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2,940,108

MOP HEADS

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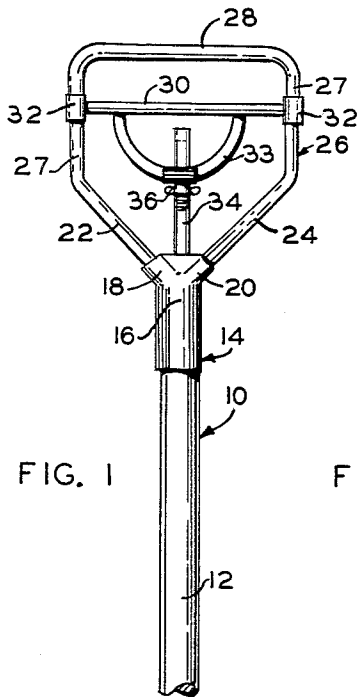


FIG. 1

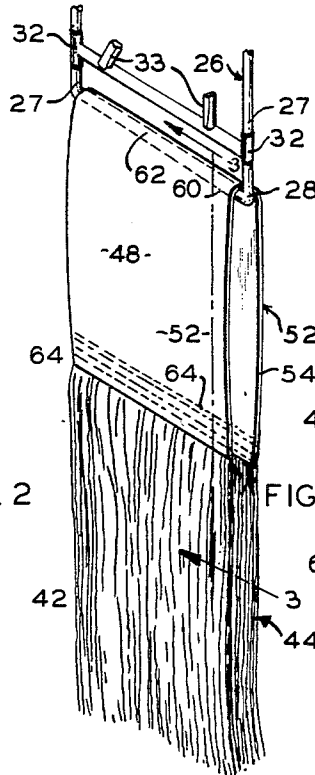


FIG. 2

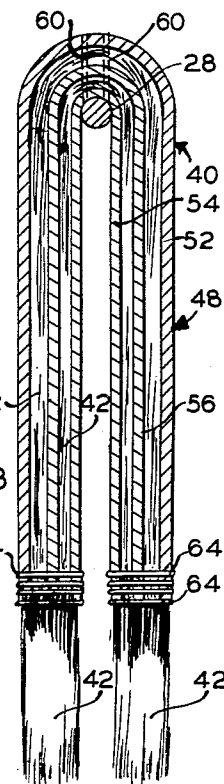


FIG. 3

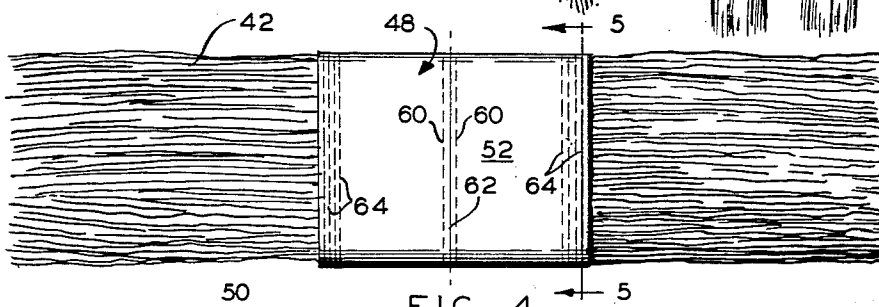


FIG. 4

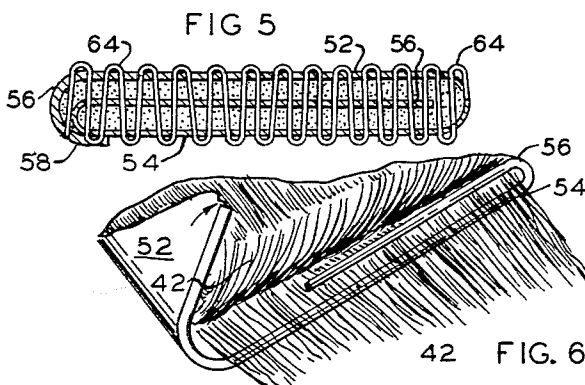


FIG. 5

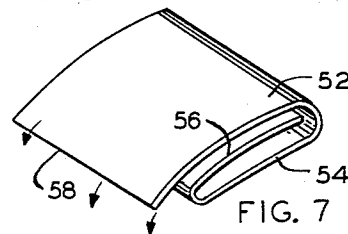


FIG. 7

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## MOP HEADS

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2 Claims. (Cl. 15—229)

This invention relates to a mop head and particularly to a mop head of the sort used with and detachably on a handle frame assembly whereby heads like the present invention are replaceable from time to time.

Present day industrial and commercial cleaning conditions require utmost care and neatness since most firms have invested thousands of dollars in very nicely decorated offices and expect the daily cleaning operation not to leave unsightly things like mop strings on the floor or caught in furniture legs. However, all present day mop heads have a tendency to wear quickly on floors, especially on the frequently encountered floors of asphalt or plastic tile laid in blocks and having numerous cracks and sharp edges. With this quick wearing and the manner in which the strings are connected, a great many strings are severed during the cleaning of a room. In addition, the life of the mop head is short and the expense of replacing them is an important factor in cleaning costs.

