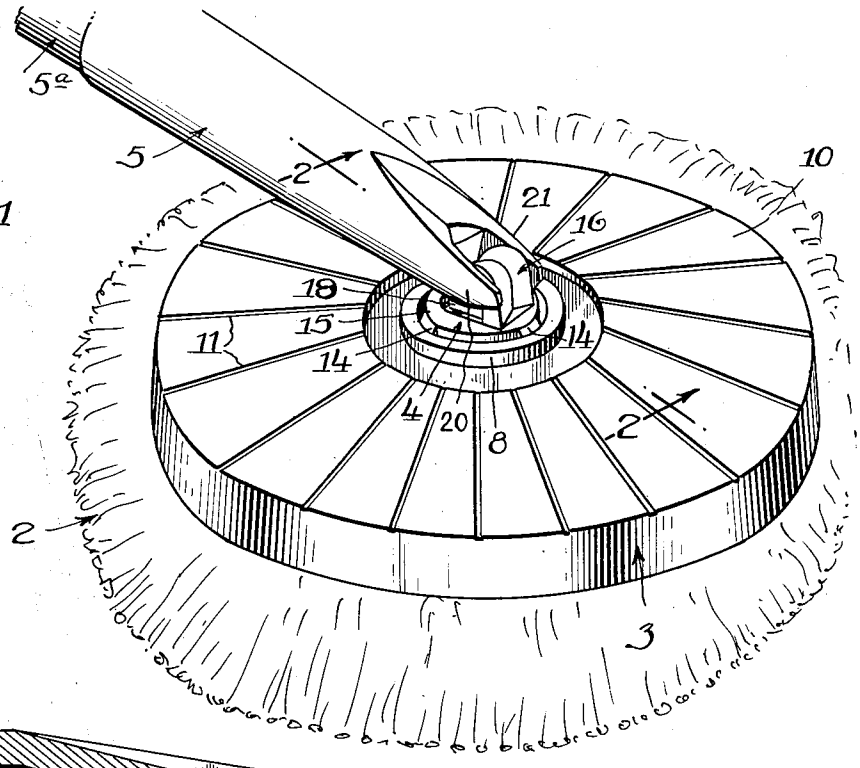
March 7, 1961 H. H. SAENZ 2,973,540

DUST MOP

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Fig. 1



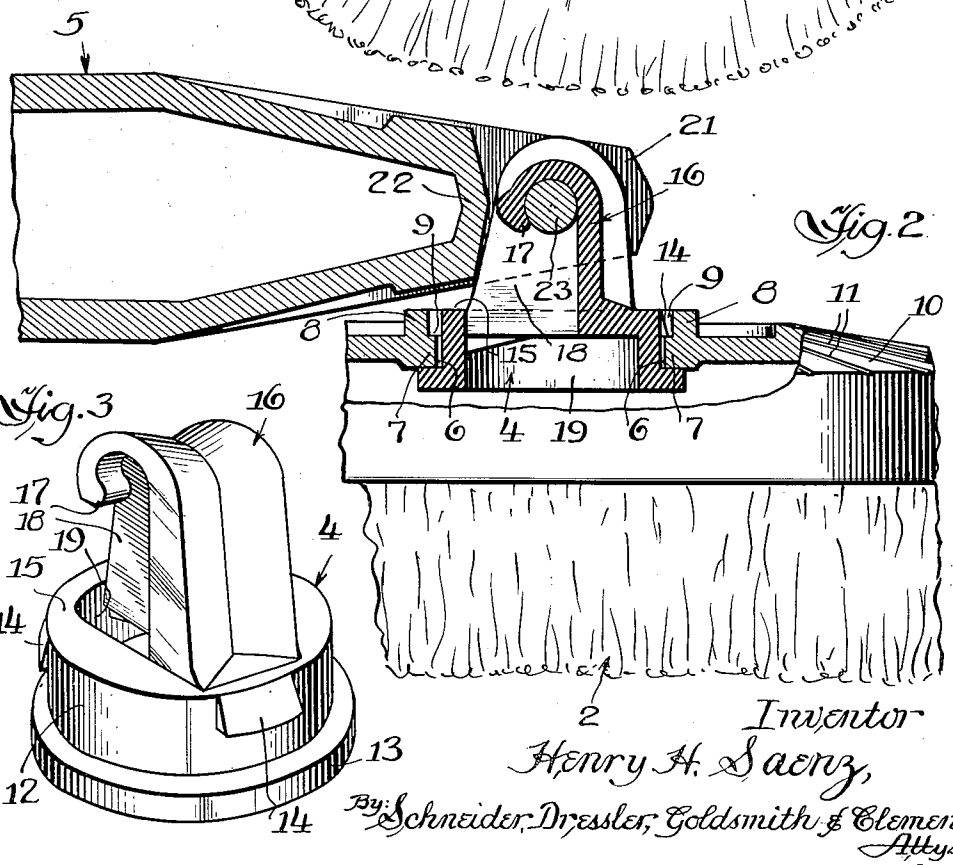


Fig. 2

Fig. 3

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DUST MOP

