April 20, 1965 C. HEEPE 3,178,749

FLOOR MOP WITH SPONGE-TYPE REFILL ELEMENT

Filed March 19, 1963 2 Sheets-Sheet 1

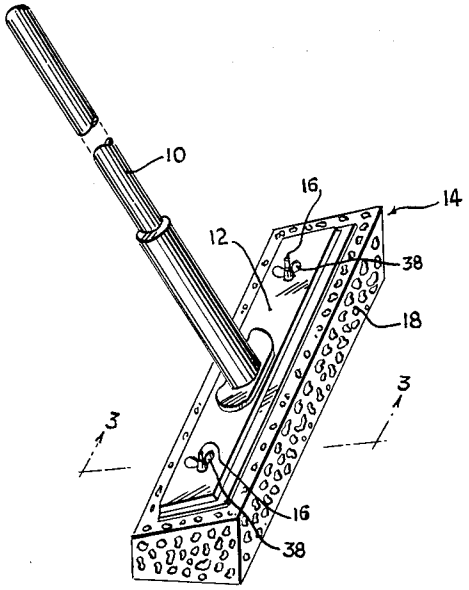


Fig. 1

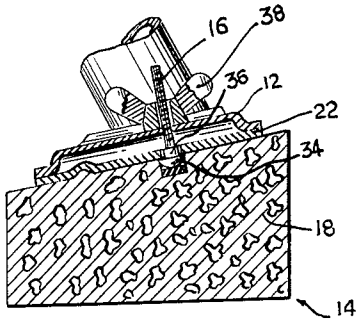


Fig. 3

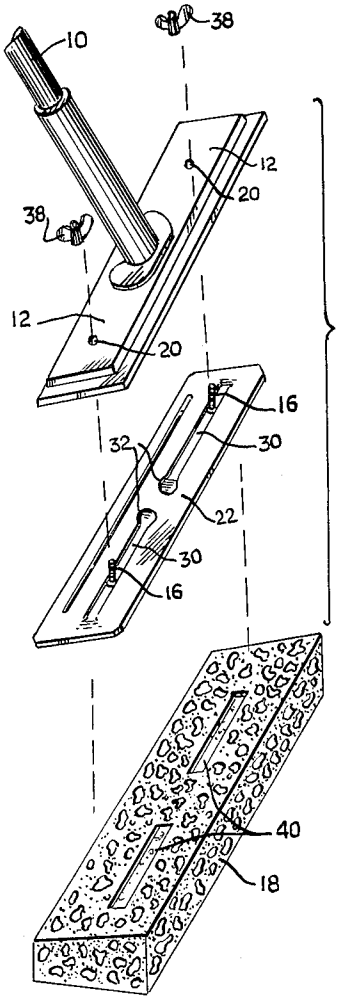


Fig. 2

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FLOOR MOP WITH SPONGE-TYPE REFILL ELEMENT

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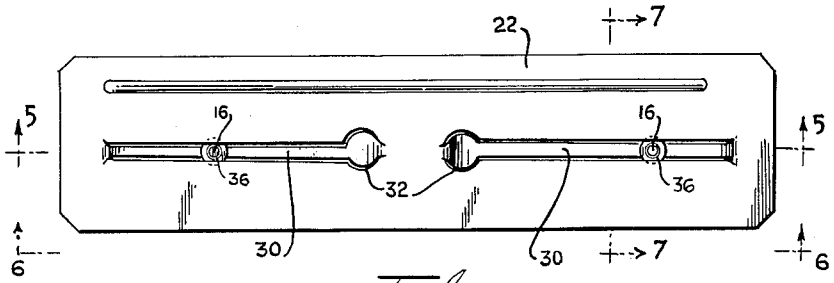


Fig. 4.

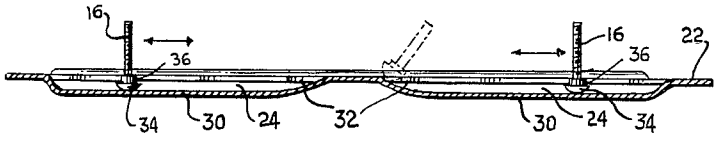


Fig. 5.



Fig. 6.

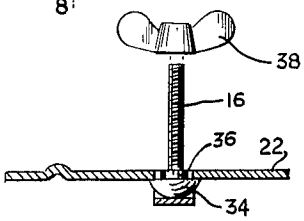


Fig. 7.

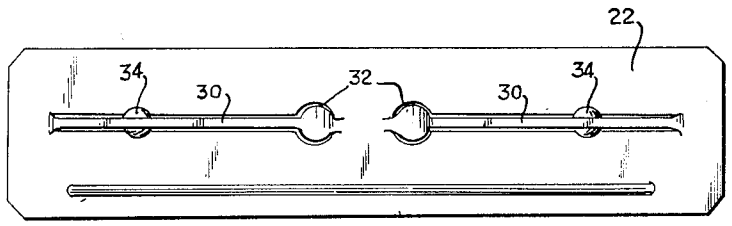


Fig. 8.

