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C. FIELD

CLEANING DEVICE

Filed Oct. 8, 1925

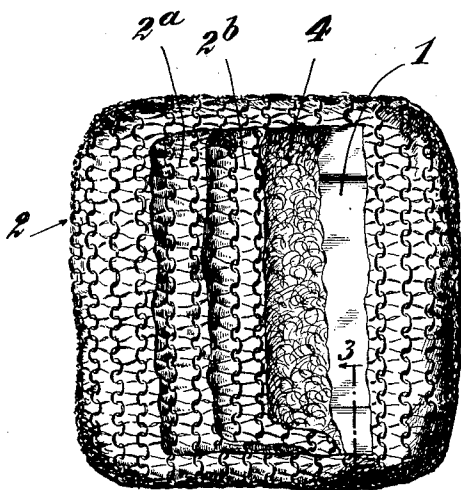


Fig. 1.

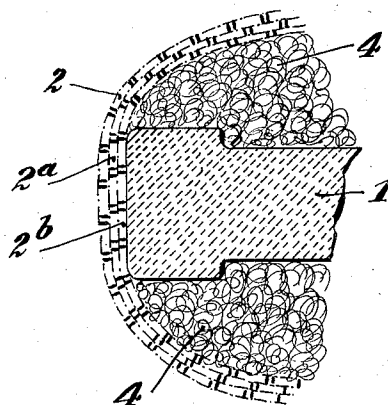


Fig. 3.

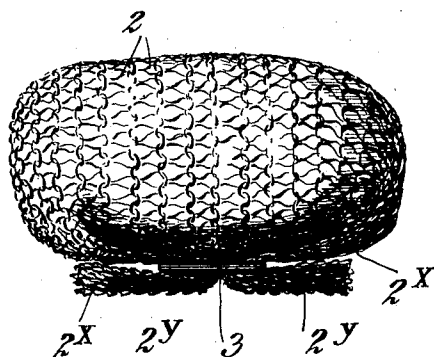


Fig. 2.

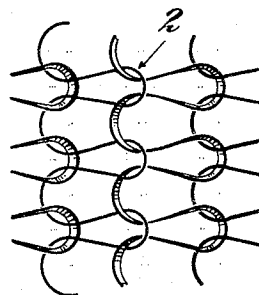


Fig. 4.

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CLEANING DEVICE.

Application filed October 8, 1925. Serial No. 61,187.

My present invention is shown as embodied in a device particularly adapted for applying soap and water to clean or scrub floors or dishes or household utensils, particularly aluminum utensils and metal surfaces generally.

Properly cleaning such articles and surfaces, particularly kitchen utensils, usually involves removing considerable coatings of grease or other clinging or sticky materials. Removal of these is facilitated by soap and water, but direct rubbing of the soap on the grease and dirt is undesirable because it tends to contaminate, abrade and waste the soap, and I find that it is unnecessary provided the action of the soap and water is supplemented by mechanical scraping and scrubbing in accordance with my present invention.

Accordingly, as set forth in another application of even date, Serial No. 61,186, filed October 8, 1925, I provide a cake of soap enclosed in a wrapper of metal fabric that is not readily clogged by the grease or dirt; that is adapted to afford considerable protection for the soap while freely exposing it to the water for solution and sudsing; and that affords effective scraping and scrubbing means which does not score or scar the surface of the metal.

In the device of said application, there may be provision for cushion effect for protection of the soap and the fabric and for making the device yieldingly self accommodating for the purpose of applying pressure more uniformly on the surface being cleaned, preferably by making the wrapper comprise layers of elastic ribbon fabric superposed, one on another, and there may be a large area recess in each face of the cake of soap to afford space into which considerable areas of the fabric may yield under pressure.

My present invention includes any one or all of the above novel features in combination with steel, copper or other metal wool pads or cushions applied between the fabric and the cake of soap, preferably over the larger faces of the cake, thereby permitting one or more edges of the cake to fit the wrapper and bear directly against the metal fabric.

