ADJUSTABLE SPONGE MOP REFILL FOR MOPS

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Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

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ADJUSTABLE SPONGE MOP REFILL FOR MOPS

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This invention relates to sponge mops and, more particularly, to a refill adapted for connection to an associated support plate of a sponge mop handle.

Finding increasing favor among householders at the present time are mops having removable and replaceable heads of cellulosic sponge material. Conventionally, the mop head includes a sponge body to which is permanently connected an inexpensive plate having fastening elements such as screws and wing nuts extending therethrough. This head is connected to an associated handle which is of permanent construction and includes a mounting plate having openings receiving the fastening elements. When the mop head is to be discarded, the wing nuts are removed and the head is replaced with a new one of similar construction.

Ordinarily, the mop head can be attached to only one, or at the most two or three, makes of handles. This is mainly due to the fact that the spacing of the screws of a conventional mop refill (this being the term generally applied to the removable head) cannot be changed. The spacing on the mop handle plate must, accordingly, be the same as that of the refill.

The main object of the present invention, accordingly, is to provide a sponge mop refill universally applicable to any of a substantial number of different mop handles attached to plates in current use. In carrying out this object, the invention, in each form thereof, includes a refill plate having aligned longitudinal slots, with the fastening elements being adjustable lengthwise of said slots toward and away from one another to locate said elements a selected, adjusted distance apart, corresponding to the spacing of the openings of the particular attachment plates of the mop handle on which the refill is to be used.

Other objects of importance are:

1. To achieve universal usage of the refill without increasing its cost materially.

2. To interrelate the screws and slot walls as to hold the screws against rotation in each position to which they are adjusted.

And, in at least one form, to permit the screws to be first extended through the mop handle attachment plate openings, and then inserted in the slots so as to automatically adjust the screws to the proper locations lengthwise of the slots, threading of wing nuts onto the screws thereafter serving to bias the slot walls into engagement with opposite sides of the screw to hold the same against rotation.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is an exploded perspective view of a mop refill formed in accordance with the present invention, in association with a mop handle of conventional construction, said handle being illustrated fragmentarily.

Fig. 2 is an enlarged top plan view of the refill per se.

Fig. 3 is a sectional view on line 3—3 of Fig. 2.

Fig. 4 is a still further enlarged sectional view on line 4—4 of Fig. 3.

Fig. 5 is a transverse sectional view on line 5—5 of Fig. 4.

Fig. 6 is a view similar to Fig. 3 showing a modified form immediately prior to attachment of the refill to the mounting plate of the handle.

Fig. 7 is a view similar to Fig. 6 in which the operation of attaching the refill to the mounting plate has been completed but with a portion of the sponge broken away.

Fig. 8 is a fragmentary perspective view of the refill shown in Figs. 6 and 7.

The reference numeral 10 has been applied generally to a conventional mop handle including an elongated handle member 12 engaged fixedly in a ferrule 14 rigidly with the midlength portion of a rectangular mounting plate 16 having an upwardly offset body portion 18 in which openings 20, spaced longitudinally and centrally of the same, are formed.

The refill 22 constituting the present invention includes a sponge body 24 the top surface of which may be inclined to dispose the handle 10 in a properly inclined position.

Permanently secured by a strong adhesive to the transversely inclined top surface of sponge body 24 is a rectangular plate 26 rigidified by the pressing of longitudinal ribs 28 thereinto adjacent its respective longitudinal edges.

Aligned with one another longitudinally and centrally of the plate are raised portions 30. These are of elongated formation, and extend longitudinally of the plate, the portions terminating short of the midlength point of the plate so as to define a space therebetween. Portions 30 at their outer ends are rounded, and formed in the portions 30, for substantially the full length thereof, are longitudinal slots 32. The slots 32 are formed in the portions 30 at the crests thereof, and as will be noted the slots terminate short of the outer ends of the respective portions 30, so as to close the slots at one end. At their other ends, the slots are open, and are in communication with transverse, short slots 34 extending the width of the portions 30 at the inner ends thereof.

A screw 36 is removably engaged in each slot. Screw 36, at its base, has a flat portion 38 lying in a plane including the axis of the screw, said portion 38 merging into a conical head 40. In the form shown in Figs. 1—5, head 40 is substantially wider at its base than slot 32.

In use, the screws 36 are engaged in the slots 32, and are adjusted longitudinally of the slots to any selected location, so as to align the screws with the openings 20 of the particular mounting plate 16 to which the refill is to be connected. The screws are then extended through the openings 20, and wing nuts 41 are threaded thereupon, bearing against the mounting plate 16 so as to fixedly connect the refill to the mop handle.

