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3,355,844

UNIVERSAL SPONGE MOP HEAD

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FIG. 1

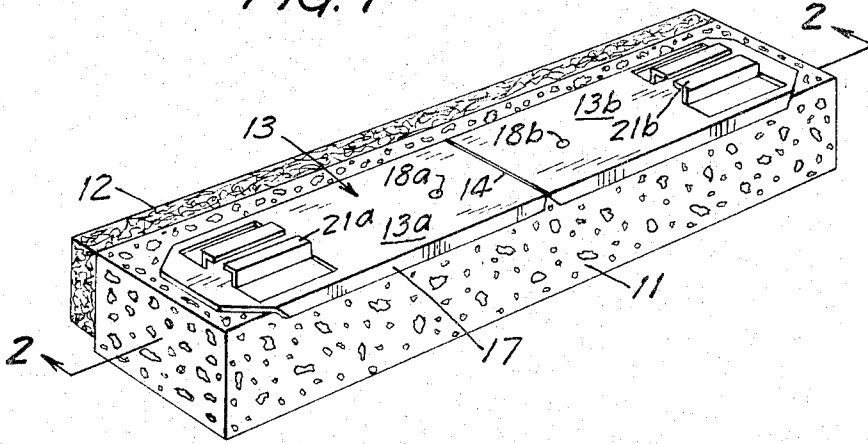


FIG. 2

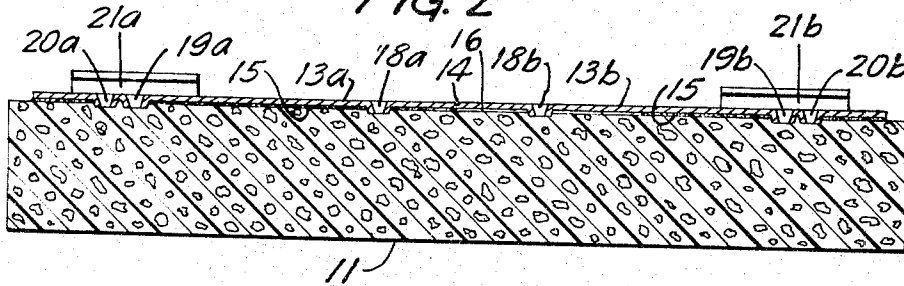
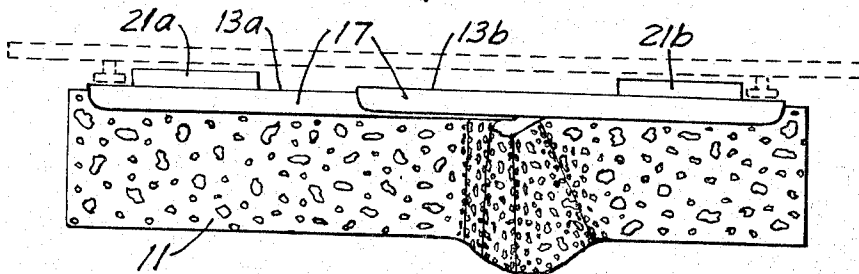


FIG. 3



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ABSTRACT OF THE DISCLOSURE

A sponge mop head is adapted for attachment on the mounting plate of a mop frame having either screw or slide attachment means. The sponge is adhered to a sheet metal or similar base plate which can be either left intact for screw attachment or broken to permit longitudinal compression of the sponge for slide attachment.

Background of the invention

This invention relates to brushing, scrubbing, and cleaning implements, particularly to sponge mops.

Sponge mops have been widely used by housewives for many years. Basically these mops involve a synthetic sponge, typically a block of regenerated cellulose, having a base plate attached to the upper surface and provided with means for attachment to the mounting plate on a mop frame. Heretofore there have been two main types of construction, which to a large extent have been mutually exclusive. In the first type, a one-piece rigid metal base plate was adhered to the upper face of the sponge body and provided with a plurality of holes. The corresponding mounting plate on the mop frame was provided with either holes or longitudinally extending slots which coincided with the holes on the base plate. Screws were then used to attach the mounting plate to the base plate, slots providing a means for permitting expansion or contraction of the sponge as it absorbed or released moisture. Exemplary mop heads of this type are illustrated in U.S. Patents 2,594,553 and 2,663,042.

