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WASHCLOTH AND PROCESS OF MAKING IT.

APPLICATION FILED NOV. 10, 1920.

1,384,871. Patented July 19, 1921.

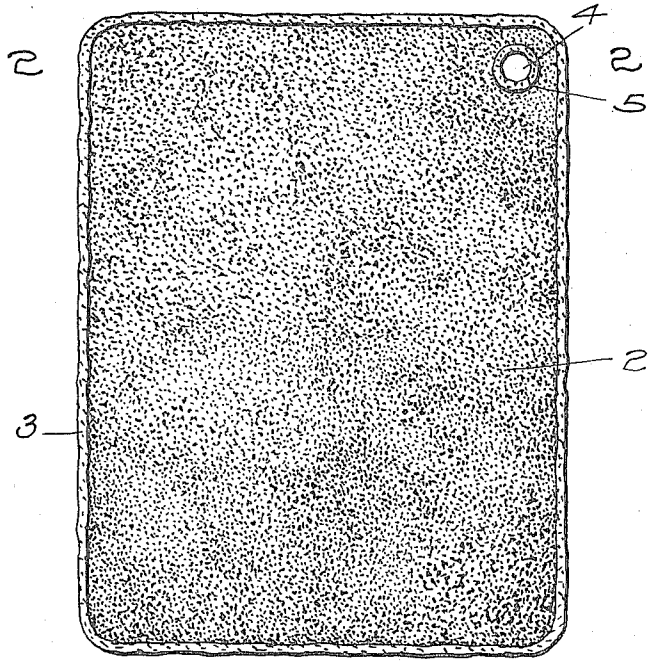



FIG. 1.




FIG. 2.




FIG. 3.

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## WASHCLOTH AND PROCESS OF MAKING IT.

1,384,871. Specification of Letters Patent. Patented July 19, 1921.

Application filed November 10, 1920. Serial No. 423,053.

*To all whom it may concern:*

Be it known that we, PAUL D. STEELE and ALBERT E. SIDNELL, citizens of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Washcloths and Processes of Making Them, of which the following is a specification.

This invention relates to a rubber wash cloth and the process of producing the same, and its main object resides in producing a wash cloth of vulcanized rubber the surfaces of which have a peculiar roughness particularly adapted for washing or massaging the face and body and likewise suitable for cleaning and wiping furniture, car-bodies and other objects.

With the above object in view, the process of producing the rubber wash cloth consists in first craping a sheet of rubber by any suitable method such as passing it between crimped or corrugated pressure-rollers.

The craped sheet after being cut to the desired size, is then dipped in a solution of sulfur chlorid ($S_2Cl_2$) and benzene ($C_6H_6$) or other rubber solvent and it is subsequently washed in a weak solution of ammonia hydroxid.

The benzene entering the crevices of the craped surfaces of the rubber enlarges the protuberances or crimps of the same and thus produces the peculiar roughness which is the principal characteristic of our invention.

The sulfur chlorid combining chemically with the rubber, causes its vulcanization and thereby fixes the surfaces of the sheet and makes the enlargement of the protuberances thereof permanent.

The ammonia bath in which the sheet is placed after its above described treatment is completed, serves to neutralize the surplus sulfur chlorid adhering to its surfaces thereby preventing the deteriorative effects of over-curing.

The edges of the wash cloth made in accordance with our invention are preferably bound to prevent tearing and the cloth may if necessary be provided with a small hole likewise bound for its suspension from a hook or nail when not in use.

The binding material best adapted for the purpose is crude rubber in sheet form which has previously been mixed with a pigment of any desired color to increase its durability and improve the appearance of the cloth to which the binding is applied.

In order to permanently fasten the binding to the wash cloth, the marginal portions of the latter are softened by means of benzene, gasolene or other rubber solvent and the crude rubber cut into strips of suitable width is folded over said portions and firmly pressed upon them until the solvent has evaporated.

It will be understood that the bindings are applied before the wash cloth is dipped into the sulfur chlorid and benzene solution so that the bound cloth will be vulcanized in its entirety.

Under ordinary conditions the sulfur chlorid and benzene are combined in the solution in proportion of one part of sulfur chlorid to twenty-five parts of benzene, and a five per cent. solution of ammonia hydroxid is used for the bath.

The crimped crude rubber sheet is dipped in the vulcanizing solution for a period of from thirty to sixty seconds and it is allowed to remain in the ammonia bath only sufficiently long to neutralize all the surplus sulfur chlorid remaining in the crevices of its craped surfaces.

If it is desired to still further enlarge the protuberances or corrugations of the craped surfaces of the rubber, a weaker vulcanizing solution is made by increasing the percentage of benzene and the sheets are allowed to remain in the solution during a proportionately longer period.

In the accompanying drawing—

Figure 1 represents a face view of a rubber wash-cloth made by our process;

Fig. 2, an enlarged section taken on the line 2—2, Fig. 1, and

Fig. 3, a fragmentary section of the cloth drawn to an exaggerated scale.

The reference character 2 designates the vulcanized sheet of craped crude rubber, 3 the rubber binding thereof, and 4 the hole for suspending the cloth, the edge of which is likewise reinforced by a strip of rubber 5.

The product of the process is a flexible, non-absorbent, rough surfaced, tough and durable material well adapted to be used in the place of the ordinary wash cloth for cleaning the face and body.

The peculiar surface of the cloth renders it of particular value as a medium for massaging the face and body or for softening

the beard before shaving, and its non-absorbent and abradent qualities make it equally suitable for use in cleaning dirty and greasy surfaces of furniture, vehicles and other objects.

What we claim and desire to secure by Letters-Patent is:

1. The process of producing rubber wash-cloths consisting in subjecting a sheet of craped crude rubber to the dissolving and curing actions of a solution of benzene and sulfur chlorid.

2. The process of producing rubber wash-cloths consisting in first subjecting a sheet of craped crude rubber to the dissolving and curing actions of a solution of benzene and sulfur chlorid and then fixing the surfaces of the same by neutralization of adhering parts of the solution.

3. The process of producing rubber wash-cloths consisting in first subjecting a sheet of craped crude rubber to the dissolving and curing actions of a solution of benzene and sulfur chlorid and then fixing the surfaces of the same by a solution of ammonia hydroxid.

4. As a new article of manufacture, a wash cloth composed of a vulcanized sheet of craped crude rubber.

5. As a new article of manufacture, a wash-cloth composed of a vulcanized, bound sheet of craped crude rubber.

6. As a new article of manufacture, a wash-cloth composed of a vulcanized rubber-bound sheet of craped crude rubber.

In testimony whereof we have affixed our signatures.

PAUL D. STEELE.
ALBERT E. SIDNELL.