Jan 6, 1931. M. L. WEISS 1,787,965

ABRASIVE MOP

Filed Nov. 13, 1929

Fig. 1.

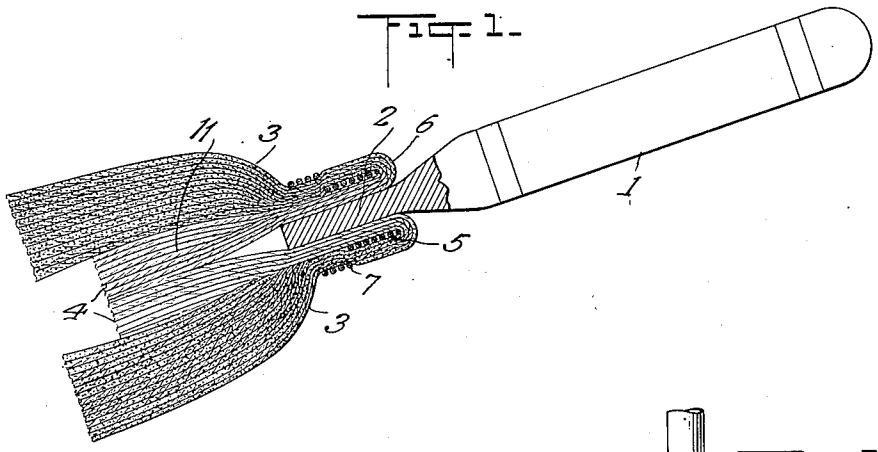
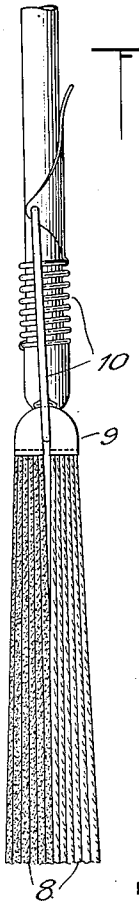


Fig. 3.



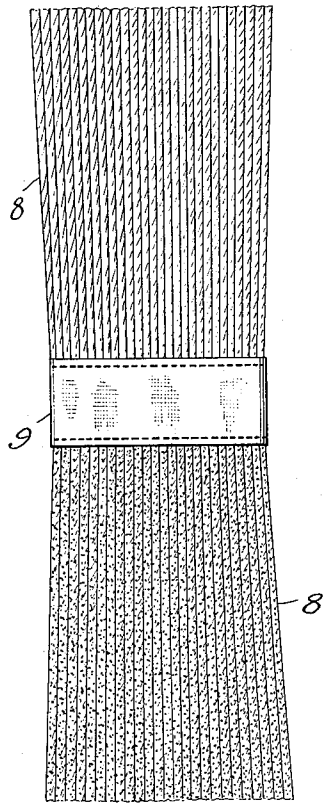


Fig. 2.

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UNITED STATES PATENT OFFICE

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ABRASIVE MOP

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This invention relates in general to devices for cleaning, scouring and renewing the surfaces of dishes, kitchen utensils, bathtubs, sinks, toilet bowls, floors, and laboratory utensils and for other miscellaneous cleaning purposes. More particularly the invention relates to mops having impregnated in the fibrous strands or cords composing the mop, abrasive and water-proofing materials.

In cleaning floors, dishes, kitchen utensils and other things, it is desirable to use a suitable abrasive material which will remove dirt, grease and other foreign substances efficiently and rapidly, without injury to the surface being cleaned. To accomplish this result, steel wool, copper and other metallic shavings have been used either combined or not combined with fabric and various forms of granular materials both soluble and insoluble, usually in a finely-divided state, have also been employed.

More frequently it is desirable to use a mop for this cleaning work, especially in cleaning floors, toilet bowls, bathtubs and other enameled ware, it becomes necessary to employ some form of abrasive material to do the work properly and efficiently.

It is difficult to combine various forms of metallic shavings with a fabric, strands or cords in a cleaning pad. Such finely-divided abrasive materials are brittle and they ordinarily do not remain in association with the fibrous strands for any considerable time. For these and other reasons such devices are short lived and objectionable in other ways.

Therefore, the principal object of the prestne invention is to provide a mop having associated with the strands thereof or with a portion of them, a finely-divided abrasive material which is caused to adhere to the strands or with which the strands are impregnated and which under ordinary conditions of use will not be easily disassociated from the fibrous strands.

A further object is to provide a mop having strands of fibrous material which have been rendered waterproof by vulcanized rubber or the like, the waterproofing material impregnating the strands of the mop and forming a binder or carrier for abrasive material on and within said strands.

Another object of the invention is to provide a mop in which only a portion of the strands of fibrous absorbent material comprising the mop are impregnated with a mixture of vulcanized rubber and abrasive material, so that a portion of the mop may be used for cleaning purposes and the remaining portion used to absorb water and dirt or soap from the surface being cleaned. This variation allows the soap and dirty water to be washed easily out of the non-impregnated strands.

