June 6, 1944. D. J. KELMAN 2,350,357

SCOURING DEVICE AND METHOD FOR MAKING THE SAME

Filed April 3, 1941

Fig. 1

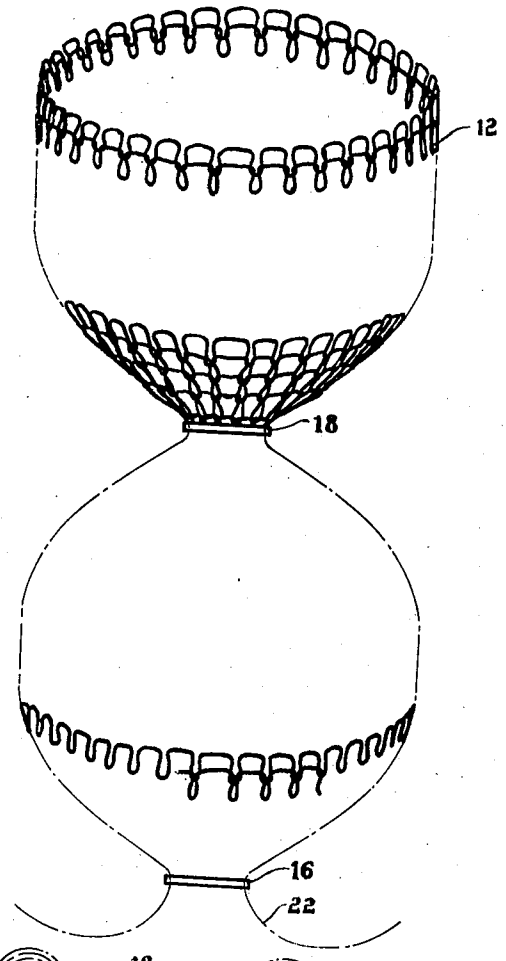


Fig. 2

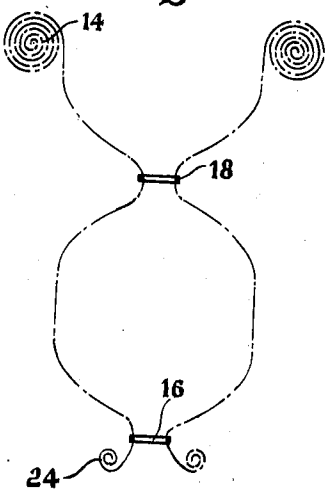


Fig. 3

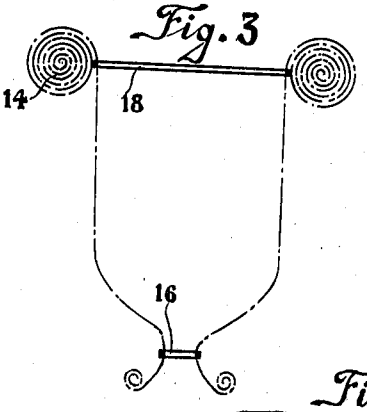


Fig. 4

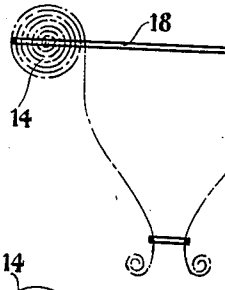


Fig. 5

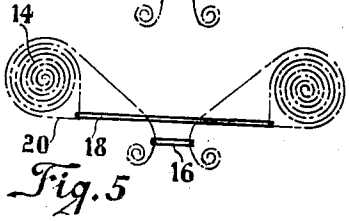


Fig. 6

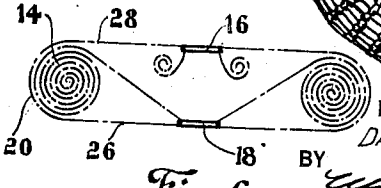
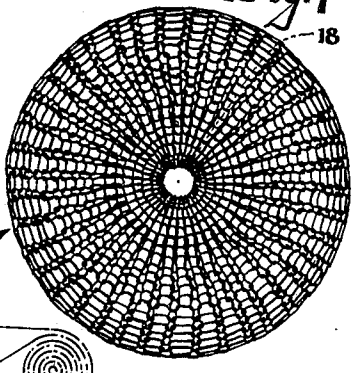


Fig. 7



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SCOURING DEVICE AND METHOD FOR MAKING THE SAME

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Application April 3, 1941, Serial No. 386,582

3 Claims. (Cl. 15—2.09)

This invention relates to scouring devices and methods for making the same. More particularly, it is concerned with the production of a novel scouring pad which is adapted to be used for the cleansing of metallic kitchen utensils.

One of the objects of my invention is to provide a highly improved, economical and simple process for making a cleaning device of the character described in a minimum of time and with a minimum of unskilled labor.

A further object of this invention is to provide a scouring device of the character described with improved means whereby said device is enabled to maintain its form.

An additional object of my invention is to provide a neat, compact, durable and strong device of the character described which shall be simple and relatively inexpensive to manufacture, comprise but few and simple parts, and which shall nevertheless be practical and efficient in use to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the claims.

