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ABSORBENT SCOURING AND POLISHING BODY

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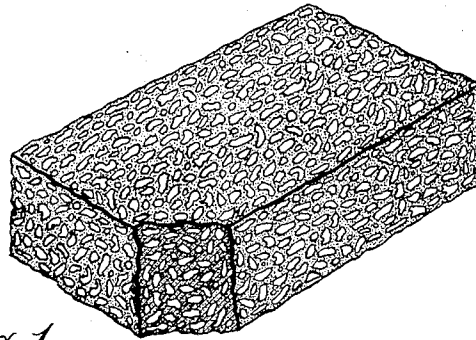


Fig. 1

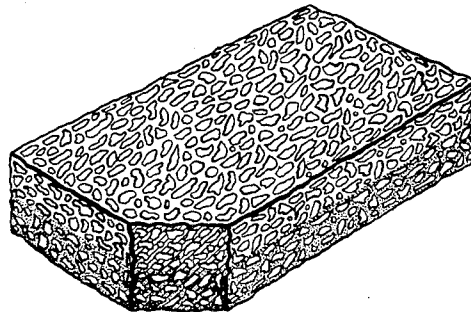


Fig. 2

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ABSORBENT SCOURING AND POLISHING
BODY

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5 Claims. (Cl. 51—303)

This invention relates to improvements in scouring and polishing bodies, and to method of producing the same.

This invention has for an object to produce and provide a novel absorbent scouring and polishing body comprising an artificial cellulosic sponge, made e. g. from cellulosic solutions such as viscose, ordinarily including a fibrous reinforcing material, and impregnated, in whole or in part, with a pulverulent abrasive material as the scouring and polishing agent.

This invention has for a further object to provide an artificial cellulosic sponge body which contains powdered abrasive material, the particles of the latter being dispersed through and imbedded in the coagulated and regenerated cellulosic substance of the body, so as to be carried thereby, and yet not disposed to substantially block off or fill the interstices of the spongiform mass of the body with likelihood of interfering with or impairing its liquid absorptive characteristics, while nevertheless so carrying the abrasive that, in the use of the body for performance of a scouring or polishing operation, the supported abrasive material will be brought into operative contact with a surface over which the body is rubbed with desired scouring and polishing effect, but without diminished efficiency as the body wears down or gradually disintegrates.

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 a perspective view, with a portion in section, showing one illustrative form of the scouring and polishing pad according to this invention; and Fig. 2 is a similar view showing another illustrative form thereof.

In the making of artificial spongiform bodies from viscose, a quantity of viscose produced from green or unripened alkali cellulose is ordinarily mixed with a desired proportion of fibrous reinforcing material, such as cotton, hemp, sisal or other natural filler. Through the viscose solution or dough thus formed is dispersed a suitable solid pore forming material, the particles of which are of chosen diametric size, according to the degree of pore size desired to be obtained in the finished spongiform body, i. e. whether of coarse, intermediate or fine porosity. When the mixture thus provided is treated to coagulate and regenerate the cellulosic solution or viscose, and to evacuate the pore forming material, the

resultant product provides a spongiform body having marked liquid absorptive characteristics, all as heretofore known to the art.

In the production of a spongiform body of the character described, but which is impregnated in whole or in part with pulverant abrasive material, whereby to give to the same scouring and polishing characteristics, according to this invention, in preparing the viscose solution or dough, and before dispersing therethrough the pore forming material, a suitable proportion of pulverant abrasive material is incorporated into the same so as to be thoroughly dispersed therethrough as uniformly as possible. Any suitable insoluble powdered substance having a degree of hardness qualified to assure an abrasive effect, when rubbed over a surface, may be employed. Illustrative abrasive substances suitable for the purpose comprise powdered pumice stone, rotten stone, sand, carborundum powder, and similar substances.

