Sept. 15, 1936. W. B. JONES 2,054,198

SPONGE APPLICATOR

Filed Nov. 21, 1932

Fig. 1

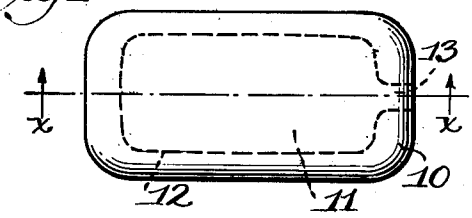


Fig. 2

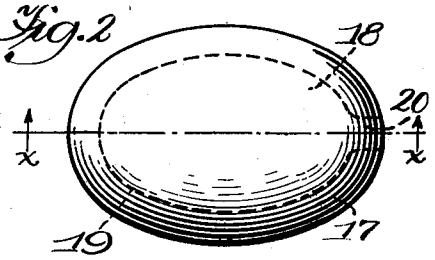


Fig. 3

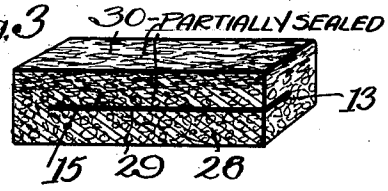


Fig. 4

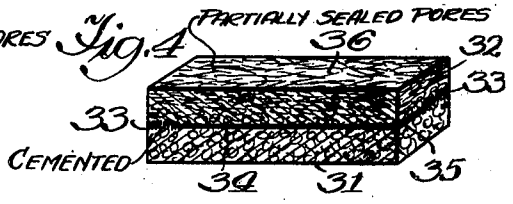
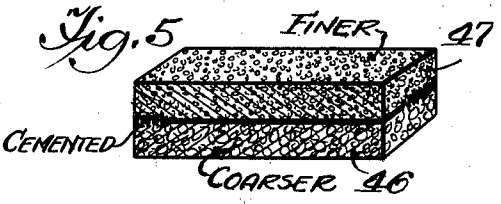


Fig. 5



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SPONGE APPLICATOR

W. Bartlett Jones, Chicago, Ill.

Application November 21, 1932, Serial No. 643,626

4 Claims. (Cl. 15—122)

The present invention relates to sponge applicators of the type disclosed in my copending application Serial No. 261,913, filed March 15, 1928, now Patent No. 1,909,966, issued May 23, 1933.

Ordinary bath sponges have a uniform sponge-surface exterior. In use they exude water uniformly all over, into the hand holding the sponge as well as on to the surface of the body where the sponge is applied. This alone is not a great inconvenience or disadvantage. However, where soap is used, it is usually rubbed into the surface of the sponge and then the soapy side of the sponge is applied to the body.

In my prior patent above referred to, there is disclosed particularly a sponge, as of rubber, adapted to hold a cake of soap or the like, which when empty is a solid sponge having no open chamber therein. It is provided with a pocket, the sides of which are normally in contact. In the forms there illustrated a cake of soap in the pocket is faced with porous sponge material through the pores of which water may enter, and from which soap and water may be discharged. The sponge is ordinarily used in the hands as a bath sponge, is entirely flexible, and is free from attached parts, such as metal, so that it is not likely to injure the body, or to cause tearing of itself.

In using the soap-filled article above described soap passes through both faces of the article, and on the face adjacent the holding hand the soap is really quite ineffective. Soap is not only wasted, but the holding hand is subjected excessively to the action of soap.

The present invention applies not only to sponges which are solid when empty as described in my prior patent, but also to any sponges in which the soap cake is housed. Because the sponge applicators of my prior patent are the preferred form, the present invention will be described and illustrated by reference to sponges having a spaceless pocket therein to receive a cake of soap and the like.

Because it is desirable to have the soap contained in an article between resilient cushions, and because only one of the cushions is really effective for transmission of soap, I provide by this invention a sponge envelope in which one of the cushion layers is ineffectively pervious to the soap or other detergent substance to render it a non-applicator surface.

