

Sept. 22, 1959

K. D. CLAYSON
FOUNTAIN SPONGES

2,904,809

Filed April 11, 1955

2 Sheets-Sheet 1

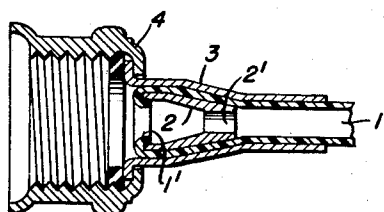
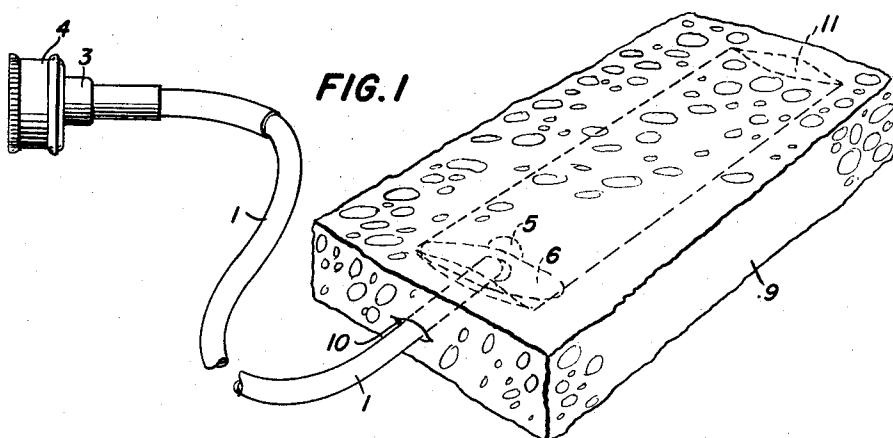


