Oct. 27, 1936. W. D. GORMAN 2,059,099

POT CLEANER AND METHOD OF MAKING THE SAME

Filed June 9, 1934

Fig. 1.

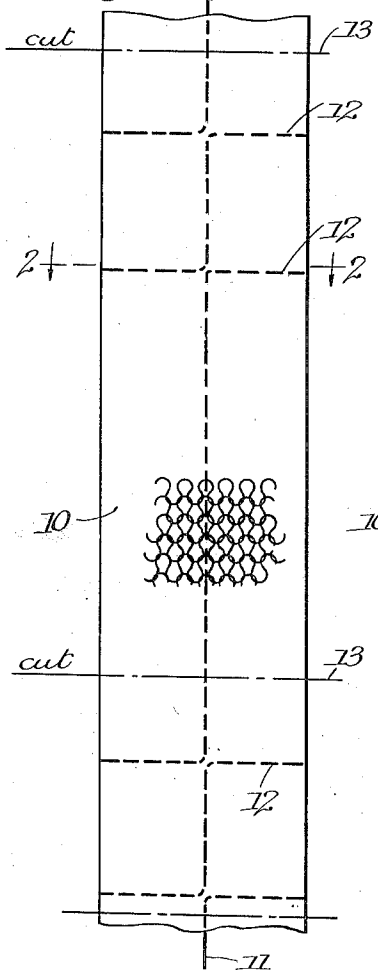


Fig. 3.

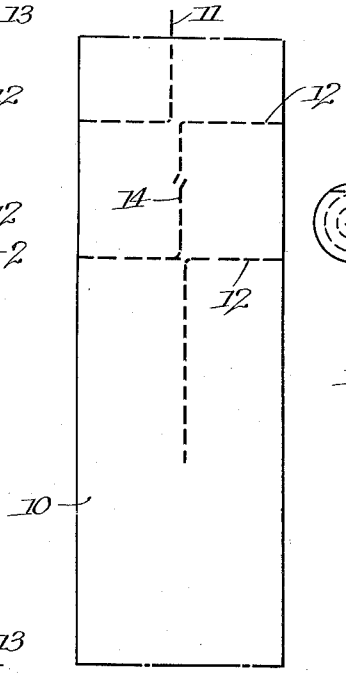


Fig. 4.

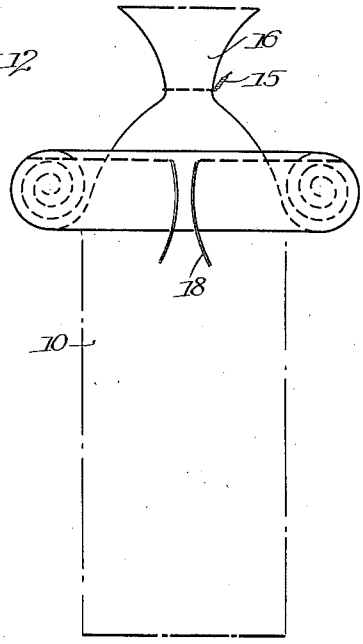


Fig. 5.

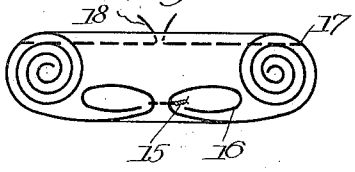
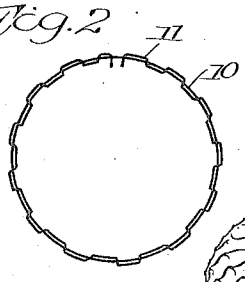


Fig. 2.



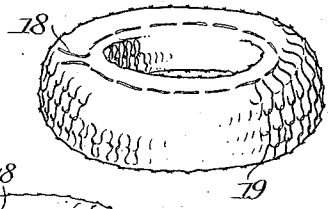


Fig. 6.

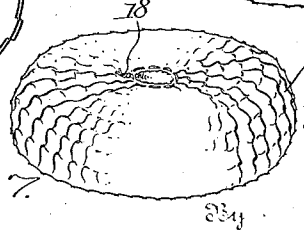


Fig. 7.

