Sept. 27, 1932. G. PULLETS 1,879,882

WREATH MAKING METHOD AND MEANS

Filed Aug. 2, 1927 3 Sheets-Sheet 1

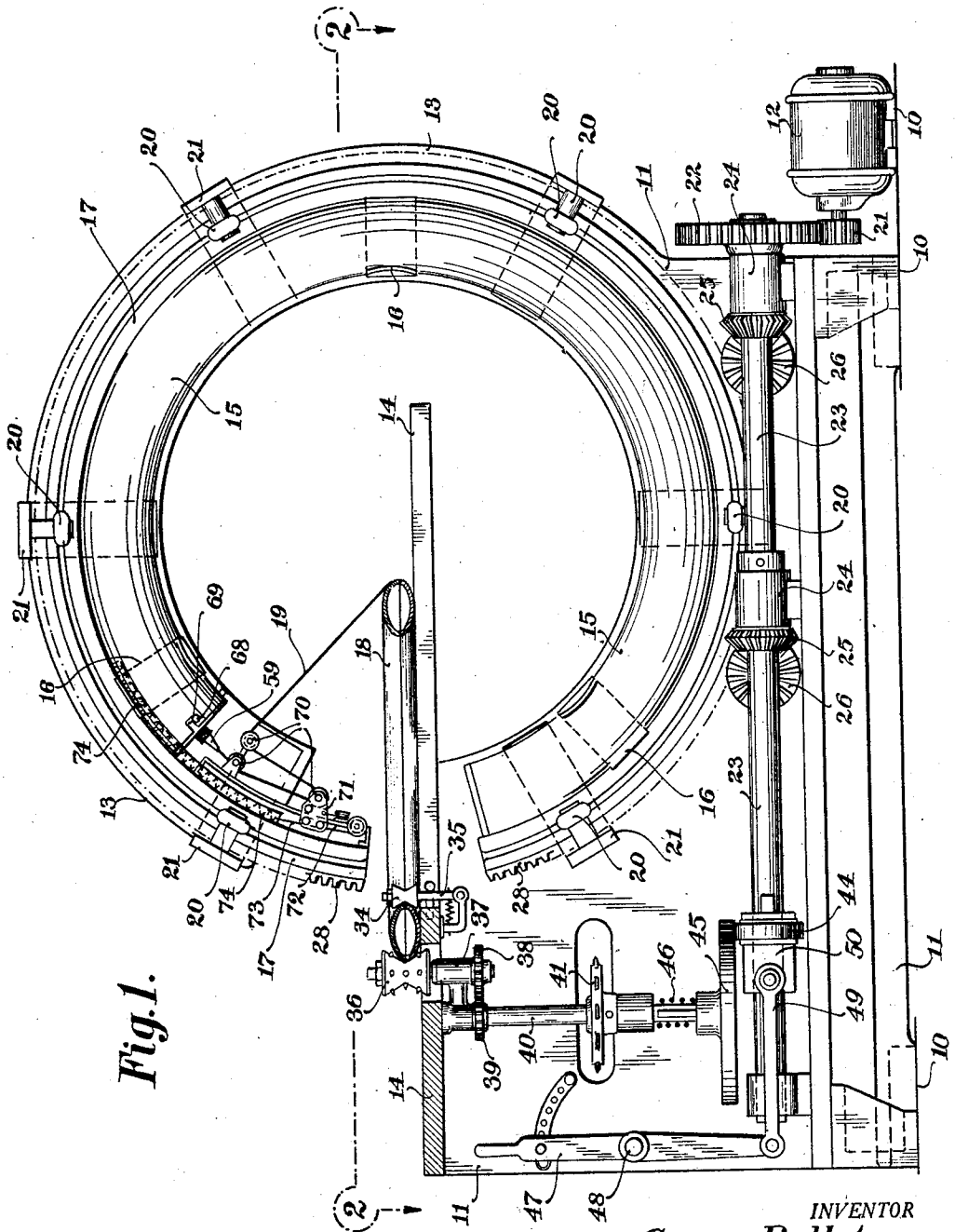


Fig. 1.

