Dec. 14, 1926. 1,611,033

E. P. HILL ET AL

MOP

Filed April 22, 1925 2 Sheets-Sheet 1

Fig. 1.

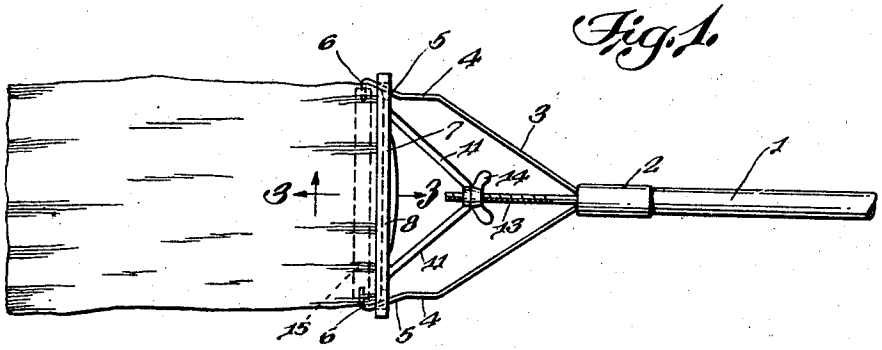


Fig. 2.

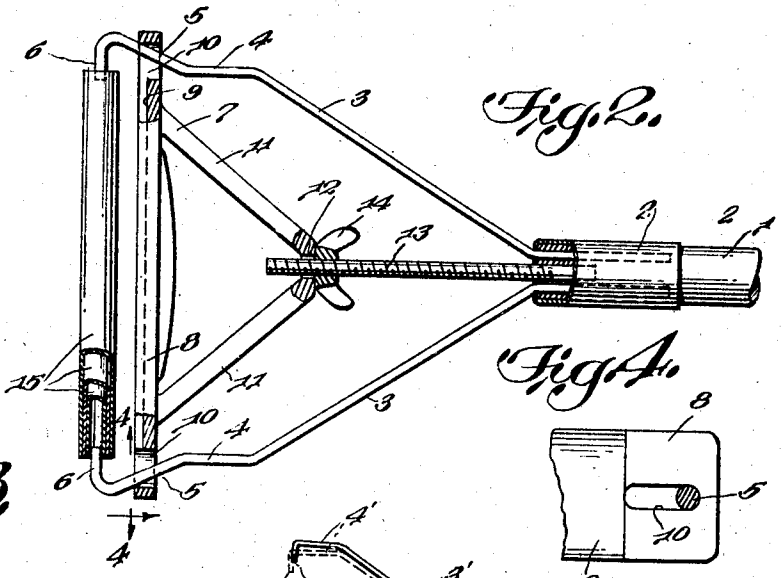


Fig. 4.

Fig. 3.

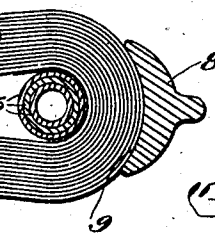


Fig. 6.

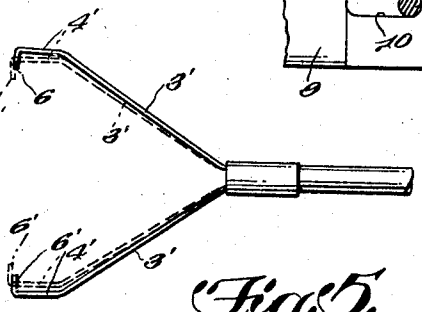
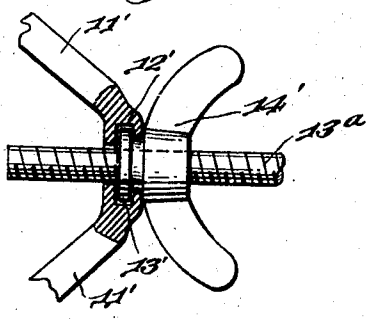


Fig. 5.



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Filed April 22, 1925 2 Sheets-Sheet 2

Fig. 9.

