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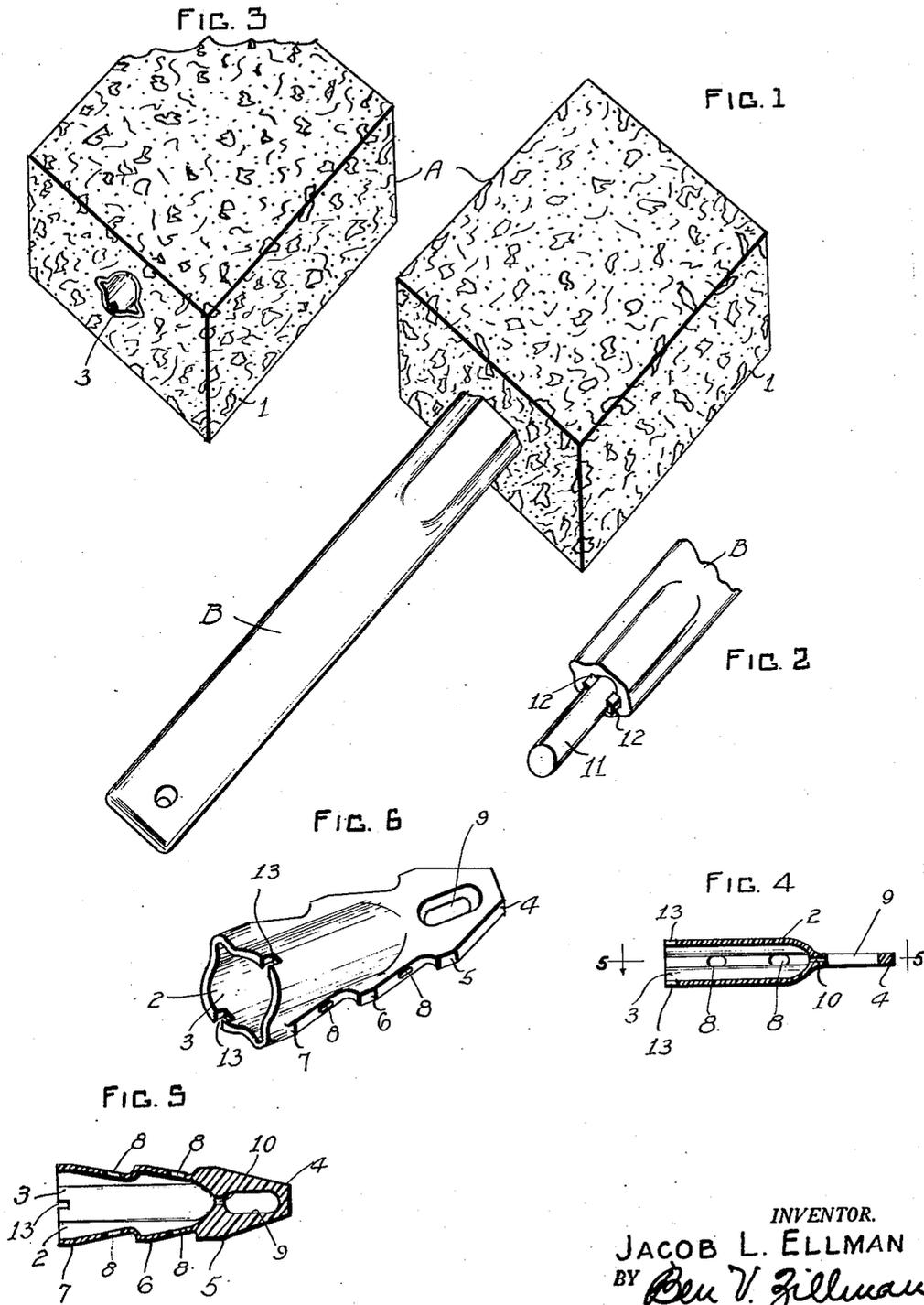
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2,810,150