INVENTOR
George Pullets
BY
Ray Belmont Whitman
ATTORNEY

Sept. 27, 1932. G. PULLETS 1,879,882

WREATH MAKING METHOD AND MEANS

Filed Aug. 2, 1927 3 Sheets-Sheet 2

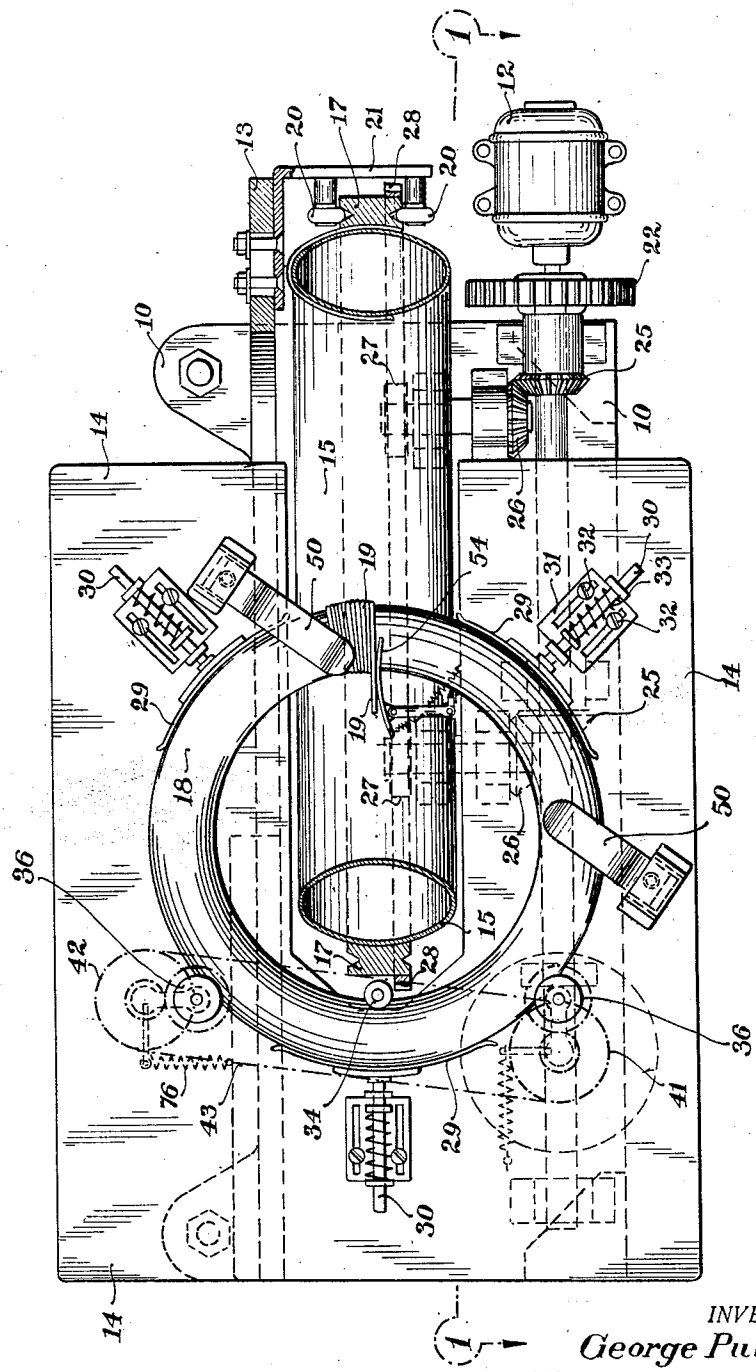


Fig. 2.