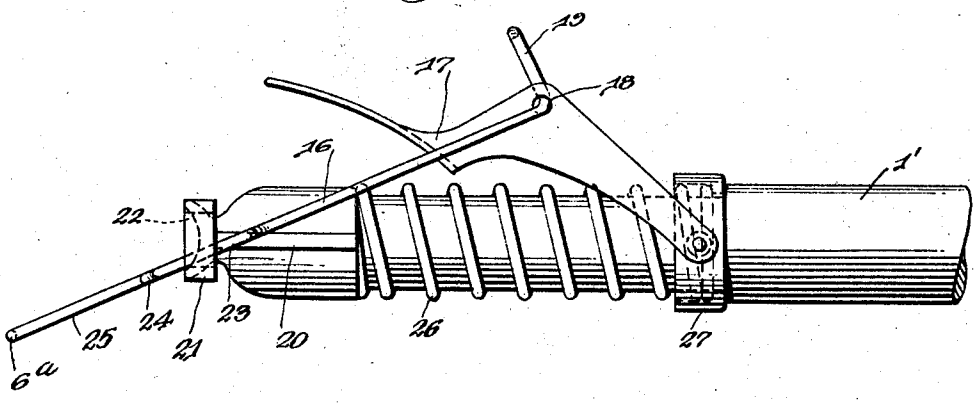


Fig. 8.

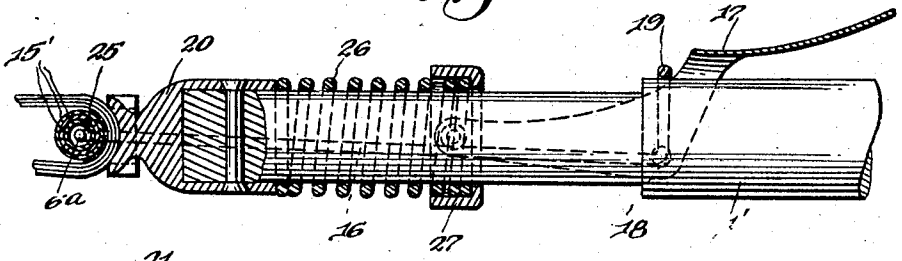
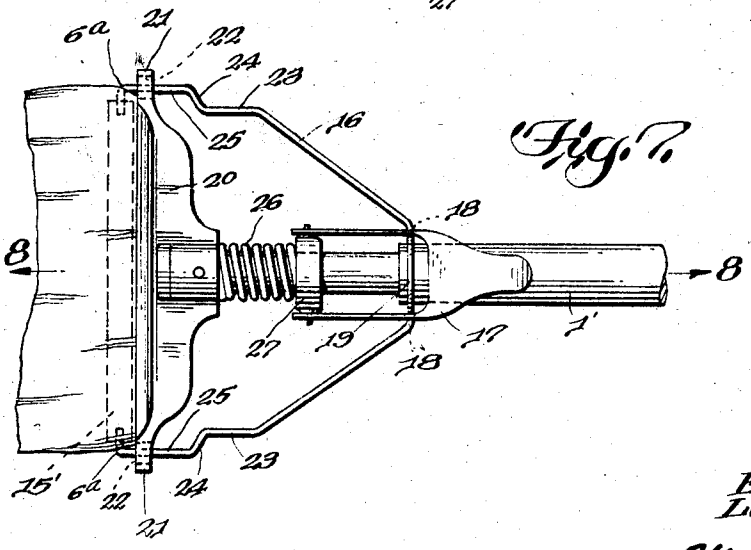


Fig. 7.



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UNITED STATES PATENT OFFICE.

EARL P. HILL AND LEONARD VAN DERA, OF CHICAGO, ILLINOIS.

MOP.

Application filed April 22, 1925. Serial No. 25,078.

