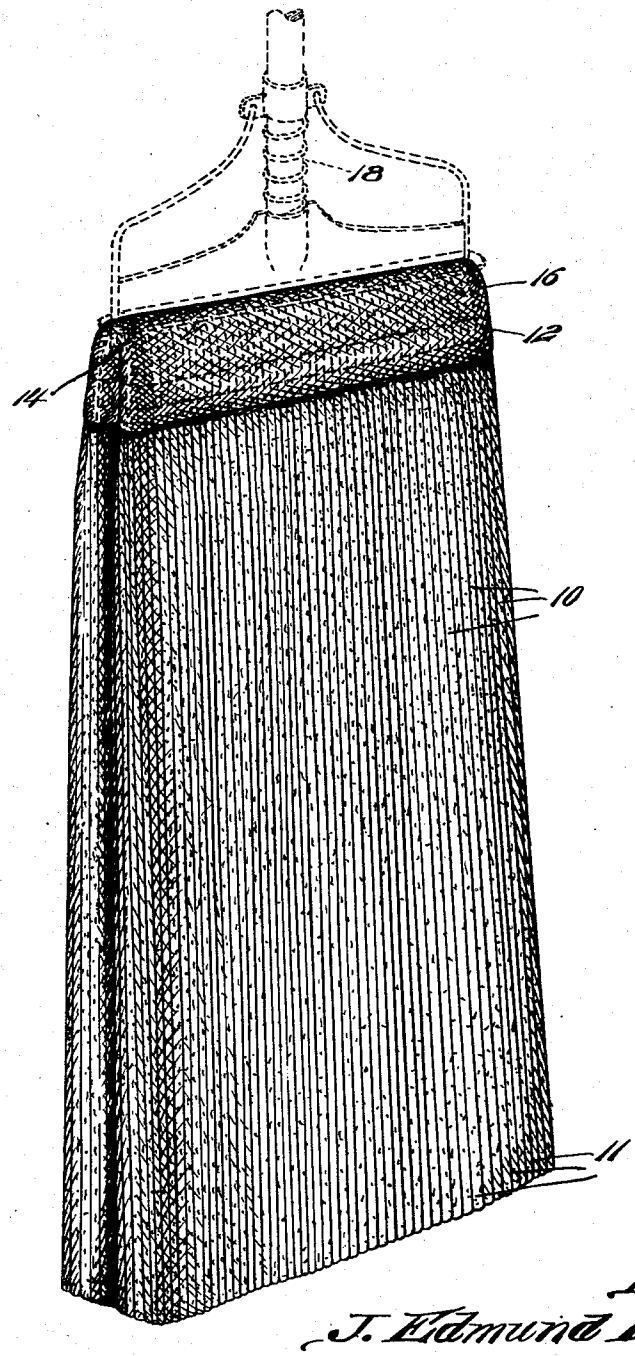
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MOP

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MOP

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2 Claims. (Cl. 15—229)

My invention relates to improvements in mops and component parts thereof.

An object of my invention is to provide a mop of a much greater efficiency than any hitherto known. I provide a mop head in which the cotton mop yarn strands are rendered "absorbent" or "quickly absorbent" by chemically treating them in a somewhat similar fashion as has been done for years in the manufacture of absorbent surgical cotton. Ordinary cotton mop yarn is not normally absorbent. In order to make it soak up water or other liquid it is necessary to force it into the liquid and hold it therein. Untreated raw cotton or normal gray or bleached cotton will not sink when floated on water. In order to make it sink it is necessary to push it and hold it in the water. On the other hand absorbent cotton, that is raw cotton rendered by chemical treatment actually absorbent will both readily sink when floated on the water and the fibres thereof will have a capillary attraction or affinity to soak up the water. The standard practical tests as used for many years in the trade for surgical cotton are "quickly absorbent" when six grains thereof dropped from a height of six inches above the surface will sink below the surface in six seconds, "absorbent" is any other cotton which will sink of its own accord. In my improved mop head therefore whether the strands are merely absorbent or quickly absorbent, each strand if put in a glass of water will promptly sink to the bottom of the glass.