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FLOOR MOP WITH SPONGE-TYPE REFILL ELEMENT

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6 Claims. (Cl. 15—244)

This invention relates to a floor mop having a sponge type of refill cleaning element. It will, however, be understood that the invention is not limited to the use of a sponge as the cleaning element, but may be applied to other mops having a refill type of cleaning element. Nor is the invention limited to floor mops, but may encompass all kinds of cleaning, polishing and waxing implements and the like having a refill type of cleaning, polishing, waxing, etc. element.

For purposes of clarity, the invention will be described solely in terms of its application to a floor mop having a cellulose sponge cleaning element. Essentially, such device comprises a mop head, a handle secured thereto, and a refill type of cleaning element which is detachably mounted on the mop head. The invention relates to the means for detachably mounting said cleaning element on said mop head.

The principal object of this invention is the provision of a mop of the character described, having a mop head and a refill type of cleaning element detachably secured thereto, the securing means comprising a pair of screw elements which interconnect the mop head and the refill element and means for adjustably positioning said screw elements on said refill.

The combination of a mop handle, a mop head and a refill cleaning element detachably mounted on the mop head is not new and is well known to the prior art. The conventional means for detachably securing the cleaning element to the mop head is a pair of screws which must temporarily be held in place on the cleaning element in order to align them with holes provided in the mop head preparatory to threading said screws through said holes. Temporary positioning means to effect such alignment of the screws with the holes in the mop head are not provided on any of the mops of the prior art. It is a relatively difficult matter, therefore, especially for the average housewife, to attach a conventional refill type of cleaning element to a mop head by the means hereinabove described.

In the present invention, however, temporary positioning means are provided, such means consisting of a pair of slots or channels for the screw shanks and a pair of spring elements engaging the screw heads, said spring elements being coextensive with said slots or channels, so that no matter where the screws are positioned, they will there be held in place. In short, the screws are manually moved along their respective slots or channels into registering positions with respect to the holes in the mop head. The spring elements tend to hold the screws in such positions, and it therefore becomes a very simple and easy matter to thread the screws through the holes in the mop head and to secure the refill thereto.

Another object of this invention resides in the fact that this construction provides important advantages to the manufacturer. For example, the screws may be applied to the refill type of cleaning element after said cleaning element is completely assembled and ready for use. Essentially, the cleaning element comprises a cellulose sponge block and a metal plate adhesively secured thereto. The slots or channels for the screws are formed in said plate. The spring elements are also formed in said plate out of the very material which is removed from the plate in order to cut the slots or channels. There is no greater effort required to assemble the screws and the mounting

plate after the sponge is attached to said plate than before. In many mops of the prior art it is necessary to attach the screws to the plate before the plate is attached to the sponge block, and this obviously makes for production problems.

Still another object of the invention is the provision of a mop of the character described wherein the refill type of cleaning element is inexpensively made and assembled.

The invention is illustrated in the accompanying drawing in which:

FIGURE 1 is a perspective view showing a preferred embodiment of the invention.

FIGURE 2 is an exploded view thereof.

FIGURE 3 is a cross-section on the line 3—3 of FIGURE 1.

FIGURE 4 is a plan view of the means for fastening the refill element to the mop head.

FIGURE 5 is a section taken on the line 5—5 of FIGURE 4.

FIGURE 6 is an end elevation of the illustration of FIGURE 4.

FIGURE 7 is a cross-section on the line 7—7 of FIGURE 4.

FIGURE 8 is an underside view of the illustration of FIGURE 6.

As has above been indicated, the present invention comprises the following component parts: A mop handle **10**, a mop head **12**, a refill type of cleaning element **14**, and a pair of screw elements **16** detachably securing said refill element to said mop head. For purposes of illustration, the mop which is shown in the drawing is a floor mop, and its cleaning element includes or comprises a cellulose sponge block **18**.

The mop handle **10** may be attached to the mop head **12** by any conventional means, and this forms no part of the present invention. The mop head is also of conventional construction and basically it comprises an elongated rectangular plate having a pair of holes **20** formed therein on opposite sides of the place where the mop handle is joined to the mop head.

Also conventional is the sponge refill **18** and the fact that said sponge refill is mounted on a connecting plate **22**. This connecting plate is also generally rectangular in shape, approximately the dimensions and configuration of the mop head **12**. The sponge refill **18** may be adhesively secured to said connecting plate **22**. This is also conventional in the art.