This invention relates to new and useful improvements in mop heads and more particularly to a removable supporting rod for the mop cloth or filler. The main object of our invention is the provision of a mop head wherein the usual supporting rod for the mop cloth or filler is removable and attached to the mop head whereby the mop cloth or filler may be quickly and readily detached from the head and when it is desired to discontinue the use of the mop supporting rod for the same may be readily removed. The usual mop cloth or filler at the present time consists of a plurality of strands of fiber and after these fillers are used a short length of time the strands become entangled and it is very difficult to remove them from the present form of mop head as they have to be cut or burned from the mop head and it is one of the principal objects of our invention to provide a mop head with a removable supporting member detachably connected to the mop head and whereby several of supporting members may be provided for a single mop head in case the user desires to change the mop cloth or filler.

With the above and other objects in view our invention consists in the novel features of construction and combination and arrangement of parts to be hereinafter more fully described, pointed out in the claims and shown in the accompanying drawings, in which:

Fig. 1 is a plan view of a mop constructed in accordance with our invention, illustrating the mop cloth or filler in position.

Fig. 2 is a similar view, parts thereof being broken away and illustrated in section.

Fig. 3 is a detailed transverse section on the line 3—3 of Fig. 1.

Fig. 4 is a detailed section on the line 4—4 of Fig. 2.

Fig. 5 is a plan view illustrating a slightly modified form of supporting rod,

Fig. 6 is a side elevation of the adjustment for the clamping member illustrating a slightly modified form of the same, with parts thereof broken away and illustrated in cross section,

Fig. 7 is a plan view illustrating our improvement attached to another form of mop head,

Fig. 8 is a longitudinal section on the line 8—8 of Fig. 7, and

Fig. 9 is a side elevation.

In the construction of our improved mop we provide a handle 1 having a socket 2 attached thereto and supported by the socket 2 are the inner ends of the divergent arms 3 which form the main support for the mop head. The arms 3 are provided adjacent their outer ends with parallel portions 4 and the extreme ends beyond the parallel portions extend outwardly to form the divergent portions 5 and then are disposed at right angles to the parallel portions 4 to form opposed supporting fingers 6. Slidably mounted upon the arms 3 is the clamping structure 7 which includes the longitudinal clamping bar 8 having a longitudinally extending curved portion 9 and provided adjacent each end with the elongated openings 10 for receiving the arms 3 to slidably mount the clamping member.

The clamping member further includes the braces 11 the inner ends of which are integrally connected and provided with the opening 12 thru which the threaded rod 13 projects. Mounted upon the rod 13 is the thumb screw 14 which is adjustable on the rod in order to move the clamping structure upon the arms 3.

In the usual construction of mops at the present time the outer ends of the arms 3 are connected to form the continuous rod along the clamping structure but in our improved device the ordinary rod has been cut away and a removable supporting member used for replacing this rod. This removable supporting member may be in the form of a rod having central bores at each end for receiving the opposed fingers 6 or the supporting member may be in the form of telescoping tubes as illustrated in Fig. 2 and whereby the fingers 6 will engage within the ends of the tubes for supporting them in parallel relation with the clamping bar 8.

Any number of tubes 15 may be used and the number of mop cloths or fillers may be provided with these tubes so that the cloths or fillers may be readily interchanged in a single mop head. In placing the filler in position, the clamping member 7 is removed inwardly toward the handle 1 and the ends of the tube bearing the filler are positioned for receiving the fingers 6 in the ends of the tube. The thumb screw 14 is then adjusted outwardly on the rod 13 moving the clamping bar 8 toward the tube so as to securely clamp the filler in place. It will be noted that as the clamping member 7 moves to-

ward the tube the ends of the clamping bar will ride over the angular portions 5 of the arms 3 and cause the outer end of the arms to move inwardly toward the tube, securely positioning the fingers 6 in the ends of the tube so as to securely hold the filler against displacement. It will be apparent from the foregoing that when it is desired to remove the filler the thumb screw is moved inwardly on the rod 13 and the clamping structure pulled inwardly on the arms 3 until the fingers 6 may be disengaged from the ends of the tube.

The entire tube and filler may be then removed from the mop head and a new filler and tube be placed in position and it will be apparent that when the used filler is removed the tube therein may be quickly and readily removed and be placed in a new filler.