One general object of the invention is therefore the provision of a sponge with a means or construction which tends to protect the holding hand from excessive contact with soap or the like solution derived from within the sponge.

A particular object of the invention is the formation of a sponge applicator with a pocket therein, defined by resilient cushions, one cushion being ineffectively pervious to passage of water through the cushion yet open to permit drying out.

I may obtain the desired effect in a number of ways. In my prior patent above referred to I show two distinct methods of making the article. One is to form a suitable cut in a solid sponge. The other is to construct the sponge by uniting two separate layers so as to leave a pocket between them. The present invention may be applied to either form as will appear hereinafter by reference to the various forms disclosed in the accompanying drawing in which:

Figs. 1 and 2 are plan views of sponges of different shapes, showing the outline of the pockets therein.

Fig. 3 is a cross-section of a sponge generally like Fig. 1, showing a sealing of the pores of an originally porous sponge.

Fig. 4 is a cross-section of a sponge generally like Fig. 1, showing a sealing of the pores of a sponge comprised of cemented layers.

Fig. 5 is a cross-section of a sponge generally like Fig. 1, showing a sponge of cemented layers of different porosity, the fine-grained sponge being relatively ineffectual as an applicator face.

In the accompanying drawing I have shown the various forms in cross-section on line x—x of Figs. 1 and 2. The Figs. 1 and 2 indicate two shapes which are suitable and convenient for bath or hand sponges. Either of the forms when filled with a cake of soap may bulge the sides outwardly. In all the figures the empty article is shown and it is to be understood that it is an article with a double utility. Without a soap or other filler it is a solid sponge. With a filler it is an efficient applicator for soap or the like, having one face as the principal operating face for applying material such as soap, and having the other face much less efficient or inoperable for such purpose.

In my prior patent I have pointed out the desirability of determining the thickness of a sponge rubber layer over the soap by reference to the porosity of the sponge material. Some sponge rubber is coarse in texture, and some is very fine. The very fine texture is less porous, and it is with more difficulty that soap solution can be exuded therefrom when used as an envelope for soap. The porosity of a layer of fine grained sponge or of a too-thick layer of coarse grained sponge may be increased by perforations, but this is not desirable, as perforations merely create water channels to the soap. Such channels reduce the lathering quality and cause more rapid loss of soap by dissolution. In the present invention I aim to use as the operating face a layer of sponge which needs no perforations and which is sufficiently thick or thin for efficiency, according to its texture or porosity.

In the present invention I may utilize the variations in sponge material, such as rubber to form a sponge applicator which is highly porous or open on one face, and which is much less porous on the other face. The less porous face layer is preferably so closed, either by the fineness of texture or thickness of material, that it is relatively inoperable to dispense soap compared with the other face layer, as shown below with reference to Fig. 5. Such a face layer has its cushioning action in the structure without its applicator function. I may treat sponge material which would otherwise be operable as an applicator on both faces, by partial sealing of the pores of one face layer.

There are numerous ways of embodying the present invention in practical form, some of which are quite economically manufactured compared to other forms.

In Fig. 1 the numeral 10 indicates a sponge which is rectangular in shape. A pocket 11 exists in the sponge and is defined by the line 12, made according to my said prior patent, with a constricted neck or opening 13. Fig. 3 is a cross-section of said sponge on line x—x of Fig. 1. It shows the sponge to be a solid block of sponge rubber 14 in which the heavy line 15 indicates the cut which forms pocket 11.

Fig. 2 represents a sponge 17 of elliptical shape, with pocket 18 defined by line 19 which also defines a constricted opening 20 into the pocket. This may be made of a single block of sponge material or of layers of material secured together as described in my prior patent.