The wing nuts 41 initially will be threadable with ease into engagement with the plates 16, without any tendency on the part of the screws to rotate. As the wing nuts begin to tighten against the plate 16, the screws 36 would ordinarily tend to rotate. However, the flattened parts 38 are of a diameter greater than the width of their associated slots 32, as will be readily noted from Fig. 5. Further, the edges of the slots 32 occur medially between the upper and lower ends of the flattened parts 38. Therefore, when the screw 36 starts to rotate, diametrically opposite portions of the flattened parts 38, opposite sides of said flattened parts, will engage against the edges of the slot 32, with the flattened parts 38 now being disposed obliquely to the slot edges as shown in dash-dotted lines in Fig. 5. The wing nuts can now be tightened without danger of the screws rotating.

When the wing nuts are to be removed, the screws will...
turn to the chain-dotted positions shown in Fig. 5, and again will be held against rotation.

The construction permits the refill to be universally used with any conventional mop handle of the general type shown in Fig. 1. The spacing of the openings 20 of said handles differs, according to the various makes of handles. The universal refill, however, can be attached to any of the handles, since the screws 36 can be adjustably spaced within a wide range.

In Figs. 6-8 a modified form is shown wherein the refill 22 has a flat plate 26 secured to the top surface of the mop body 24. In this form, transverse slits, spaced longitudinally of plate 26, and designated at 42, are formed in the plate 26. The slits terminate short of the opposite longitudinal edges of plate 26. The slits are arranged in pairs, there being one pair at one side of the midlength point of the plate 26, and the other pair at the other side. Between the slits of each pair there is extended, longitudinally and centrally of the plate 26, a slot 32. The slot 32 is defined between the transversely spaced free edges of raised flange elements 45 that are defined by formation of the slits 42, and are forced upwardly out of the plane of the plate 26. The flange elements are of springy characteristics, and are ordinarily in the position shown in Fig. 6, before attachment of the refill to a mop handle. The flange elements at each side of a slot 32 together constitute a raised portion 30 analogous to the portion 30 at each end of the plate 26 in the first form of the invention.

On the free, upwardly offset longitudinal edges of the respective flange elements, there are formed lips 44. The lips 44 extend the length of the flange elements, and are inclined transversely thereof, the lips being turned downwardly in the direction of the longitudinal center line of plate 26, and when seen in cross section being in downwardly converging relation to one another. The provision of the lips 44 defines crest parts 46 on the respective flange elements.

Normally, the slots 32 are of a width greater than the diameter of the head 40 of the screw. As a result, the screw can be first attached to the mop handle plate 16, by extension through the openings 20. Thereafter, the wing nuts 41 can be applied and are threaded downwardly until they engage the plate 16 against the top portions of the flattened parts 38 of the screws.

With the body portion 18 of the plate 16 engaged between the flat part 38 and the wing nut 41, the plate 16 is lowered as shown by the arrow in Fig. 6, the head 40 of each screw being moved into the associated slots 32.

Continued movement of the plate 16 in the slot 32 will ultimately bring the underside of body portion 18 against the crest parts 46. The user now presses downwardly on the plate 16, and this causes the lips 44 to be forced inward one another to narrow the slots 32, this action obtaining by reason of the springy characteristics of the flange elements 45. This brings the lips 44 into engagement with opposite sides of the flattened part 38 as shown in Fig. 7, to prevent rotation of the screw 36. With the plate 16 held in this position momentarily, the user tightens the wing nuts 41, until the two plates have been tightly connected.

The form shown in Figs. 6-8 has the advantage that it does not require one to visually adjust the screws 36 in an attempt to space them apart a distance corresponding to the spacing between openings 20. While the making of such adjustment visually is not particularly difficult, the arrangement shown in Figs. 6-8 permits the screws to be first attached to the plate 16, after which they will be automatically properly spaced longitudinally of the plate 26 when extended into the slots 32.

While we have illustrated and described the preferred embodiments of our invention, it is to be understood that we do not limit ourselves to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent is:

1. For attachment to a mop handle mounting plate having spaced openings, a sponge mop refill comprising an elongated sponge mop body, an elongated plate affixed thereto having longitudinal slots registerable with said openings, and fastening means adjustable longitudinally of the slots into registration with said openings for extension of said means through the openings to connect the plate, said slots being spaced apart at opposite sides of the midlength point of the refill plate, and being aligned longitudinally of the body, said refill plate having raised portions extending longitudinally and centrally thereof, the slots being formed in the crests of said raised portions, said fastening means comprising screws having integral heads underlying the raised portions, said fastening means further comprising nuts threadable upon said screws against the mounting plate after extension of the screws through the openings of the mounting plate, the screws having flat disc-shaped parts in proximity to the heads thereof, said flat parts being greater in diameter than the width of the slots, to engage against opposite edges of the slots and thereby prevent rotation of the screws.