The second major type of sponge mop construction is effectively illustrated in U.S. Patent 3,188,676. A small metal plate is mounted adjacent each end on the upper face of the sponge body, the two plates being separated by a substantial distance. Each plate bears a slide means having a cross-section designed for engaging tabs which are struck from one face of the mounting plate on the mop frame. Spacing the slide-bearing plates apart not only permits the sponge to expand and contract, the cooperative slide means moving longitudinally along the tabs, but also permits longitudinally compressing the sponge so that the slides can be positioned between the tabs and then moved outward to grip them firmly. Although this arrangement is convenient in many respects, the sponge mop sometimes contracts so much when not in use that the head becomes disengaged from the slides and falls off, to the extreme annoyance of the housewife.

The aforementioned U.S. Patent 3,188,676 suggests that the two separated slide-carrying plates may be provided with holes, to permit mounting on mop frames of the type first referred to hereinabove. Although this is theoretically possible, the resulting product is not totally satisfactory for either purpose. Since the greater portion of the sponge body is not connected to any rigid support, the mop tends to bow, distort, chatter, and provide irregular cleaning action, no matter what type of mounting plate the mop frame has.

Summary of the invention

The present invention provides a novel sponge mop

head which is effective for installation on any of the major types of mounting frames presently in use, and is specifically adapted for attachment to both of the types discussed hereinabove. The invention provides a sponge mop in which a continuous elongated base plate is attached to the sponge body over the greater portion of its length, thus providing resistance to bowing, distortion, and chattering in use, as well as minimizing any tendency for the mop head to fall off a mounting plate of the slide type when the sponge dries out. The novel mop head is readily attachable to any mounting plate employing screws or similar means of attachment. At the same time, this mop head has slide means mounted adjacent each end of the rigid base plate, corresponding to the mating tabs found on the mounting plate of the other common type of mop head.

As originally supplied, the continuity of the base plate prevents attachment of both slide means to the complementary pair of tabs found on a mounting plate. The base plate, however, is so constructed that it can be separated at its mid-point and one plate portion slid over the other far enough to permit the slide means to fit between the pair of tabs on mounting plates of this type. At the same time, the novel construction of this device is such that a drying mop head, can not shrink sufficiently to become detached from the tabs. Further, even after the base plate has been separated into two pieces and installed in the manner and for the purpose just indicated, the mop head can still be removed and screwed to a mop frame of a different construction without sacrificing quality of performance.

Brief description of the drawing

The invention will be better understood with reference to the accompanying drawing in which:

FIGURE 1 is a view in perspective of a presently preferred embodiment of the invention;

FIGURE 2 is a longitudinal cross-sectional view of the mop head shown in FIGURE 1, taken along sectional line 2-2 and looking in the direction of the arrows; and

FIGURE 3 is a rear elevational view of the mop head shown in FIGURE 1, illustrating the manner in which the mop head is manipulated to facilitate installation on a mop frame mounting plate having tabs on one surface thereof.

Description of preferred embodiment

In the drawings, prismatic sponge body 11 is secured to one face of low density fibrous lofty abrasive mat 12. To the upper face of sponge body 11 is adhered base plate 13, divided into left portion 13a and right portion 13b by a weakened portion, or break line 14. Base plate 13 is secured to the upper face of sponge body 11 by adhesive layer 15 throughout their coextensive areas, except for adhesive-free area 16, which extends from break line 14 under right half 13b, across the entire width thereof, for a short distance. The attachment of base plate 13 and sponge body 11 throughout most of their coextensive length provides firm connection of sponge body 11 to the mop frame and minimizes any tendency of sponge body 11 to bow in the central portion during use. Bowing is further minimized by lip 17, which extends substantially at right angles to base plate 13, overlying the rear face of sponge body 11 and tending to hold it in fixed position.

At spaced locations equidistant from break line 14 are pairs of depressed holes, 18a and 18b, 19a and 19b, 20a and 20b. These holes are adapted to receive self-tapping screws which are inserted through corresponding holes or slots in the mounting plate on the mop frame.

Also located on base plate 13 adjacent the ends thereof are slide means 21a and 21b, each of which defines, in

cross-section a C-shaped channel corresponding to the tab on a mounting plate of a different type of mop frame. When the mop head is to be installed on the mounting plate of a frame of this type, it is gripped firmly and bent back and forth along break line 14, thereby separating base plate 13 into halves 13a and 13b. In order to facilitate separation of plate 13 along break line 14, lip 17 is notched in the immediately adjoining area. Since there is no adhesive in area 16, plate half 13b is readily lifted above and slid over plate half 13a. In order to facilitate installation but nevertheless maintain the maximum resistance to bowing, it is desirable that adhesive-free area 16 extend longitudinally a distance approximately but not greatly exceeding the length of slide means 21a or 21b, typically about an inch. As is shown particularly in FIGURE 3, the sliding plate half 13b or plate half 13a longitudinally compresses sponge body 11, permitting slide means 21a and 21b to fit between the downwardly extending tabs on a mop frame mounting plate (indicated in dashed lines); when plate halves 13a and 13b are returned to their original position, slide means 21a and 21b engage the corresponding pair of tab means.