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Fig. 4

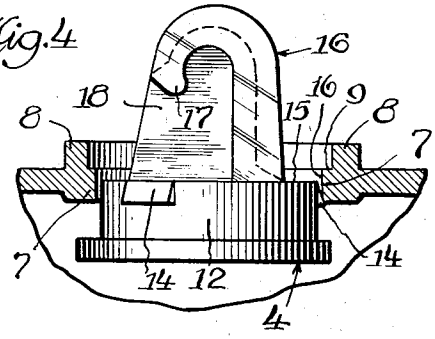


Fig. 5

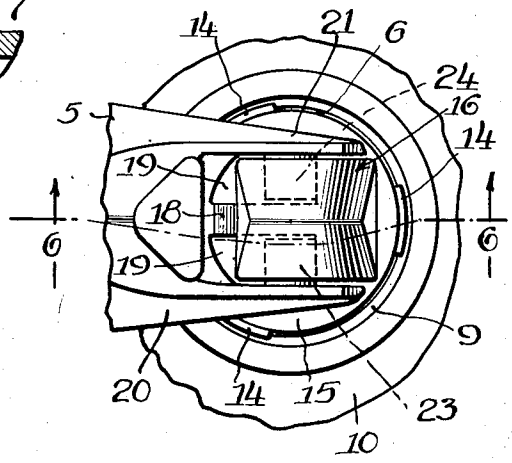


Fig. 6

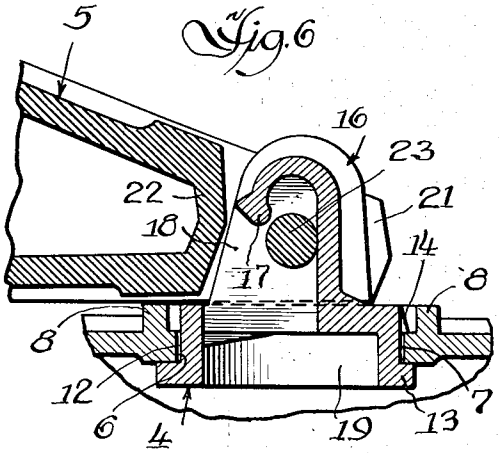


Fig. 7

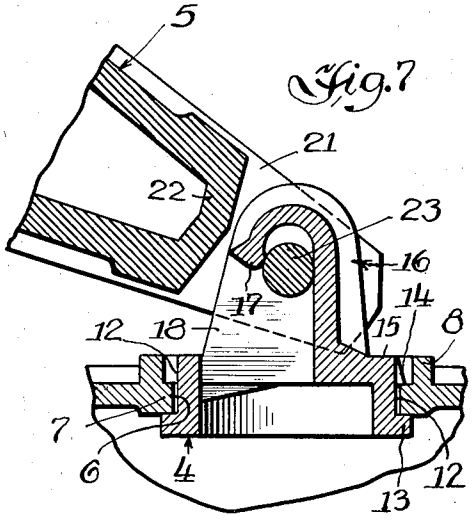
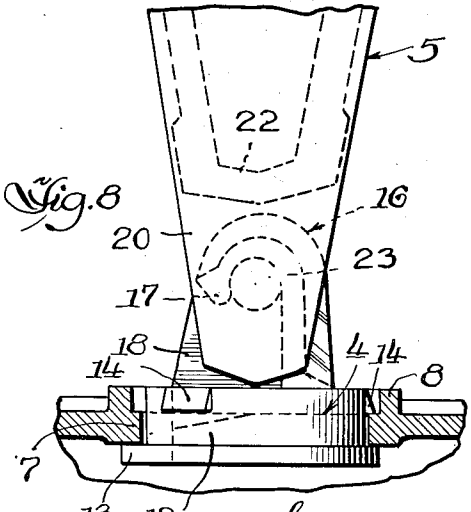


