Feb. 19, 1935. R. B. KINGMAN 1,991,559

DETERGENT ABRASIVE SCOURING PAD

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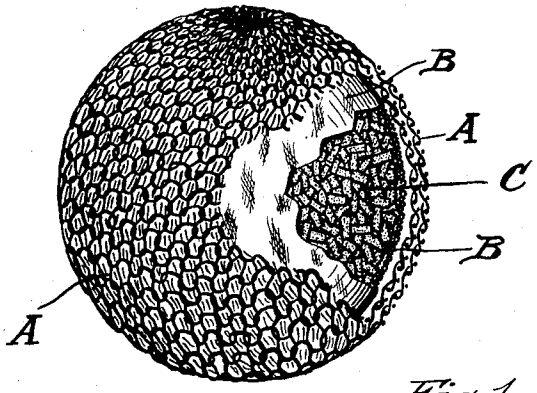


Fig. 1

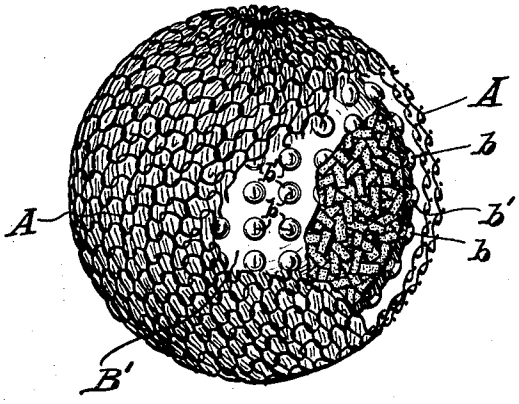


Fig. 2

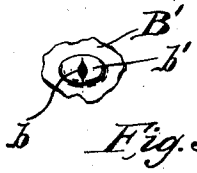


Fig. 3

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DETERGENT ABRASIVE SCOURING PAD

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1 Claim. (Cl. 15—122)

This invention relates to improvements in scouring pads, pot-cleaners and similar devices; and the invention has reference, more particularly, to a novel detergent abrasive scouring pad.

It has heretofore been attempted to produce detergent abrasive scouring devices, but the results have not been satisfactory; first, for the reason that no satisfactory means has been provided for conserving the soapy constituents against rapid and wasteful dissipation through excessive exposure to liquids employed in cleaning and scouring operations, with the consequence that the life of the device was too short for practical purposes; and, second, for the reason that excessive exposure of the soapy constituents to cleaning liquids resulted in either rapid dissolution of the same or ultimate hardening and caking of the same which latter effect tended to defeat the resiliency of the device desired in the use thereof to assure maximum efficient abrading contact thereof with the surfaces to which the same were applied for scouring purposes.

It is the object of this invention to provide a novel form and construction of detergent abrasive scouring pad so devised and constituted that the soapy constituent thereof, while sufficiently liberated for desired detergent effects when the device is in use, is nevertheless, conserved against rapid and wasteful dissipation so that the useful life of the device is greatly extended, while at the same time the soapy constituents of the device are substantially protected against undue caking whereby the requisite resiliency and conformability of the device is maintained throughout its period of usefulness. With this object in view, the novel detergent abrasive scouring pad, according to this invention, comprises an outer enveloping integument of more or less open mesh metallic abrasive fabric; an inner integument of material normally offering strong resistance to the penetration therethrough of liquid, such as water, while nevertheless, under kneading or squeezing manipulations and pressure, or under expansion by heat, tending to admit and exude such liquid back and forth therethrough in comparatively minor quantities; and a central mass of soapy detergent material enclosed by said inner integument so as to be gradually dispensed therethrough and therefrom when submitted to the action of minor quantities of liquid which are permitted to work back and forth through said inner integument during the manipulation in use of the scouring body or pad.

Other objects of this invention, not at this time more particularly enumerated, will be understood from the following detailed description of the same.

Illustrative embodiments of this invention are shown in the accompanying drawing, in which:—

Fig. 1 is in part a side elevation and in part a sectional representation of the novel detergent abrasive scouring pad utilizing one form of inner integument; and Fig. 2 is a similar view showing another or modified form of inner integument; and Fig. 3 is a fragmentary view to illustrate the opening of the type of inner integument shown in Fig. 2, when the scouring pad is manipulated in use.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring to Fig. 1 of the drawing, the novel detergent abrasive scouring pad therein illustrated comprises, an outer abrasive integument A of more or less open mesh metallic fabric. Preferably this metallic fabric comprises a tubular knitted fabric produced from a flat or ribbon-like metallic strand or wire; such strand or wire preferably being of not easily corroded metal, such, for example, as copper. Said outer integument A may consist of one or a plurality of layers or plies, as may be desired. The metallic fabric is suitably gathered or closed at its ends to form the outer integument A into a hollow continuous member.