The present invention presents a mop head so constructed and arranged as to retain the mop strings or filaments even after they have been severed. In addition, the present mop head can be turned over and used on the back after the front has been worn through.

Generally described, without regard to scope of limitation coverage found in the claims, the mop head is constructed from a group of longitudinal strings or fibres or filaments bundled flat by means of a center cloth band wrapped around the middle and both edges of the strings and stitched in at least two rows at the center and in several rows of stitching going through the back and front. Where desired to make the mop head even more serviceable, a special fold of the present invention is made by wrapping the center band not only around the bundle of strings but with one flap thereof extending substantially centrally, transversely through the bundle and being stitched to form a back flap, front flap, and a center flap all stitched together.

A primary object of this invention is to provide a mop head with greater wear resistance and less string shedding.

Another primary object of this invention is to construct a mop head that can be turned over and used on the back even after the front is completely worn through so that practically as much good use can be gained from the back side and the front side.

Additional objects and advantages are found in the details of stitching and folding; and other and further features of my invention will be apparent from the following specification taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a plan view of a conventional mop frame, with a portion of the handle broken away, on which the present invention can be used. This mop frame itself does not form a part of this invention.

Fig. 2 is an isometric view of the present mop head positioned on the frame of Fig. 1.

Fig. 3 is an enlarged substantially vertical section view

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through the mop head when in position on the frame, as taken substantially along the lines 3—3 of Fig. 2.

Fig. 4 is an enlarged flat, plan view of the present mop head extended flat as on a horizontal surface.

Fig. 5 is an enlarged cross-sectional view taken substantially along the lines 5—5 in Fig. 4.

Fig. 6 is an enlarged fragmentary isometric view of one bottom end of the band as it relates to the strings fastened therein.

Fig. 7 is an isometric view showing the novel special fold without the strings therein.

Referring first to Fig. 1 in order to understand the type of mop considered here, the mop frame and handle assembly 10 is made so that mop heads may be substituted when worn out and this frame assembly 10 consists of an elongated handle member 12 having a metal formed socket 14 fastened on the end thereof which socket has a bifurcated end portion 16 extending to form two angular sockets 18, 20 in which are retained the terminal ends 22, 24 of a closed wire frame 26 forming side members 27 and a straight connecting rod portion 28 on the outer end thereof. A clamp bar 30 is mounted internally of frame 26 by means of fixed socket collar-like members 32 thereon which slidably engage the sides 27. Clamp bar 30 is movable under pressure by means of a yoke 33 fixed thereto and which slidably engages a screw threaded rod 34 fixed in the socket 14. A wing nut 36 on rod 34 can be screwed down against the yoke 33 thereby clamping bar 30 against the portion 28.

As is readily seen in Fig. 2, the present mop head 40 is flexible and bends at the middle to insert in the frame 26 over portion 28 to be clamped thereto by yoke 33 and rod 34 with nut 36. Mop head 40 is constructed from a longitudinal bundle 42 of elongated, individual strings, fibres, or filaments 44 initially bundled together flat to form an elongated rectangular, absorptive pile. About the center of this bundle is folded a band 48 of cloth, plastic or the like of width substantially less than the length of the strings 44 and of initial length sufficient to make several folds about the center of the bundle of strings.

As is seen more clearly in Figs. 3, 5 and 7, band 48 is folded first across the top 50 of the bundle to form top flap 52, then around the bottom of the bundle 42 to form bottom flap 54, and while the less expensive version of the mop could suffice with these two folds stitched in place, a third optional flap 56 is created by inserting the band material on around and through the substantial middle of the bundle 42 of strings. The other end 58 is folded around to form a smooth edge. With this arrangement, the bundle of strings 42 is completely encompassed on front and back by flaps 52, 54 and when needed is divided by means of the center flap 56.

As is seen in Fig. 4, when the band 48 is in place on bundle 42, it is stitched with at least two rows of stitching 60 spaced about the center 62 and several rows of stitching 64 at the lower end of the band 48 on opposite sides of the center 62. The stitching 60, 64 (Figs. 3 and 5) is with heavy, very strong thread and extends completely through the top flap 52, middle flap 56, and the back flap 54 forming for all practical purposes an identical front and back of the mop head, either one of which can be used for cleaning. This arrangement secures all the strings 44 in four places in four rows at 64 at each end of the band 48 and also at two or more places at 60 on each side of the center 62. In addition, the stitching 60, 64 is reinforced through the presence of the center flap 56.