DETACHABLE HANDLE MOP

Filed Jan. 19, 1953

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

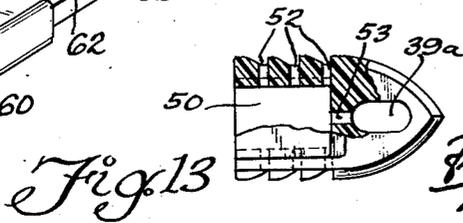
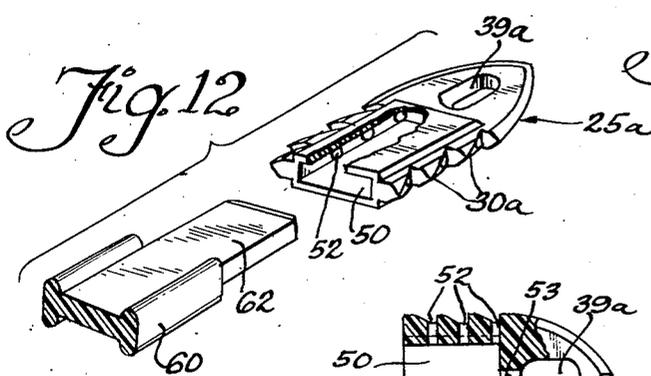
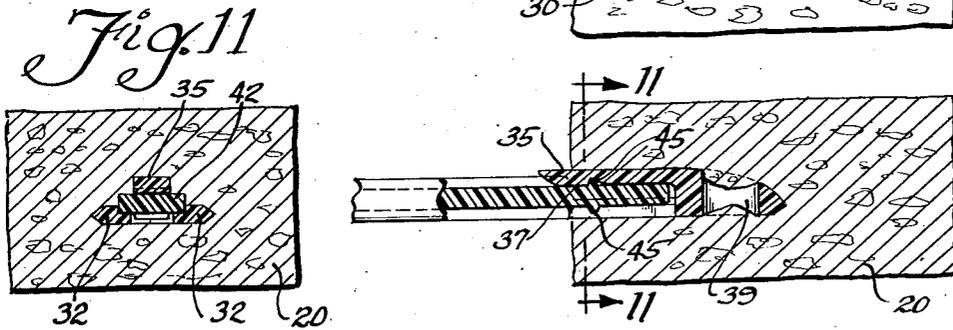
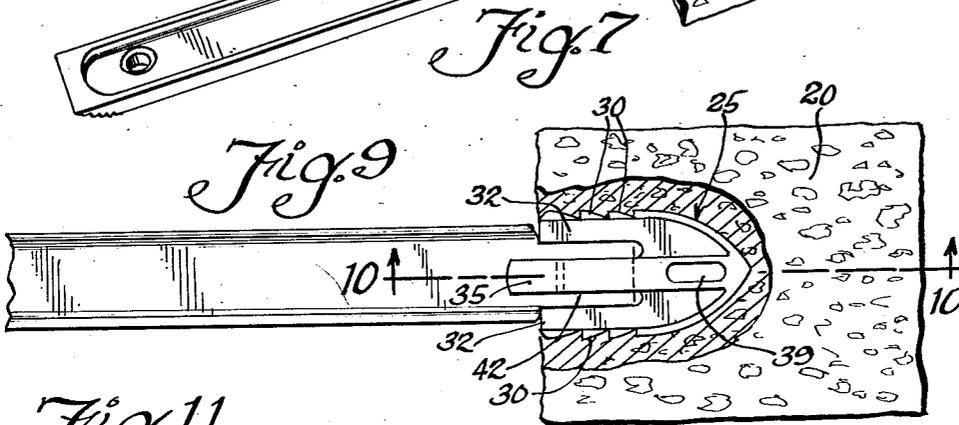
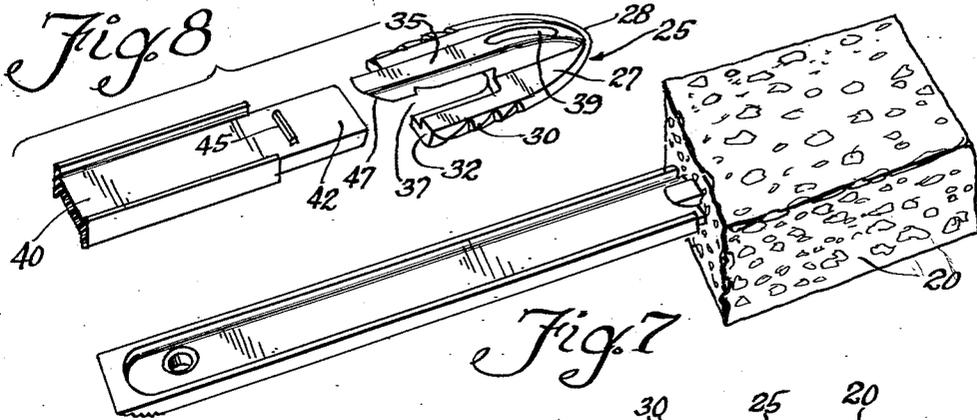