A further object of my invention is to provide not only a mop which will have an actual affinity for the water, but to provide a mop head which will actually carry many times the weight of water than the present day mops, thereby greatly increasing its water carrying efficiency. Inasmuch as each mop head will have a larger water carrying capacity, it is obvious that for a certain degree of efficiency mop heads constructed of my improved material may be made much smaller than the present day mop heads and still be capable of achieving the same purpose.

My improved mop may be used for wet mopping, drying a wet floor, dusting, washing, oiling, waxing or any general cleaning purpose. Where used for wet mopping it is obvious that it will absorb and lift from the pail of water many times the amount of liquid lifted by the ordinary mop by merely immersing it therein and without the necessity of pushing it in, squeezing it and holding it into the water so that it will become artificially saturated with water as with the nonabsorbent mops now on the market. This makes my improved mop particularly adapted for wet mopping. It is so absorbent that it is not necessary to dip the entire mop in the pail. A few inches of the end of the mop dipped in water will enable the mop to soak up sufficient water to wet down a considerable floor space and the capillary attraction of the yarn will draw the moisture up to the ends of the mop. This is a decided advantage and will produce a much more even wet mopping than hitherto as the mop actually holds the water and will spread it evenly on the surface to be wet-mopped instead of slopping it on to the surface as present day nonabsorbent mops do. This eliminates puddles on the floor which are always a source of decay of wood or other materials used for the floor surface.

When used for drying a wet floor it is apparent that my improved mop will readily absorb many times the amount of water of an ordinary mop and therefore it will not only when used as a wet mop wet a much greater surface, but when used as a mop for drying a wet floor it will mop up a greater area than former types of mops prior to each squeezing, thus substantially lessening the time hitherto consumed in squeezing mops. It is apparent that when used for drying a wet floor it will pull up the water that has been slopped on the floor by another mop and that due to the absorbency of my improved mop it will speed up the drying process making the mopping process much quicker with the resultant of less labor. Inasmuch as I am able to mop much quicker after wet mopping with my improved mop it is obvious that it saves the floor surfaces particularly composition floors and newly laid rubber floors which tend to bulge after the water seeps through the inlay and gets under the floor, by substantially lessening the time on which the water is laid on the surface to be mopped. When used on marble floors it also saves the annoyance of people walking through the wetted down surface and tracking the moisture through the rest of the building by correspondingly lessening the time in which it is on the floor.

It has heretofore been customary in use to use many different kinds and sizes of mops for many different purposes, such as one wet mop, one dry mop, one dusting mop, one washing and oiling mop, etc. A set of two or three of my improved mop heads and one handle will do all the mopping work and dusting work in the home and avoid the nuisance and expense of having several different kinds of mops and handles for this purpose.

It is also apparent that my improved mop head may be used if desired in the form of hand swab

for the use in drying down automobiles and other vehicles and in this connection it performs a double purpose, namely, of taking off the grit and dirt without scratching and when wrung out or dried will quickly dry the surface of the automobile finish avoiding the streaks like chamois, thus with one article performing both the work of a sponge or brush and a chamois cloth.

Inasmuch as my improved mop head is so constructed as to have a greater affinity for water or other liquid than an ordinary mop head it is apparent that in use it will more completely absorb the water and particles it comes in contact with than mops hitherto on the market, thus more completely drying the floor.

While I am aware that absorbent cotton has been made for many years as far as I am aware no one has hitherto treated cotton in yarn form to render it absorbent in the sense that surgical cotton is rendered absorbent and a further object of my invention is to provide as a new article of manufacture a cotton yarn so chemically treated as to render it "absorbent" or "quickly absorbent". It is well known that the ordinary cotton fibre contains vegetable waxes and oils, some of which are contained on the surface of the fibre but a great many of which are contained in the central cell or canal in each fibre. The ordinary bleaching process removes most of the surface vegetable waxes and oils, but the central canal is hardly affected by it and remains filled up with vegetable waxes and oils. By my improved process, however, I entirely break down and remove substantially all vegetable waxes and oils from the central canal or cell of each fibre, thus creating voids for the absorption of water therein. It is due to this reason therefore that my improved mop yarn will absorb two or three times the amount of water as the ordinary mop yarn and due to the fact that the surface waxes and oils have been substantially removed the natural affinity of substantially pure cellulose for water will permit each fibre to absorb the water. While my improved mop head may be permanently fastened to the handle I preferably provide a detachable mop head of the type forming a larger portion of the mops sold today so after the yarn strands are worn out a new mop head may be replaced therefor without the necessity of changing the more or less permanent wooden handle.