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UNITED STATES PATENT OFFICE

2,059,099

POT CLEANER AND METHOD OF MAKING THE SAME

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Application June 9, 1934, Serial No. 729,871

24 Claims. (Cl. 140—71)

My invention relates to an improved pot cleaner and method of making the same, the pot cleaner being of the type consisting essentially of a knitted tube of wire folded or rolled into a mass of convenient size and shape to be held in the hand or attached to a stick or the like and used for scouring various domestic utensils. It is an object of the invention to simplify and speed up the manufacture of such cleaners by eliminating the heretofore necessary operation of manual insertion of drawstrings in the blanks, which consist of lengths of knitted fabric. In providing such improved method I have also provided an improved stock or fabric and an improved blank for the purpose, all as hereinafter described and claimed.

Referring to the drawing, which is made a part of this application and in which similar reference characters indicate similar parts:

Fig. 1 is an elevation of a length of knitted material of tubular form, showing the incorporated unknitted material which is to form the drawstrings for the pot cleaners,

Fig. 2, a section on line 2—2 of Fig. 1,

Fig. 3, an elevation of a single blank or unit after being severed from the length,

Fig. 4, a similar view illustrating subsequent steps in the operation of making the pot cleaner,

Fig. 5, a vertical section of a nearly finished device,

Fig. 6, a perspective of such a device, and

Fig. 7, a perspective of a finished cleaner.

In the drawing, reference character 10 indicates a tube, preferably knitted of narrow flat copper wire, as known in the art. During the knitting operation, which is preferably carried on upon a plain circular knitting machine with independent needles, a wire or other suitable strand of material is incorporated in the tube at certain courses in a manner well known to those skilled in the art, so as to be tied in permanently but not knitted into the fabric. The points or courses where such wire or strand is so incorporated are indicated at 12 and it will be evident that the non-knitted strand floats between the courses where it is incorporated in the fabric, the ends of said strand projecting from the ends of the tube or the blanks cut therefrom, as illustrated in Fig. 3, in which figure the lower end has however been cut off as a matter of convenience for further manipulation.

In a preferred form of the invention the inlays of wire 12 which extend circumferentially of the fabric tube and preferably through approximately 360 degrees, are so located that when a blank is cut therefrom, as on line 13 in Fig. 1, two spaced inlays will lie rather near one end of the blank, as shown in Fig. 3, leaving a long part of the blank below the lower inlay, but such arrangement may be varied according to convenience or preference. At any suitable or convenient stage of the operation the float of wire between the two inlays is cut as indicated at 14, but it will be obvious that the drawstrings so formed could be laid in as separate pieces or might be cut automatically during the knitting of the tube, if preferred.

After the formation of such a blank as that shown in Fig. 3 the drawstring at 12, which is marked 15 in Fig. 4 is tensioned to collapse the tube at the upper end of the blank and the ends of the drawstring are secured, as by twisting them together in case the inlay is a wire. The top portion of the tube above drawstring 15 is now folded or rolled back over the tube, this portion being marked 16 in Figs. 4 and 5, provided of course it is long enough to be so folded or rolled.

As the next step the lower end of the tube is rolled or folded on itself and this is continued until the part 16 comes to lie inside the rolled or folded part 17 of Fig. 5. It may be necessary to push the part 16 down inside the toric portion 17, which portion may of course vary considerably in shape according to the method of folding, rolling or crimping that may be preferred.

After the blank has been formed as above described the second drawstring 18 is pulled as tight as may be desired according to the preferred shape of the final product 19 and its ends are secured as described above in the case of drawstring 15.

It will be obvious to those skilled in the art that variations other than those above described may be made in the method and devices of my invention, all without departing from the spirit thereof; and, therefore I do not limit myself to what is shown in the drawing and described in the specification, but only as indicated in the appended claims. The term "folding" is used in the claims as a term generic to various methods of folding, rolling, crimping, etc., such as may be used in my method and other terms are intended as limiting only to the extent required by prior art.