The advantages of this construction are numerous but include two very important features: (1) the mop head can be used successfully considerably more than heretofore possible with mop heads due to the complete re-

versibility and reinforcement and (2) there is no deposit or loss of strings from the mop during the useful life even after the mop has worn through in several places.

For example, in the operation of the mop head 40 the natural, heavy wear is on the outside surface of band 48 as it rubs on the floor during the mopping operation. Eventually the cloth or other material comprising band 48 wears completely through exposing the strings themselves through the outside of the mop. When this occurs, the strings are rubbing on the floor. Normally in other mops the wearing through of a string would immediately mean that a string or more is left on the floor or in the furniture legs. However, in the instant invention when the outside band 48 wears through and a string or more 44 wears through beneath the worn, exposed area of the band 48, the string 44 is not broken off and left on the floor but rather is firmly and permanently held by a pair of stitched rows 60 and another four rows of stitching 64. One entire side of the outside area of top 52 between center 62 and center stitching 60 and bottom stitching 64 can wear completely through and the mop is still serviceable and still not leaving strings.

In addition, when it happens that both sides of the outside top 52 have worn through between stitching 60 and 64, the inner reinforcement band 56 prevents the abnormal sagging of the mop head and maintains the alignment needed for continued mopping. Use can be continued on inner band 56 until such time as it is desirable to invert the entire mop head by removing from frame 26 and turning over on rod 28. After this inversion, the bottom 54 is now on the top and has assumed the operation of the former top 52. With this provision, the now badly worn area of the mop is confined to the interior and the alignment of the mop is still assured. Continued service is possible through the use of the bottom area 54 until it becomes too badly worn.

In summation, it is seen that the new mop can be used first with the top 52 on the floor until worn through the strings 44 and serviceable life of the inner flap 56 at which time the entire mop head 40 is removed from the frame 26 and turned completely over to place the bottom 54 on the outside. At all times during this severe use and service, broken strings 44 are constantly occurring but are retained firmly in place through the stitching 60, 64.

While I have shown and described in detail a complete embodiment of my invention, various alterations, substitutions, eliminations, variations, changes, and other modifications can be made in the disclosed embodiment without departing from the scope of the invention as defined in the appended claims.

I claim:

1. In a mop head of the type removable from and repositionable on a handle frame assembly having a retaining member thereon, a plurality of elongated, flexible mop strings arranged coextensively horizontal and vertical to form a flexible, elongated mop bundle, a substantially central, continuous reinforcing wide band member of a wear resistant sheet material of less width than the length of said bundle and including a top flap lying across one side of said bundle, a central transverse flap inserted transversely between said strings in said bundle, and said top flap extending around one side and continuously across to form a bottom flap lying across the other side of said bundle, at least two rows of stitching stitched transversely across the width of said band member approximately at the center thereof, said stitching

passing through said top flap, said central flap and said bottom flap thereby stitching said bundle to and between said flaps forming a center portion about which said entire bundle may be folded along a transverse line in either direction of rotation to form a pair of mop sides in opposed relation depending from said handle retaining member, said center portion being bendable on said frame to form said folded position selectively with one of said top or the bottom flap exposed as a mop wearing surface, said mop head being foldable in the other direction of folding to switch the exposed wear surfaces of said mop, and additional stitching adjacent each marginal edge of said band member and spaced from said center stitching, said additional stitching also connecting said front flap and said back flap through said mop strings confined therebetween, by virtue of which said mop strings remain on the mop even when worn through between said rows of stitching and said entire mop head is invertible to substitute the back wearing surface for the front when said front has worn through.

2. In mop head of the type removable from and repositionable on a handle frame assembly having a retaining member thereon, a plurality of elongated, flexible mop strings arranged coextensively horizontal and vertical to form a flexible, elongated mop bundle, a substantially central reinforcing, wide band member formed from a wear resistant continuous sheet of material of less width than the length of said bundle and wrapped around the bundle with a portion thereof lying across the top of said bundle forming a top flap, then extending around said bundle across the bottom thereof forming a bottom flap, and then extending continuously around the other side and through the middle of said bundle separating the strings therein forming a central transverse flap, at least two rows of stitching passing through said top, center, and bottom flaps across the width of said bundle thereby forming a central portion about which said bundle may be bent in either direction of rotation to place selectively, initially either one of the top or bottom flaps on the outside of the mop head as the wear surface, said bundle in folded condition being attachable about said retaining member to bring said folded portions into substantial coextensive position depending from said retaining member, said bundle being removable and being bendable upon itself in the other direction to place the inner surface on the outside thereby presenting a new wear surface, and additional stitching adjacent each marginal edge of said band member a distance from said center and spaced from said center stitching, said additional stitching also connecting said top flap, said center flap, and said bottom flap through said mop strings confined therebetween, by virtue of which said mop strings remain on the mop even when worn through at the point of wear between said rows of stitching and said entire mop head is invertible after one side is worn to substitute the unworn reverse side.

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