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SPRAY HEAD

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Fig. 1

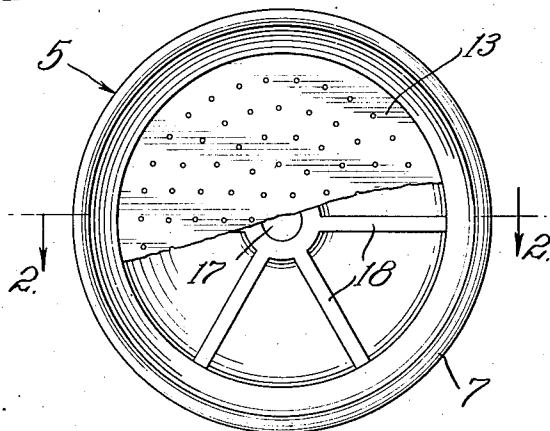
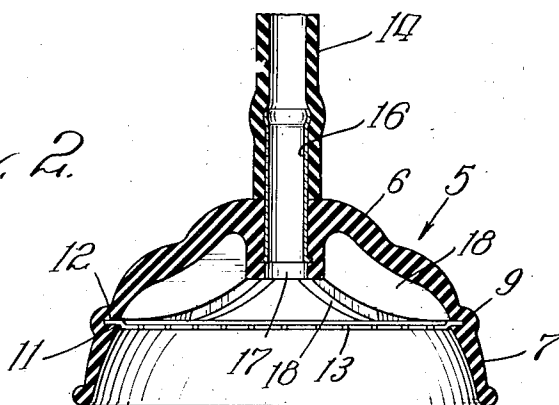


Fig. 2



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SPRAY HEAD

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3 Claims. (Cl. 299-141)

This invention relates generally to liquid spray devices and in particular to a spray head adapted to be used in the home.

Many of the prior art spray heads for use in the home generally consist of a rubber dome-shaped portion adapted for connection at the small end with a hose or tube, and having an annular bead or thickened portion at the large end thereof provided with an annular recess for receiving the marginal edges of a spray disc. Considerable inconvenience is encountered with spray heads of this type due to the fact that the water pressures applied on the disc often times blow or push the disc out of the recess in the bead portion during the normal use of the spray head. In some instances this difficulty has been overcome by the use of a very thick portion for supporting the disc which increases the bulk and cost of the spray head, and sometimes it is necessary to utilize a wide edge on the metal disc carried in a corresponding deep annular recess. Another disadvantage of these prior art spray heads is the lack of any directed flow of the water which is discharged through the disc.

It is an object of this invention, therefore, to provide an improved spray head.

Another object of this invention is to provide a rubber spray head which is capable of positively retaining the spray disc in assembly position against the liquid pressures applied on the disc without a thickened portion at the open face of the head.

A feature of this invention is found in the provision of a spray head which is constructed with a supporting portion adapted to retain a spray disc in assembly position and at the same time serve as an anti-splash shield and direct the flow of liquid discharged through the disc.

A further feature of this invention is found in the provision of a spray head which is comprised essentially of a one piece rubber member having a dome-shaped portion and a relatively thin but wide annular rim portion extended from the dome-shaped portion. A metal perforated disc is retained within an annular recess formed at the junction of such two portions, with the annular rim portion being of a construction adapted to provide a firm support for the disc against the liquid pressures applied thereon.

Further objects, features, and advantages of this invention will become apparent from the following description when taken in connection with the accompanying drawing in which:

Fig. 1 is a bottom plan view of the spray head of this invention with a portion of the metal disc

being broken away to more clearly show the construction of the spray head; and

Fig. 2 is a transverse sectional view taken approximately along the line 2-2 in Fig. 1.

With reference to the drawing the spray head of this invention is illustrated as including a one-piece member 5 composed of rubber or like moldable material. Both figures correspond precisely in dimensions with a commercial embodiment of the invention. As viewed in Fig. 2 the upper portion 6 of the member 5 is seen to be of substantially dome or bell-shape. The lower portion 7 of the rubber member 5 projects longitudinally thereof to form an annular rim or skirt portion at the enlarged end of the dome portion 6. This rim portion is relatively thin but relatively elongated axially, or longitudinally of the head, and serves not only to assist in retaining the metal spray disc in position, as will be explained, but also as an anti-splash shield for the water so that it does not spread undesirably. The portions 6 and 7 of the member 5 are joined together by an annular extending bead portion 9 which has formed therein a laterally extending annular recess 11 opening to the inside of the member 5 and adapted to receive therein the marginal or peripheral edge 12 of a perforated metal disc 13.