The order in which the steps of the preferred method are taken may also be varied within the scope of my invention in several obvious respects,

as by rolling or folding back the long end of the tube in Fig. 3 before collapsing the upper end by tightening its drawstring 12. The short end of the blank in Fig. 3 may be cut so short that it cannot be folded or rolled and many other obvious changes will occur to those skilled in the art.

Having thus fully described my said invention what I claim is:

1. A method of making pot cleaners comprising knitting a wire into a tubular fabric, laying another wire into the fabric of the tube circumferentially thereof at widely separated points in the length of the tube during the knitting operation to provide draw strings therefore, said inlaid wire being floated between inlays, floating said last-named wire inside the tube between the circumferential inlays, severing the tube into lengths each including two such draw strings, severing the wire float between draw strings, tightening one of the wire draw strings to collapse the tube, twisting the ends of the wire drawstring together to keep the tube in collapsed condition, folding the adjacent end of the tube back over the collapsed portion, folding the other end of the tube back over the first-folded portion so as to bring the second draw string into position beyond the folded-in portions of the tube, tightening the second wire draw string, and twisting the ends of the second wire draw string together.

2. A method of making pot cleaners comprising knitting a wire into a tubular fabric, laying an unknitted strand into the fabric of the tube circumferentially thereof at widely spaced intervals during the knitting operation, floating said unknitted strand inside the tube between the circumferential inlays, severing the tube into lengths each including a pair of inlays, severing the float between pairs of such inlays to provide separate draw strings, collapsing the tube at one point by tightening a draw string and securing its ends together, folding the adjacent open end back over the body of the tube, doubling the other end of the tube back over the closed end so as to overlap the first folded portion and bring the second draw string beyond said closed end, tightening the second draw string and securing the ends of the second draw string together.

3. A method of making pot cleaners comprising knitting a wire into a tubular fabric, laying an unknitted strand into the fabric of the tube circumferentially thereof at widely spaced intervals during the knitting operation, floating said unknitted strand inside the tube between the circumferential inlays, severing the tube into lengths each including a pair of inlays, severing the float between pairs of such inlays to provide separate draw strings, collapsing the tube at one point by tightening a draw string, folding the adjacent open end back over the body of the tube, doubling the other end of the tube back over the closed end so as to overlap the first folded portion and bring the second draw string beyond said closed end, and tightening the second draw string.

4. In a method of making pot cleaners, the steps of knitting a wire into a tubular fabric, laying an unknitted wire into the fabric of the tube circumferentially thereof at widely separated points in the length of the tube during the knitting operation to provide draw strings therefor, collapsing one end portion of the tube by means of its draw string, folding the other end back over the collapsed end so as to enclose the same, tightening the second draw string, and securing the ends of the draw string.

5. A method of making pot cleaners comprising knitting a wire into a tubular fabric, incorporating an unknitted draw string into portions of the tube near the ends thereof, tightening one of the draw strings to collapse the corresponding part of the tube, doubling the open part of the tube back over the collapsed part, and tightening the second draw string to collapse the corresponding portion of the tube.

6. In a method of making blanks for pot cleaners on a circular knitting machine, the steps of knitting a wire into a tube, laying another wire into widely separated courses of the tube during the knitting operation, floating the wire inside the tube between laid-in courses, severing the tube between alternate laid-in courses, and severing the floats of the laid-in wire between such courses.

7. A method of making blanks for pot cleaners on a circular knitting machine, comprising knitting a wire into a tube, laying unknitted draw strings into widely separated courses of the tube during the knitting operation, and severing the tube between altenate laid-in courses.

8. A knitted fabric for pot cleaners, comprising wire knitted into a tubular fabric and a non-knitted wire incorporated in widely separated courses of the fabric during the knitting operation, said non-knitted wire floating inside the tube between such courses.

9. A knitted fabric for pot cleaners, comprising wire knitted into a tubular fabric and unknitted wire incorporated in widely separated courses of the fabric during the knitting operation.

10. A knitted fabric for pot cleaners, comprising wire knitted into a tubular fabric and unknitted draw strings incorporated in widely separated courses of the fabric during the knitting operation.

11. A machine knitted blank for pot cleaners comprising a knitted wire tube having a non-knitted draw string laid during the knitting operation into each of two courses near the ends of the blank.