Enclosed within the outer abrasive integument A is an inner integument B suitably formed into a hollow continuous enclosure which lies more or less contiguous to the inside surfaces of said outer integument A. The interior of said inner integument B is filled with a detergent material C, preferably comprising a mass of soap chips, but which could if desired consist of any other character and form of detergent. The inner integument B comprises an interstitial material wherein, when in a state of rest or unmanipulated, the interstices are contracted to more or less resist the penetration and passage therethrough of water or other form of cleaning liquid utilized with the device, but which expand to pass minor quantities of such liquid in and out therethrough when the texture of the material is expanded by hot liquid or when squeezed or kneaded by manipulation of the scouring pad and by pressures incident to the application and rubbing of the scouring pad over surfaces to be cleaned during the use of the same. Illustrative of a textile fabric having the requisite quantities and characteristics above indicated, and which is

suitable for use to provide said inner integument B, is a water resistant lacquered cloth known as "Aquatex" which is manufactured by the Improved Products Co. of Chicago, Illinois.

It is not essential that said inner integument, having the desired characteristics as above pointed out, shall consist of a textile fabric, since there are other kinds and forms of material which will be normally liquid resistant in a state of rest, but which, under movement induced by squeezing, kneading and like manipulations, will function to pass back and forth therethrough minor quantities of liquid. Illustrative of such other kinds and forms of material, I have shown in Figs. 2 and 3 of the drawing an inner integument of somewhat different character, but nevertheless equivalent in the functions and action desired thereof. In said Figs. 2 and 3 said inner integument is indicated by the reference character B' and comprises a hollow body of soft rubber having dispersed throughout its walls a multiplicity of slit-like openings or interstices *b*, the lips of which normally contract and meet in closed together relation so as to substantially exclude the passage of liquid therethrough, but which, when the resilient walls of the body are distorted from normal state under squeezing or pinching pressures and manipulations, tend to expand or gape and open (see Fig. 3) so as to permit the passage of liquid back and forth therethrough. To facilitate the opening and closing movements of said slit-like openings or interstices *b*, it is preferable, although not essential, that the walls of the integument B' be provided with substantially semi-spherical hollow exteriorly projecting teats or protuberances *b'* in the tops of which said slit-like openings or interstices *b* are provided.

In the use of the novel detergent abrasive scouring pad, characterized as above set forth, the operator may dip the same in water, and by squeezing or kneading manipulations thereof, cause minor quantities of the water to flow back and forth through the inner integument B or B', as the case may be, whereby as extruded therefrom, after contact with the detergent or soapy material C, the same will supply a modicum of such material to and through the outer abrasive integument A, whereby, as the latter is pressed against and rubbed over a surface to be cleaned, such detergent material will greatly assist, in conjunction with the abrasive action of said outer integument, in loosening and removing soil, grease, encrustations and other forms of dirt desired to be removed from such surface by the involved scouring action.

It will be obvious, owing to the character of the inner integument and the functioning thereof as above described, that excessive inundation by cleaning liquid of the soapy detergent material stored within the interior of the pad is prevented, while yet sufficient liquid is brought in contact therewith to assure exudation in use of a serviceable amount of the detergent material. It will therefore be apparent that waste, by untimely and undue dissipation of said detergent material, is prevented, and consequently the useful life of the scouring pad is prolonged so as to permit a long period of repeated use thereof. Furthermore, after a given use of the pad has taken place, and it is desired to lay the same aside until need therefor again arises, the operator by squeezing the same once or twice, may quickly and easily discharge any substantial amount of liquid from the interior, whereby the detergent material is left practically dry, with little tendency to either dissolve or cake, and so as to be ready for the next period of use.

Having thus described the present invention, I claim:—

A detergent emitting core for enclosure in scouring pads made of metallic fabric, comprising a central detergent mass, and an interstitial integument member enclosing said mass, the interstices of said member being normally contracted to resist the passage of liquid therethrough to conserve the detergent mass against wasting away when not in use, but adapted, when subjected to movement by manipulation or expansion, to open more or less whereby liquid may directly flow back and forth therethrough to induce emission of detergent material under conditions of use.

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