Oct. 31, 1961 L. A. LITTLETON 3,006,011

DUSTING MOP

Filed Aug. 18, 1958

Fig. 1.

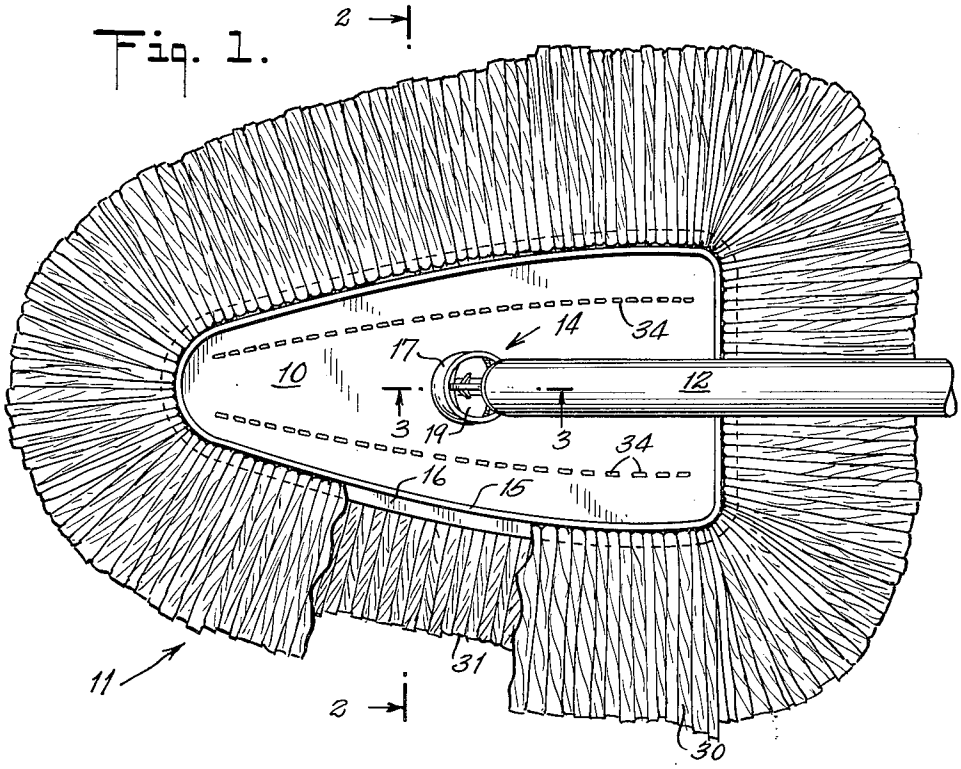


Fig. 2.

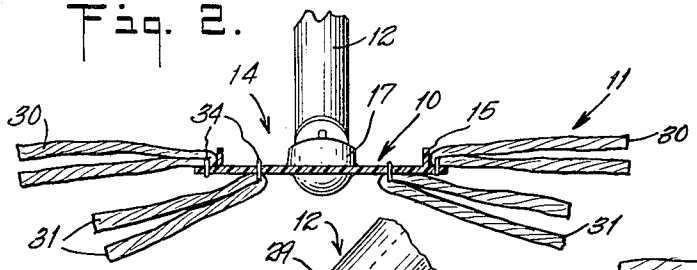
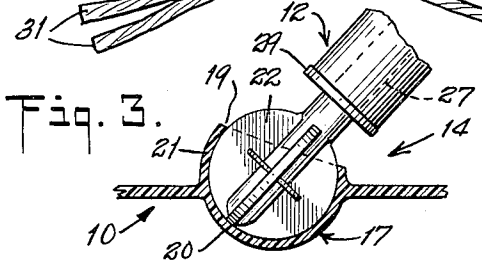


Fig. 3.



