Aug. 18, 1959 A. BOTTINO 2,899,780

SCOURING PAD CONTAINING DISPENSABLE SUBSTANCE

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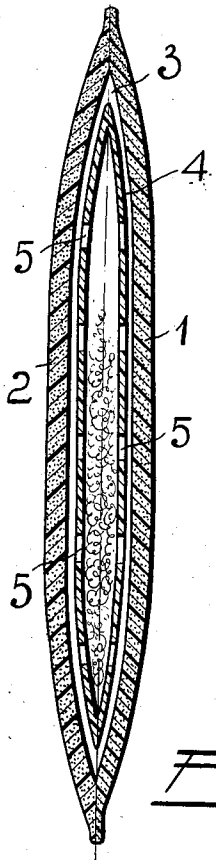


Fig. 1

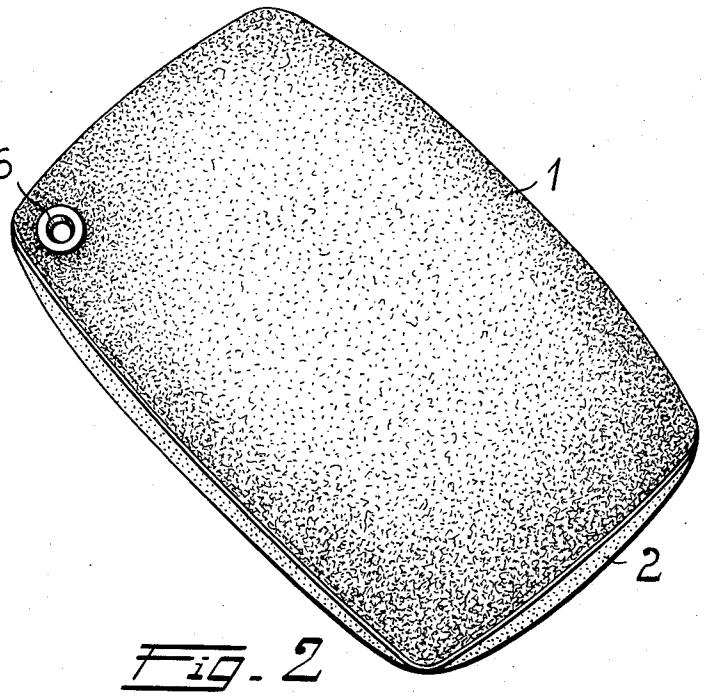


Fig. 2

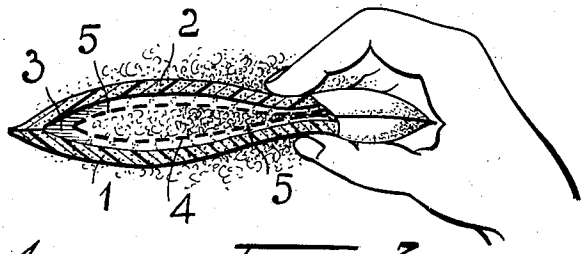


Fig. 3

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SCOURING PAD CONTAINING DISPENSABLE SUBSTANCE

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3 Claims. (Cl. 51—185)

This invention relates to an improvement in scouring pads, of the kind which is suitable for use in household operations, as for instance as a kitchen pad for washing dishes, walls and the like, as well as in industrial or similar operations.

Porous or permeable materials have been already used heretofore in the manufacture of scouring pads. It is well known in fact that porous natural or synthetic rubbers have found one or their main fields of application in this direction, and very satisfactory results in this field have been reached with the continuous improvements of plastic materials having a porous, cellular structure. It has also been proposed heretofore to combine such pads with a certain quantity of detergents, as for instance powdered soap, the pad being to this end designed in the form of a bag wherein the detergent is located. It is however known that such bag-shaped pads are affected by the drawback that, since during use the inner compartment thereof is flooded by an uncontrollable quantity of water causing the whole detergent to be brought into solution, the consumption of this latter occurs very quickly, whereas the formation of the washing foam is proceeding in a very irrational manner because of the disproportionate quantities of water and detergent.

It is an object of the invention to provide an improved pad of this class, in which the consumption of the added dispensible substance, such as detergents or the like, is positively reduced.

It is another object of the invention to provide a bag-shaped pad of the class described wherein the proportions of water and added substances in the inner of the bag may be regulated at will, so as to obtain the optimum solution for forming a rich foam. More particularly, it is an object of the invention to provide a pad in which the added substance may be admixed with or dispensed into the wash water, which has entered the inner compartment of the bag, in measured quantities.

