This invention relates to a mophead holder. More particularly, it relates to a holder enabling quick attachment and detachment of the mophead.

Mop heads have heretofore been known in which the mophead had pockets on its upper surface and in which the mophead holder had means to releasably engage the pockets, usually comprising spring hinges or similar devices. These, when engaged, applied a stretching force to the pockets so that while the fit was tight at first, the mophead would soon stretch out of shape, would get loose, and eventually would fall off. The present invention solves this problem by providing a novel mophead holder which can always be made to fit snugly in the mophead pockets and yet can be readily released. It applies no stretching forces unless those are desired.

A feature of the present invention is a structure providing a relative sliding action between two parts of the mophead holder, together with a novel alignment provision and tightening means such as a pair of wing nuts. When the nuts are tight, the two parts are held securely in place as in its extended position. When they are loosened, they can readily be slid together, as for withdrawal of one mophead and insertion of another mophead, and slid apart, as for engagement in the pockets.

Thus one object of the present invention is to provide a quick-action mophead holder for use with pocket-type interchangeable mopheads characterized by its ability to hold the mopheads snugly without stretching them. As a corollary, this invention makes it feasible to change mopheads frequently, so that they may be washed between uses, and so that different ones may be used for different purposes.

Other objects and advantages of the invention will appear from the following description of a preferred embodiment thereof.

In the drawings:

FIG. 1 is a view in perspective of the lower portion of a mop having a mophead holder embodying the present invention, the handle and the ends of the mophead being broken off to enable use of a rather large scale drawing.

FIG. 2 is a top plan view of the mophead holder in FIG. 1. The holder is shown in solid lines in its extended position; the broken lines show one of the elements slid relatively to the other to collapsed position used during insertion and removal of a mophead.

FIG. 3 is a fragmentary view in perspective generally similar to FIG. 1 but showing in solid lines the mop holder in its retracted position for insertion and removal; broken lines showing the inserted position. Most of one side of the mophead and holder have been broken off to conserve space.

FIG. 4 is an end elevation view of the mop holder, on a somewhat enlarged scale, with the handle in the swivelable position.

FIG. 5 is a front elevation view of the central portion of the mop holder on the scale of FIG. 4.

FIG. 6 is a top plan view of the central portion of the mop holder, taken on the scale of FIGS. 4 and 5.

FIG. 7 is a fragmentary view in perspective of the central portion of the mop holder taken on the same scale as FIGS. 1 through 3. The handle-attachment portion of the mophead holder is shown in solid lines in a vertical position, while broken lines show the extreme positions thereof along a plane perpendicular to the mop head holder.

FIG. 8 is another perspective view of the central portion of the mop holder, showing the swiveling movement of the handle-attachment portion in a direction perpendicular to the movement shown in FIG. 7.

FIG. 9 is a top plan view on a reduced scale of a mophead of the type used in my invention.

FIG. 10 shows the lower portion of a mop with a handle 10, most of which is broken off to conserve space, a mophead holder 11 of the present invention and a mophead 12.

As shown in the drawings, the mophead or cleaning portion 12 may comprise an assembly of cotton string 13 with a fabric backing 14. By way of example, (see FIG. 9), it is shown as having a long rectangular shape, although some changes in the shape may be made without departing from the principles of this invention.

The fabric backing 14 is provided with pairs of sockets or pockets 15, one at each end, preferably made by folding a portion of the fabric back on the backing strip 14 and stitching it thereon at least the two edges. The closed side may have a heavier fabric added to it for additional strength. The mop holder 11 is insertable into the pockets 15 for using the mop and is removable when the mophead 12 is to be washed, or when a change is to be made to another type of mophead.

The holder 11 of this invention includes a pair of generally rectangular plate members 16, 17. These plate members 16, 17 may be made of flat steel, preferably their longitudinal edges are provided with upwardly and outwardly extending flanges 18. The purpose of these flanges 18 is to enable the two plate members 16, 17 to nest together. Flat plates would not of themselves have any guiding action during expansion or contraction of the mop holder 11.