12. A knitted blank for pot cleaners comprising a knitted wire tube having non-knitted draw strings laid into each of two courses near the ends of the blank, said non-knitted draw strings being united by a float inside the tube.

13. A blank for making a pot cleaner, comprising a length of tubular knitted wire fabric and an unknitted strand laid into said tube circumferentially thereof during the knitting operation at two spaced points in the length of the tube, said strand floating inside the tube from one of said points to the other and also in opposite directions beyond said points.

14. A method comprising the steps of knitting a tubular fabric, incorporating an unknitted strand into widely-spaced courses of the tube to provide drawstrings therefor, tightening a drawstring in a length of the tube containing at least two drawstrings so as to collapse a portion of the tube, doubling the open portion of the tube back over the collapsed portion, and tightening the second drawstring to collapse the corresponding portion of the tube.

15. As an article of manufacture, a knitted tubular fabric having an unknitted strand incorporated in widely-spaced courses thereof, said strand being floated inside the tube between such courses.

16. A scouring pad comprising a tubular fabric having an outwardly spirally rolled portion terminating in a constricted portion tied by a draw cord, and a portion extending from said rolled

portion wrapped around the outer side of said rolled portion and being constricted at the outer end, and said constricted portion being tied by a draw cord.

17. A scouring pad comprising a tubular knitted fabric having an outwardly spirally rolled portion terminating in a constricted portion tied by a draw wire, and a portion extending from said rolled portion wrapped around the outer side of said rolled portion and being constricted at the outer end, and said constricted portion being tied by a draw wire, said draw wires being interwoven with the fabric of the tubular member.

18. A process of the character described, consisting in interweaving a pair of draw wires at spaced points on a tubular fabric member, drawing one of the draw wires to constrict said tubular member, then rolling an opposite end of the tubular member spirally outwardly until the constricted portion is turned inside out, and then drawing the other draw wire to enclose the spirally rolled portion of the tubular member.

19. A process of the character described, consisting in interweaving a pair of draw cords into a tubular fabric member, one adjacent one end of the member and the other spaced from said end, drawing the first draw cord tightly, then rolling the opposite end of the tubular member spirally outwardly until the first end is turned inside out, and then drawing the other draw cord tightly to cover the spirally rolled portion.

20. A process of the character described, consisting in incorporating into a tubular fabric member a single elongated, pliable wire to provide a pair of spaced annular interconnected portions interwoven with said fabric member, each of said portions having extending ends, said ends and the interconnecting portion being disposed within the tubular member and not interwoven to said fabric member, then severing the interconnecting portion to form two separate draw wires, drawing one draw wire to constrict the tubular member at one end, then rolling the tubular member spirally outwardly at the other end until the first constricted end is turned inside out, and then drawing the second draw wire tightly to enclose the spirally rolled portion.

21. An article of the character described comprising a tubular knitted member and a single elongated piece of pliable wire having an annular portion interwoven into the fabric of said tubular member, a wire end extending from one end of said annular portion, a second annular portion spaced from the first annular portion interwoven into said tubular member and having one end interconnected to the opposite end of said first annular portion, and a wire end extending from the opposite end of said second annular portion, said wire ends and the interconnecting portion being disposed within said tubular member.

22. A process of the character described consisting in constricting one end of a tubular fabric member by means of a draw string, turning the tubular member inside out, inserting the opposite end portion of the tubular member inside the tubular member and constricting the tubular member at a portion spaced from the first end by a draw string to form the pad.

23. A scouring pad comprising a tubular fabric having an outwardly spirally rolled portion terminating in a constricted portion, means for securing said portion in constricted relation, and a portion extending from said rolled portion wrapped around the outside of said rolled portion and constricted at the outer end, said latter constricted portion being tied by a draw cord.

24. A process of the character described comprising constricting one end of a tubular fabric member, securing the constricted portion in constricted relation, turning the tubular member inside out, inserting the opposite end of the tubular member inside the tubular member, and constricting the tubular member at a point spaced from the first end by a draw string to form a pad.

WILLIAM D. GORMAN.