Referring now to the connecting plate **22**, it will be observed that two longitudinally extending and axially aligned slots or channels **24** are formed therein. This may be done by a simple metal stamping procedure, the plate **22** being preferably made of sheet metal. The material which is removed from plate **22** in order to form slots **24** is not entirely removed therefrom, and remains attached at its respective ends to said plate as the drawing clearly shows. Stated differently, the material which is stamped out of the plate to form slots **24** is severed from said plate only along the sides of said material, the ends of the material remaining attached as before. What is thereby produced is a pair of metal strips **30** which parallel the slots coextensively therewith a spaced distance below the bottom surface of the plate.

The slots are enlarged at their adjacent ends to form receptacles **32** for the heads **34** of screws **16**. In other words, it is through enlarged openings **32** that the heads of the screws may be inserted through connecting plate **22** into the space between said plate and cut out strips **30**. In short, the heads of the screws will be lodged between said cut out strips on the one hand, and the bottom surface of the connecting plate on the other hand. The space is snug and the cut out strips accordingly bear against the heads of the screws and provide a spring-bearing action

with respect thereto, holding the screw heads against plate **22** in any position to which the screws may be moved.

It will also be observed that screws **16** are provided with square shanks or shoulders **36** adjacent their respective heads. These square shanks or shoulders ride within slots **24**, and their dimensions are such that they are free to move longitudinally of the slots, but are prevented from rotating therein. As will shortly appear, this will fix the screws against rotation when wing nuts **38** are applied thereto.

It has above been stated that connecting plate **22** is secured to the cellulose sponge block **18** by adhesive means. This is a conventional operation and any suitable water insoluble adhesive may be used for the purpose. It will be understood that cellulose sponge, in a dry state, is a relatively stiff or rigid structure. However, no difficulty is encountered in scoring it to form grooves or other necessary depressions. In the present case, grooves **40** are formed in the sponge block in order to receive the cut out strips **30**. This permits of placing the connecting plate **22** flush against the top surface of the sponge block. When an adhesive is applied between said connecting plate and said sponge block, they are securely fastened to each other.

In attaching refill **14** to mop head **12**, all that needs be done is the following: screws **16** are positioned in their respective slots **24** for registration with holes **20** in the mop head. The screws are then inserted through said holes, and the wing nuts **38** are then applied to them and tightened thereon. This completes the mounting operation.

The foregoing is illustrative of a preferred embodiment of this invention, and it will be understood that the principles described herein may be applied to other forms, all within the broad spirit of the invention and the broad scope of the claims.

What is claimed is:

1. A mop construction comprising a handle, a mop head secured to said handle, and a cleaning element secured to said mop head, said mop head comprising a plate having a plurality of holes formed therein, said cleaning element including an attaching plate having a plurality of slots formed therein, and strips substantially coextensive with said slots and disposed behind the slots in parallel relation thereto, a plurality of headed fastening elements being slidably mounted in said slots and engaging said mop head through its said holes in order to secure said cleaning element to said mop head, said strips engaging the heads of said fastening elements in spring-biasing relationship to position said fastening elements for registration with the holes in said mop head preparatory to engagement therewith.

2. A mop construction in accordance with claim 1

wherein said cleaning element comprises a cellulose sponge block and said attaching plate adhesively secured thereto, said strips being provided on that side of the attaching plate which faces the sponge block, said sponge block being provided with depressions receiving said strips and causing face-to-face abutment of said attaching plate and said sponge block.

3. A mop construction in accordance with claim 2 wherein said strips are struck out of said attaching plate, said strips being free from said attaching plate along their respective side edges and being connected to said attaching plate at their ends.

4. A mop construction in accordance with claim 3 wherein each fastening element comprises a screw and a nut, said screw being provided with a square shank adjacent its head for projection through said slots, said square shank permitting longitudinal sliding movement of thes crews through said slots while preventing rotational movement thereof within said slots, the nuts of said fastening elements being wing nuts for manual rotation with respect to said screws.

5. In a mop construction of the character described, a refill type of cleaning element, said cleaning element comprising a plate and a sponge attached said plate, said plate being provided with a pair of slots formed therein and a pair of strips provided behind said slots in parallel relation thereto, and a pair of screw-type fastening elements for attaching said refill cleaning element to a mop head, said screw-type fastening elements comprising a pair of screws having a head at one end and a thumb nut at the opposite end, and a square shank adjacent the head, said head being disposed between the plate and said strip, said shank projecting through the slot and said strip engaging said head in spring-biasing relationship, said screws being slidably movable along said slots while prevented from rotating therein and being positionable at any predetermined point along said slots by means of the spring pressure exerted against them by said strips.

6. A mop construction in accordance with claim 5, wherein each of said slots has an enlarged opening at one end thereof, the heads of said screws being inserted into said opening to position said screws for slidable movement within said slots.

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