After the viscose solution or dough with the incorporated abrasive is prepared, and the pore forming material is added thereto, the solution or dough is deposited in a mold or pan of a shape calculated to produce a desired body mass, and is then ready for coagulation and regeneration. Such coagulation and regeneration may be attained by any method familiar to the art, such e. g. as by steam or electrical heating, submission to a boiling salt solution, etc. Evacuation of the pore forming material may occur during the coagulating and regenerating step or subsequent thereto. Upon removal of the pore forming material the coagulated mass will be reduced to the desired spongiform body, which body may then be washed and dried. The spongiform body may be thus individually produced in the ultimate shape and size of the desired scouring and polishing device, or such devices may be cut from a larger spongiform mass produced as described.

When the abrasive powder impregnated viscose is coagulated and regenerated, the particles of abrasive disposed therethrough will be distributed throughout the mass thereof, so as to be imbedded therein and more or less exposed over the bounding surfaces of the voids of the spongiform mass, but not so as to block or fill said voids, or so as to otherwise interfere with or impair the liquid absorptive characteristics of the body produced. The coagulated and regenerated viscose portion of the body thus acts as a binder which holds and retains the abrasive powder in place with little or no sifting out of the latter.

In some cases it may be desired to produce the spongiform body wherein the normal softness thereof is somewhat reduced. This may be effected by mixing with the viscous solution or dough a percentage of a suitable liquid resin, lacquer or the like, whereby to produce a somewhat harder, stiffer and less absorbent mass, which latter adapts the product to certain kinds of scouring and polishing effects.

As shown in Fig. 1, the scouring and polishing body may be impregnated throughout its entire mass with the abrasive content. In other cases it may be desired to provide a composite body wherein one part thereof is impregnated with abrasive material and another part thereof left free of the abrasive, whereby the latter part will be soft and absorbent, and thus suitable for use in cleansing or washing off of a surface previously scoured and polished by the abrasive charged part. This latter form of spongiform body is shown in Fig. 2.

To produce the form of device shown in Fig. 2, a layer of viscose solution or dough charged with abrasive powder, and having the pore forming material dispersed therethrough, is first laid in the pad or mold, whereupon a second layer of viscose solution or dough free of abrasive but containing the pore forming material is superposed upon said first layer deposited in the pan or mold. The composite mass is then coagulated and regenerated, the pore forming material evacuated, and the resultant spongiform body then washed and dried. The resultant body will comprise two layers, one abrasive charged and one free of abrasive, and these layers will be united one to the other by the coagulation of the viscose, but without substantial tendency to intermingle or lose their individual characteristics.

The scouring and polishing body is highly liquid absorbent, and consequently in use will readily absorb and exude soapy water, or other dirt loosening or dissolving liquids, in aid of the abrasive scouring effects produced by the powdered abrasive constituent. After use the body may be easily cleansed, rinsed, squeezed out and dried ready for subsequent use.

Since the abrasive is substantially uniformly distributed throughout the mass of the body, there is always some thereof available for scouring effect when the body is used, since additional abrasive is constantly exposed as the body wears down or gradually disintegrates over a long period of use.

Having now described my invention, I claim:

1. An absorbent scouring and polishing device comprising spongiform coagulated and regenerated cellulosic material having powdered abrasive material contained in and dispersed throughout the coagulated body portions thereof.

2. An absorbent scouring and polishing device comprising spongiform coagulated and regenerated cellulosic material having powdered abrasive material contained in and dispersed throughout one part of the coagulated body portion thereof, and another part of said coagulated body portion free of such abrasive material.

3. An absorbent scouring and polishing device comprising spongiform coagulated and regenerated cellulosic material including a resin constituent to somewhat harden the same, and having powdered abrasive material contained in and dispersed throughout the coagulated body portions thereof.

4. An absorbent scouring and polishing device comprising spongiform coagulated and regenerated cellulosic material, one part of which contains a resin constituent to somewhat harden the same and powdered abrasive material contained in and dispersed therethrough, and another part of which is free of said resin and powdered abrasive.

5. The method of forming an absorbent scouring and polishing device comprising, intermingling powdered abrasive material with a cellulosic solution, dispersing pore forming material throughout the mixture, and then coagulating and regenerating the cellulosic material and evacuating the pore forming material therefrom, whereby to form a spongiform mass in which the powdered abrasive is contained in and dispersed throughout the coagulated cellulosic material.

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