Fig. 10

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2,810,150

DETACHABLE HANDLE MOP

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5 Claims. (Cl. 15—244)

This invention relates to household or kitchen tools of the class of mops and more specifically to dish mops having a head of sponge material, and has among its general objects the production of such a mop having a detachable head, that will be neat and attractive in appearance, relatively economical in construction, be sturdy enough to be well adapted to the use to which it will normally be subjected, and which will be otherwise satisfactory and efficient for use wherever deemed applicable.

This application is a continuation in part of my now abandoned patent application Serial No. 303,969, filed August 12, 1952.

One of the principal objects of my invention is to provide such a mop having a handle member detachably secured thereto, so that when the mop head becomes worn, damaged or unsanitary, it may be readily removed and replaced by a new one, using the old handle member as part of the new unit.

Another of the main objects of the invention is to construct such a mop assembly wherein the mop head is made in a simple, workmanlike and efficient manner, so that the same may be done on a production-line basis.

A further object of my invention is so to shape the handle-receiving element of the operative unit as to facilitate its ready entrance into and through the sponge body in the assembly of said parts, while withdrawal therefrom is substantially prevented.

Still another object of the invention is to construct a handle-receiving member with a glue-receiving duct leading forwardly from the rear end and having communicating openings laterally therefrom to feed the glue from said duct outwardly to the side edges of said member after said member has been inserted to its final assembled position within the sponge body.

As another feature of my invention in certain embodiments thereof, I provide a spongiform mop having a handle receiving socket embedded therein and a detachable handle non-rotatably disposed in the socket, with detent means for locking the handle in the socket, so that while the handle is positively locked to the mop when the latter is in use, it may readily be disengaged from the mop when the latter becomes worn or unsanitary and a fresh mop may then be substituted therefor.

Other objects and advantages will be obvious to those skilled in the art to which this invention appertains, as will be apparent from the disclosures hereinafter given.

In the drawings forming part of this specification and illustrating certain preferred embodiments of my invention,

Fig. 1 is a perspective view of one form of dish mop embodying my invention;

Fig. 2 is a fragmentary perspective view of the forward end of the detachable handle;

Fig. 3 is a fragmentary perspective view of the rear end of the mop head;

Fig. 4 is a longitudinal sectional view of the handle-receiving element;

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Fig. 5 is a sectional view of the same, taken substantially along the line 5—5 of Fig. 4;

Fig. 6 is a perspective view of the handle receiving element;

Fig. 7 is a perspective view similar to Fig. 1, showing a different embodiment of my invention;

Fig. 8 is an exploded perspective view of the socket member and a fragmentary portion of the forward end of the handle, both of said parts as employed in the embodiment of Fig. 7;

Fig. 9 is a fragmentary longitudinal sectional view of the embodiment of Figs. 7 and 8;

Fig. 10 is a fragmentary sectional view taken substantially along the line 10—10 of Fig. 9;

Fig. 11 is a transverse sectional view taken substantially along the line 11—11 of Fig. 10;

Fig. 12 is an exploded perspective view of a socket member as embodied in still another form of my invention, and a fragmentary portion of the forward end of a handle employed in conjunction with said socket member, and

Fig. 13 is a plan view of the socket part of Fig. 12, a part of same being broken away for clearness in both figures.

