June 16, 1959 W. A. BALLINGER 2,890,471

LATCHED-BACKBONE REMOVABLE MOP

Filed Aug. 17, 1956

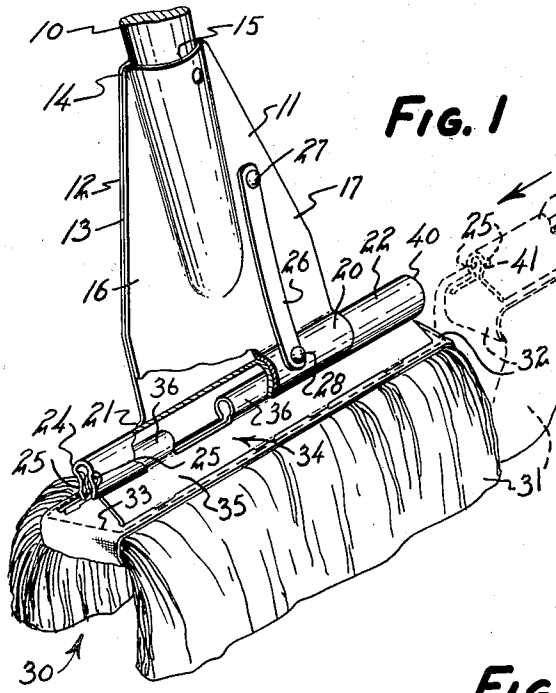


FIG. 1

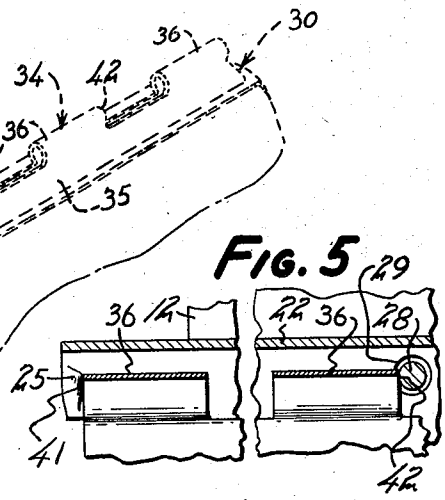


FIG. 5

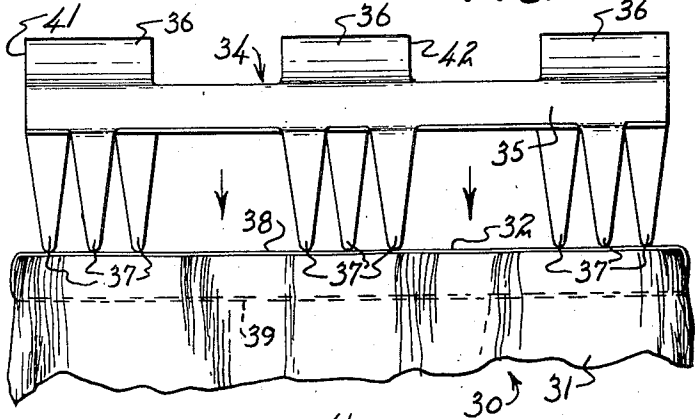


FIG. 3

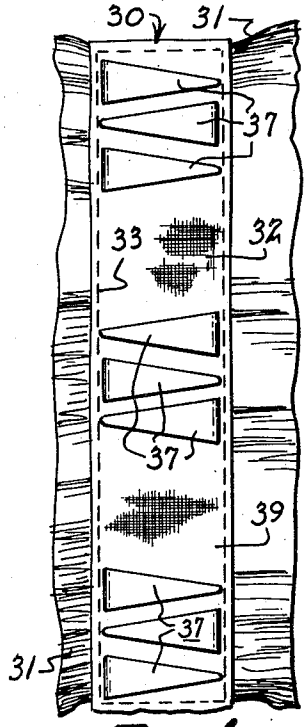


FIG. 4

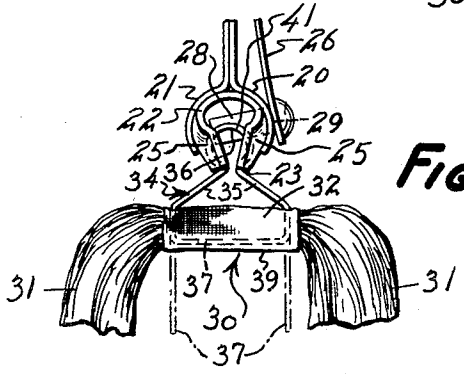


FIG. 2

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LATCHED-BACKBONE REMOVABLE MOP

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4 Claims. (Cl. 15—229)

This invention relates to a mop, which may be used for cleaning floors and other flat surfaces.