According to an important feature of the invention, the pad comprises an outer bag element at least partly made of permeable material having a cellular structure, and an inner flexible dispenser of impermeable material containing the added substance, passages being provided in the walls of said dispenser in order to allow the added substance to be ejected upon a squeezing of the inner dispenser.

These and other objects and features of the invention will be better understood from the following detailed description, reference being taken to the accompanying drawing in which:

Fig. 1 is a cross-sectional view of a scouring pad according to the invention.

Fig. 2 is a perspective view of the pad; and

Fig. 3 is a partly cross-sectional and partly perspective view of the pad during the use, when squeezed by the user.

Referring now more particularly to the drawing, the bag-shaped pad is formed of two parts **1** and **2**, made

of permeable plastic material having a cellular porous structure, which are connected along their peripheral rims by means of adhesive, electronic welding, stitching or the like. Thus an inner compartment **3** is formed which may be entered by an external liquid through the permeable walls of this compartment. A portion of the perimetral rim of the bag may be left open to facilitate the introduction into said compartment of an inner dispenser **4**, which is formed of a flexible envelope, for instance of an inherently water impenetratable plastic material such as polyamide or polyvinyl plastic foils. This dispenser has a size which is slightly inferior to the overall size of the compartment **3** and is filled with a soluble cleansing agent, such as powdered soap. A series of holes **5** of limited size are provided in the walls of the dispenser.

An eyelet **6** is secured in a conventional manner to the pad.

It has been found to be very useful to make one of the parts **1** and **2**, e.g. part **1**, of a porous material having larger cells in its structure than the cellular material of part **2**. Such large-cell materials are remarkably rougher to the touch than fine microcellular materials, so that one face of the pad may be used against surfaces needing a more intensive abrasive action, whereas the other face may be used for rubbing or polishing finer surfaces. It has been also found to be convenient to incorporate in part **1**, during its manufacture, an abrasive powder substance, so as to increase the abrasive characteristics of this part.

As shown in Fig. 3, when the pad is squeezed with the hand a certain limited quantity of detergent is ejected from the dispenser into the compartment **3** through the holes **5**, the compartment being flooded by water which penetrates into this compartment through the permeable parts **1** and **2** as soon as the pad is plunged into or sprayed with water. The squeezing is repeated as long as necessary to obtain optimum foam.

The pad is thus impregnated with a foaming solution, yet the small size of the holes **5** in the dispensing envelope **4** as well as the impenetrability of the wall portions between these holes have the effect of keeping the interior of said dispensing envelope insulated from the surrounding water.

The added substance contained in envelope **4** may be an antiseptic or insecticide agent or a wax, and in the latter case of the side parts **1** and **2**, e.g. part **1**, may be manufactured with a fine cellular structure so as to be capable of uniformly distributing the wax even on delicate surfaces, as for instance on pieces of furniture, without injuring the same. At least one of parts **1** and **2** may be made of wholly impermeable material.

Instead of being incorporated in the structure of parts **1** or **2**, the abrasive or emery materials may be adhered to the surface thereof with the aid of a solvent or a glue, or may be sprayed thereon in the course of the setting of the thermoplastic materials forming these parts **1** or **2**.

Although it is preferable to have the rims of the pad completely closed after the introduction of the dispenser, at least the portion designed for the introduction of said dispenser **4** may be only temporarily closed, for instance by means of buttons, lacing or the like, in a conventional manner, so as to allow the dispenser to be replaced.

I claim:

1. A scouring pad comprising a bag consisting at least partly of permeable flexible material having a cellular structure, a flexible dispenser inside said bag, and a dispensable substance in said dispenser; said dispenser being made of an inherently water-impenetrable material provided with a plurality of permanently open apertures distributed around its periphery, said apertures

enabling the ejection of said substance upon a squeezing of said bag, said dispenser occupying a volume substantially smaller than the interior of said bag, said bag thus forming a water-penetrable compartment about at least a portion of said dispenser.

2. A scouring pad according to claim 1, wherein said bag consists of two substantially coextensive sheet members of permeable flexible material, said sheet members being joined together over the major part of their perimeter while forming a slit for the introduction of said dispenser.

3. A scouring pad according to claim 2, wherein said bag is provided with temporary closure means at said slit.

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