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QUICK CHANGE MOP HOLDER WITH OUTER HINGED JAW

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QUICK CHANGE MOP HOLDER WITH OUTER HINGED JAW

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This invention relates in general to a mop and is more particularly described as a mop with a screw type clamping head for receiving one or more cotton mop heads.

An important object of the invention is to provide a mop which has a bail looped and firmly attached at its inner end and open at the outer end for the insertion and removal of mop heads.

A further object of the invention is to provide a mop with a cross bar at the outer end of the bail fastened at one end and adapted to be opened at the other end for the admission and removal of the mop heads.

Still a further object of the invention is to provide a triangular support for the inner bent end of the bail which also is engaged with a mop handle and to firmly attach the socket parts in engagement with the bail.

Other objects of the invention will appear in the specification and will be apparent from the accompanying drawings in which,

Fig. 1 is a side elevation of a mop in accordance with this invention with one of the socket plates removed and with parts shown in section.

Fig. 2 is an elevational view of the mop as taken at one edge of Fig. 1 but with both socket plates in place; and

Fig. 3 is an outside elevation of one of the socket plates.

In a mop supporting head of this type, it is difficult to secure the mop holding frame or bail at the end of a handle or mopstick without its becoming loose so that the bail may twist more or less and get out of alignment. Also in most mops of this kind, it is difficult to quickly attach and remove the cotton or other mop heads which are applied at the outer end of the bail. In this mop, it is necessary only to release the pressure on a clamping member and to open the outer end of the mop for this purpose.

Referring now more particularly to the drawings, this mop comprises a one-piece bail 10 of heavy wire or bar stock which is bent to form a U-bend or a loop 12 intermediate its ends with parallel portions 14 at the sides of the loop and connected portions 16 extending angularly outward from the ends of the parallel portions 14. At the outer ends of the angularly extending connected portions 16 are parallel sides 18, one terminating in a substantially closed reverse loop 20 and the other terminating in a reversely bent open hook 22.

At the outer end of the bail is a cross bar 24 preferably channel-shaped in cross section having a hole 26 in the bottom wall of the channel at each end. At one end the hole 26 is engaged by the substantially closed loop 20 and at the other end, the hole 26 is adapted to be loosely engaged by the open hook 22.

With this construction, the cross bar may be covered with the two outer extremities of the bail but it may be easily disengaged from one end and moved to open position beyond the end of the bail for admitting and removing a mop head of cotton or other material.

Within the bail is a clamping head 28 preferably comprising two similar metal sheets 30 secured together in opposite relation, each sheet forming the head having

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an outer rim 32 curved at the ends 34 and together forming a groove 36 for seating the ends of the loop 20 and the hook 22 as well as the cross bar 24 and for engaging the parallel sides 18 of the bail for free sliding movement. The plates of the clamping head are preferably formed with embossed portions 38 and 40 to strengthen the plates and may be formed with perforations 42 on one side having bent tongues 44 which engage the perforations 42 of the other side, thereby clamping the plates tightly together, or the plates may be spot-welded together at the positions of the perforations or at other locations throughout the plates to bind them tightly together in a well known manner.

Centrally of each plate is an opening 46 through the plate with an outwardly rounded embossed portion 48 extending to the inner end of the head and together forming a circular free passage to the openings 46 in the plates. At the opposite side of the opening 46 is an embossed extension 50 forming a continuation of the passageway at the other side of the opening 46.

In order to tightly clamp the loop 14 and to secure the mop to a mopstick or handle 52, a sheet metal socket 54 comprising two similar clamping plates 56 are placed oppositely together, each plate having a semi-circular rounded portion 56 together with the other plate forming a circular recess for receiving the mopstick therein, the mopstick being secured tightly to both other plates 56 by a bolt or rivet 58.

Each socket plate 56 has embossed side grooves 60 conforming to the parallel side portions 14 of the bail 10 near the loop 12 and with angularly extending embossed portions 62 continuing therefrom to seat the connected portions 16 of the bail which extend at an angle to the portions 14. These plates are secured tightly together over the opposite sides of the loop and inner end of the bail by clamping the plates tightly together with overlapping edge portions or by spot-welding the plates tightly together at indicated notches 64 and 66 and to the bail itself, thereby binding these parts in substantially integral relation. The end of the loop 12 extends beyond the embossed portions 62 and needs no specially embossed portion for seating it as it is held tightly in place between the plates of the socket.

Extending centrally and longitudinally of each socket plate between the embossed portions 14 is an embossed portion 68 substantially semi-circular in cross section for seating a screw bar 70 which fits tightly within the opposite embossed portion 18 of the two plates 56 and is held tightly by engagement with the plates and by spot-welding at notches 72 and 74, thereby binding the screw bar tightly in place with a portion thereof extending outwardly from the socket and between the sides of the bail into the opening in the clamping head formed by the embossed portions 48 in the plates 30 of the head and the outer extremity of this screw bar also at times extending into the opening formed by the embossed portions 50 of the plates.