Each plate 16, 17 is preferably provided with one longitudinally extending closed-end slot 19 and with a bolt opening 20 adapted to lie opposite the slot 19 of the other plate 17 or 16. Bolts 21 in the assembled mop each extend through the bolt opening 20 and the slot 19 in the two opposite plates 16, 17, and are provided with fastening and release means, such as a wing nut 22 and a washer 23, are provided, preferably on the upper surface of the upper plate member 16. As will be obvious from FIGS. 1, 2 and 3, this means that the two plates 16, 17 can slide relatively to each other lengthwise, guided by their flanges 18 and by the slots 19 and bolts 21. This makes it possible to insert the plates 16, 17 into the pockets 15 by (1) collapsing the plates 17, 16 together to shorten their length, (2) inserting the upper plate 16 into one pocket 15, (3) sliding the lower plate 17 relative thereto with the nuts 23 loosened but still engaged until it engages the other plate 15, and (4) tightening the nuts 22 firmly to hold the plates 16, 17 in the extended position.

The upper plate 16 is provided, at a place which will, when the mophead holder 11 is in the extended position, be at about the center thereof, with a pair of opposed bracket members 30 (see FIGS. 4 to 8). These bracket members 30 may comprise corner members having three sides. A horizontal base side 31 is secured to the plate member 16, as by rivets 29, screws, or other suitable means. An upstanding flange 32 extends perpendicular to the plane of the plate 16 and also perpendicular to its longitudinal axis. The two flanges 32 face other and are spaced apart for a purpose soon to be explained. They have a generally L-shape or step-shape, having a higher portion 33 and a lower portion 34. The third corner 35 of the bracket members 30 is not essential, but is advisable to provide rigidity for these opposed parallel members 30. Aligned openings 36 are provided in the lower steps 34 of the parallel opposed flanges 32.

The mophead holder 11 is attached to a handle 10 by a handle receiving member 40 comprising a pair of steel plates 41, 42 formed into a generally circular tapered socket and secured together by welded side flanges.
At their forward end, the plates 41, 42 are formed to provide a split yoke 43. The connection between this yoke 43 and the supporting bracket on the mop holder 11 is made by a novel type of universal connection 44. The universal joint member 44 preferably comprises a box-like member 45, which may be open at the ends, providing four sides 50, 52 generally rectangular and preferably square. A bolt 46 extends through the aligned openings 51 in the lower step 34 and through aligned openings 52 in the side walls 50 of the box-like member 45 to provide a pivotal connection to the upward-standing parallel bracket flanges 32. Another bolt 47, perpendicular to this one, a short distance therefrom, extends through the other two sides 54 and connects the member 45 to the yoke member 43. This means that the handle 10 is pivoted along an axis generally horizontal and perpendicular to the longitudinal axis of the mop holder 11, while the universal joint 44 is itself pivoted relatively to the brackets 30 by a generally horizontal pivot 46 parallel to the longitudinal axis of the mop holder 11.

It will be noticed also that the upper step 33 cooperates with the yoke 43, so that the yoke 43 extends approximately even with the top of the upper step 33 when the handle 10 is being perpendicular to the mop holder 11. The upper portion of the step 33 provides a means for preventing the swiveling action on the upper bolt 47 and permits only movement along the plane perpendicular to the plates 16, 17. This means that when the user is holding the mop handle 10 on the same side of the mop as the upper steps 33, he is assured of relative rigidity, and the close fit of the tolerance provided by tightening the bolt 46 on the universal joint 44 between the two brackets 30 is enough to prevent accidental vertical movement except when the user wants it. On the other hand, once the mop handle 10 has been swung over to the other side, above the lower step 34, the swiveling action is free to take place both in the vertical plane heretofore mentioned and also in any plane perpendicular to that plane. This means that it is possible for the mophead to assume almost any position relative to its handle when on that side of the mop holder 11.