The present invention is an improvement, both as to the mop assembly and to the mop head refill unit, over the Baker Patent 2,264,736 issued December 2, 1941, known in the trade as a "Baker" mop, the name Baker being a trademark. The Baker structure, though meritorious, had certain prime disadvantages which the present invention overcomes. For one thing, Baker employed a series of pronged cylindric buttons (see Figs. 2 and 4 of the Baker patent) to connect the mop head to the handle bracket. The prongs were pushed through the top of a back-bone band that bound the mop strands and were then clinched inwardly on its bottom to secure the buttons to the mop head. At least two and usually more pronged buttons were needed in each Baker mop, and they had to be spaced apart from each other and aligned with each other very carefully during assembly. Consequently, assembly of the mop was prolonged by the number of separate pieces that had to be handled and adjusted, and the cost of production was accordingly affected. Furthermore, when the mop refill unit was inserted into the barrel, the cylindric parts of the pronged buttons were often found to be out of alignment and tended to jam in the barrel, delaying or preventing completion of the assembly. Supposedly, the outstanding feature of the mop was the ease and rapidity of changing from one mop head refill to another, and when jamming occurred, this advantage was lost.

Another disadvantage was the difficulty in properly positioning the buttons within the barrel and of locking them in place. Baker provided a pair of swinging spring fingers with latch-forming nogs to snap into respective holes through the barrel and one of the buttons. But before the nog could be snapped in place, the hole through the button had to be accurately aligned with the hole through the barrel, and this alignment took time and often required considerable maneuvering.

The present invention improves the Baker mop by providing accurate spacing and alignment of the buttons with each other, this being accomplished in a one-piece plural-button construction that greatly reduces the time and labor of assembly. My invention also provides a new combination of a stop member in the barrel with the locking nog to give instant and accurate positioning of the buttons in the barrel in the correct location for locking.

One object of the invention is, therefore, to provide an improved mop of the Baker type.

Another object of the invention is to provide a mop refill unit that can be very quickly assembled by the manufacturer.

Another object of the invention is to provide for accurate alignment of the cylindric portion of the pronged buttons in a mop refill unit for a Baker mop.

Another object of the invention is to provide a mop assembly enabling very rapid installation of a refill unit.

Another object of the invention is to provide a mop

of the Baker type in which there can be no jamming while changing from one mop refill unit to another.

Another object of the invention is to provide a bracket, for supporting a Baker-type mop head, of simpler and better configuration.

Other objects and advantages of the invention will appear from the following description of a preferred form thereof, presented in accordance with 35 U.S.C., section 112.

In the drawings:

Fig. 1 is a view in perspective of the lower end of a mop assembly embodying the principles of the invention. The handle is shown broken off, to conserve space, and portions of the barrel and adjacent parts are broken away and shown in section, to disclose the button construction, otherwise obscured. In broken lines, a mop refill unit is shown outside the barrel, ready for insertion therein into the solid-line position.

Fig. 2 is an end elevation view on an enlarged scale of a portion of the assembly of Fig. 1.

Fig. 3 is a view in side elevation of a multi-button member about to be inserted in a yarn thread assembly.

Fig. 4 is a bottom plan view of the central portion of one of the mop refill units.

Fig. 5 is an enlarged view in elevation and in section of a portion of the mop and its connecting member broken in the middle to conserve space, and showing the engagement by one of the buttons of the crimped end with the simultaneous engagement of another button by a locking pin.

In the mop of this invention, one end of a suitable handle **10** is attached to a bracket member **11** comprising two plate members **12** and **13** shaped to provide mating semi-circular portions **14** that fit together to form a generally cylindrical, preferably somewhat tapering, handle-receiving recess **15**. The bracket **11** also has a pair of flanges **16**, **17** provided by the flat portions of the plate members **12**, **13**.

At the lower end of the bracket **11** and (unlike the Baker patent) in line with the mop handle **10**, the present invention provides a pair of elongated concave lips **20**, **21**, one from each plate **12**, **13**, in which may be secured (as by spot welding) an elongated barrel member **22** of the desired length. The barrel member **22** has an axially extending opening **23** along its lower end and is provided at one end **24** with crimped-in sides **25** to provide a stop member, the function of which will be explained later. A locking device is also provided, by a spring finger **26** swingably mounted to the flange **17** by a pivot **27** at one end and having a stud or nog **28** at its outer end. The stud **28** is adapted to snap into an opening **29** through the lip **20** and barrel **22**.

The mop head assembly **30** which is removably supported in the barrel **22**, preferably consists of strands **31** of flat hank cord or some other type of fabric mat, with the hanks securely bound from end to end on a line in between the ends of the cord by a band **32** of substantial fabric, such as a canvas strap. The band **32** is preferably stitched securely from top to bottom through the hank by longitudinal lines of thread stitches **33**, so that the stitched band **32** and the compacted cord strands **31** transversely bound therein form a substantial backbone which may at this time still be flexed transversely. In other words, there is a firm but flexible backbone, free of any rigid core or stiffener.