Fig. 8



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United States Patent Office 2,973,540 Patented Mar. 7, 1961

2,973,540

DUST MOP

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Filed Jan. 12, 1960, Ser. No. 2,048

6 Claims. (Cl. 15—229)

This invention relates to a swivel yarn mop, and is particularly concerned with means for facilitating washing the mop body and reassembling it with the rest of the mop structure.

Heretofore it has been customary in connection with yarn mops to detachably secure the mop body to the mop head so that when the mop body becomes dirty it may be removed, washed, dried and reattached to the mop head. The commercial success of such mops depends, to a large extent, upon the length of time and effort required to remove and reattach the mop body to the mop head.

In accordance with the present invention, the mop body and mop head are permanently attached to each other and are both washable. The mop head and mop body may be dumped into a conventional washing machine as a single unit. The handle may be detached from and reattached to the mop head very quickly and easily so that substantially no time is required beyond that actually used for washing the mop.

The mop handle is mounted in a socket that is removably secured to a center member rotatably mounted in an opening provided therefor in the mop head. The rotatable mounting of the center member permits the mop head and body to turn through 360° in its horizontal plane to facilitate moving the mop body into hard-to-reach places. The mop head is preferably provided with an internal annular flange contiguous to the opening in which the center member is mounted, and the center member is provided with lateral projections spaced vertically a distance substantially equal to the height of the flange of the mop head. One of the vertically spaced projections preferably comprises a series of three wedge shaped lugs projecting downwardly and outwardly from the upper edge of the center member and the other preferably comprises an annular flange extending outwardly from the bottom edge of the center member. Either one of the projections of the center member or the flange of the mop head is resilient, so that the center member be easily and quickly secured to the mop head.

The center member has a vertical hook member projecting above its top plane surface having a reentrant free end on its hook. The vertical distance between the top plane surface of the center member and the lowermost surface of the reentrant free end of the vertical hook member is dimensioned to facilitate attachment of the socket to the mop. The free end of the hook extends inwardly so that the socket cannot be accidentally displaced from the vertical hook member. The reentrant free end of the vertical hook member is preferably slightly resilient to facilitate removal or attachment of the socket to the mop.

The structure by means of which the above-mentioned and other advantages of the invention are attained will be described in the following specification, taken in conjunction with the accompanying drawings showing a preferred illustrative embodiment of the invention, in which;

Fig. 1 is a fragmentary perspective view of a yarn mop embodying the invention;

Fig. 2 is a cross sectional view, taken along the line 2—2 of Fig. 1;

Fig. 3 is an enlarged detail perspective view of the center member adapted to be rotatably mounted in the mop head;

Fig. 4 is a fragmentary cross sectional view through the mop head, showing the center member in position to be secured to the mop head;

Fig. 5 is a fragmentary top plan view of the mop head with the socket secured in place;

Fig. 6 is a cross sectional view, taken along the line 6—6 of Fig. 5;

Fig. 7 is a cross sectional view, similar to Fig. 6, showing the socket raised angularly from the position shown in Fig. 6; and

Fig. 8 is a fragmentary view, partly in section and partly in elevation, showing the socket extending at right angles to the top plane surface of the rotatable center member and fully engaged with the hook member.

Referring to the drawings, the mop comprises a mop body 2, a mop head 3, a rotatable center member 4, a socket 5, and a handle 5a. The mop body comprises a plurality of uniform strands of yarn, preferably nylon or a nylon blend, that may be washed with a detergent in hot water without damage. The mop body is usually washed in a conventional washing machine. The mop body is permanently secured to the mop head in any suitable manner. Since the yarn of the mop body is permanently secured to the mop head, the mop head is thrown into the washing machine with the mop body and must also be capable of withstanding detergents and hot water temperatures without deleterious effect. Polyethylene is preferably used for the mop head, but other materials having the requisite characteristics may be used, if desired.