INVENTOR
George Pullets
BY
Ray Belmont Whitman
ATTORNEY

Sept. 27, 1932. G. PULLETS 1,879,882

WREATH MAKING METHOD AND MEANS

Filed Aug. 2, 1927 3 Sheets-Sheet 3

Fig. 3.

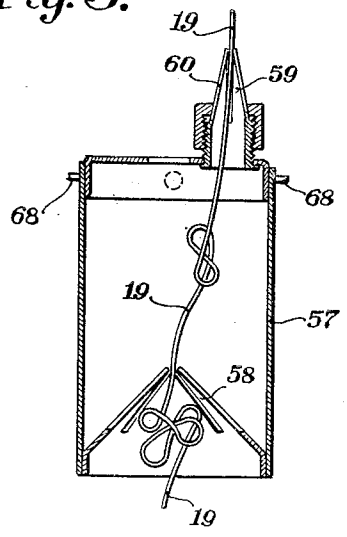


Fig. 4.

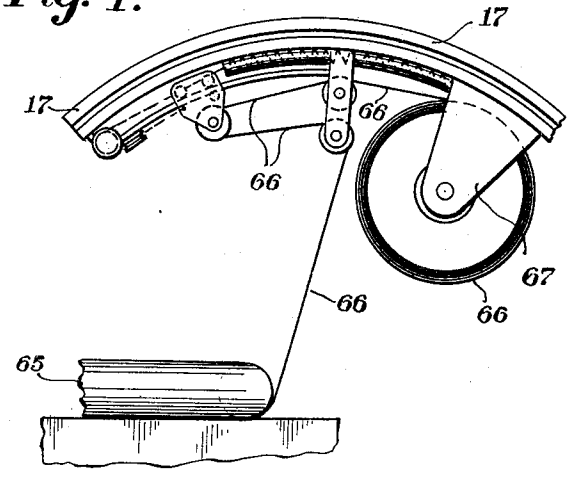


Fig. 5.

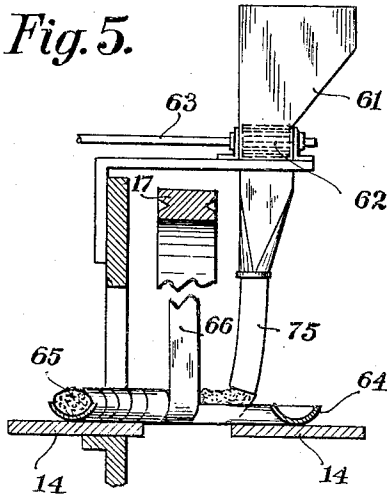


Fig. 6.

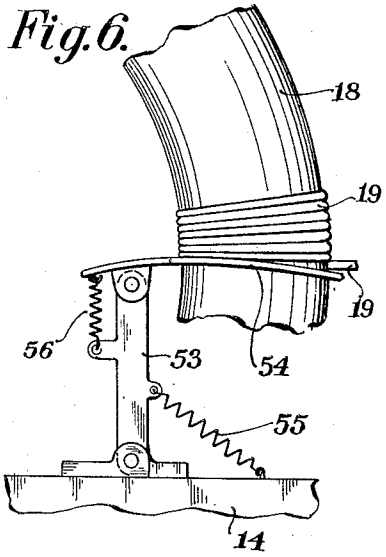
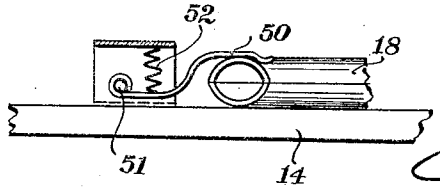


Fig. 7.



INVENTOR.
George Pullets
BY
Ray Belmont Whitman
ATTORNEY

Patented Sept. 27, 1932

1,879,882

UNITED STATES PATENT OFFICE

GEORGE PULLETS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO FRANK C. BRAUN, OF NEW YORK, N. Y.

