March 29, 1932. E. S. BRADFORD, JR 1,851,237

SCOURING UTENSIL

Filed March 11, 1931

Fig. 1.

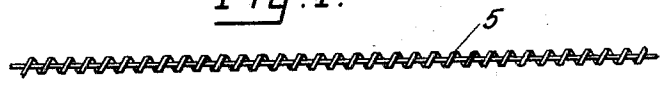


Fig. 2.

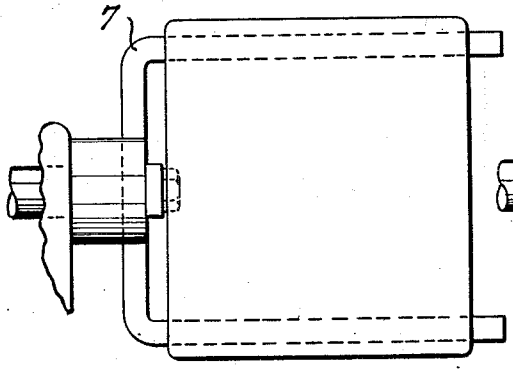


Fig. 3.

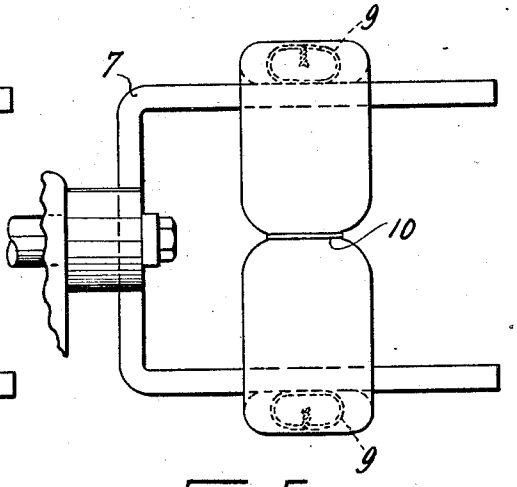


Fig. 4.

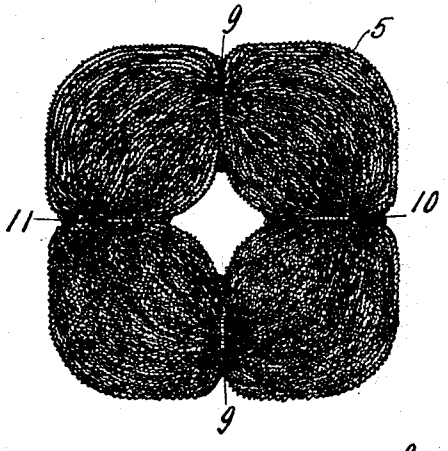


Fig. 5.

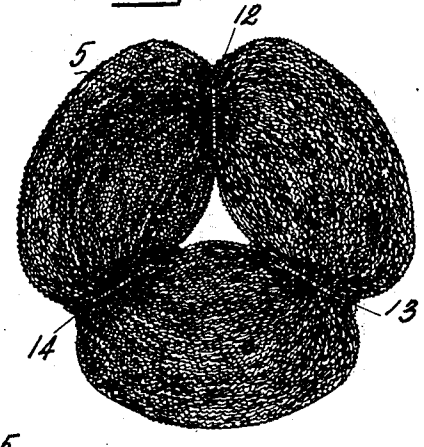
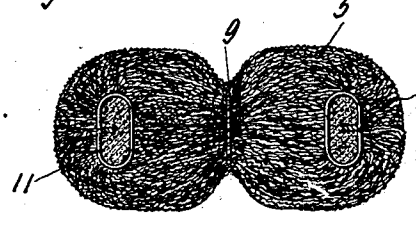


Fig. 6.



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Patented Mar. 29, 1932 1,851,237

UNITED STATES PATENT OFFICE

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SCOURING UTENSIL

Application filed March 11, 1931. Serial No. 521,696.

This invention relates to a species of scouring utensil. It is made somewhat like the scouring utensil of my copending application Serial No. 474,551, in that it may be made like that one up to one point in its construction and then by simple manufacturing steps can be changed in character to the extent of building in peculiar features of its own, as I will point out.

As a general plan the object of the invention is to provide a particular species of scouring utensil having detail advantages such as will be pointed out with the drawings and specific description.

In the drawings—

Fig. 1 is a view of the twisted metallic strand as may be used in one form to make the structure of the invention;

Fig. 2 is a skeleton view of a support on which a skein of the strand has been wound;

Fig. 3 is a skeleton view of the skein on the support, after tying and before it is released from its skein winding position;

Fig. 4 is a view of my new scouring utensil in one of its forms;

Fig. 5 is a view in another of its forms; and

Fig. 6 is a transverse sectional view taken on the line 10—11 of Fig. 4.

It is of advantage for some purposes to have a scouring utensil shaped somewhat like a doughnut. The hole in the center lets the water pass through in large volume so that the utensil can clean and be cleaned by the running by of the water as the utensil is manipulated. This possibility in the invention will be apparent from the illustration of its forms in Figs. 4 and 5.

To accomplish the invention I begin, as in said copending case, by winding a skein with a strand like 5. I wish to point out that the central carrying element of the strand may be of metal wire flattened or round and in multiple as well as single strands, or as is more usual, of textile fibrous material instead of metal wire. The winding is done under tension. In some respects for my present purpose the strand 5 preferably has an elastic carrying cord such as the ordinary cotton cord at the center. The coiled filament of flattened tinsel metal which is also elastic, somewhat like a coiled spring. The combined elasticity of the strand 5 has an effect, as I will point out, in getting the improved form of scouring utensil.

