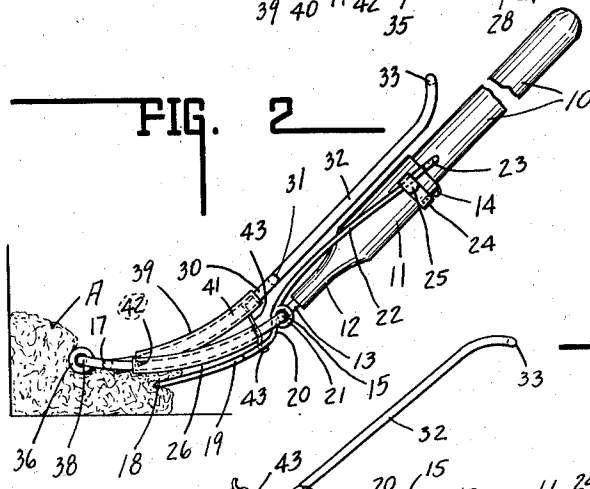
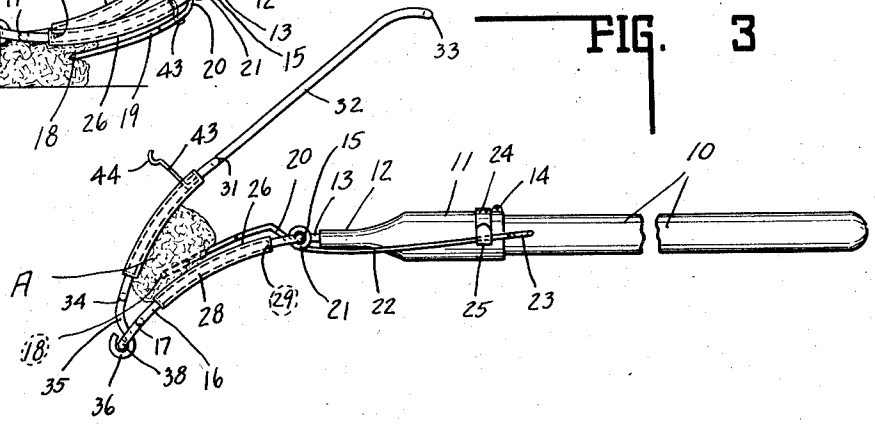


FIG. 3



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2,288,647

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2,288,647

WRINGER TYPE MOP

Henry V. Reynolds, Dayton, Ind.

Application November 23, 1938, Serial No. 241,910

2 Claims. (Cl. 15—119)

This invention relates to a cleaning device capable of use as a mop, et cetera, and which is adapted for the squeezing of the cleaning element thereof.

The chief object of the invention is to provide a device of the aforesaid character and equip the same so that it is capable of detachably mounting a cleaning medium, such as a synthetic or natural sponge and which sponge when dirty, may be soaked or rinsed in a bucket of water or at a sink and when rinsed, the sponge may be squeezed so as to expel or express the major portion of such water, its operation being repeated as often as necessary until the cleaning sponge is cleaned, all without the operator wetting the hands.

Another object of the invention is to provide an arrangement of the aforesaid character which is adapted to detachably receive a cleaning medium, such as a sponge, so that as the sponge wears out, it may be replaced without the necessity of requiring an entirely new supporting structure.

Another object of the invention is to provide in such a structure, a mounting arrangement for such a sponge whereby the sponge or cleaning medium may be held at or adjacent its rearward edge portion and have its forward edge portion extend beyond and project beyond the supporting portions of the structure so that mop boards, walls and ceilings and particularly corners, may be readily cleaned and also floors may be readily cleaned without marring legs of the pieces of furniture resting thereon, such marring usually being incident to the engagement of a cleaning structure therewith, to-wit metal to leg contact.

One chief feature of the invention consists in forming the support structure in such a manner that each of the several objects hereinbefore mentioned are accomplished.

Another chief feature of the invention consists in forming the support portion such that the shape thereof is arcuate in side elevation so that various inclinations of the handle portion of the structure may be utilized with full surface contact of the cleaning medium being maintained thereby.

Another feature of the invention consists in forming the structure primarily of foraminated sheet metal and wire.

Other objects and features of the invention will appear more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

In the drawing,

Fig. 1 is a plan view of the mop structure looking at what may be termed the cleaning medium supporting face thereof, the squeezing portion being shown approximately midway between its normal or non-squeezing position and its squeezing position, the cleaning medium being omitted therefrom for clearness.

Fig. 2 is a side elevational view of the structure embodying the invention with a cleaning sponge mounted thereon and the structure shown associated with a corner arrangement showing the simultaneous cleaning of the two angularly positioned surfaces and the corner.

Fig. 3 is a view similar to Fig. 2 but the structure is inverted and the squeezing element has been moved from the position shown in Fig. 2 beyond the position shown in Fig. 1 and into squeezing engagement with the cleaning medium. This figure further illustrates the type of compression or squeezing effected upon the squeezed element, to-wit, the same being of longitudinal character rather than of transverse character customary in usual squeezing structures.

In the drawing, 10 indicates an elongated handle, one end being receivable by the tubular portion 11 of a socket member, the opposite end of which is flattened as at 12 to form retaining pockets 12a for rigidly anchoring the substantially parallel ends 13 of a wire frame. A screw 14 secures the socket and handle together. Any other connection common to the industry, such as the conventional screw thread connection, may be employed in lieu thereof.

A wire frame includes the two ends 13, the two aligned and oppositely directed portions 15, forwardly directed side portions 16 and the front or forward portion 17. This wire frame is substantially rectangular in plan outline. The side portions 16 are slightly arched as shown in Figs. 2 and 3.