In the assembly of the spray head the metal disc 13 is received within the recess 11 by simply folding back the yieldable annular rim portion 7 about the dome-shaped portion 6. With the portion 7 thus folded the metal disc 13 is positioned against the lower end of the dome-shaped portion 6 and when in this position the return of the portion 7 to its normal position closes the metal disc 13 within the recess 11.

In the operation of the spray head, connection is made with a suitable source of liquid supply through a flexible conduit 14 which is extended over a metal sleeve or insert 16 received in frictional engagement within a channel or bore 17 provided in the small end of the dome-shaped portion 6. The wall of the dome-shaped portion 6 is braced or stiffened by rib portions 18 extended radially from the channel 17 to the bead portion 9. It is apparent of course that the pressure exerted against the metal disc 13 by the liquid in the dome-shaped portion 6 is applied against the side walls of the recess 11. In one commercial embodiment of the invention the diameter of the metal disc 13 is about 3 inches, the longitudinal length of the dome-shaped portion 6 being about one inch and the longitudinal length of the rim portion 7 being about one-half

inch. This embodiment, as mentioned, is illustrated in actual size in the drawing. By virtue of the extended length of the rim portion 7 any tendency of the recess 11 to spread apart and release the metal disc 13 is positively prevented. In other words the rim portion provides a firm support for the disc 13 so as to eliminate any tendency of the lip or head portion 9 to be rolled back upon itself by the pressure applied thereon at the disc 13.

It is seen, therefore, that the invention provides a spray head which is of a very simple construction and adapted to positively retain the spray disc therein regardless of the liquid pressures applied thereon, and the annular rim portion 7 not only provides a backing or support for the disc 13, but also serves to define the channel flow of the water spray.

Although the invention has been described with reference to a particular embodiment thereof it is to be understood that it is not to be so limited since changes and modifications can be made therein which are within the full intended scope of this invention as defined by the appended claims.

I claim:

1. A bath spray head including in combination a one-piece dome shaped rubber member adapted to be connected with water conveying means, and a perforated spray disc, said member having a water inlet portion at one end with an opening and an oppositely disposed discharge portion, a walled yieldable skirt at the discharge portion with an internal annular face, said member having an annular groove with a disc ledge defining one annular edge of said face and said skirt having an opening defining the other annular edge, said skirt extending in width from said ledge to said annular opening and said width being at least twice the thickness of the wall of said skirt, said perforated disc being supported at its edge in said groove on said disc ledge and said width of such skirt acting to strengthen said yieldable skirt and maintain said disc on said ledge against the liquid pressures applied on the disc from the side thereof toward the water inlet, and said annular-skirt-opening-diameter being more than twice the diameter of the opening at the water inlet portion.

2. A bath spray head including in combination a one-piece dome shaped rubber member adapted to be connected with water conveying means,

and a perforated spray disc, said member having a water inlet portion at one end with an opening and an oppositely disposed discharge portion, a walled yieldable skirt at the discharge portion with an internal annular face, said member having an annular groove with a disc ledge defining one annular edge of said face and said skirt having an opening defining the other annular edge, said skirt extending in width from said ledge to said annular opening and said width being at least twice the thickness of the wall of said skirt, said perforated disc being supported at its edge in said groove on said disc ledge and said width of such skirt acting to strengthen said yieldable skirt and maintain said disc on said ledge against the liquid pressures applied on the disc from the side thereof toward the water inlet, with said skirt wall being thin enough so that it can be outwardly rolled sufficiently to permit the insertion of the edge of said perforated disc in said annular groove and on said ledge, and said annular skirt opening diameter being more than twice the diameter of the opening at the water inlet portion.

3. A bath spray head including in combination a one-piece rubber member adapted to be connected with water conveying means, and a perforated spray disc, said member having a dome-shaped portion at one end with a water inlet opening and an oppositely disposed discharge portion, said dome-shaped portion having radially extending ribs on the inside thereof to strengthen such dome-shaped portion and maintain its shape, a walled yieldable skirt at the discharge portion with an internal annular face, said member having an annular groove with a disc ledge defining one annular edge of said face and said skirt having an opening defining the other annular edge, said skirt extending in width from said ledge to said annular opening and said width being at least twice the thickness of the wall of said skirt, said perforated disc being supported at its edge in said groove on said disc ledge and said width of such skirt acting to strengthen said yieldable skirt and maintain said disc on said ledge against the liquid pressures applied on the disc from the side thereof toward the water inlet, and said annular skirt opening diameter being more than twice the diameter of the water-inlet opening.

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