In the accompanying drawing, in which is shown one of the various possible embodiments of this invention,

Fig. 1 is a perspective view illustrating the initial stage in the manufacture of a device embodying my invention;

Figs. 2–6 are cross-sectional schematic views illustrating successive stages in the process of manufacturing my improved scouring device; and

Fig. 7 is a bottom plan view of a cleaning device made in accordance with my invention.

Referring now in detail to the drawing, 10 designates a scouring pad embodying my invention which may be made from suitable metallic material, such as flat ribbon-like wires. The wire is first knitted in the well known manner on a suitable knitting machine into an elongated tubular, seamless fabric member 12, such as shown in Fig. 1. Then beginning at one end of the said member 12, the fabric is rolled back spirally upon itself to form a multi-layered annulus 14 which comprises the body of the completed scouring device.

In accordance with my invention I have provided simple and highly improved means for maintaining the pad substantially in the shape imparted after the rolling operation is completed. Hitherto, for this purpose, it has been the practice to employ means, such as wire staples or draw strings. The latter render the pad unsightly and also are relatively expensive to apply as will be seen when same is compared with my novel fastening means now to be described.

Prior to initiating the tube rolling action resulting in the formation of the annulus 14, I slip two highly resilient annular members, such as rubber bands 16 and 18, over the lower end of the knitted tubular member 12. For reasons which will be later apparent the normal circumference of the rubber bands should be as small as possible and considerably less than the inner circumference of the annulus 14, said rubber bands, however, being capable of distension to a circumference larger than the outer circumference of said annulus.

One of the rubber bands 16 is disposed adjacent the lower end of the tube and the other rubber band 18 is disposed further along the tube, as shown in Fig. 1. While the spacing between the two rubber bands 16 and 18 may be adjusted during the later stages of the pad forming process soon to be described, I prefer to have them positioned a predetermined distance apart on the said tube, said distance being substantially equal to the extreme diameter of the completed pad plus one-half the circumference of the outer layer 20 of the completed annulus 14, shown in Figs. 5 and 6. This distance may be marked out on a work table used by a pad-assembler.

The portion 22 of the fabric tube 12 extending below the rubber band 16 may be rolled up into a small annulus 24 in order to fill up the aperture in the annulus 14. After an operator has rolled the fabric tube 12 up to the first rubber band 18 in the stage of operation shown in Fig. 2, he manually distends the said rubber band, as by grasping same both from the inside of the said rubber band and from the outside thereof through the mesh of the knitted metallic fabric 12. The rolling of the annulus 14 is then continued, the rubber band 18 being carried in distended condition to a position adjacent the inside of the annulus, as shown in Fig. 3. Upon further rolling and additional distension of the rubber band 18, said rubber band is caused to revolve about the center of the rolled annulus 14 until it lies adjacent the outside thereof in the position illustrated in Fig. 4. Another quarter-roll of the annulus causes the rubber band 18 to be disposed at the bottom of the semi-completed pad in the

position shown in Fig. 5. A few more degrees of roll are then imparted to the annulus to bring the lower rubber band 16 through the center of the annulus and up to the top surface of the pad 10.

The rubber band 18 is then released. The resultant contraction of the rubber band to approximately its normal size will pull a portion 26 of the outer layer 20 into flat position running from the lower surface of the annulus 14 to the said rubber band, said portion 26 thereby forming the bottom wall of the completed scouring pad 10, as shown in Fig. 6. The upper surface of the pad is defined by a flat portion 28 of the fabric between the top surface of the annulus to the rubber band 16.

It will be seen that in this manner both of the fastening means comprising the rubber bands 16 and 18 lie wholly within the completed scouring pad 10 and are concealed from the exterior thereof, it being noted that in the region adjacent the rubber bands the metallic strands are disposed in close proximity (see Fig. 7).

Although I prefer to employ a rubber band 16 at the lower end of the tubular fabric 12 to form the upper closure for the scouring pad 10 because of the ease with which the same is applied, it will be apparent that other suitable fastening means, as for example a wire staple, may be employed in lieu thereof, since this closure means in any event will lie wholly within the completed scouring pad 10.

It will thus be seen that there is provided a device and method for making the same in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A scouring pad comprising an annularly rolled open-ended tubular fabric of wire mesh, one end of said fabric being gathered together by a rubber band to provide a top surface for said pad, said rubber band lying wholly beneath said surface, the bottom surface of said pad comprising a portion of said fabric disposed between the outer surface of the formed annulus and the center thereof, and means to maintain said portion in position, said means comprising a rubber band wholly above and disposed adjacent said portion.

2. A method of making a device of the character described from a tubular fabric member comprising encircling said fabric adjacent one end thereof with an annular member of highly resilient material having a circumference smaller than the circumference of said fabric, rolling said fabric spirally upon itself from the other end to form an annulus, distending said resilient member, revolving said distended member about said annulus while rolling said fabric, constricting said first named end, and allowing said distended member to return to substantially its normal shape.

3. In the method of making a device of the character described from a tubular fabric that improvement comprising the steps of disposing a distended annular member of highly resilient material having a normal diameter smaller than the diameter of said fabric around and wholly exteriorly of a portion of said fabric, and spirally rolling said portion and said member upon said fabric to dispose said annular member wholly within the spiral annulus thus formed.

DAVID J. KELMAN.