A keystone outlined wire frame has the forward portion 18, the rearwardly and slightly inwardly directed side portions 19 which at the rear ends are offset as at 20, see Figs. 2 and 3. These offset portions connect to coil portions 21 coiled about portions 15.

From these portions 21 there extends rearwardly, upon opposite sides of the tubular socket, the portions 22, each of which terminates in an outwardly and then a return directed finger engageable portion 23.

A strap 24 is suitably secured to the socket portion adjacent the handle receiving end thereof and the opposite and laterally projecting ends of the strap have curved ends 25 forming catches to latchingly receive portions 22. When released from the latches, the keystone clamp pivots into a relatively wide mouth relationship with respect to the cleaning medium support wire frame.

A rectangular foraminated plate 26, having holes 27, has curled ends 28 embracing side portions 16. It also has two parallel flanges 29 for

stiffening purposes. It has the same arched shape in cross section as wire frame side portions 16.

The sponge A, of rubber, cellulose, or the like, or a natural sponge or other suitable cleaning material, thus is clampingly mounted at its rearward edge portion—see Fig. 2—between the support member and clamp. Coil portions 21 maintain a pressure contact when portions 22 are seated in catches 25.

A squeezing member includes an open wire frame having the side portions 30 similarly arched. Extending inwardly towards each other and from the rear ends of portions 30 are the portions 31. These are aligned but herein are shown terminating short of meeting engagement. From such adjacent ends there extends portion 32 of considerable length connected by midportion 33. These form the handle for the squeezing member. Any other suitable or equivalent handle arrangement may be provided.

Extending inwardly towards each other from the opposite ends of side portions 30 are the portions 34. These have forward extensions 35 terminating in ends formed as eye portions 36. Portions 34, may, if desired, be connected as at 37.

Front portion 17 of the support member includes a similar number of U-shaped forwardly directed portions 38, the midportions of which are positioned in the openings of the eyes 36. This constitutes the pivotal connection at the forward edges of the members and therebetween.

A foraminated plate 39 having openings 40 therethrough and similar to plate 26 and similarly arched has curled portions 41 embracing side portions 30. It also has the reenforcing parallel flanges 42.

The flange 42 adjacent handle 32—33 supports spring clip 43 having portion 44 adapted to engage the exposed edge of the adjacent flange 29 of plate 26 when the parts are positioned as shown in Fig. 2. Thus, the squeezing and supporting members are yieldingly locked together. Movement of the handle 32—33 is sufficient to engage or disengage this locking arrangement. As shown in Figs. 2 and 3, handle portions 32 adjacent portion 33 are laterally directed so as to be readily engageable—see Fig. 2—when positioned as shown therein and adjacent the handle 10.

Any other equivalent or suitable means may be utilized in place of the foraminated plates, these, however, having been found most suitable.

The salient parts of the invention, therefore, include three wire frames, two foraminated plates or their equivalents and a handle connecting member.

One structural feature, in addition to those previously mentioned herein, is the sequential pivotal connection of the squeezing member, the support member and the clamp. While the clamp is shown of open work character, it may be reticulated, or even include a foraminated plate addition, if desired.

While the invention has been described as being applicable to the use of water for cleaning purposes, it is to be understood that the invention may be utilized for the application of wax, et cetera, as well as polishing thereof, or if the so-called cleaning element is of sponge rubber, the device may be utilized as a wall cleaner, etc.

A further feature of the invention consists in the stream-line connection, as it were, of the major support for the so-called cleaning element so that it is positioned forwardly of the handle and but partially overlaps the support therefor carried by the handle, the clamp being operative in connection therewith for holding the so-called cleaning element to the structure.

A further feature of the invention, it will be obvious, is the relatively small volume occupied by the respective parts when operatively associated together for cleaning or squeezing.

While the invention has been illustrated and described in great detail in the drawing and foregoing description, the same is to be considered as illustrative and not restrictive in character.

The several modifications described herein as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. In a unitary mop structure for detachably supporting a readily compressible sponge member, the combination of a base plate structure wider than its length from front to back and slightly arched from front to back, a handle rigidly secured at its forward end to the rear of the base plate structure, a sponge-like member normally projecting forwardly and appreciably beyond the front of the base plate, an open wire clamp for clamping the sponge to the convex side of the plate, the wire portions being deeply embeddable in the rear and plate lapping portion of the sponge when in clamping engagement therewith, said clamp having pivotal connection with the plate structure near the rear end thereof, and having a portion extending rearwardly from the pivotal connection and along said handle and normally constrained toward clamping engagement with the plate when locked at its rearward free end to the handle, and a similarly curved sponge squeezing plate, said squeezing plate having pivotal connection at its forward portion with the forward portion of the base structure, the squeezing plate being of similar outline and area and normally lying adjacent the base plate structure, opposite from the sponge and clamp and movable about its pivotal connection approximately 300° for doubling the sponge upon itself and squeezing the doubled sponge between said plates, the reversely folded portion of the sponge then being interposed between the clamp and squeezing plate and the clamp then being positioned between the doubled sponge portions, the squeezing plate having a handle portion extending rearwardly from the end opposite its pivotal connection and adapted to lie alongside the mop handle when in non-squeezing position.

2. A mop structure as defined by claim 21, characterized by the base plate structure including a wire frame arrangement connected to the first mentioned handle and having spaced portions and a base plate member secured at opposite sides to said spaced portions and with the rear spaced from the frame arrangement, the squeezing plate including a wire frame arrangement having pivotal connection with the base wire frame arrangement and two spaced portions and a squeezing plate member secured at opposite sides to the last mentioned spaced portions, the squeezing plate handle portion constituting an integral median extension of said last mentioned spaced portions.

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