WREATH MAKING METHOD AND MEANS

Application filed August 2, 1927. Serial No. 210,090.

This invention relates to improvements in methods and means for making and covering wreaths, or like-shaped objects, and more particularly to an automatic device for both covering a wreath having a pre-formed body and for manufacturing a wreath body of extrudable material.

An object of the invention is to automatically cover a wreath-shaped, or other continuous-shaped, object, as with Japanese roping or flat strips of paper or cloth, in an efficient and time saving manner, in contrast to the laborious hand methods now in use.

Another object is to provide in the one machine means for manufacturing a wreath body from extrudable material, such as moss, by forming it so that it will retain its shape while being covered, and permanently thereafter by a succeeding covering operation of the machine.

Another object is to provide a new method and means for applying a covering to any rotatable object by rotating another object containing said covering within said object to be covered.

These, and other objects, will be apparent as the description proceeds. They are all attained in the manner described and in the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevational view, through plane 1—1 of Fig. 2, of the completely assembled machine, showing a wreath being covered with a strip of the covering material; Fig. 2 is a plan and sectional view, through the plane 2—2 of Fig. 1, of the machine of Fig. 1, through a horizontal diametral plane thereof, and showing further details of its important operating parts; Fig. 3 is a side sectional view of the exit nozzle of the covering-material container when there is being used material like Japanese roping which has a tendency to twist and knot itself when being fed from the container, this view showing the manner of feeding out the material to permit the successful and rapid operation of the machine without frequent shut-downs due to breakage, or like causes at this point; Fig. 4 is a fragmentary side elevational view showing the important details of an attachment to the machine for the purpose of covering a wreath or like rotatable object, such as a tire, for instance, with a flat strip of paper or other material fed from a roll as shown; Fig. 5 is a fragmentary side elevational and sectional view combined of the essential parts of a device applied to the machine for the purpose of forming a wreath of extrudable material, such as moss; Fig. 6 is a top plan view of a detail for pressing the Japanese roping or like material more closely together on the inside diameter of the annular-shaped wreath being covered, so that its outer diameter will also be completely covered and leave no spaces between the turns of roping; and Fig. 7 shows a detail of the clamping means for holding down the pre-formed wreath body onto its table during the operation of covering it, these holding-down clamps being quickly removable when replacing the wreath.

Similar numerals refer to similar parts throughout the several views.

On a suitable base 10, Fig. 1, is mounted a frame 11, preferably of cast iron, structural shapes, or a combination thereof, and also an electric motor 12.

Frame 11 terminates in an annular frame 13 which is broken away at one point, as shown. Frame 11 also supports a horizontal table 14 projecting into the opening of frame 13.

Frame 13 surrounds a flexible metal container 15 in length somewhat less than frame 13. This container 15 is adapted to hold a quantity of Japanese roping or other covering-material 19 used to cover the annular-shaped wreath or like object 18 processed in this machine. It is held in place by a series of spring clamps 16, positioned somewhat as shown in Fig. 1, and adapted to permit the container 15 to be quickly inserted and removed from the machine. This container is adapted to revolve with a circular rail 17, which is also broken away at one point, as shown in Fig. 1; its cross-sectional shape, as well as that of container 15, is clearly shown in Fig. 2. Of course, the cross-section of both the container and wreath may be circular or any other shape, and as shown here

is but for purposes of illustration, although in the case of the container, there is an advantage of the oblong shape in permitting a larger capacity while yet clearing the inside edge of the wreath.

Circular rail 17 is mounted to revolve within the annular frame portion 13 by being mounted between a series of equi-spaced bearing rollers 20, arranged in two parallel planes, as shown in Figs. 1 and 2, these rollers being frictionlessly mounted for rotation on brackets 21 secured to the frame portion 13.