These and such other objects of my invention as may hereinafter appear will be best understood from a description of an embodiment thereof such as is shown in the accompanying drawing illustrating a detachable mop head.

The drawing is a perspective view of a detachable mop head constructed in accordance with my invention showing the mop handle in dotted lines.

In the drawing, the mop head consists of strands 10 of absorbent cotton yarn each arranged in substantial side by side relationship having free lower ends 11 and means 12 to bind the upper ends thereof together. As shown the cotton yarn strands are arranged in side by side or in contiguous relationship and are preferably doubled over near the center portion 14 thereof and I provide suitable means 12 to bind said strands together substantially centrally thereof. In the embodiment shown said means preferably comprises the flat tape 16 secured around the center portion of said strands for binding said strands together, and for detachable securement thereto of the mop handle 18. If desired, however, the means binding said strands together substantially centrally thereof may include the handle 18 in case it is desired to permanently affix the strands to the handle as is desirable in yacht or deck mops, lavatory mops or dish mops.

To render the individual strands 10 of cotton yarn "quickly absorbent" according to the standard practical tests for surgical cotton as used for many years in the trade heretofore referred to, the skeins of cotton yarn are first preferably boiled under substantially 60 pounds pressure in a solution of textile soap and caustic soda for 12 hours. The skeined cotton yarn is then bleached with chloride of lime, then treated to a bath of boiling hot liquid soap, soured or treated with another bath of sulphuric acid and rinsed with cold water to which a very little blue is added. Any suitable type of a blue may be employed such as ultramarine as well as any suitable type of a textile soap. This is substantially the process to which raw cotton has been subjected to for years in the manufacture of absorbent or surgical absorbent cotton and I believe by changing the form of the cotton or other strands employed from loose cotton to yarn I am enabled to provide as a new article of manufacture an absorbent cotton yarn preferably adapted for mops as hitherto described, but also having other uses and by this change in form of the material treated I am enabled to provide an entirely new type of commercial article which may be used in any place where an absorbent yarn is desired and which is particularly advantageous when employed as mop yarn as hitherto described.

By the chemical treatment mentioned above substantially all the surface oils and waxes are removed from the individual cotton fibres and in addition the vegetable oils and waxes are substantially removed from the central cell or canal of each cotton fibre not appreciably touched by the ordinary bleaching or finishing yarn process, thereby creating voids for the reception in each fibre of a larger amount of water and by the substantial elimination of surface waxes, thus creating a greater affinity for water in the actual mopping operation.

To show the results of such a mop I took a four-ply mop head of ordinary construction and a four-ply mop head constructed in accordance with this invention, each weighing 16 ounces with the following results: Each mop head was separately immersed in a pail of cold water for a half a minute, each mop head was separately drained for one-quarter of a minute to remove surface water. The weight of the ordinary mop head after draining was 1 pound, 12 ounces, the weight of my improved mop head after draining was 4 pounds, 2 ounces. Thus the difference in weight was 38 ounces of water, making the increase in the lifting absorbency 315.8%. The yarns in both mop heads tested were exactly the same in quality and construction, with the exception that my improved mop head had been chemically treated, bleached and rendered absorbent in the manner indicated above.

In the claims and otherwise in the specification I employ the word "absorbent" to mean mop or other yarn, artificially treated preferably in the yarn state to render it absorbent, in the same sense that absorbent cotton is used when referring to absorbent surgical cotton and I employ the word "quickly absorbent" to refer to cotton yarn which is so treated as to pass the standard practical tests for surgical cotton as

used for many years in the trade heretofore referred to.

It is understood that my invention is not limited to the specific embodiment shown and that various deviations may be made therefrom without departing from the spirit and scope of the appended claims.

What I claim is:

1. A mop head comprising strands of absorbent cotton yarn arranged in substantially contiguous relationship having free lower ends and means to bind the upper ends thereof together, said strands being chemically rendered absorbent to increase their water lifting absorbency at least 200%.

2. A mop head comprising strands of cotton yarn having substantially all the vegetable waxes and oil removed from the surface and central cell of each cotton fibre thereof arranged in substantially contiguous relationship having free lower ends and means to bind the upper ends thereof together.

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