FIG. 2

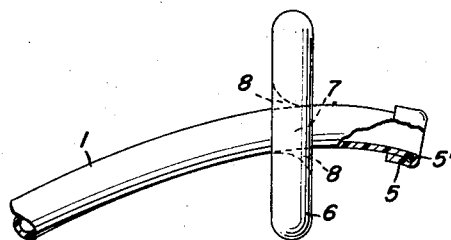


FIG. 3

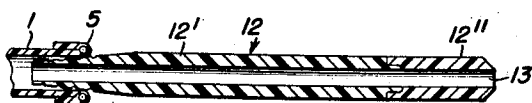


FIG. 5

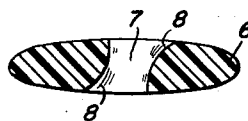


FIG. 6

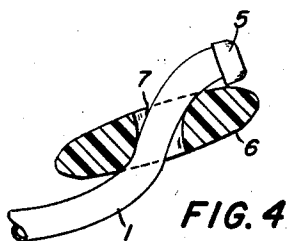


FIG. 4

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2 Sheets-Sheet 2

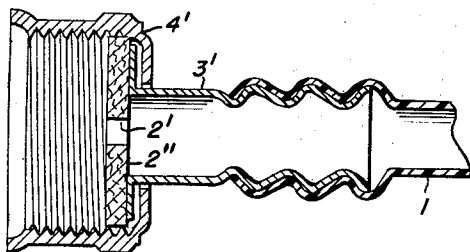


FIG. 7

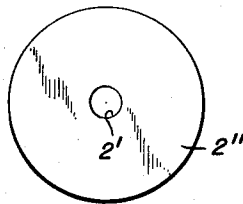


FIG. 8

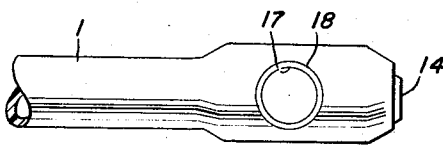


FIG. 9

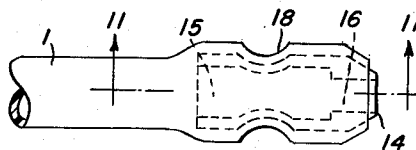


FIG. 10

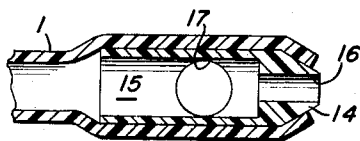


FIG. 11

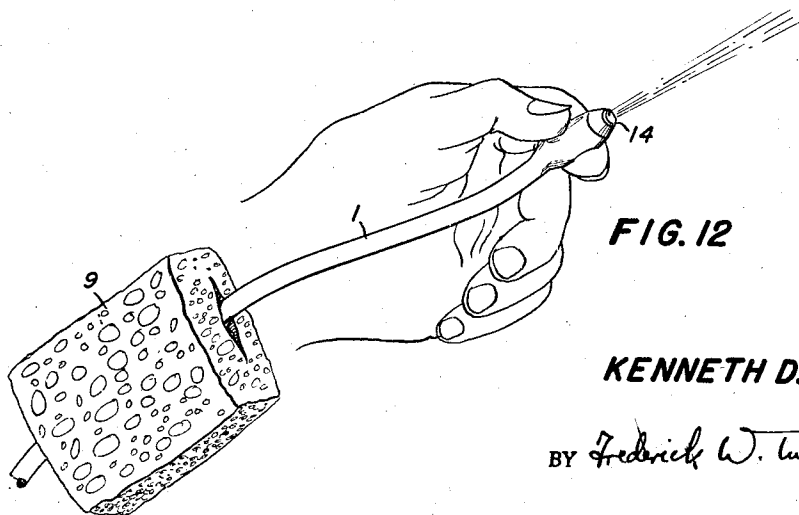


FIG. 12

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1

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FOUNTAIN SPONGES

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Application April 11, 1955, Serial No. 500,391

7 Claims. (Cl. 15—130)

This invention relates to cleaning devices and more particularly to fountain sponges.

An object of the invention is to provide a fountain sponge that is inexpensive while at the same time being of increased efficiency.

A further object of the invention is to provide a fountain sponge device in which the sponge element may be renewed as required.

A still further object of the invention is to provide a cleaning device including not only the fountain sponge using a gentle flow of water, but including also a nozzle to give a forceful jet of water when desired without requiring adjustment of a valve at the source of the water, and without the use of complicated, heavy or metallic elements that are not only expensive to manufacture but are unreliable in operation and, due to their weight and hardness easily damage the paint on the object, such as an automobile, on which the cleaning device is being used.

A still further object of this invention is to provide an extremely light weight assemblage, easy to lift, carry and manipulate, that connects to a suitable source of water under pressure, with a restrictor inserted in the coupling that connects the assemblage to a tap or faucet to cut down the volume of flow and the pressure of the water entering the tubing, yet allowing ample volume and pressure of water for washing automobiles, airplanes, windows, window sills, porch railings, and many other washing purposes. The restrictor eliminates the necessity of adjusting the volume of flow or the pressure of water at the tap, or by means of a conventional nozzle such as is ordinarily used at the discharge end of a garden hose.

A further object is to provide a novel, simplified method of attaching and holding a sponge or other cleaning piece of material to the tubing, and a novel and simplified structure whereby the hose may be pushed through the sponge so that a simplified nozzle at the discharge end of the tubing may be used when a more powerful stream of water is required.

Other and further objects and advantages of the invention will become apparent to those skilled in the art from the following description taken with the accompanying drawing in which like characters of reference designate corresponding parts in the several views and in which:

Fig. 1 is a perspective view of the device;

Fig. 2 is a sectional view of a hose connection used;

Fig. 3 is a detailed view, partly in section of a means to secure the tubing in a sponge;

Fig. 4 is a view partly in section illustrating the manner of manipulation of the retaining means to assemble the tubing in the sponge;

Fig. 5 is a sectional view of a nozzle for use with the device;

Fig. 6 is a detailed section of the toggle means;

Fig. 7 is a sectional view of a slightly different hose connection;

Fig. 8 is an elevation of the orificed gasket shown in Fig. 7;

2

Figs. 9 and 10 are a plan and an elevation of a nozzle; Fig. 11 is a sectional view of the nozzle of Figs. 9 and 10; and

Fig. 12 shows the nozzle in use to produce a strong jet of water.