For attachment of this member to the barrel there is provided a single rigid member **34**, preferably of metal, which takes the place of the separate buttons used by Baker. This novel member **34** may be made from a single sheet of iron, bent and cut to provide a pair of converging sloped flanges **35** with their edges generally parallel to

each other, their upper edges being bridged by a series of spaced-apart substantially cylindrical button portions **36**. Pronges **37** depend from the lower end of the sloped flanges **35**, preferably in groups of three below each button **36**, two on one side and one on the other side, the order alternating between the sets of prongs **37**.

In assembling the refill, the mop impaling prongs **37** are pushed through the top **38** of the backbone band **32** (Fig. 3) and then clinched inwardly on its bottom **39** (Fig. 4), thereby attaching the strands **31** firmly to the metal holder **34**. This very simple operation contrasts with Baker's assembly, because no measuring or alignment of the button portions **36** is necessary in this invention. The single unit **34** pre-aligns and pre-spaces the buttons **36**, and it remains rigid, so that when the prongs **37** are pushed in and locked, the refill unit **30** is completely ready for attachment to the bracket **11**.

A completed refill unit **30** is assembled into the bracket **11** by sliding the pre-aligned and pre-spaced buttons **36** into the open end **40** of the barrel **22**. There is no need here for careful alignment either. The unit **30** is pushed in until the end **41** of an end button **36** abuts and is stopped by the crimped end **24** of the barrel **22**. When it reaches that point, it is automatically aligned, and the spring finger **26** is simply swung around by one's thumb and its stud **28** sprung into the hole **29**, and locks behind the trailing edge **42** of one of the short cylindrical buttons **36**. The refill unit **30** is then securely locked in place and is held there against any possibility of retraction, by the edges **41** and **42** being held between the crimped end **24** and the stud **28**. Positive alignment is assured during manufacture of the barrel **22** and member **22**. There is obviously no possibility of jamming or misalignment, either during manufacture or change of refill units.

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.

I claim:

1. A mop assembly, comprising a bracket having a handle-receiving recess with a flanged portion therearound and a tubular barrel transverse to and on the same plane as said recess, the opposite side of said barrel from said recess being an open slot, the walls at one end only of said barrel being crimped inwardly to provide a stop, said barrel also having a hole through its walls at a spaced distance from said crimped end; a locking spring member swingably attached to said flange at one end and having a locking stud at its other end adapted to engage in said hole; a mop head having a flexible nonmetallic backbone; and a unitary rigid mop-head-securing member having a spaced-apart series of aligned generally cylindric buttons joined by a pair of flanges provided with prongs impaled into said mop head, said buttons including an end button and being slidable into said barrel and aligned and locked in position by the leading edge of said end button engaging said crimped end and the trailing edge of a button being engaged by said locking stud.

2. A mop assembly, comprising a bracket having a handle-receiving recess, a planar flanged portion therearound, a tubular barrel in the plane of said flanged portion and transverse to said recess, the side of said barrel away from said recess being an open slot, said barrel being provided with stop means at one end thereof, said barrel also having a hole through its walls at a spaced distance from said stop means, a spring locking member swingably attached at one end to said flange and having a locking stud at its other end adapted to engage in said hole, a mop head, and a unitary rigid mop-head-securing member having a spaced-apart series of aligned generally cylindric buttons joined by an integral pair of flanges from which depend prongs impaled into said mop head, said buttons including an end button and being slidable into said barrel and adapted to be aligned and removably locked in position by the leading edge of said end button engaging said stop means and the trailing edge of a button being engaged by said locking stud.

3. In a mop, a longitudinally-slotted tubular barrel having stop means at one end and a hole at a spaced interval from said stop means; a mop unit having a unitary rigid supporting member provided with a series of spaced generally cylindrical buttons, including an end button, slidably arranged in said barrel, the leading edge of the end button being adapted to engage said stop means, one said button upon that engagement then being in a position where its trailing edge is closely adjacent said hole and on the side thereof nearer said stop means; and locking means adapted to engage through said hole and into engagement with said trailing edge.

4. In a mop, a longitudinally-slotted tubular barrel having its walls crimped in at one end and having a hole therethrough at a spaced interval from said crimped end; a mop unit having a rigid supporting member provided with a series of spaced generally cylindrical buttons, including an end button, slidably arranged in said barrel with the leading edge of the end button adapted to engage said crimped end as a stop, the trailing edge of one said button then being in a position closely adjacent said hole and on the side thereof nearer said crimped end; and locking means adapted to engage through said hole and into engagement with said trailing edge.

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