The present invention relates to a cleansing pad adapted to contain a quantity of detergent, and aims to provide certain improvements in such pads. More particularly, it relates to a hand and bath detergent pad useful for personal hygiene, although it will be appreciated that it may have use in cleaning walls or other surfaces. Cleaning pads for hand and bath use containing a detergent, such as soap, have been heretofore proposed but have not met with popular favor for various reasons, among which are: (a) they contemplated the use of either a cake of soap enclosed within a porous container or a soap impregnated material which permitted the soap to dissolve and waste away when exposed to water; (b) if left in a wet or moist condition the pad would become slimy and repulsive to fastidious users; (c) where the soap was in cake form, it materially lessened the flexibility of the pad and its general usefulness.

It has been also recognized, that sudsing detergents have superior cleansing properties than conventional soaps, but so far as I am aware all attempts to form such sudsing detergents in cake form for personal use have failed.

In view of the foregoing and other objections and deficiencies to hand and bath cleansing pads as heretofore proposed, my invention has among its manifold objects, the following: (1) the provision of a cleansing pad comprising a detergent enclosed within a soft, pliant container, preferably of elastomeric material, so that it will retain its original form throughout the life of the pad; (2) the provision of a cleansing pad as set forth in (1) wherein the pad has one or more cavities within which the detergent is housed, capillary passages being provided in the elastomeric material through which the detergent may be expressed from the cavity or cavities to the exterior of the pad; (3) the provision of a cleansing pad as set forth in (1) and (2) wherein the material of the pad has a preformed, wrinkled surface structure which will provide limited frictional cleansing action, yet be smooth and soft to the human skin and one which will not slip out of the hand in use; (4) the provision of a cleansing pad as set forth which will be light in weight so that it will float in water; (5) the provision of a cleansing pad as set forth which lends itself to unlimited coloring in manufacture and the use of scented detergents, while providing white Suds; (6) the provision of a cleansing pad as set forth, preferably in the shape of a cake of soap, which will not deteriorate or diminish in size in use notwithstanding consumption of the detergent; (7) the provision of a cleansing pad as set forth which will outlast a cake of soap of equal weight of detergent when subjected to substantially equivalent use; and (8) the provision of a cleansing pad as set forth which can be made in shapes possessing eye appeal and which can be manufactured and sold at a reasonable price.

The foregoing and other objects of my invention, not specifically enumerated, I accomplish by providing a cleansing pad comprising a soft, pliant, enclosing casing impervious to detergent composition, having a pocket adapted to hold a quantity of detergent composition, said casing being preferably formed from two opposed layers of prefabricated elastomeric sheet material having on its opposite surfaces ridges and valleys and preferably backed on one surface with a non-stretchable open mesh fabric, by assembling two layers in overlying opposed relation with the mesh fabric in juxtaposition, bonding and sealing the free edges thereof and suitably forming in said pad capillary passages leading from the interior pocket to the outer surface of the casing at either the bonded edges or at the surfaces of the pad and introducing into the pocket, either before or after bonding the edges, a suitable detergent in either the liquid or pulvulent state.

The invention and the advantages realizable thereby will be readily understood from the detailed description which follows, when considered in conjunction with the accompanying drawings showing two preferred embodiments, wherein:

Figure 1 is a top plan view of a cleansing pad embodying my invention, parts being broken away to better illustrate the structure thereof.

Fig. 2 is a front elevation or side view of the pad shown in Fig. 1.

Fig. 3 shows a section taken substantially along the plane of the line 3—3 of Fig. 1.

Fig. 4 shows a section taken substantially along the plane of the line 4—4 of Fig. 3.

Fig. 5 is a view similar to Fig. 1, showing another embodiment of my invention.

Referring first to Figs. 1 to 4 of the drawings, the cleansing pad 10 consists of two opposed layers 11 and 12 of soft, pliant material impervious to liquid or pulvulent detergent composition, each of said layers being preferably formed of cellular elastomeric material, such as whipped foam rubber, having a thickness of at least \( \frac{1}{4} \) of an inch, said material having raised portions 13 and valleys 14 and 15 between said raised portions, and the surfaces of said material being preferably wrinkled, as shown at 16. The layers 11 and 12 are preferably complementarily corrugated on both surfaces, the corrugations extending transversely to each other with the valleys or furrows 14 of one group of corrugations being deeper than the valleys or furrows 15 of the second group of corrugations. By the same token, the ridges 17 on the opposite face of the material formed by the furrows 14 extend beyond the ridges 18 provided by the furrows 15. As a concomitant of said construction the opposite faces of said material are each formed with intercommunicating cavities. To reinforce and prevent stretching the material of the layers 11 and 12, the surface provided with the ridges 17 and 18 have bonded thereover a sheet of open mesh fabric 19. Two layers of the fabric reinforced material of the same size are then placed in overlying opposed relation with the open mesh fabric in face to face relation and bonded together by any suitable means. The perimetral edges of the layers are also bonded together, as at 20, and thereby provide a pad having an internal pocket 21 bounded by the perimetral edges, the said pocket having interconnected cavities provided by the transversely-extendind internal ridges 17 and 18. For providing communication between the pocket 21 and the exterior of the pad, the side walls of the pad at spaced points around its perimeter have formed therein capillary passages 22. Of course, if desirable, supplemental or additional capillary passages 23 may be formed in the faces of the layers and preferably at certain of the intersections of the transverse furrows 14 and 15.

The pocket 21 may be filled either prior to or after formation of the pad with a water soluble detergent in
either liquid or pulverulent form, it being apparent that the pulverulent material will be incorporated prior to completion of the pad and the liquid detergent after formation of the pad. The liquid detergent may be injected into the pocket 21 under pressure through suitable needle-like nozzles, which latter may be utilized in forming the capillaries 22 and 23.