Referring first to Figs. 1-6, A indicates a dish mop head of sponge material, the handle being indicated by the letter B. It is evident that the mop head receives substantially all of the wear given the mop, and will become unfit for use long before the handle portion of the device. The sponge material has a relatively much shorter life than the handle, because of wear or fouling. In order to salvage as much of the entire unit as possible for further use, the handle part of the device may be made of relatively more durable and expensive material and manufacture, and is arranged to be detachably secured to the mop head whereby successive mop heads may be mounted in turn to the same handle.

One common way of mounting a handle or other manipulating member to a sponge block is to split said block into two mating portions, smear glue across said opposing faces to be assembled into the block unit, lay the forward end of the handle between said mating portions, and press the latter together and onto said handle until the glue is dry. This method is relatively slow and expensive, and in my construction has been altered in a manner to be more clearly hereinafter set forth.

The sponge block 1 may be of any suitable size, shape and material, as for example cut from a mass of plastic base material. No recess, opening or cavity need be provided therein to receive the handle receiving element, inasmuch as the latter is so shaped that it will readily penetrate through the block material to a selected position and may then be glued in place in the novel manner to be described.

Said handle receiving element may be made of any suitable material that is able to withstand the temperature and liquids to be normally encountered in the use of the device, and I have found that a suitable plastic, such as acrylic, urea or acetate ester, etc., is well adapted for such use.

Such an element 2 may be molded to the desired shape somewhat as shown, and in this instance is provided with a hollow tubular longitudinally extending portion having a central duct or handle-receiving passage 3 of a diameter and length to receive the forward end of the handle member when the latter is inserted into operative position within the element 2.

The socket element 2 is reduced in thickness toward its forward end, as at 4 and is also of minimum width across said forward end, so as to provide a somewhat arrow or spear-shaped end for ready penetration through the sponge

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mass during manufacture of the device, as will be further explained.

At longitudinally spaced intervals along the side edges of said element 2 are laterally projecting teeth or barbs 5, 6 and 7, the latter being enlarged rearwardly of the element and reduced or tapered in width toward the forward end of the element. It is to be noted that each tooth extends laterally outwardly beyond the next forwardly adjacent tooth on that side, so that the tooth 7 extends farthest laterally, the tooth 6 a bit less so and the tooth 5 extends the shortest distance laterally. With this construction penetration of the socket element into the sponge block is progressive and easy, and the teeth act to prevent or at least greatly retard the possibility of accidental withdrawal of the element from the block after being glued therein.

Ducts or passageways 8 communicate between the main opening or duct 3 and the opposite side edges of the element 2, opening onto said teeth surfaces at said side edges, and there is an enlarged opening 9 entirely through the body of said element 2 at its forward end, with a passageway 10 leading thereinto from the forward end of said duct 3. Obviously, if glue is forcibly fed into the rear of said duct 3, it will discharge through the openings 8 and 10 to the portions of the element 2 at said discharge points.

In assembling the element 2 with the sponge block, any suitable jig or positioning means may be used to position the parts in proper alignment, and forward pressure exerted on the socket element 2 relatively of the sponge 1, so that the element 2 is fed through the latter to its predetermined final position within the latter, as indicated in Fig. 5. While so held, and after such insertion, glue of proper nature for the purpose is forcibly introduced into the rear end of the main duct 3, and will feed outwardly therefrom through the communicating ducts, to the sides of the element 2 and into the opening 9, so that glue at said points will effectively bond the parts together after setting.