Although the mop head is shown as being circular in horizontal cross section, it may be of any desired shape. The circular shape is preferred because it permits the yarn of the mop body to swirl under and around furniture, including furniture having short legs, and thereby facilitates dusting in hard-to-reach areas.

The mop head is provided with a centrally disposed opening 6 of slightly larger diameter than the intermediate portion of center member 4 which is rotatably mounted therein. The inner edge of an annular lateral flange 7 defines the outer edge of opening 6. An upstanding annular rib 8 is recessed from the inner edge of flange 7 to provide an internal annular shoulder 9 between the upper surface of flange 7 and the inner surface of rib 8. The upper surface 10 of mop head 3 slopes downwardly and outwardly from its center and is preferably provided with a plurality of radially disposed grooves 11.

Center member 4 is preferably made of a high-impact, rigid, styrene-type thermoplastic resin capable of withstanding detergents and a temperature of 180° F. without deleterious effect. A suitable resin of this type is made by Marbon Chemical Division of Borg-Warner Corporation and sold to the public under the registered trademark "Cycolac." The center member has an intermediate cylindrical wall 12 having a diameter slightly smaller than the inner diameter of annular flange 7.

A lateral flange 13 extends outwardly from the lower edge portion of cylindrical wall 12 and forms one of the projections adapted to hold the mop head and mop body together as a unit. Flange 13 is adapted to engage the underside of flange 7 when the center member is rotatably mounted in the mop head. The other projection that helps to hold the mop head and mop body together as a unit preferably comprises a plurality, preferably three, wedge shaped lugs 14 which extend downwardly

and outwardly from the top plane surface 15 of the center member. The lower edge of each lug 14 is parallel to flange 13, and is spaced above the upper surface thereof a distance substantially equal to the height of flange 7.

A vertical hook member 16 extends upwardly from the peripheral edge of top plane surface 15. Hook member 16 has a reentrant free end 17 that is spaced above top plane surface 15 and is slightly resilient. Free end 17 extends toward the upright portion of the hook member to form a restricted entry to the underside of the hook, for a purpose hereinafter described. In the embodiment shown, hook member 16 is reinforced by a centrally disposed vertical web 18 integral therewith. Center member 4 is provided with a vertical bore 19 on each side of web 18.

Center member 4 is pressed into opening 6 to force lugs 14 past flange 7 in order to mount the center member rotatably in mop head 3. Flange 7 is sufficiently resilient to be temporarily deformed by lugs 14 and to spring back to its original position when the lugs clear it. The peripheral edge of flange 13 extends outwardly too far to permit it to be forced past flange 7. Accordingly, the lower edge of each lug 14 engages the upper surface of flange 7 at shoulder 9, and the upper surface of flange 13 engages the lower surface of flange 7 to hold center member 4 rotatably mounted in opening 6 of mop head 3.

Sufficient clearance is provided between cylindrical wall surface 12, lugs 14, flange 13 and the contiguous surfaces of flange 7 to permit center member 4 to be easily rotated in opening 6. If desired, lugs 14 may be resilient and flange 7 may be rigid. It is also possible to reverse lugs 14 and flange 13. In such event the lugs would have their wide surface at the upper end of each lug, and the center member would be secured in place by forcing the lugs downwardly past flange 7. Regardless of the specific construction of center member 4, its top plane surface 15 is preferably coplanar with the upper surface of annular rib 8 when the center member is secured to the mop head between the projections 13 and 14.

Socket 5 is tubular and handle 5*a* fits snugly therein. Preferably the handle is pressed fitted into the socket and the interior of the socket is provided with a plurality of longitudinal ribs adapted to dig into handle 5*a* to prevent rotation of the handle in the socket. If desired, the handle may be glued in the socket to form a substantially permanent bond between the handle and socket. The bottom end of socket 5 is provided with a yoke comprising a pair of integral arms 20 and 21 extending below transverse wall 22 of the socket and adapted to fit on opposite sides of vertical hook member 16.

A pivot pin 23 extends inwardly from arm 20, and a similar pin 24 extends inwardly from arm 21. Pins 23 and 24 are axially aligned and extend perpendicularly to the longitudinal axis of handle 5*a*. Pins 23 and 24 are adapted to engage hook member 16 on opposite sides of web 18 to pivotally secure the lower end of the socket 6 to center member 4.