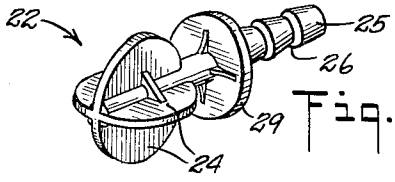
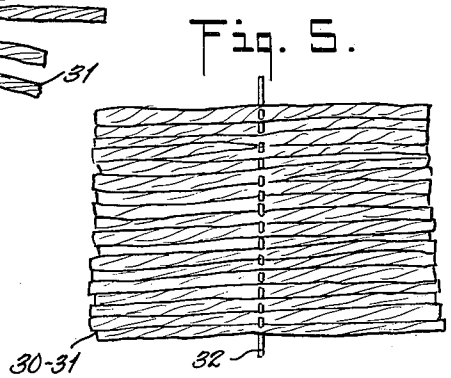


Fig. 4.

Fig. 5.



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United States Patent Office 3,006,011 Patented Oct. 31, 1961

3,006,011

DUSTING MOP

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Filed Aug. 18, 1958, Ser. No. 755,706
1 Claim. (Cl. 15—229)

The present invention relates to cleaning implements and, more particularly, to an improved mop head construction of the so-called dry or dusting type.

Floor mops of the foregoing type now on the market generally comprise a mop head, a frame for mounting the mop head, a handle, and means for removably attaching the handle to the frame, which means may include a swivel joint to provide for universal movement between the mop head and the handle. The mop head is constructed of fabric, such as a pad or bundle of dust collecting strands, and includes a pocket for receiving the frame. The frame is formed of stiff wire and is somewhat larger than the pocket, so that it stretches the pocket slightly when it is inserted therein to retain the mop head on the frame while the mop is in use.

Such mop construction is popular because the mop head can be removed from the frame when it is soiled and, by reason of the absence of metallic parts, can be placed in a washing machine.

Accordingly, an object of the present invention is to provide a mop head which has all the attractive features and advantages of mop heads constructed in the above described manner but consists of fewer parts and is less expensive to manufacture.

Another object is to provide such a mop head which eliminates the frame and other metallic parts likely to corrode.

A further object is to accomplish the foregoing in a simple, practical and economical manner.

Other and further objects will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claim, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawing, forming a part of the specification, wherein:

FIG. 1 is a plan view of a mop in accordance with the present invention with a portion of the mop head broken away and only the lower portion of the handle being shown.

FIG. 2 is a sectional view taken along the line 2—2 on FIG. 1.

FIG. 3 is a sectional view taken along the line 3—3 on FIG. 1.

FIG. 4 is a perspective view of the joint element apart from its socket and the mop handle.

FIG. 5 is a fragmentary plan view illustrating the manner in which the mop structure is stitched prior to securement to the base plate.

Referring to the drawing in detail, there is shown a mop which generally comprises a base plate **10** having mop structure **11** secured thereto, a handle **12**, and a universal joint **14** for removably attaching the mop head to the handle.

The base plate **10** is generally ogival but has a rounded front end or nose and in accordance with the present invention is constructed in a semi-rigid moldable plastic resin, such as polyethylene, polyvinyl, rubber and the like. Such material provides a substantially rigid base which is slightly bendable. For example, a base plate formed of polyethylene plastic resin having a thickness

of about 0.060 inch has been found suitable for use in practicing the invention.

The base plate preferably has a peripherally extending rib **15** on the top side thereof adjacently spaced from the peripheral edges of the base plate and having a height of about 0.25 inch. This rib serves to stiffen the base plate and provide a marginal zone **16** for securing mop structure in an even manner as will be more fully explained hereinafter.

The base plate also has a generally spherical socket **17** on the top side at about the middle thereof which has an upwardly and rearwardly facing opening **19** and serves as an element of the joint **14**. The opening **19** is equivalent in size to a circle having a diameter of about seven-eighths of the diameter of a one inch hollow sphere and is formed by cutting the hollow sphere in a plane perpendicular to a polar axis of the sphere which is inclined at about 20° to the vertical. In order to maintain the amount of material required to provide the socket, the lower hemisphere **20** depends from the base plate at its under side and the upper hemispherical portion **21** projects upwardly therefrom. The wall of the socket is semi-rigid to facilitate insertion and removal of a joint element **22** about to be described. For example, such structure is provided by making the base plate of polyethylene plastic resin with the wall of the socket having a thickness of about 0.060 inch, that is, about the same thickness as that of the base plate.