In Fig. 5 we have illustrated a slightly modified form in the arms 3′ wherein it will be noted that the outer ends thereof are provided with parallel portions 4′ and fingers 6′ extended at right angles from the outer ends of the parallel portions.

In Fig. 6 we have illustrated a slightly modified form of means for adjusting the clamping structure wherein the juncture of the brace members 11′ is provided with the receiving socket 12′ having positioned therein the head 13′ formed integral with the thumb screw 14′ whereby when the thumb screw 14′ is adjusted on the threaded rod 13ª the clamping structure will be moved simultaneously with the adjustment of the thumb screw.

In Figs. 7 to 9 inclusive we illustrate the principle of the invention as applied to a different type of mop head. In this form of mop head we provide a U-shaped supporting member 16 the intermediate portion of which is engaged with the clamping arm 17 by extending the same thru the openings 18 in the clamping member forming an arcuate portion 19 intermediate the ends of the members 16 whereby the same will conform to the contour of the handle 1 when the clamping member is in an operative position as shown in Fig. 8. The main features of the form shown in Figs. 8 and 9 are of a well known structure sold on the market at the present time but for use with our improved mop head the clamping head 20 is provided with extended end portions 21 having openings 22 therethru for receiving the side arms of the U-shaped members 16. The outer ends of the U-shaped members 16 are disposed at right angles to form the fingers 6′ as in the main form of the invention. In this form of the invention the sides of the members 16 are provided with parallel portions 23 the outer ends of which are extended at an angle as shown at 24 and then arranged parallel as shown at 25 whereby when the ends of the clamping members 20 are provided so as when they are moved off the parallel portions 23 the fingers 6′ may be readily engaged or disengaged with the ends of the filler tube 15′.

In the form of the invention shown in Figures 7 to 9 inclusive the clamping member 20 is forced toward the filler supporting tube 15′ by means of the coil spring 26 which is placed under compression by means of a movable cap 27 engaged over the inner end of the spring and connected to the pivoted clamping member 17.

It will be apparent from the foregoing description taken in connection with the drawings that we have provided a simple and inexpensive mop head which not only will eliminate time and waste in removing the mop cloths or fillers from the head but provides a simple and effective device whereby the mop cloths or fillers may be quickly and readily removed or replaced.

While we have shown and described the preferred form of our invention it will be obvious that various changes in the details of construction and the combination and arrangement of parts and in the proportions may be resorted to for successfully carrying our invention into practice without sacrificing any of the novel features or departing from the scope of the appended claims.

Having thus described our invention, what we claim is:

1. In a mop, the combination with a mop head receiving tube, of a handle, oppositely diverging resilient arms carried by the handle and including end portions bent in a direction toward each other and adapted for insertion in the end portions of the tube, a clamping member having elongated openings formed in its opposite end portions through which the arms are adapted to pass, said clamping member being adapted to spring the arms toward each other to engage the end portions in the end portions of the tube and said clamping member being adapted to be adjusted into clamping engagement with the mop head carried by the tube, and means for moving said clamping member into clamping position with respect to the head and in a direction to spring the arms toward each other, substantially as described.

2. In a mop, the combination with a mop head receiving tube, of a handle, oppositely diverging resilient arms carried by the handle and including end portions bent in a direction toward each other adapted for insertion in the end portions of the tube, a clamping member having elongated openings formed in its opposite end portions through which the arms pass, said clamping member being adapted to spring the arms toward each other to engage the end portions in the end portions of the tube and said

clamping member being adapted to be adjusted into clamping engagement with the mop head carried by the tube, and means for moving said clamping member into clamping position with respect to the head and in a direction to spring the arms toward each other, said means including a thread bearing rod, a member defining an opening through which the rod is adapted to project and operatively connected to the clamping member, and a thumb nut threaded upon said rod and adapted to be moved into operative relation with said member, substantially as described.

In testimony whereof we affix our signatures.

LEONARD VAN DERA.
EARL P. HILL.