Pins 23 and 24 are spaced equidistant from the edges of arms 20 and 21 so that the socket may be secured with either edge uppermost. In the embodiment shown, when socket 6 is substantially flush with top plane surface 15, the upper edges of pins 23 and 24 are spaced from said top plane surface a distance less than the vertical distance between free end 17 of hook member 16 and top plane surface 15 so that the socket may be pushed until pins 23 and 24 engage the upright portion of hook member 16. The outer end of the handle may then be lifted to force pins 23 and 24 past the restricted entry formed by free end 17 of hook member 16. The pins force free end 17 outwardly to pass, and the free end then snaps back into place to pivotally hold pins 23 and 24. The procedure is reversed to remove the handle socket from the mop.

If hook member 16 is not provided with a reinforcing web 18, a single pin (not shown) may replace the pair of pins 23 and 24. Such single pin would cooperate with hook member 16 in the same manner as the pair of pins 23 and 24.

The above detailed description has been given for clearness of understanding only. No unnecessary limitations should be understood therefrom, as modifications will be obvious to those skilled in the art.

I claim:

1. A yarn mop which comprises: a mop body including a plurality of strands of yarn; a mop head attached to said mop body, said mop head having a centrally disposed opening; a rotatable center member having a cylindrical outer wall and a plurality of lateral projections extending outwardly from said cylindrical wall beyond the edge of said mop head defining said opening when said center member is positioned in said opening, said lateral projections being spaced vertically to span the edge of said mop head contiguous to said opening at a plurality of points spaced radially of said opening, said center member being insertable into said opening by means of a resiilent interengagement between the edge of the mop head contiguous to said opening and said plurality of lateral projections, the edge of the mop head contiguous to said opening being adapted to be held between said vertically spaced projections; a socket; a mop handle secured in the upper end of said socket; a pair of arms projecting longitudinally from the bottom of said socket; pivot means disposed between said arms, said pivot means extending perpendicularly to the longitudinal axis of said mop handle; said center member having a top plane surface and a vertical hook member extending upwardly from said top plane surface, said vertical hook member having an upstanding section and a hook section adapted to cooperate with said upstanding section to rotatably support said pivot means, said hook section having a free end restricting the entrance into the space between said cooperating sections, said pivot means being insertable between said cooperating sections by means of a resilient interengagement with the free end of said hook section.

2. A yarn mop which comprises: a mop body including a plurality of strands of yarn; a mop head attached to said mop body, said mop head having a centrally disposed opening; a rotatable center member having a cylindrical outer wall and a group of three lateral projections extending outwardly from one end of said cylindrical wall beyond the edge of said mop head defining said opening when said center member is positioned in said opening, another lateral projection near the other end of said cylindrical wall, said group of projections and said other projection being spaced vertically to span the edge of said mop head contiguous to said opening at three points spaced radially of said opening, said center member being insertable into said opening by means of a resilient interengagement between the edge of the mop head contiguous to said opening and said group of three lateral projections, said three projections being wedge shaped with the smaller end of the wedge directed toward the upper edge of said center member, the edge of the mop head contiguous to said opening being adapted to be held between said three projections and said other projection; a socket; a mop handle secured in the upper end of said socket; a pair of arms projecting longitudinally from the bottom of said socket; pivot means disposed between said arms, said pivot means extending perpendicularly to the longitudinal axis of said mop handle; said center member having a top plane surface and a vertical hook member extending upwardly from said top plane surface, said vertical hook member having an upstanding section and a hook section adapted to coperate with said upstanding section to rotatably support said pivot means, said hook section having a free end restricting the entrance into the space between said cooperating sections,

said pivot means being insertable between said cooperating sections by means of a resilient interengagement with the free end of said hook section.