In the embodiment shown, container 15 is rotated by means of the electric motor 12 through its pinion 21 and spur gear 22, which gear 22 is keyed to a horizontal shaft 23 which rotates in bearings 24, and carries bevel gears 25, which in turn mesh with companion gears 26, suitably mounted, and which last named gears in turn drive a plurality of spaced pinion gears 27 in mesh with a master gear 28, secured around the outer periphery of rail 17. It will be noted that the bevel drive pinions 25 are spaced apart a distance somewhat in excess of the distance between the ends of the master gear 28 at its cut out portion, as shown in Fig. 1; this permits a continuous drive of the revolving rail 17, with its container 15, since one of the gears will always be in mesh. The purpose of the cut out portion is, of course, to permit the insertion of a new wreath 18, and its removal after having been processed in the machine. It is contemplated to provide suitable electric switch means in conjunction with braking means so that the rail with its container will always come to a stop—when the electric current is shut off—in substantially the position shown in Fig. 1, to permit the immediate removal of the completed wreath and the introduction of a new one without the necessity of revolving the container and rail to such position from any other position at which it may have stopped.

The annular-shaped wreath 18 is mounted in position on table 14 between a series of equi-spaced resilient guides, each consisting of an arc-shaped member 29 attached to a plunger or rod 30 positioned outside the outer periphery of the wreath 18 and along a radial line, said rod 30 being movable inwardly and outwardly in bearings in a frame member 31, which is equipped with slots in its base as shown in Fig. 2 and is adjustably secured to the table 14 by means of fastening bolts 32. This construction permits wreaths having varying outside diameters to be properly and revolvably positioned in the machine and held to a constant path of rotation. Spiral springs 33, arranged as shown, provide continuous contact between the members 29 and the outer edge surface of wreath 18. As an additional means of maintaining the proper position of the wreath on the table, a revolvable guide roller 34 is provided at a point diametrally opposite the point at which the covering is being wound around the wreath, within the inner edge of the wreath 18, and in contact therewith. The shape and position of this guide roller 34 is clearly shown in Fig. 1, where it is shown mounted on a suitable lever bearing 35, so arranged with the aid of a spiral spring that it may be moved laterally off the edge of the wreath, permitting a larger wreath to be inserted, or its position altered to accommodate the enlarged covered portion of the wreath as well as its bare portion.

The wreath 18 is slowly rotated in a horizontal plane within its guides 29 on table 14, by means of drive pulleys 36, shaped somewhat to conform to the contour of the edge of the wreath, as clearly disclosed in Fig. 1, and also having suitable gripping points or equivalent means on their surfaces for positively driving the wreath 18 as it revolves. Pulleys 36 are mounted on vertical shafts, or bearings, in such manner that they may be moved toward or away from the position shown, in order to accommodate wider wreaths, the covered and uncovered portions of any wreaths, (there being an appreciable increase in wreath thickness because of the thickness of the covering-material) and also for altering the tension between the surfaces of pulleys and wreath. This is accomplished by having these pulleys 36 mounted to revolve on a swinging bracket 37, always urged inwardly by spiral spring 76, Fig. 2, the lower end of the bearing or shaft carrying a small spur gear 38 which meshes with a companion gear 39, keyed to a vertical shaft 40, which is driven by a sprocket wheel 41, Fig. 1, driving a like sprocket wheel 42 through a chain 43, Fig. 2. This sprocket wheel 41, Fig. 1, is driven from the main drive shaft 23 preferably through a friction drive, consisting of a vertically-positioned pinion in frictional edge contact with the side surface of a horizontally-positioned master disc 45, this contact between the two members being maintained with the aid of a spiral spring 46, and arranged to permit master disc 45 to slide along its key-wayed shaft ever downwardly against the surface of pinion 44.