These and other objects which will be apparent to one skilled in the art, are secured by the process hereinafter described and the novel forms of mops shown in the accompanying drawing illustrating two embodiments of the present invention, and in which:

Figure 1 is a partial side view of a dish mop showing a portion of the mop and its handle in cross-section and illustrating particularly one method of attaching the mop to the handle;

Fig. 2 is a plan view of one form of floor mop showing how the strands or cords of fibrous absorbent material may be held together by a fabric; and

Fig. 3 illustrates this form of mop in association with a handle.

In the drawings the numeral 1 indicates the handle of a dish mop, the construction of which is well known but which is described herein merely for the purpose of explaining the present invention. One end of the handle is preferably made of smaller diameter as indicated by the numeral 2. In combining the mop with the handle 1, two or more bunches 3 of the strands of suitable fibrous material are laid in parallel rows and the reduced end 2 of the handle inserted therebetween until it is positioned within close proximity of the end 4 of the strands. The bunches 3 of the strands are attached to handle 1 by means of the wire 5, which is wound tightly around the strands or they may be attached to the handle by any other suitable means. The bunches 3 are then folded over upon themselves as indicated at 6, so that the strands now encompass and extend a sub-

stantial distance beyond the ends 4. The turned over portions of the strands are tightly wound with wire as indicated at 7 or they may be securely held in position by any other suitable means.

The floor mop illustrated in Figs. 2 and 3 comprises a plurality of strands 8 of fibrous material which are preferably bound together by means of the fabric 9, as more clearly shown in Fig. 2. This form of mop is folded over a suitable clamping arrangement such as is indicated generally by the numeral 10 in Fig. 3 and which need not be described in detail herein since it forms no part of the present invention. The mop is, of course, preferably folded over the clamping arrangement so that the ends of the strands lie approximately the same distance away from the clamping mechanism as illustrated in Fig. 3.

The abrasive material may be supplied to the mop by various methods. One method which at present is deemed preferable is described as follows:

A mixture of rubber latex and finely-divided abrasive material such as for example emery, carborundum, sand, pumice, etc., in any desired proportions is prepared and the paste thus formed is applied to the strands of the mop so that all of the strands to which the abrasive is to be applied are thoroughly impregnated with this mixture. The moisture inherent in the rubber latex is removed by the application of heat and the rubber therein is vulcanized by any preferred method of vulcanization such as for example, the immersing of the strands of the mop in a solution of sulphur chloride or by subjecting the strands to the action of the fumes of sulphur chloride. Or, if desired, a suitable vulcanizing agent may be added to the rubber solution and vulcanization performed by the application of heat.

While the various abrasive materials mentioned above may be used, it is preferred that finely-divided pumice be used, because the particles thereof are not sharp and are not as likely to cause injury to the surface being cleaned as are some of the other abrasive materials mentioned above. It will, of course, be understood that the final selection of abrasive material to be used will to a large extent be determined by the nature of the surface to be cleaned. The application of the rubber is not limited to latex, but rubber particles dispersed in the fluid in a colloidal or other form may be used and rubber solutions such as rubber cement when properly diluted may also be employed.

When the rubber has been vulcanized as described above, the strands thus treated will have impregnated therein a water-proof coating of rubber in which there is finely-divided abrasive material adapted to remove dirt, grease and other foreign substances from the surface being cleaned.

It may be desirable to impregnate only certain portions of the mops with the mixture of rubber and abrasive material. As shown in Fig. 1 those portions of the strands lying in the interior of the mop and designated by the numeral 11 are preferably not treated with this mixture but are left in their natural absorbent condition so that when the mop is being used, these portions of the strands will absorb and retain water or a soap solution. In the form of floor mop illustrated in Figs. 2 and 3, it may be desirable to treat only one-half of the mop with the mixture of rubber and abrasive materials as indicated in the lower half of Fig. 2; the portion of the mop so treated may be used to remove dirt and grease from the surface to be cleaned and the other half of the mop which has not been so treated may be used to absorb water or soap solution from the surface. On the other hand the treated or impregnated portions of the mops will not absorb grease.

With the above forms of my improved mops in mind, it will be appreciated that the same are free from the disadvantages usually incident with other forms of cleaning devices heretofore used. The use of loose granular material is not necessary and the particles are not liable to become detached or broken, thereby obviating the stoppage of pipes and drains and preventing injury to the skin of the user or injury to the eyes or other delicate organs, by particles of steel, copper shavings or other abrasive substances.

It will, of course, be understood that if it is desirable, every portion of the strands may be coated with the abrasive material or any desired portion other than those specified may be left untreated according to the particular uses for which the mop is to be employed.

Having thus illustrated and described these forms of mops and the preferred method of applying the abrasive material, it is understood that the invention is not to be limited to the details set forth, for various changes may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

What is claimed and desired to be protected by Letters Patent is:—

1. An abrasive mop comprising strands of absorbent material impregnated with a mixture of a water-proof binding material and an abrasive material.

2. An abrasive mop comprising strands of absorbent material impregnated with vulcanized rubber and an abrasive material.

3. An abrasive mop comprising strands of absorbent material impregnated with vulcanized rubber and finely-divided pumice.

4. An abrasive mop comprising strands of absorbent material, some of said strands be-

ing adapted to absorb and retain water or soap solution and other strands being impregnated with vulcanized rubber and finely-divided pumice.

In testimony whereof, I have affixed my signature hereunto.

MORRIS L. WEISS.