In Figs. 1 to 4 it will be noted that the ribs or ridges 17 on the respective layers 11 and 12 are disposed in registry or alignment with each other, thereby providing parallelly extending cavities within the pocket 21, as best shown in Fig. 3. With the construction as thus made, the pad will have greater flexibility in a direction parallel to the ridges 17 than in a direction transverse to said ridges. To render the pad equally flexible both longitudinally and transversely thereof or at right angles to the major and minor dimensions of the pad, the layers 11 and 12 may be disposed with the longitudinal ribs 17 at right angles to each other, as shown in Fig. 5. Notwithstanding the transverse relationship of the ribs 17 on the respective layers, the pad will still have the internal pocket with intercommunicating cavities, as does the pad of Figs. 1 to 4.

The foam rubber material from which the layers 11 and 12 are formed is what is conventionally known as waffle weave rug or carpet under-matting. The detergent may be any of the commercially obtainable water-soluble higher saturated alcohols, although it will be understood that, if desired, a pulverulent soap powder or liquid soap may be used. It will also be appreciated that foam rubber may be tinted to give it any desired color and that the detergent may likewise be suitably scented.

The pad in use, because of its exterior furrowed and wrinkled surface, when wetted with water, will cause a substantial amount of the water to adhere thereto and, upon squeezing or applying pressure to the pad, the detergent will be expressed from the internal pocket through the capillaries and, upon contacting the water, said adherent water on the wet hands of the user will give rise to the formation of suds. By virtue of the character of the material from which the pad is made and its external wrinkled surfaces, it will also be appreciated that the pad, when rubbed over the skin, will provide limited massaging action without the slightest danger of abrasing or irritating the skin. After use, the pad may be rinsed clean with water and will readily dry without providing a scum or slimey coating since the detergent is held within the confines of the pocket and is only expressed therefrom by the application of pressure or squeezing action on the pad. Furthermore, the pad can be twisted, turned, and deformed to engage the exposed surface of any part of the body and thus to make a thorough cleansing job by the combined detergent and rubbing action and will immediately thereafter resume its original form due to the inherent elasticity of the foam rubber.

After the detergent within the pad has been consumed it is possible to reanimate the pad by charging a new supply of detergent into said pocket with an appropriate syringe. However, as a practical matter, in view of the relatively low cost at which the pad may be manufactured and sold, the pad may be discarded after exhaustion therefrom of the detergent supply.

From the foregoing detailed description it will be apparent that I have provided a cleansing pad satisfying the various objects of my invention as set forth in the opening statement of the specification, and while I have shown and described two embodiments of my invention, it is to be understood that said embodiments have been shown and described by way of example and not limitation, and hence changes in the details of construction and character of materials and compositions employed may be varied within the range of engineering skill without departing from the spirit of the invention.

What I claim is:
1. A cleansing pad comprising two opposed layers of elastomeric material impervious to a detergent composition, said layers having a substantially uniform thickness of at least 1/8", and each layer being formed with complementary raised portions and valleys in its opposed surface, said layers being secured together at their lateral edges to provide an internal pocket having a plurality of interconnected cavities and said casing having a plurality of capillary passages leading from the pocket to the exterior of the casing.
2. A cleansing pad according to claim 1, wherein a quantity of water-soluble detergent is contained in said pocket.
3. A cleansing pad according to claim 1, wherein in at least one of the layers of elastomeric material the raised portions and valleys are formed by the material being complementally corrugated on its opposed surfaces.
4. A cleansing pad according to claim 1, wherein in at least one of the layers of elastomeric material the raised portions and valleys are formed by the material being complementally corrugated on its opposed surfaces and the corrugations on said surfaces extend transversely to each other.
5. A cleansing pad according to claim 1, wherein at least one of the layers of elastomeric material is complementally corrugated on its opposed surfaces, the corrugations extend transversely to each other and the furrows of the corrugations which extend in one direction are deeper than the furrows of the corrugations which extend transversely to said first corrugations.
6. A cleansing pad according to claim 3, wherein both layers of the elastomeric material are complementally corrugated on their respective surfaces.
7. A cleansing pad according to claim 5, wherein both layers of the elastomeric material are corrugated and the deeper furrows on the respective layers extend transversely to each other.
8. A cleansing pad according to claim 6, wherein the ridges of the corrugations on the adjacent faces of the layers are bonded together.
9. A cleansing pad according to claim 6, wherein a sheet of open mesh fabric is bonded to the ridges of the corrugations on the adjacent faces of the layers.
10. A cleansing pad according to claim 6, wherein a sheet of open mesh fabric is bonded to the ridges of the corrugations on the adjacent faces of the layers and said layers are bonded together through the open mesh fabric.
11. A cleansing pad comprising a soft, pilant, body formed of whipped foam rubber impervious to liquids, having a waffle-like wrinkled surface, an enclosed pocket, and capillary passages leading from the pocket to the outer surfaces of the pad and a quantity of liquid detergent composition within said pocket adapted to be expressed therefrom through said capillary passages upon the application of pressure to the pad.

References Cited in the file of this patent

UNITED STATES PATENTS
1,469,917 Dessau .......................... Oct. 9, 1923
1,741,962 Theodoropoulos .................. Dec. 31, 1929
2,341,818 Schellings ......................... Feb. 15, 1944
FOREIGN PATENTS
466,645 Great Britain ...................... June 1, 1937
652,687 Great Britain ...................... Nov. 28, 1949