The above and other features of my invention will be more evident from the following description in connection with the accompanying drawings, in which

Fig. 1 is a face view of a cake of soap with metal wool cushions and metallic fabric wrapper, illustrating one form of the invention, layers of the fabric and cushion being broken away to show the cake of soap;

Fig. 2 is an edge of the complete article;

Fig. 3 is a detail section on the line 3—3, Fig. 1;

Fig. 4 is an enlarged view showing one form of metal ribbon fabric that may be used.

As shown in the drawings, a cake of soap, 1, having metal wool cushions, 4, on each face, is enclosed in fabric, 2.

The fabric I prefer to use is a relatively fine mesh fabric of flexible metal ribbons, preferably of non-ferrous relatively soft metals or alloys such as copper, aluminum or German silver. A desirable metal is an alloy much like that employed in ordinary tinsel.

While the weave is capable of wide variation, it will be evident that metal ribbons bent in the slidable loops required for stocking-knit fabric afford natural scraping edges that are not too harsh, combined with any desired size of mesh for retaining the cake of soap and for holding the metal wool cushions in place and for scrubbing the surface to be cleaned. The width of the ribbon may be, say, eight to twelve times its thickness and, say 1/16 to 1/64 inch wide by, say, 1/500 to 1/100 inch thick.

The metal fabric envelope may be secured about the cake of soap in any desired way. A cheap way is to have the envelope of this flexible copper or tinsel-like ribbons made on a stocking knitting machine.

This or any other suitable fabric may be formed as a tube, the cake of soap faced with metal wool inserted therein, the ends of the tube closed and folded over and secured together by wire or other suitable fastening means, and the whole flattened and formed to standard size in a suitable press. This has the advantage that one face of the pad has a large part of its effective working surface comprised of scraping ribbon which will be afforded by the enclosing fabric. The reverse or folded-over side is covered by so many thicknesses of ribbon fabric that it forms a soft cushion for the hand or a deep elastic pad for application to the surface to be cleaned; also the fingers of the user may be slipped into the pocket formed between the folded back ends and the body of the knitted

tube, thereby affording a convenient means for holding the soap when in use.

In the present embodiment the fabric is in three layers, 2, 2^a, 2^b, while the fourth layer is metal wool, as steel or preferably of a relatively soft metal such as copper or aluminum or alloys. This layer may be a pad of thin springy metal ribbons which may be crumpled or wadded as desired.

Preferably, the fabric is in the form of a tube much longer than the cake of soap. The pads, 4, are applied and soap is slipped into the tube, the free ends then being folded back against the wrapper portion as at 2^x, 2^y, and after securing by wire or other suitable bond, 3, the free ends, 2^x, 2^y, are reversely bent toward the ends of the device and are preferably more or less crushed and flattened to form the completed article shown in Fig. 2.

Where there are multiple layers, they may be formed by telescoping two or more separate pieces of the fabric or by telescoping back and forth successive portions of a single length. It will be evident, however, that while the tubular form is convenient, there are many other ways in which wrapping may be applied around and securely fastened upon the cushioned cake of soap.

The fabric used for the wrapper may be of wire of any desired cross-section and the weave or knit of the fabric may be as indicated in Fig. 4. Here it consists of ribbons interengaged longitudinally of the fabric in slip loops. The ribbon loops may assume an infinite variety of positions under different tensions and pressure, in the different parts of the fabric, by reason of the loop structure in combination with the springiness and ribbon shape of the metal. A characteristic relation shown in Fig. 4 is where the fabric is moderately stretched so that the elastic stiffness of the ribbon loops has an opportunity to permit the ribbons to assume a characteristic position more or less edgewise to the surface. This is of advantage for several reasons. It tends to present the scraping edges of the ribbon edgewise to the surface of the fabric and consequently in the best possible position for scraping the surface to be cleaned. This also provides openings for flow of water through the fabric, directly to and from the soap at the edges and through the metal wool at other points. The metal wool pads naturally cling to the soap and to fabric, tending to hold them in orderly relation while at the same time affording opportunity for considerable elastic play or relative movement between the soap and the fabric. By proper manipulation, the fabric and the wool may be caused to have a variable rubbing action on the surface of the soap. For instance, when the device is used merely for sudsing water, rubbing the surface of the fabric by the hand will promote a very rapid solution of the soap and water, while

the metal wool may be used as an effective foam maker.