The handle element B may be of any suitable size, shape and of relatively durable material. This element B may be made of plastic material, for instance, molded to the desired proportions, with its forward end sized and shaped to be snugly but detachably received within the central duct of the element 2, as indicated by the forwardly projecting reduced end 11.

If it is desired to prevent unintentional rotation of the handle within the receiving element, some interlocking means may be provided for the purpose, as for example, by lugs 12—12 on one of said cooperating elements, as on the handle element, to enter into the complementary openings or detents 13—13 on the adjacent end of the other element, somewhat as shown, or by key and groove means, etc.

In Figs. 7—11, inclusive, I show another embodiment of the invention having other highly desirable features. In this embodiment I provide a mop head 20 formed of any suitable spongiform material, preferably a synthetic substance such as a cellulose derivative, for example cellulose acetate, which is relatively soft and pliable when wet and relatively stiff and hard when dry, and of any desired degree of porosity. Embedded in one end of the sponge 20 is a handle receiving socket member 25. The member 25 comprises a relatively flat plate-like member 27 of generally arrow-head shape, being pointed in the front portion thereof, as at 28, and having laterally and rearwardly extending barbs or teeth 30 on the sides thereof, the barbs 30 being formed on a pair of substantially parallel, spaced apart legs 32 extending rearwardly from the pointed front portion of the member. Formed integrally with the member 25 and extending upwardly and rearwardly therefrom is a resiliently bendable finger on rib-like member 35, this rib-like member extending somewhat beyond the rear end of the legs 32. A notch or detent 37 is formed on the inside of

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the rib 35 at a point spaced from the rear end thereof. A perforation 39 extends through the rib 35 and plate 27. It will be readily understood that the spongy material of the mop 20 will be urged by the normal resilience of the said material into the perforation 39, thus assisting in locking the member 25 within the mop head.

I provide a handle member 40 to co-operate with the socket member 25, said handle being of non-circular cross section, preferably thin and flat. The handle may be formed of any suitable material, such as wood, metal or plastic, but in any event is relatively stiff. The socket member 25 on the other hand is preferably formed of a suitable plastic although it too may be formed of metal. In any event, the rib-like member 35 is sufficiently resilient that it may be sprung a slight distance relative to the plate portion 27 to serve as a detent.

The handle 40 is provided with a reduced portion 42 at its forward end and is of such dimensions that it will fit relatively snugly within the space provided between the legs 32 and the rib 35 of socket portion 25. The reduced portion 42 of the handle is provided with a transverse outwardly extending ridge 45.

The socket member 25, which is embedded in the mop head 20, preferably by means of a water insoluble adhesive, is so firmly attached to the mop head that it will not be readily disengaged therefrom inadvertently in ordinary use. The non-rotatable character of the socket member relative to the head, and of the handle relative to the socket, is a great advantage in this connection.

The handle is readily attached to the socket member by merely shoving the reduced portion 42 of the handle into the handle-receiving passage or space provided in the socket member 25, the detent 37 of the latter snapping into place behind the ridge 45 of the handle member, locking the two parts firmly together. Thus, when the handle is attached to the socket member, the handle likewise is non-rotatable with reference to the socket member and the mop head and, furthermore, cannot inadvertently be withdrawn therefrom. Hence, in effect, the handle is substantially unitary with the mop head when the parts are so engaged.

When the mop has become worn or fouled to such a degree that it is desired to discard the mop head, it is necessary merely to insert a finger or thumb under the end of the rib portion 35 of the socket member 25, springing the rib member 35 outward sufficiently to permit disengagement of the ridge 45 of the handle member and permitting withdrawal of the handle from the socket member. It will be noted (Fig. 8) that the end of the rib 35 is bevelled as at 47 to permit ready insertion of a person's finger thereunder.

Referring now to Figs. 12 and 13, I have shown here still another embodiment of my invention, comprising a socket member 25a which is substantially similar to the socket member 25 except in the following respects.

