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SOAP POWDER PACKET

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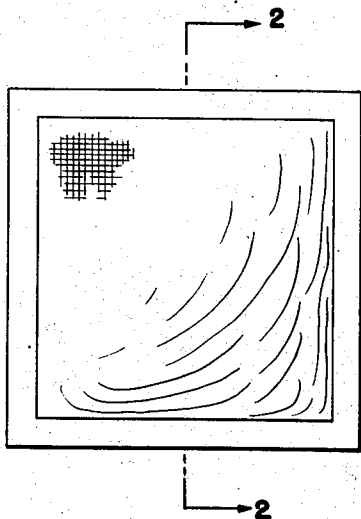


FIG. 1



FIG. 2

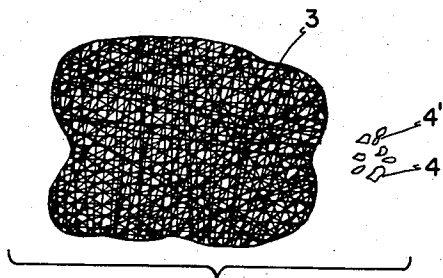


FIG. 3

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SOAP POWDER PACKET

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1 Claim. (Cl. 252-93)

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The present invention relates to a soap container which provides a simple means of dispensing soap in a useable form which has a great number of advantages.

In the present invention the soap is used in particle form and retained within a thin paper web container through which water will readily infuse, permitting the soap to be dissolved in contact with the hands or face, as the case may be, when used for washing purposes.

Small, individual bars of soap are commonly used in hotels and other places but these usually are not in such form that they may be readily carried in handbooks or small bags and, further, such individual bars contain much more soap than is necessary for a single use. In view of the fact that the soap packet of the present invention may be carried quite generally by people, it finds use as a substitute for the bar of soap often found in toilets, which soap may be dirty and may have been previously used and therefore objectionable even though soap is known to be a mild disinfectant.

In the present case the small soap packet may be dispensed in wash rooms in mechanical machines or may be purchased in packages containing a certain number of individual packets which the user will carry around with him or may be provided in hotel rooms and other places.

A further feature of the present invention is that the packet can be used only once since after it has been wetted and lathered, it shrivels into a small ball which is, naturally, discarded.

The invention will be more fully described in the specification annexed hereto in connection with the drawings shown an illustration of the invention in which—

Figure 1 shows a plane view of the soap packet of the present invention.

Figure 2 shows a section on the line 2—2 of Figure 1, and

Figure 3 shows an enlargement of a small section of the paper of Figure 1 with a comparison of the soap packet particles contained within the packet.

In the present invention the packet is comprised of two sheets 1 and 2 of porous, absorbent paper having a wet strength treatment which does not reduce the porosity of absorptivity of the web. Such a wet strength treatment may be given the paper by impregnation of the paper wet with a viscal solution which is regenerated in the fibers. This may be accomplished by tub sizing the web in a solution of cellulose xanthate and then passing the web through a dilute acid

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solution such as sulphuric acid, after which the paper web should be washed. The use of other types of wet strength treatments which reduce the porosity and absorptivity of the web, such as plastic impregnation or spraying must not be employed as the fibers must be left in the same form with the same physical structure that they were in before the wet strength treatment. This paper web is preferably provided on its inner abutting surfaces, particularly around the peripheral edge of the sheets 1 and 2, with a heat sealing means in the form of heat sealing fibers as, for instance, synthetic thermoplastic fibers, which may be deposited on the inner faces of the web and which do not affect the porosity of the web. The web may be made, if desired, of a duplex sheet, one web consisting of synthetic thermoplastic fibers and the other of natural cellulosic fibers of the desired type, the two sheets being pressed together. The fibers are preferably of a considerable length, about $\frac{1}{4}$ " or greater and so oriented that comparatively large inter-fiber interstices are formed. These interstices 3 (Figure 3) may range from 5 to 150 microns and on the average are slightly smaller than the dry soap particles 4, etc. contained within the package. The inter-fiber interstices are obtained or formed in any usual manner as, for instance, by deflocculation of the fibers in the manufacture of the web. The inter-fiber interstices have asymmetrical boundaries; in other words the fibers crossing in random formation create asymmetrical orifices. It will also be noted that the soap particles are also formed in asymmetrical shapes which may average smaller in volume than if symmetrical shapes were used. By using particles of asymmetrical shape the particles are more quickly enfused with water and therefore do not tend to aggregate in large bulks which take considerable time to dissolve. Lathering, therefore, is quickly effected.

The packet size is preferably of the order of $1\frac{1}{2}$ to 2" square and the particles of soap may range from .1 mm. to 1.5 mm. The soap particles may be of any well known formula, normally dry soap and should substantially fill only about 60% of the packet space. I have noticed that if the quantity of soap particles in the packet bear a definite relationship to the total cubic area within the packet, the speed with which lathering takes place is markedly increased. If, for example, the entire space within the packet is filled tightly with dry soap particles, sealed and then wetted with water, the aggregation of particles immediately takes place and a rather hard lump is formed, and also the inter-fiber

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interstices are blocked to the extent that lathering may be considerably retarded. Inasmuch as instantaneous lathering is important so that the use of the packet will closely resemble or be superior to the bar of soap in this respect, it is essential that rapid lathering takes place and to this extent the packet should be filled approximately no greater than 60% of the space with the soap particles. This feature together with the feature of making the particles asymmetrical provides a comparatively soft aggregate and permits rapid disintegration, giving full effect to the soap very rapidly after being wetted.

The packet itself may be decorated either by dyeing the membrane or webs in colors or imprinting thereon in colors, as may be desired.

When the packet is used, it may be wet in the hands and rubbed to work up a lather. The water, freely infusing within the packet, causes an aggregation of the wetted particles so that these particles do not sift through the walls of the packet, as may be expected, as they become smaller by being dissolved. Since the first action is an aggregation of the particles in a soft mass, the dissolving of the soap is well controlled and none of the soap particles is lost. By working the packet after it has been wet in the hands, a lather is readily worked up and the soap dissolves through the walls of the packet, thus giving full effect to its use. In working the packet in the hands, it will be found that the packet shrivels up and as the soap is finally dissolved out of the packet, nothing is left but the paper itself.

Having now described my invention, I claim:

A soap packet consisting of webs of thin, porous, absorbent paper, forming opposing walls of the packet, said webs having on their inner faces each a second web, consisting of synthetic ther-

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moplastic fibers pressed to the first webs, forming each a composite duplex web, with large asymmetrical interfiber interstices said duplex webs being heat sealed in face to face relation only around their peripheral surface edge, said paper webs adapted to shrivel into a small ball when wet and rubbed in the hands, said paper web having a wet strength treatment and provided with large asymmetrical interfiber interstices through which water may readily infuse, a quantity of soap particles retained within said packet occupying substantially not more than 60% of the normal volume of the packet, said particles being generally asymmetrical in shape and of a size generally substantially larger than the size of said interfiber interstices.

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