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CLAMP-IN HEAD YARN MOP

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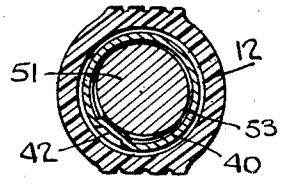


Fig. 6.

Fig. 1.

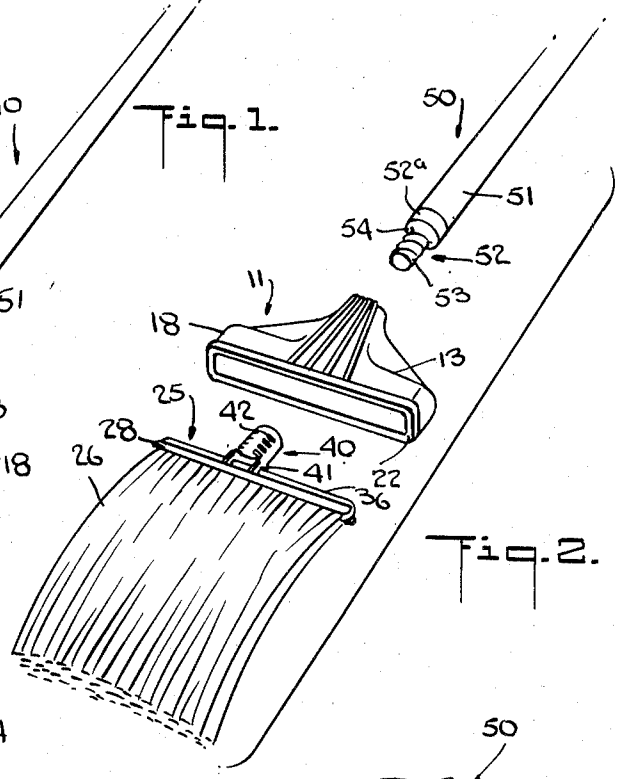


Fig. 2.

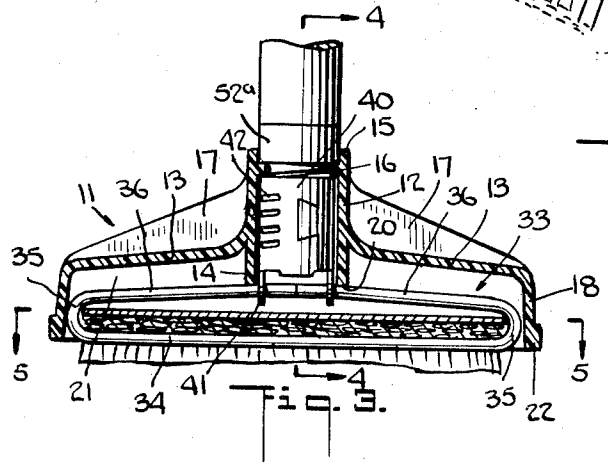


Fig. 3.

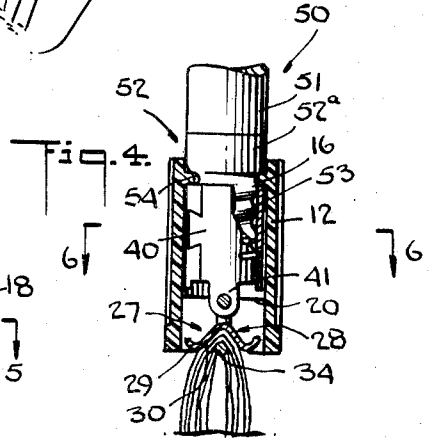


Fig. 4.

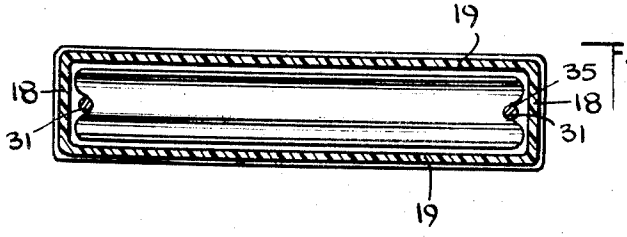


Fig. 5.

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CLAMP-IN HEAD YARN MOP

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8 Claims. (Cl. 15—229)

This invention relates to mops. It is particularly related to a "spaghetti-type" or yarn mop.

An object of this invention is to provide a mop of the character described comprising a molded hollow head, a clamp clamping the mop yarn and received within said head and provided with a screw socket fitting into a neck in the head, the construction being such that when a threaded end of a handle is screwed into the socket, the clamp is firmly fixed within the head, thus holding the clamp, mop elements and handle in assembled relation with respect to the hollow head.

Yet another object of this invention is to provide a mop of the character described which may easily be assembled and disassembled, which shall permit replacement of parts and which shall be relatively inexpensive to manufacture and yet practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

In the accompanying drawings in which is shown various illustrative embodiments of this invention,

Fig. 1 is a partial prospective view of a mop embodying the invention;

Fig. 2 is a view similar to Fig. 1, but showing the handle, the head and the clamp with the mop yarn, or elements, in dissassembled relation;

Fig. 3 is a partial cross sectional view of the mop embodying the invention;

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a cross-sectional view taken on line 5—5 of Fig. 3; and

Fig. 6 is a cross sectional view taken on line 6—6 of Fig. 4.