In lieu of the skeletal formation of the socket member 25, the socket member 25a is provided with an elongated passage 50 which is substantially entirely enclosed by the body portion of socket member 25, a portion thereof being shown broken away in Figs. 12 and 13. Laterally extending barbs or teeth 30a are provided as in socket member 25. Laterally extending ducts 52 provide passages from the opening 50 through the side walls of the socket member 25a and a further passage 53 extends from said opening 50 into aperture 39a.

The handle member 60 is provided with a reduced end portion 62 cooperating with socket member 25a and suitable detent means (not shown) may be provided for detachably securing the handle member to the socket member, as for example a protuberance on one of said members and a recess in the other member adapted to receive said protuberance.

It will be understood that socket member 25a may

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be attached to a mop head in the same manner as described above for the other embodiments and, after insertion in the mop head, a water insoluble adhesive may be squirted into the opening 50 and by means of a suitable plunger forced through the apertures 52 and 53, so that the socket member may be firmly secured within the mop head.

Having thus described my invention, it is obvious that various material changes and modifications may be made therein without departing from the spirit of my invention; hence, I do not wish to be understood as limiting myself to the exact form, arrangement, construction and combination of parts herein shown and described, except as limited by the claims hereunto appended.

I claim:

1. In a dish mop, an operating handle, a block of sponge material, and a handle receiving element immovably embedded in said sponge and enlarged toward its rear end, said element being of minimum thickness at its forward end and provided with laterally extending teeth adjacent the forward end and at longitudinally spaced intervals rearwardly of the same, each tooth extending laterally outwardly beyond the next forwardly adjacent tooth, and means on said element adapted to cooperate and resiliently and detachably interlock with the handle to prevent relative rotation therebetween and accidental withdrawal of said handle after said handle is in operative position relative to said element, said means comprising a ridge on one of said cooperating portions and a detent on the other cooperating portion.

2. The combination of a cleansing member of spongy form material having embedded therein a handle receiving socket member, said socket member having laterally extending tooth formations inhibiting accidental withdrawal of the socket member from the cleansing member, a handle, and means between said handle and socket member to resiliently and detachably interlock said socket member and handle and prevent relative rotation therebetween, said means comprising a detent on said element and positioned within said cleansing member and a rib on that portion of said handle that extends into said cleansing member.

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3. A combination as defined in claim 2, wherein the socket member has a handle receiving passage and surfaces engageable with the cleansing member, said passage communicating with said surfaces, and the socket member being secured to the cleansing member by water insoluble adhesive.

4. A combination as defined in claim 2, wherein the socket member is relatively flat, having an integral resilient finger extending outwardly from the open end of the socket member and normally extending outwardly from the cleansing member so as to be readily manually engageable.

5. In a dish mop, a block of sponge material, a handle-receiving hollow element made of a material that is relatively rigid as compared to said sponge and immovably embedded in the latter and enlarged in width and thickness toward its rear and opening at said rear to provide a handle-receiving passage that extends forwardly into said sponge, said element having laterally extending tooth formations thereon inhibiting accidental withdrawal of said element from said sponge, said element also having an opening extending laterally through its forward end and into which opening said sponge may project, an elongated handle having means at its forward end for insertion into said passage to detachably interlock with said element and prevent relative rotation between itself and said element.

References Cited in the file of this patent

UNITED STATES PATENTS

1,367,758	Strieff	Feb. 8, 1921
1,887,913	Bell	Nov. 15, 1932
2,084,485	Fink	June 22, 1937
2,210,967	Vaughn	Aug. 13, 1940
2,237,793	Rudd	Apr. 8, 1941
2,254,235	Mutch	Sept. 2, 1941
2,491,274	McNeill	Dec. 13, 1949
2,679,064	Palma et al.	May 25, 1954

FOREIGN PATENTS

425,719	Italy	Oct. 10, 1947
723,815	France	Jan. 19, 1932