Even when the knitted fabric is of quite fine mesh, the scraping edges are effective and the mesh is self cleansing, or at least is readily cleansed because of the freedom with which the water may be circulated to and from the soap. Where fine mesh or multiple layers of fabric are used, the metal wool is well protected from direct contact with coatings of grease or sticky material on the surface being cleaned, and such rinsing as may be desirable for cleaning the metal fabric wrapper will be ample for cleaning the metal wool which is so much better protected.

A single layer of fabric may be used to serve any or all of the above purposes, and the fabric may be weaker, because the elasticity of the metal wool permits stretching limits to vary the natural positions of the springy metal ribbon without changing the set of the metal. Multiple layers of relatively loose fabric may be superposed on the metal wool to afford still more elastic heavily cushioned working face for the pad, making it still more self accommodating to the work while at the same time better protecting the cake of soap.

If the metal ribbons of the fabric are of as soft metal and as thin as may be desirable for properly scouring metal surfaces without scratching them, rough usage of the device may wear out the fabric before the soap has been used up. If this happens in the case of the multiple layer wrapper, the only result is to expose successive layers of fabric each of which has been up to that time protected from injury by the layer that has become worn out. The novelty and advantage of this feature of my invention will be readily appreciated. The number of layers of wrapper supplied may be designed with reference to the strength of the ribbons employed in the fabric and with reference to the size of the cake of soap, for the purpose and with the result that the wrapper will last as long as the soap.

In certain cases, as where there is only a single layer of fabric wrapper, any violence that may destroy the wrapper, will leave the cake of soap with its metal wool pads still in useful form, because the pads and soap are not anchored to or positively secured to the wrapper and can be slipped out of the wrapper at any time.

It will be noted that in the form shown the faces of the soap cake are recessed and the pads are prevented from slipping by raised margin of the soap cake. In normal use, the elastic cushion effect of the metal wool tends to relieve the fabric from deforming stresses, thereby tending to preserve the form of the weave and the resilience of the ribbons. The resilience of the pads is sufficient to take up slack such as might be produced by consider-

able permanent stretching out and straightening of ribbon mesh in various parts of the fabric.

It will be obvious that as concerns certain of the broader claims, the expression "cake of soap" is intended as descriptive of hard soap and is intended to include such soap whether in the form of one or more lumps or cakes.

I claim:

1. A cleaning pad, including a rectangular cake of soap having metal cushioning means on one face thereof the aforesaid parts being enclosed in a wrapper formed of knitted metallic ribbon.

2. A cleaning pad, including a rectangular cake of soap having steel wool layers on different faces thereof, the aforesaid parts being enclosed in a wrapper formed of knitted metallic ribbon in the form of a tube with closed ends.

3. A cleaning pad, including a rectangular cake of soap having steel wool layers on different faces thereof, the aforesaid parts being enclosed in a wrapper formed of knitted me-

tallic ribbon in the form of a tube, the ends being folded back on one face of the pad and secured together by metallic fastening means.

4. A cleaning pad, including a solid backing having metal cushioning means on one face, and the whole enclosed in a wrapper comprising a plurality of layers of knitted metallic ribbon.

5. A cleaning pad, including a solid backing having steel wool layers on different faces thereof, enclosed in a wrapper comprising a plurality of layers of knitted metallic ribbon in the form of a tube with closed ends.

6. A cleaning pad, including a solid backing having steel wool layers on different faces thereof, enclosed in a wrapper comprising a plurality of layers of knitted metallic ribbon in the form of a tube, its ends being folded back on one face of the pad and secured together by metallic fastening means.

Signed at New York, in the county of New York, and State of New York, this 7th day of October, A. D. 1925.

CROSBY FIELD.