As shown in Fig. 2, the strand 5 is wound on a revolvable frame 7 and the winding is done under tension. When a suitable amount of material is wound it is gathered together on the frame in skein form as shown in Fig. 3.

To make the utensil of Fig. 4, I preferably hook a binding cord or wire 9 through the loop of the skein at one end and pull this binding wire up into the very end of the loop. Then I pass the wire around the skein body in a plane parallel to the length of the skein at the end bend. I tightly tie or bind the strands of the skein as shown in Fig. 3. The other end is tied down in the same way. Thus far, I have proceeded as in my copending case. The departure from that case in one form consists in binding the skein at two diametrically opposed points 10—11, each located (to make the form of Fig. 4) half way between the top and bottom bindings.

Then I remove the utensil from the frame 7. The elasticity of the skein causes its parts to contract between the binding sections 9 and 10 and the material swells out into four regularly arranged puffy knobs of material which surround a central hole. This form is shown in Fig. 4 and its resemblance to the doughnut form will be recognized.

As contrasted with the spherical form of utensil shown in my copending case the new form is annular. This annular form is made so by releasing the winding tension of the skein after it has been bound down tightly at a series of equidistant points around its periphery. When the skein so bound is released from the frame (which holds it stretched out until so bound and released) what happens is that the gimped cord between each pair of binding points puffs out in relaxing and moves toward a spherical form (as in my copending case), but this movement is partially restrained by the adjacent sections moving toward the same spherical form with the lines between the binding points 9 and 10 at different angles. The result is that each section modifies the

relaxing movement of the other and the whole normally relaxes into the annular shape.

In Fig. 5 I have a modified form in which the shape is not so nearly that of an annulus as in Fig. 4, but more nearly heart-shaped. But it still has the hole in the center like a doughnut. Because of this variation from one shape to another but with the same broad principle of construction involved, I use the analogy to the doughnut shape which is generally characterized by a hole in the center with a body of the material (not necessarily annular) enclosing the hole.

To make the form of Fig. 5, I bind the skein while under tension on frame 7 at three (instead of four) substantially equidistant points 12, 13, and 14, around its periphery, as shown. Then when a skein so bound is released it takes the form of Fig. 5. In that form the gimped cord is somewhat looser and puffier around the periphery than in the form of Fig. 4 (assuming that the same amount of material is wound in making the skein), and the hole is somewhat smaller.

But in both cases the gimped cord is of loose enough character to let the binding sink in the fluffy mass and to effectively guard the binding wire (or other means) against being exposed at the surface of the utensil. Because each binding wire is located between two closely abutting sections of the loose material arranged around the central hole, each binding wire is most effectively buried in the mass of gimped cord where it can perform its binding function without interfering with the use of utensil as the wire would do if it were normally exposed where it could scratch the work or the hand.

As compared to the earlier utensil of my said copending case the one herein disclosed is flattened down and spread out so as to resemble an annulus rather than a sphere in form. This change in form from the spherical to the annulus is accomplished by having three or more binding elements to form a series of equally spaced means about the skein body to bind it down. It is a small change in means but a radical change in the resulting form of the utensil.

Having described my invention what I claim is:

1. An annular cleaning utensil of the class described comprising a series of at least three circular binding elements, a strand of metallic gimped material formed into loops, each loop passing once through each binding element, said binding elements being located at substantially equal points around the closed path of the loops, there being enough of said loops and of the binding elements to form a loose mass between each pair of binding elements of the series and with the loose mass between one pair abutting another mass of like kind between successive binding elements.

2. An annular cleaning utensil of the class described comprising a series of at least three circular binding elements, a strand of metallic gimped material formed into loops, said binding elements being arranged at substantially equal distances around the looped material and each of said elements being wound to compact the strands of the loop in a plane at right angles to its periphery, each loop passing once through each binding element and with the material between each of said binding elements bowed outwardly into a fluffy loose mass, all arranged so that a series of such fluffy masses is disposed around a central opening and the binding elements lie hidden at the abutting ends of such masses.

3. A cleaning utensil of the class described comprising a series of at least three approximately spherical masses of gimped metallic strand material arranged in a closed path, each one of said masses formed of strands which extend in bowed out form from the opposite poles of its approximately spherical mass, all of said masses being made up of the strand material which is looped around the closed path of the series and is bound down into closely consolidated form at each adjacent pair of poles of said masses, the material adjacent such poles in each mass being sufficient to contact the adjacent mass and bury the consolidated pole portions, and binding means to hold the said closely consolidated form of the strands between each pair of said series.

4. An annular cleaning utensil made up of gimped metallic strand material arranged in annular form, binding means acting to keep the annular form spread out with well opened loops, said binding means comprising a series of at least three equidistant tying devices each wound at right angles to the skein material to consolidate the latter at such points, the material of the skein being arranged between the tying devices in loose mass form, each such form closely abutting in a series around the opening of the skein form.

5. An annular cleaning utensil made up of gimped metallic strand material arranged in annular form, binding means acting to keep the annular form spread out with well opened loops, said binding means comprising a series of four equidistant tying devices each would at right angles to the skein material to consolidate the latter at such points, the material of the skein being arranged between the tying devices in loose mass form, each such form closely abutting in a series around the opening of the skein form.

In testimony I have affixed my signature.

EDWARD S. BRADFORD, JR.