The operation of the present device is as follows: the handle 10 is inserted in the handle holder 40, and the mop-holding portion 11 is readied to receive the mop cleaning portion 12 by loosening the wing nuts 22 or other tightening device, and moving the plates 16, 17 together. The bolts 21 and the slot 19 along with the flanges 14, respectively the two plates 16 and 17, parallel to one another to the closest position. The rectangular dusting-mop portion 12 is then laid on the floor, the mop-holding portion 11 is placed on top of the fabric backing 14 and once again the plates 16 and 17 are moved relative to one another, this time in an outward direction so that the ends of the plates 16 and 17 are inserted into the pockets 15 of the dusting portion 12. When the plates hit the ends of the pockets 15, the wing nuts 22 are tightened and the mop is ready for use.

Now, depending on the type of area to be cleaned, the handle 10 may be vertically tilted to either the swivel side 34 of the mop holder 11 or it may be kept on the rigid side 33 of the mop holder 11, if no swivel action is desired.

It can easily be seen that this assembled mop has many advantages over prior-art structures. The user may have a free moving mophead 12 with which to get into corners and other inaccessible areas, or the user may keep the mophead in its conventional position for covering large, flat surfaces which are unobstructed by desks, etc. At the same time, the user may easily replace or substitute one mophead 12 for another when the used mophead 12 gets dirty, or when a job requires a different type of mophead 12.

To those skilled in the art to which this invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the spirit and scope of the invention. The disclosures and the description herein are purely illustrative and are not intended to be in any sense limiting.

1. A dust mop, including in combination a pair of elongated plates of substantial width, an upper plate lying on top of a lower; means joining said plates and making them sidable with respect to each other along a longitudinal direction only for a distance comprising most of the length of each of said plate, so that overall length can be greatly extended; means for locking said plates in any of their relative positions; a mophead with deep facing wide pockets, each pocket receiving and being filled by an end portion of one said plate when the plates are slid longitudinally to spread them and extend one said plate into each said pocket; means for securing a handle to the upper said plate; said plates filling said pockets and providing a continuous backing for said mophead so as to maintain said mophead in full contact with the surface to be cleaned.

2. A dust mop holder for an elongated rectangular mop having deep facing pockets at its opposite ends, comprising an upper elongated plate and a lower elongated plate, each plate having a central flat portion and short longitudinal edge flanges much shorter than the width of said plate, said plates nesting together with the flanges preventing lateral or rotary relative movement, each plate having a long longitudinally extending closed slot, the slots on different plates being laterally displaced from each other, and a guiding and tightening means extending through the slot of the other plate, so that said two plates can be slid together to shorten their total length and can be extended apart to elongate their total length and extend into the pockets of the mop, said means being tightened in any desired position, whereby a solid backing for said mop can be made to extend across the full length of said mop.

3. A dust mop holder for an elongated rectangular mop having deep facing pockets at its opposite ends, comprising an upper elongated plate and a lower elongated plate, each plate having a central flat portion and longitudinal edge flanges extending upwardly and outwardly at approximately 45°, the plates nesting together with the flanges preventing lateral or rotary relative movement, each plate having a long longitudinally extending closed slot, the slots on different plates being laterally displaced from each other, and a guiding and tightening means extending through the slot of the other plate, so that said two plates can be slid together to make their total length approach their individual length and can be extended apart to make their total length approach twice their individual length and extend into the pockets of the mop, said means being tightened in any desired position, whereby a solid backing for said mop can be made to extend across the full length of said mop.

References Cited in the file of this patent

UNITED STATES PATENTS

997,777  Nielk  ------------------ July 11, 1911
1,362,940  Severs  ------------------ Dec. 21, 1920
1,830,046  Anderson  --------- Mar. 15, 1932
1,991,693  Oberti  ------------------ Feb. 19, 1935
2,109,635  Ferri  Mar. 19, 1938
2,273,371  Oberti  Feb. 17, 1941
2,335,598  Flandig  Aug. 3, 1943
2,572,978  Bogen  Oct. 30, 1951
2,735,495  Park  July 24, 1956
2,802,230  Madsen  Aug. 13, 1957
2,804,638  Veshbikian et al.  ------------------ Oct. 24, 1957
2,840,840  Yamen  ------------------ July 1, 1958
2,930,564  Maier  ------------------ Mar. 29, 1960