

UNITED STATES PATENT OFFICE.

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PROCESS OF CLEANING WOOL, FABRICS, ETC.

No Drawing.

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My invention relates to improvements in process of cleaning wool, fabrics, etc., and it consists in the steps hereinafter set forth.

An object of my invention is to provide a cleansing process, by means of which an economy is effected in the cleansing operation, thereby rendering the process particularly desirable for use in wool cleaning establishments, laundries, etc.

A further object of my invention is to provide a process for cleansing wool and fabrics, especially the latter, which obviates the necessity of the use of caustic alkalis to get rid of the grease which may be contained in the materials treated.

A further object of the invention is to provide a process of washing clothes or fabrics, which will cut down the quantity of bleach that would be otherwise required.

A further object of the invention is to provide a laundrying process which will conserve the machine, since, as stated, it will obviate the use of alkali, which latter tends to cause a rapid depreciation of wood wash wheels.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

The main feature of the invention consists in steps in the process in which the material called bentonite of which there are several varieties, is used. Bentonite is a colloidal clay found in various parts of the United States, and especially in Wyoming. This clay has peculiar properties. When dry it will not absorb grease to any extent, but when wet, as where the clay is placed in water and allowed to stand for some time, the resulting colloidal solution or mixture, I have discovered, has a peculiar property of emulsifying the grease, so that the grease in its emulsified form may be extracted and removed. One peculiar thing which I have discovered is that it takes time for the water to act on the clay, and furthermore that the clay, to be most effective, must first be treated with water, since it cannot be used dry in a washing machine to produce the results which are produced where it is first dissolved in water.

I have tried out numerous ways of using this bentonite solution. One of the ways in which it may be used is set forth below, but it will be understood that the proportions given are for example only, and that other

proportions might be used, without departing from the spirit of the invention.

Example.

A batch containing one hundred and twenty-five pounds of soiled towels was treated with this cleansing process. To this end twenty-five pounds of bentonite was mixed with fifty to one hundred gallons of water, and the mixture was left undisturbed over night. The bentonite clay was broken down by the water, and the solution was ready for use. The towels had first four cold rinses of three minutes each in pure water. Five gallons of the clay solution, which was thoroughly stirred to keep the clay in suspension, was added to fifteen gallons of water in a wash wheel, which was run for approximately ten minutes. The grease in the towels was emulsified and was eliminated by a cold rinse. The towels were then treated with hot suds, i. e., with three gallons of soap solution, for fifteen minutes, after which there was a hot rinse for three minutes. Subsequently, the towels were treated with a quart and a half of lime bleach, three gallons of soap solution, and three pounds of washing soda, followed by two hot rinses, two lukewarm rinses, and two cold rinses, each of three minutes. The approximate time for the process was one hour.

It will be noted that no caustic alkali was first used to get out the grease, but that this was done by the bentonite. The result is that the material is in much better condition than if it had been treated with strong alkali. Furthermore, much less soap was used than would ordinarily have been used, and finally less bleach was necessary, while the towels were completely cleansed and in the best possible condition.

The use of bentonite clay solution in the cleansing of wool is especially advantageous. Heretofore it has been a difficult thing to de-grease wool, since it has been necessary to use strong alkali, which leaves the wool in a dry harsh state, which in some instances has to be treated by the use of other oils partially to restore it to its soft and pliable condition. When a batch of wool is treated with bentonite solution, the grease is emulsified, floats to the top, and can be drawn off. Then with subsequent rinses, the wool is left more nearly in its natural state, but clean.

Very often the wood wash wheels in laun-

dries are so disintegrated by caustic alkalis that they are useless. The use of the bentonite clay solution prevents this, since the clay has no deleterious effect on the wood wash wheels, such as that produced by caustic alkalis.

I have found that the use of the bentonite solution as a step in laundrying obviates the necessity of the use of as much bleach as ordinarily, and this effects a further economy.

I claim:

1. The herein described process of cleansing fabrics and the like, which includes mixing bentonite with water to form a colloidal solution, allowing such solution to stand until the bentonite has absorbed substantially a maximum amount of water and subsequently washing said fabric and the like in said colloidal solution.

2. The herein described process of cleansing fabrics and the like, which includes first treating the fabrics with a colloidal solution of bentonite and subsequently treating such fabrics with soap.

3. The herein described process of cleans-

ing fabrics and the like which includes treating the fabrics with a colloidal solution of bentonite, draining off the emulsified grease, rinsing and subsequently treating such fabrics with soap.

4. A process for cleansing fabrics and the like, which consists in washing fabrics and the like in a mixture prepared by mixing bentonite with water and allowing the mixture to stand until the bentonite has absorbed substantially a maximum quantity of water, whereby the grease is emulsified, draining off the grease and rinsing the fabrics, treating the fabrics with a soap solution, and subsequently rinsing.

5. The process of cleansing fabrics and the like, which consists in treating the fabrics and the like with a water solution of bentonite in the proportions of twenty-five pounds of bentonite to fifty to one hundred gallons of water, said solution having been allowed to stand until the bentonite has absorbed substantially a maximum quantity of water, treating with soap, rinsing, treating with bleach and soap and finally rinsing.

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