Many fountain sponge devices have been proposed but have not gained public acceptance for various reasons. One reason being that it is usual in such devices to secure the sponge to the end of a hose and, if the operator desires to use a simple stream or jet of water, such stream or jet is not available without detaching the sponge, and, of course, re-attaching it when it is desired to use the sponge again.

Referring now to the drawing, in Fig. 1 it will be observed that a length of flexible tubing 1 is secured at one end to a hose coupling 3, 4. This tubing is preferably of small diameter and of light weight, the length will, of course, be dictated by the desires of the user. The details of one manner of joining the tube 1 to hose coupling 4 is seen in Fig. 2. Coupling 4 carries a tapered metallic tube 3 mounted for swiveling action in screw threaded element 4. Tube 1, extending into tapered element 3 is expanded over an apertured plug 2 so that the wall of tubing 1 is securely wedged between plug 2 and tubular element 3 making a tight joint.

Attention is invited to the fact that the orifice 2' in plug 2 is slightly smaller than the internal diameter of tube 1. The reason for this is to regulate the flow of water to the sponge or to the nozzle at the other end of tube 1.

In the simplest form of the device the end of tube 1 remote from the hose coupling is formed with a bead 5, see Fig. 3, formed by folding the end of the tubing back on itself to form an enlargement at the end of the tubing. This bead may be, but is not necessarily, folded over a ring 5'.

A toggle element 6, Figs. 3 and 6, having an aperture 7 of smaller diameter than bead 5 is mounted for sliding movement on tube 1 adjacent bead 5. Aperture 7 is enlarged at 8, 8 at each side of toggle 6. These enlargements are so located that the toggle 6 may be positioned on tube 1 as seen in Fig. 4, for insertion into a sponge.

A sponge 9, preferably of synthetic material, is provided with an aperture 10 extending a short distance into one end of the sponge. A second aperture 11 extends from the other end of the sponge in alignment with and joining aperture 10. The end of tube 1 and toggle 6 are placed in the position shown in Fig. 4 and inserted in aperture 10. When toggle 6 reaches aperture 11 it is turned so as to lie, as shown in dotted lines in Fig. 1, at the end of aperture 11 so as to prevent withdrawal of tube 1 from the sponge.

Toggle 6 is freely slidable and rotatable on tube 1 and provides for free swiveling action of the sponge on the tube. Bead 5 can, of course, not be withdrawn through toggle 6 but tube 1 can be thrust further through toggle 6 to protrude beyond sponge 9.

In using the assemblage of Fig. 1 it will be appreciated that if the water at the tap is turned on to give full pressure and volume to a conventional garden hose, it would be expected that too much pressure and volume would be delivered at sponge 9. Since, however, the orifice 2' in plug 2 at the hose connection is of smaller diameter than tube 1, the volume and pressure of water delivered to the sponge 9 is reduced. The device, therefore receives only the volume of water it requires (which saves water) and the pressure of delivery is nominal so the hazard of sudden spurts of water wetting the operator is eliminated.

If, however, it is desired to use a jet of water, for instance in cleaning off muddy automobile wheels, it is only necessary to push the end of tube out of the sponge

through aperture 11, and apply a fitting 12 as seen in Fig. 5 to the end of the tube. This fitting 12 is simply a tubular element of molded material that is tapered at one end to wedge into the end 5 of tube 1. The tapered portion may have its surface formed with generally helical rudimentary screw threads to aid in wedging it into the tube, but such threading is not considered essential. In any case, the bore 13 of fitting 12 is of smaller diameter than the tubing 1 and smaller than aperture 2' in plug 2 so that pressure builds up in tube 1 to provide a high velocity flow through bore 13 forming a jet of sufficient strength to dislodge mud, etc. on the automobile wheel.

Fitting 12 may be of one homogeneous piece of plastic, or, as indicated in Fig. 5, may have a body 12' of relatively hard plastic and an end portion 12'' of quite soft, deformable plastic so that by squeezing end portion 12'' the jet from bore 13 may be modified as desired.