In Fig. 3 I represent a sponge of a solid cake 28 of sponge rubber, cut to form a pocket 29, and treated to seal or partially close the pores on one face. Originally, the block may be uniform in sponge texture so that either face is operable. One face may be filled with a suitable filler such as rubber particles, or cement partially to close the pores of the layer. Where a cement, such as rubber is used the filled face may be heated and compressed, thereby permanently to compress the sponge and seal pores. The permanent compression can be progressive from the face, which may be in the form of a thin porous layer, somewhat irregular and mottled, to the more open pores at a distance inward, at or near the pocket 29. The surface 30 represents such a mottled surface, which may be practically non-effective as an applicator. In making such a form, I have found that some sponge rubber may be merely heated to effect such a sealing, without filler or cement, and that the presence in the sponge of vapors of a volatile rubber solvent aid in this action. In the application of heat, care may be taken so that only the surface or the material near the surface is so affected.

In Fig. 4 I show a sponge made generally similar to that of Fig. 3, from two layers 31 and 32 of sponge rubber, cemented together about a peripheral zone at 33 to form pocket 34 and opening 35. The layers wet with a rubber cement at 32 may be placed together, laid on a hot plate, and compressed. The plate is allowed to cool, so that only the surface of layer 32 is highly heated and sealed. The heat dries out the solvent from the cement, and the vapor in the sponge aids in the sealing action to form mottled surface 36.

In Fig. 5 I show a sponge which has two cemented layers 46 and 47 of sponge rubber. Layer 46 is sufficiently open and porous to function as an applicator face. Layer 47 is so fine in texture that it is relatively inoperative as an applicator face when it has a cushioning thickness as illustrated.

Without soap or other filler the article is also a useful sponge, because of its solidity, and it is an improved sponge because one face is more functional as a sponge, as to liquid capacity than the other, yet each face has substantially equal functional capacity, as to cushioning or resiliency. Although I have shown forms in which the surfaces are flat and parallel when the sponge is empty, it is obvious that convex surfaces are contemplated, and that the article is itself convex at the surfaces when there is soap inside. In general the flat or convex forms are termed substantially flat forms to distinguish them from the ball-type. The invention is preferred in substantially flat form, but it is not necessarily limited thereto. A flat layer is desired over the soap pocket so that the porosity for soap discharge is uniform. Where discharge is required only at one face, the other face may be extended, and may be hemispherical if desired. Such greater thickness would render uniformly porous rubber relatively impervious to the discharge of soap.

One advantage of porosity on both faces is the ability of the sponge to dry out the pocket from both sides. Where one side is sealed, soap becomes soggy, and "soft soap" is formed with a loss of cake form.

The invention is not to be considered as limited to the forms herein disclosed. Other variations and modifications are contemplated, such as those which may fall within the scope of the invention as defined in the appended claims.

I claim:

1. A sponge applicator comprising a sponge unit having a pocket on the interior thereof for the reception of a cake of soap or the like, one part of the sponge at one face of the pocket being open and porous from the pocket through to the exposed surface for the application of soap or the like thereby upon wetting the sponge, and the opposite portion of the sponge on the other side of said pocket having a relatively more fine-grained sponge structure and of less porosity whereby it is relatively ineffective as an applicator surface both layers being porous to effect evaporation from the pocket

2. A sponge applicator comprising two layers of sponge material in part secured together in flatwise relation so as to form a pocket therebetween for the receipt of soap or the like, one layer being relatively porous to provide an applicator face, and the other layer having a sponge texture facing the pocket, said layer being relatively much less porous to provide a face which

is substantially ineffective as an applicator face, both layers being porous to effect evaporation from the pocket.

3. A sponge applicator comprising two layers of sponge material in part secured together in flatwise relation so as to form a pocket therebetween with sponge texture facing both sides of the pocket for the receipt of soap or the like, one layer having its porosity reduced by a partial sealing of its pores.

4. A sponge applicator comprising a sponge unit having a pocket therein, one part of the sponge at one face of the pocket being open and porous for the application of soap or the like from within the pocket upon wetting the sponge, and the opposite portion of the sponge on the other side of and immediately adjacent the pocket being characterized by a sponge structure capable of holding water and by less porosity than the said applicator side to the extent that the same is ineffective as an applicator surface for soap or the like from within the pocket.

W. BARTLETT JONES.