The joint element **22** comprises a plurality of circular discs **24** intersecting each other at their diameters with the disc members having about the same diameter as the interior of the socket. For example, two discs disposed at right angles to each other and having a thickness of about one-sixteenth of an inch may be employed. Such structure has the advantages of facilitating insertion and removal of the joint element because the socket is more readily stretched or deformed by engagement and application of force at points spaced apart 90°, for example, than by attempting to force a complete sphere into the socket opening. This arrangement also has the advantage that the mop head can be swiveled in all directions and yet be directed as desired because of the edge resistance of the discs on the socket wall.

The element **22** is further provided with a stem **25** in axial alignment with the line of intersection of the discs **24**. This stem is provided with formations **26** which facilitate adhesively anchoring the stem in a hole **27** at the lower end of the mop handle, and has a flange **29** adapted to abut the lower end of the mop handle and be adhesively secured thereto.

The element **22** preferably is formed by molding it of material similar to or the same as the base plate but not necessarily.

The mop structure **11** shown herein comprises a group of strands **30** at the periphery of the base plate and two rows of strands **31** between opposite side edges of the base plate and the socket.

As shown in FIG. 5, parallel strands are connected together by stitching **32** at the middle thereof. These strands are folded to double them up, as shown in FIG. 2, and are secured directly to the base plate by stitching **34** passing through the stitching **32**. This is made possible because a sewing machine needle can readily penetrate the plastic resin. The stitching of the outer group of strands **30** is facilitated by the rib **15** which serves as a guide for properly positioning the strands on the top side of the marginal zone **16**. The rows of strands **31** are attached to the underside of the base plate.

In use, the swivel element **22**, now secured to the lower end of the handle **12**, is inserted into the socket opening **19** to mount the discs **24** in the socket **17**, whereby the handle **12** is attached to the mop head.

When the strands of the mop head become soiled the handle is detached by removing the swivel element 22 from the socket 19 and the mop head can then be washed. Since there are no metal parts which can be damaged or cause damage, the mop head can be washed in a household washing machine. In the event after several washings the strands are soiled to an extent that they cannot be washed clean or become frayed after considerable use of the mop, the mop head is replaced with a new one. The mop head construction is provided at such low cost that the plastic base plate is expendible.

From the foregoing description it will be seen that the mop disclosed provides an improved swivel joint and mop head construction which enables the mop head to be manipulated with great ease and get into corners and under furniture even if there is comparatively little space. By the selection and arrangement of elements, the parts of the mop are reduced to a minimum and can be manufactured and assembled in an economical manner. The mop head is light in weight but yet is sturdy in construction and can readily withstand such rough usage to which it may be normally subjected.

As various changes may be made in the form, construction, and arrangement of the parts herein, without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matters are to be interpreted as illustrative and not in any limiting sense.

What is claimed is:

A mop head comprising a base plate constructed of a semi-rigid moldable plastic resin and integrally formed with a generally centrally located socket on the top side thereof for universally receiving a joint element on a mop handle, said base plate and socket walls being of substantially the same thickness, mop structure, and stitching securing said mop structure to said base plate to provide a unitary, disposable mop head, said base plate having a rib on the top side adjacently spaced of the edges of the base plate and said mop structure being secured by stitching outwardly of said rib.

References Cited in the file of this patent

UNITED STATES PATENTS

1,626,036	Higgins	Apr. 26, 1927
2,256,752	Saurer	Sept. 23, 1941
2,791,454	Saives	May 7, 1957
2,825,914	Moss	Mar. 11, 1958
2,880,025	Herbenar	Mar. 31, 1959

FOREIGN PATENTS

102,928	Australia	Jan. 7, 1937
736,847	Great Britain	Sept. 10, 1955
1,145,047	France	Apr. 29, 1957