An alternative means to secure the tube 1 to hose coupling 4 is shown in Fig. 7 which differs from a conventional hose coupling by being provided with a disc washer 2'' that seals the coupling. Disc 2'' is provided with an aperture 2' which is the same as aperture 2' of Fig. 2.

Figs. 9 to 12 show the preferred structure for the end of the tube normally lying in sponge 9. This structure includes a nozzle element 14 of a relatively rigid plastic (although it could be of metal) element having a bore longitudinally thereof of which a portion 15 is of the same diameter as the inside diameter of tubing 1 and a portion 16 is of considerably reduced diameter to form a nozzle restriction. A cross bore or auxiliary opening 17 is provided of such a size that when the ends of this cross bore are uncovered no pressure can be built up in the plug. The end is stretched and shrunk over plug 14 and is provided with apertures 18 in alignment with bore 17 forming an enlargement that cannot be pulled back through toggle 6. It will be seen, then, that in normal use with the end of the hose within the sponge, the water metered through orifice 2' will come to the nozzle element 14 with only nominal pressure and will flow out through nozzle restriction 16 and auxiliary openings 17, 18 in a constant gentle stream through the sponge so as to rinse away the dirt while the sponge is being used to wipe off the automobile or other object that is being washed.

It will be noted that when the end of the tubing or hose 1 is provided with the insert 15, the hose, at this point is enlarged so that it can not be pulled back through the sponge to separate the sponge from the hose.

Due to the gentleness of the flow of water through the sponge, a detergent may be used by spooning the detergent into the aperture 11. The water will slowly dissolve the detergent and carry it in all directions outwardly through the sponge.

When it is desired to use a jet of water, as may be required to remove a heavy incrustation of mud on an automobile wheel, the end of tube 1 carrying nozzle element 14 need only be thrust out of the aperture 11, as seen in Fig. 12 and the nozzle held with the thumb and first finger covering auxiliary openings 18. Bore 16 being of less diameter than aperture 2' pressure will build up in tube 1 and a jet of water will be thrown by the nozzle.

It is seen, therefore, that a very simple and useful cleaning device has been devised.

Many other advantages, uses and modifications will become apparent to those skilled in the art, and all

changes and modifications coming within the scope of the appended claims are embraced thereby, it being understood that the structures shown are by way of example and the invention is not limited to such examples.

I claim:

1. A fountain sponge device comprising a sponge, an elongated flexible tubing having one end slidably mounted in said sponge to carry fluid thereto, a hose connection remote from said sponge to attach said tubing to a source of liquid under pressure, said hose connection being provided with an orifice to normally reduce the pressure of liquid to said tubing, said slidable mounting of said tube in said sponge providing means whereby said tubing may be extended through and beyond said sponge to provide a direct flow of water.

2. The fountain sponge device of claim 1 in which the tubing is retained in the sponge by means of an enlargement at the end of said tubing.

3. The fountain sponge device of claim 1 in which the end of the tubing mounted in said sponge is provided with a plug having an end opening and at least one auxiliary opening of an area approximating the cross sectional area of the tube, the diameter of said end opening being small so that upon closing of said auxiliary opening a jet of fluid under a higher pressure will be provided.

4. The fountain sponge device of claim 3 in which two auxiliary openings are provided having a combined area approximating the internal cross sectional area of the tube.

5. The fountain sponge device of claim 1 in which the end of said tubing is provided with means whereby when thrust through said sponge the volume flow may be restricted in order to build up a pressure in said tube to supply a jet of liquid.

6. A cleaning device comprising a sponge, an opening through said sponge, said opening being restricted at one end, an elongated flexible tubing having one end slidably projecting into said sponge through the restricted end of said opening and provided at its end, lying normally within said sponge, with an enlargement whereby said tubing will be restrained from being withdrawn through said restricted portion of said opening but will be capable of being projected from the sponge by sliding motion.

7. The device of claim 6 in which said tubing is provided at its end remote from said sponge with an orificed hose connection whereby the volume of flow to said sponge is limited.

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