The inner portion of each plate 30 terminates in a straight edge 76 at right angles to the screw bar 70 and mounted on the screw bar is a wing nut 78 adapted to engage the straight edge of the clamping head for moving it outwardly toward the outer end of the bail. To release the clamping head and move it inwardly, the wing nut 78 is manually threaded toward the socket on the screw bar 70 which relieves the clamping head of any pressure therein. In assembly, socket plates 56 are placed on opposite sides of the looped end of the bail and secured in place by clamping or spot-welding, the clamping head is separately assembled by joining the plates 30 and the clamping head is inserted between the parallel sides of the bail with the curved ends 34 engaging the parallel sides 18. The cross bar 24 may be hooked into en-

gement with the substantially closed loop 20 before or after the clamping plate is applied to the bail and the other end of the cross bar may be engaged with the open hook 26 as desired to insert or remove a cotton mop-head from between the outer rims 32 of the clamping head and the cross bar 24.

When the mopheads are inserted between the clamping head and the cross bar, they are tightened in place by threading the wing nut 78 outwardly on its screw bar 70 tightly pressing the inner end of the clamping head outwardly and the rims thereof into engagement with the inserted mop heads. The mopsticks or handles 52 may be applied at the factory where the mop is made or it may be separately applied after the mop is shipped to a dealer or customer.

With this construction, a rigid mop head mounting is produced which is not likely to twist or get out of alignment in use. The bail is made of one piece and the outer ends of the bail are secured together and against twisting by the double connection of the clamping head 28 and the cross bar 24 which not only hold the inserted mopheads tightly in place, but also hold the ends of the bail against twisting or turning movement. By making the bail of one piece and tightly locking the loop 12 of the bail in socket members which are spot-welded or otherwise secured tightly together, the bail is firmly held by the handle and is not likely to be disengaged therefrom.

While a preferred embodiment of the invention has been described in some detail, it should be regarded as an illustration or example rather than as a limitation or restriction of the invention, since various changes in the construction, combination, and arrangement of the parts may be made without departing from the spirit and scope of the invention.

I claim:

1. A mop holder comprising a bail with an inner U-bend having parallel side portions, said bail having outer spaced parallel ends with angular outward extensions from the outer ends of the parallel side portions to the outer spaced parallel ends, one of the parallel ends having an inwardly extending substantially closed loop and the other end having an inwardly turned hook, a cross piece with a hole at each end, one hole in detachable engagement with the substantially closed loop and the other hole adapted to make a releasable connection with the hook, means for engaging the said inner U-bend of the bail and attaching a mop handle thereto, and a clamping head movable on the said parallel spaced outer ends of the bail, the clamping head comprising an outer grooved portion with sides for seating therein the cross bar and the inwardly extending loop and hook of the ends of the bail and with end grooves for slidably engaging the said parallel ends of the bail and means for moving the clamping head in the bail relative to the inner U-bend and said cross piece.

2. A mop holder in accordance with claim 1, the said U-bend engaging means comprising plates secured to-

gether with embossed portions forming a socket bore extending between the plates from the inner edge thereof, the clamping head having a bore extending centrally between the bail ends at the inner side of the head, a threaded bar secured in the socket bore and extending between the parallel ends of the bail into the bore formed in the clamping head, and a lock member movable on the threaded rod into engagement with the inner edge of the clamping head to move the clamping head outwardly in the bail.

3. A mop holder comprising a one-piece bail of heavy wire formed intermediate its ends with an inner U-bend having parallel sides, said bail having outward angular portions extending from the parallel sides and outer spaced parallel ends, one of the ends having an inwardly extending substantially closed loop and the other having an inwardly turned open hook, a cross piece having holes at its ends, one hole engaged with the hook and the other engageable with the loop so that when it is disengaged from the hook, it is turnable about and still engages the said loop at the other end, a socket comprising parallel plates engaging the said inner bail U-bend at the sides of the parallel portions and at the inner end of the said angular extensions, a threaded fastening rod secured between the plates and extending centrally outwardly within the outer parallel ends of the bail and said plates having enlarged recess portions for receiving a mop handle, means binding the socket plates together and tightly engaging the handle, the bail and the threaded rod in place, and a clamping head comprising a grooved portion at its outer edge for seating the cross piece therein and the grooved portion extending at the sides of the clamping head to slidably engage the outer parallel ends of the bail for relative movement of the clamping head thereon, the inner edge of the clamping head having a flat abutment and an open bore extending inwardly from the edge of the flat abutment, the outer end of the threaded rod extending freely within the bore, and clamping means threaded on the rod and movable against the abutment surface of the clamping head to press it outwardly in the bail and to engage a mophead between the outer grooved edge of the clamping head and the cross piece when the latter engages the said loop and the hook ends of the bail.

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