Referring now in detail to the drawing, 10 designates a mop embodying the invention. The same comprises a hollow head 11 which may be molded of synthetic plastic material. The head 11 is hollow and open at its underside. It is formed with a central neck portion 12 from which extends outwardly top shoulder portions 13 flaring slightly outwardly and downwardly. The neck 12 extends up above the shoulders 13 and also is formed with a lower end portion 14 projecting downwardly below the shoulder portions 13. Said neck 12 is formed below its upper end 15 with an inner annular rib or shoulder 16 for the purpose hereinafter appearing. The top shoulder portions 13 are connected to the neck 12 by central strengthening ribs 17. Extending downwardly from the outer ends of the top shoulder portions 13 are end walls 18, and extending downwardly from the sides

of said top shoulder portions are longitudinal side walls 19 interconnecting the ends of the end walls 18. The shoulder portions 13 may be of rounded transverse cross-sectional shape if desired. The downwardly projecting portion 14 of the neck 12 has a lower end edge 20 for the purpose hereinafter appearing. Thus, the head 11 is formed with a hollow chamber 21 at its underside opening downwardly. Said side walls 19 and end walls 18 may be formed with a thickened lower end edge bead 22 extending all around for strengthening said head.

The mop 10 further comprises an adaptor 25 carrying "spaghetti-type" yarn mop elements 26. These elements may be made of synthetic sponge material. However, they may be replaced by any other flexible mop elements or fibers. The adaptor 25 comprises an elongated clamp plate 27 which may be made of sheet metal. Said plate 27 has a longitudinal, central, inverted U-shaped portion 28, formed with integral upwardly curved longitudinal lips 29. The inverted U-shaped portion 28 forms an elongated, inverted U-shaped groove 30 at the under side of the plate 27. The ends of the inverted U-shaped portion 28 are notched inwardly as at 31, at both ends, for the purpose hereinafter appearing. Extending about the plate 27 is a wire loop member 33. Said wire loop member 33 has a bottom portion 34 disposed below the plate 27 in spaced relation thereto and located within the inverted U-shaped groove 30. Extending upwardly and inwardly from the ends of said wire portion 34, are curved portions 35 received within the end notches 31. Extending inwardly from the upper ends of the curved portions 35 are aligned wire portions 36 disposed above the plate 27 in spaced relation thereto. The inner ends of portions 36 may be fixed together by welding or in any other manner.

The flexible mop elements 26 are folded in half around the bottom wire portion 34 and are clamped by said wire portion 34 against the underside of the clamp plate 27. The mid-portions of said mop elements are hence clamped tight within the inverted U-shaped groove 30.

Mounted on the upper wire portions 36 is a metal sleeve 40. Said metal sleeve 40 has downwardly projecting apertured ears 41 through which the wire portions 36 pass. Said sleeve 40 is formed with inwardly punched sets of ridges 42 for receiving a screw threaded member. It will be noted that the plate 27 and the wire member 33 are received within the chamber 21 and that the mop elements 26 project downwardly therefrom. The lower end edge 20 of the tubular member 12 contact the wire portions 36 on opposite sides of the aperture ears 41. The sleeve 40 passes upwardly through the neck 12 and its upper end edge contacts the underside of the annular rib or shoulder 16.

The mop is provided with a handle 50. Said handle 50 comprises an elongated wood rod 51 to the lower end of which is fitted a metal cap 52. Said cap 52 is formed with a portion 52a and a reduced externally screw threaded portion 53. The portion 53 may be inserted through the opening formed by the internal annular rib 16 and is screwed into the sleeve 40, engaging the ribs 42. Between the portions 52a and 53 is formed a shoulder 54 which contacts the upper side of the annular rib 16. Thus, as the handle is turned for screwing the portion 53 thereof into the sleeve 40, the shoulder 54 contacts one side of the rib 16 and draws the sleeve 40 upwardly against the opposite side of said rib for firmly attaching the sleeve 40 and the mop handle to the head. At the same time, the loop 33 is pulled upwardly into the chamber 21 until it contacts the lower edge 20, thus making an assembly of the mop handle 50, the adaptor 25 and the head 11. The flexible mop elements project downwardly

below the head, so that the mop may be used. The handle 50 may be unscrewed to disassemble the adaptor 25 with its mop elements from the head.

It will thus be seen that there is provided an apparatus in which the several objects of this invention are achieved and which is well adapted to meet the condition of practical use.

As possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

We claim:

1. A mop comprising a head having a chamber at its underside opening downwardly and being formed with a central neck, said neck being formed with an internal annular rib, an adaptor comprising an elongated plate formed with end notches, a wire lop extending about the ends of said plate and engaged within said end notches, said wire loop having a top portion above the plate and a bottom portion below said plate, mop elements having their mid-portions clamped between the bottom portion of said wire loop and the underside of the plate, a sleeve attached to the top portion of the wire loop, said sleeve extending upwardly within the neck and being formed with screw thread elements and being disposed below said annular rib, and a handle having a screw threaded portion passing through the internal annular rib and engaging the screw threaded elements on the sleeve, and said handle being formed with a shoulder contacting the upper side of said annular rib, said handle-threaded portion being of a reduced diameter and positioned below said shoulder, whereby upon causing threaded engagement between the reduced diameter threaded portion of the handle and said sleeve, said sleeve and handle are clamped to said head.

2. A mop comprising a head having a chamber at its underside opening downwardly and being formed with a central neck, said neck being formed with an internal annular rib, an adaptor comprising an elongated plate formed with end notches, a wire loop extending about the ends of said plate and engaged within said end notches, said wire loop having a top portion above the plate and a bottom portion below said plate, mop portions having their mid-portions clamped between the bottom portion of said wire loop and the underside of the plate, a sleeve attached to the top portion of the wire loop, said sleeve extending upwardly within the neck and being formed with screw thread elements and being disposed below said annular rib; said central neck having a downwardly extending portion projecting into said chamber and contacting the top portion of said wire loop, and a handle having a screw threaded portion passing through the internal annular rib and engaging the screw threaded elements of the sleeve, and said handle being formed with a shoulder contacting the upper side of said annular rib, said handle-threaded portion being of a reduced diameter and positioned below said shoulder, whereby, upon causing threaded engagement between the reduced diameter threaded portion of the handle and said sleeve, said sleeve and handle are clamped to said head.

3. The combination of claim 2, said plate having a central portion of inverted U-shape.

4. A mop comprising a hollow head having a chamber at its underside opening downwardly and being formed with a central tubular neck, an adaptor, mop elements attached to said adaptor, said adaptor being received within said chamber, a sleeve attached to said adaptor and disposed within said neck, and being formed with screw threaded elements, said neck being formed with an annular internal rib contacting the upper end of said sleeve, and a handle having a reduced screw threaded portion passing through said annular rib and engaging said screw threaded elements of the sleeve and being further formed with a shoulder contacting the top of said annular rib.

5. In a mop, in combination, a hollow head having a central neck portion, top shoulder portions extending outwardly from said central neck portion, end walls extending downwardly from the ends of said top shoulder portions, side walls extending downwardly from the sides of said top shoulder portions and interconnecting said end walls, said hollow head being open at its underside, said central neck portion extending downwardly into the hollow of said head, said neck being formed adjacent its upper end with an annular internal rib, an elongated plate received within said head, said plate having and elevated central portion of inverted U-shape and being formed with longitudinal upwardly turned lips, said inverted U-shaped portion being formed with notches at the ends thereof, a wire loop having a portion disposed below said plate and upwardly and inwardly curved portions received within said notches, and a top portion disposed above said plate and contacting said downwardly extending portions of said neck, a sleeve having a pair of opposed downwardly extending apertured ears receiving the top portions of the wire loop therethrough, said sleeve received within said neck and below said annular rib, mop elements having the mid-portions thereof clamped between the lower loop portion and the underside of said plate, and end portions projecting downwardly below said head, a handle comprising a rod having a reduced screw threaded portion, and a shoulder above said screw threaded portion, said screw threaded portion passing through said annular rib and engaging threaded elements on said sleeve, and said shoulder contacting the top of said annular rib for drawing the sleeve upwardly against the lower side of said rib.

6. In combination with claim 5, said mop elements comprising cellulose yarn.

7. A mop comprising a clamp, mop yarn elements having their mid portions gripped by said clamp, a head fitted over said clamp, said head being open at the bottom and having side walls and end walls and top walls forming a chamber to receive the clamp, and said head having a central sleeve formed with an internal annular rib, a socket within said sleeve formed with internal screw elements, means to attach the socket to the clamp, a mop handle having a reduced screw-threaded end forming a shoulder, said screw-threaded end passing through the opening formed by the annular rib and engaging the screw thread elements of the socket, said shoulder contacting the upper side of said annular rib, and said socket contacting the underside of said annular rib.

8. A mop comprising a clamp, mop yarn elements having their mid portions gripped by said clamp, a head fitted over said clamp, said head being open at the bottom and having side walls and end walls and top walls forming a chamber to receive the clamp, and said head having a central sleeve formed with an internal annular rib, a socket within said sleeve formed with internal screw elements, means to attach the socket to the clamp, a mop handle having a reduced screw-threaded end forming a shoulder, said screw-threaded end passing through the opening formed by the annular rib and engaging the screw thread elements of the socket, said shoulder contacting the upper side of said annular rib, and said socket contacting the underside of said annular rib, said clamp comprising an elongated plate formed with notches at the ends thereof, a wire having a portion beneath the plate, and a portion bent around the ends of said plate and engaged within said notches, and said wire having inwardly extending end portions above said plate, and said mop elements passing between the first wire portion and the underside of said plate,

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