Low density abrasive product 12, a suitable form of which is described and claimed in U.S. Patent 2,958,593, may be adhered to the sponge by any suitable means. A particularly satisfactory technique is to embed it in one face of a sponge-forming cellulosic mass to a depth sufficiently to let the mass partially surround fibers in the interface, regenerate the cellulose, and convert the mass to sponge form, all as described and claimed in U.S. Patent 3,080,688. As shown in FIGURE 1, it may be desirable to have the low density abrasive 12 extend less than the full depth of sponge body 11, thereby keeping it normally out of contact with the floor when the lower surface of sponge body 11 is being used. When it is desired to subject the floor to more rigorous cleaning action, the mop head may be turned so that its front face, and therewith low density abrasive pad 12, is lowermost. To minimize the possibility of undesirable scraping of the floor during such operation, the forward edge of base plate 13 should not extend completely to the forward face of sponge body 11.

What we claim is:

1. A sponge mop head, designed for installation on a wide variety of sponge mop frames having a mounting plate, comprising in combination:

a thin rigid elongate base plate having two sides and two ends,

a plurality of attaching means on said base plate adapted for connection to corresponding means on a plurality of different mop frame mounting plates,

said base plate having a weakened portion, extending between its sides approximately midway between its ends, along which said base plate may be broken into two substantially equidimensional parts, and

a prismatic sponge body having two ends and a plurality of sides,

at least one of said sides being both longer and wider than said base plate,

said one side being adhered to one face of said base plate substantially throughout their coextensive areas except for an adhesive-free portion of said areas, said portion being about one inch long and the entire width of said base plate extending from said weakened portion beneath one of said substantially equidimensional parts of said base plate.

2. The mop head of claim 1 wherein the attaching means on the base plate include

a pair of slide members having a C-shaped cross-section, located adjacent the ends of said base plate and adapted, when said base plate is broken in two along its weakened portion, to cooperatively slidably engage tabs extending below the surface of a mop frame mounting plate,

and a plurality of holes, located on opposite sides of the weakened center portion of the base plate, adapted to receive self-tapping screws extending through the correspondingly positioned holes on a mop frame mounting plate.

3. The mop head of claim 2 wherein the base plate has a lip extending downward from one side thereof and is so dimensioned and positioned on said one side of the prismatic sponge body that said lip extends over the adjacent side of said sponge body.

4. The mop head of claim 3 wherein the lip is notched at the portion immediately adjoining the weakened portion of the base plate.

5. The mop head of claim 4 wherein the sponge body has four sides, the side opposite that over which the base plate lip extends having a lofty nonwoven fibrous low density abrasive mat affixed thereto.

6. The mop head of claim 5 wherein the low density abrasive mat terminates short of the lower edge of the side to which it is affixed.

7. In a sponge mop head of the type wherein one face of a synthetic sponge is adhered to a rigid elongate base plate extending over a major portion of said face, said base plate being provided with holes for attachment to a first type of conventional mop frame mounting plate, the improvement which comprises:

providing a generally centrally located break line extending across said base plate,

providing, adjacent each end of said base plate, an elongate slide means of appropriate dimensions and position to slidably engage, in a direction parallel to the length of said base plate, one of a spaced pair of complementary downturned tab means on a second type of conventional mounting plate, it normally being impossible to simultaneously engage both of said slide means with both of said tab means,

and adhering said base plate to said sponge face throughout their coextensive areas except for a portion adjoining one side of said break line across the entire width of said base plate for a distance approximately equal to the length of one of said slide means,

whereby said mop head can either be directly attached with screws to a mounting plate of said first type, or attached to a conventional mounting plate of said second type by breaking said base plate along said break line, sliding the unadhered portion of one half of said base plate over the other half of said base plate to longitudinally compress the sponge and permit positioning the pair of slide means on said base plate between the pair of tab means on a mounting plate of said second type, and then sliding the pair of slide means apart, thereby engaging each slide means with a corresponding tab means and returning said mop head to substantially its original dimensions.

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DANIEL BLUM, *Primary Examiner*.