2. For attachment to a mop handle mounting plate having spaced openings, a sponge mop refill comprising an elongated sponge mop body, an elongated plate affixed thereto having longitudinal slots registerable with said openings, and fastening means adjustable longitudinally of the slots into registration with said openings for extension of said means through the openings to connect the plate, said slots being spaced apart at opposite sides of the midlength point of the refill plate, and being aligned longitudinally of the body, said refill plate having raised portions extending longitudinally and centrally thereof, the slots being formed in the crests of said raised portions, said fastening means comprising screws having integral heads underlying the raised portions, said fastening means further comprising nuts threadable upon said screws against the mounting plate after extension of the screws through the openings of the mounting plate, the screws having flat disc-shaped parts in proximity to the heads thereof, said flat parts being greater in diameter than the width of the slots, to engage against opposite edges of the slots and thereby prevent rotation of the screws.

3. For attachment to a mop handle mounting plate having spaced openings, a sponge mop refill comprising an elongated sponge mop body, an elongated plate affixed thereto having longitudinal slots registerable with said openings, and fastening means adjustable longitudinally of the slots into registration with said openings for extension of said means through the openings to connect the plate, said slots being spaced apart at opposite sides of the midlength point of the refill plate, and being aligned longitudinally of the body, said refill plate having raised portions extending longitudinally and centrally thereof, the slots being formed in the crests of said raised portions, said fastening means comprising screws having integral heads underlying the raised portions, said fastening means further comprising nuts threadable upon said screws against the mounting plate after extension of the screws through the openings of the mounting plate, the screws having flat disc-shaped parts in proximity to the heads thereof, said flat parts being greater in diameter than the width of the slots, to engage against opposite edges of the slots and thereby prevent rotation of the screws.
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portions extending longitudinally and centrally thereof, the slots being formed in the crests of said raised portions, said fastening means comprising screws having heads underlying the raised portions, said fastening means further comprising nuts threadable upon said screws against the mounting plate after extension of the screws through the openings of the mounting plate, the screws having flat disc-shaped parts in proximity to the heads thereof, said flat parts being greater in diameter than the width of the slots, to engage against opposite edges of the slots and thereby prevent rotation of the screws, said raised portions each comprising a pair of upwardly offset flange elements of springable material, said flange elements being yieldably and resiliently shiftable in the direction of the sponge mop body to reduce the width of the slot defined therebetween, each flange element having a lip formed thereon and extending along the adjacent side of the slot, said lips converging in a downward direction to define crest parts on the respective flange elements, said mounting plate being engageable against said crest parts to force the flange elements downwardly to engage the lips against opposite sides of said flat parts, thereby to bind the screws against rotation.

5. For attachment to a mop handle mounting plate having spaced openings, a sponge mop refill comprising an elongated sponge mop body; an elongated plate affixed thereto having longitudinal slots registrable with said openings, and fastening means adjustable longitudinally of the slots into registration with said openings for extension of said means through the openings to connect the plates, said slots being spaced apart at opposite sides of the midlength point of the refill plate, and being aligned longitudinally of the body, said refill plate having raised portions extending longitudinally and centrally thereof, the slots being formed in the crests of said raised portions, said fastening means comprising screws having heads underlying the raised portions, said fastening means further comprising nuts threadable upon said screws against the mounting plate after extension of the screws through the openings of the mounting plate, the screws having flat disc-shaped parts in proximity to the heads thereof, said flat parts being greater in diameter than the width of the slots, to engage against opposite edges of the slots and thereby prevent rotation of the screws, said raised portions each comprising a pair of upwardly offset flange elements of springable material, said flange elements being yieldably and resiliently shiftable in the direction of the sponge mop body to reduce the width of the slot defined therebetween, each flange element having a lip formed thereon and extending along the adjacent side of the slot.

6. For attachment to a mop handle mounting plate having spaced openings, a sponge mop refill comprising an elongated sponge mop body, an elongated plate affixed thereto having longitudinal slots registrable with said openings, and fastening means adjustable longitudinally of the slots into registration with said openings for extension of said means through the openings to connect the plates, said slots being spaced apart at opposite sides of the midlength point of the refill plate, and being aligned longitudinally of the body, said refill plate having raised portions extending longitudinally and centrally thereof, the slots being formed in the crests of said raised portions, said fastening means comprising screws having heads underlying the raised portions, said fastening means further comprising nuts threadable upon said screws against the mounting plate after extension of the screws through the openings of the mounting plate, the screws having flat disc-shaped parts in proximity to the heads thereof, said flat parts being greater in diameter than the width of the slots, to engage against opposite edges of the slots and thereby prevent rotation of the screws, said raised portions each comprising a pair of upwardly offset flange elements of springable material, said flange elements being yieldably and resiliently shiftable in the direction of the sponge mop body to reduce the width of the slot defined therebetween, each flange element having a lip formed thereon and extending along the adjacent side of the slot.

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