3. A yarn mop which comprises: a mop body including a plurality of strands of yarn; a mop head attached to said mop body, said mop head having a centrally disposed opening; a rotatable center member having a cylindrical outer wall and a plurality of lateral projections extending outwardly from said cylindrical wall beyond the edge of said mop head defining said opening when said center member is positioned in said opening, said lateral projections being spaced vertically to span the edge of said mop head contiguous to said opening at a plurality of points spaced radially of said opening, said center member being insertable into said opening by means of a resilient interengagement between the edge of the mop head contiguous to said opening and said plurality of lateral projections, the edge of the mop head contiguous to said opening being adapted to be held between said vertically spaced projections; a socket; a mop handle secured in the upper end of said socket; a pair of arms projecting longitudinally from the bottom of said socket; a pivot pin disposed between said arms, said pivot pin extending perpendicularly to the longitudinal axis of said mop handle; said center member having a top plane surface and a vertical hook member extending upwardly from said top plane surface, said vertical hook member comprising an upstanding section and a hook section having a reentrant free end that extends the bend in the hook beyond 180°, said hook section being adapted to cooperate with said upstanding section to rotatably support said pivot pin, said reentrant free end of said hook section being resilient to permit said pivot pin to be inserted between said cooperating sections of said vertical hook member.

4. A yarn mop which comprises: a mop body including a plurality of strands of yarn; a mop head attached to said mop body, said mop head having a centrally disposed opening and an internal annular flange defining the periphery of said opening; a rotatable center member having a cylindrical outer wall and a plurality of lateral projections extending outwardly from said cylindrical wall beyond the inner edge of said flange when said center member is positioned in said opening, said lateral projections being spaced vertically to span the edge of said flange at a plurality of points spaced radially of said opening, said center member being insertable into said opening by means of a resilient interengagement between said flange and said plurality of lateral projections, said flange being adapted to be held between said vertical spaced projections; a socket; a mop handle secured in the upper end of said socket; a pair of arms projecting longitudinally from the bottom of said socket; a pair of axially aligned pivot pins disposed between said arms, said pivot pins extending perpendicularly to the longitudinal axis of said mop handle; said center member having a top plane surface, a vertical hook member extending upwardly from said top plane surface and a vertical web reinforcing said hook member, said vertical hook member having an upstanding section and a hook section adapted to cooperate with said upstanding section to rotatably support said pivot pins, said hook section having a free end restricting the entrance into the space between said cooperating sections on each side of said web, said pivot pins being insertable between said cooperating sections on opposite sides of said web by means of a resilient interengagement with the free end of said hook section.

5. A yarn mop which comprises: a mop body including a plurality of strands of yarn; a mop head attached to said mop body, said mop head having an opening in the center thereof; a rotatable center member; projections on the outer wall of said center member spaced apart vertically at a slightly greater distance than the thickness of said mop head contiguous to said center opening and extending outwardly slightly beyond the perimeter of said opening when said center member is positioned in said opening, said mop head being formed of resilient material so that said rotatable center member can be forced into the center opening of the mop head until the spaced projections of said center member span the side walls of said mop head contiguous to said center opening; said center member having a top plane surface and a vertical hook member extending above said top plane surface; a mop handle; a yoke at the bottom of said handle comprising a pair of arms extending longitudinally of said handle; and a pivot pin disposed between the arms of said yoke perpendicularly to the longitudinal axis of the mop handle, the clearance between the free end of said vertical hook member and the upstanding portion of said hook member being slightly less than the diameter of said pivot pin, the free end of said vertical hook member being resilient so as to permit said pivot pin to be snapped into place between the free end of said hook member and the underside of its top.

6. A yarn mop which comprises: a mop body including a plurality of strands of yarn; a mop head attached to said mop body, said mop head having an opening in the center thereof and an internal annular flange defining the periphery of said opening; a rotatable center member; projections on the outer wall of said center member spaced apart vertically at a slightly greater distance than the thickness of said flange and extending outwardly slightly beyond the perimeter of said opening when said center member is positioned in said opening, said flange being resilient so that said rotatable center member can be forced into the center opening of the mop head until the spaced projections of said center member span said flange; said center member having a top plane surface and a vertical hook member extending above said top plane surface; a mop handle; a yoke at the bottom of said handle comprising a pair of arms extending longitudinally of said handle; and a pivot pin disposed between the arms of said yoke perpendicularly to the longitudinal axis of the mop handle, the clearance between the free end of said vertical hook and the upstanding portion of said hook member being slightly less than the diameter of said pivot pin, the free end of said vertical hook being resilient so as to permit said pivot pin to be snapped into place between the free end of said hook and the underside of its top.

No references cited.