An operating lever 47, pivoted at 48, moves a link 49, attached to the pinion housing 50, to permit the lateral movement or sliding of the friction pinion 44 toward and away from the center of master disc 45 while yet permitting it to rotate and thus bring about a varying change of speed, through shaft 40, of the wreath drive pulleys 36. This construction permits the proper speed of rotation of the wreath to effect the proper number of turns of covering for any speed of the container 15 and any size of wreath and thickness of the covering-material.

The motor which drives the machine is arranged to be started and stopped both by

means of a hand switch and a foot pedal, for convenience in operation.

In order to hold the wreath 18 down on table 14 and so prevent it from being lifted out of its position when the pull of the Japanese roping 19 is upward, as, for instance, when in the position shown in Fig. 1, there is provided a suitable number of clamps 50, each having a resilient finger portion overlying the upper surface of the wreath. A preferred form of this clamp is shown in detail in Fig. 7, in which the overlying finger portion is adapted to hinge at 51 and to resiliently press downwardly by means of a spiral spring or like means 52. This permits the clamp to be effective on both covered and uncovered portions of wreaths of varying sizes. They are adjustably attached to table 14 so as to be shiftable to accommodate different sizes of wreath-diameters.

When the wreath is being wound, and as each turn of the roping is made, it is sometimes desirable to slightly compress the turns at the inner periphery of the wreath in order that those at the outer periphery may be close enough together to fully cover the wreath core within, this necessity being due to the varying circumferences of the inner and outer peripheries. This condition is taken care of by means of the construction shown in detail in Fig. 6, which shows an arm 53 pivoted in a horizontal position above the table 14 and carrying a pivoted pressing member 54, both arm 53 and pressing member 54 being constantly urged into operative position by means of spiral springs 55 and 56, respectively. The pressing member 54 urges the inner edges of the compressible Japanese roping 19 closer together, as clearly disclosed in the drawings; moreover, the construction is such that the member may be swung into a remote position during the changing of the wreaths. The general arrangement of this device is shown in Fig. 2.

The table 14 is, of course, cut out in the manner as shown in Fig. 2 in order to accommodate the container 15 and its rail 17, while yet permitting a proper operating surface on which the wreath can be processed.

The Japanese roping, or like covering-material 19, is packed into the container 15 until same is completely filled. The container may be removed from the machine for this operation if desired, the resilient clamps 16 permitting a quick change.

While care is taken in loading the container to prevent snarling of the roping, there is always such a tendency with this material. Hence, it has been found necessary to develop a special form of exit nozzle. This is clearly disclosed in Fig. 3, which shows the roping 19 coming from the container below in a snarled condition and passing through a cylindrical nozzle 57, containing at its inner end an inwardly projecting cone-shaped member terminating in its center in a hole through which the roping may pass, and which hole is surrounded by a series of resilient fingers 58 in the manner shown. This construction has the effect of taking out most of the snarls in the roping, but if any of them should pass through, a final exit nozzle 59 is provided, terminating in an additional cone-shaped series of spring fingers 60, as shown.

The exit nozzle 57, Fig. 3, is arranged as a removable unit having holding pins 68 adapted to fit into bayonet slots 69, Fig. 1, at one end of container 15. Thus the whole exit nozzle member is positioned down into the end of container 15, the Japanese roping passing through it and out over a constant-tension take-up device on to the wreath. Here it is tied or otherwise temporarily secured, after which the machine is put into operation and the winding of the roping to cover the surface of the wreath performed.

This take-up and tensioning device consists essentially of a number of small freely-rotating pulleys 70, Fig. 1, preferably mounted in ball bearings, one of which pulleys is secured to a traveling member 71. Through these pulleys the roping is adapted to be strung to freely move. Member 71 is adapted to move back and forth on a rail or rails 72, and is held in its outermost position by being attached, through a wire 73, to a comparatively long spiral spring 74, suitably encased within the rail 17 as shown in Fig. 1. Or a coiled spring in a disc-shaped container may be utilized in lieu of the long spiral spring. This construction permits an approximately uniform tension on the roping 19 as it is wound around the wreath 18 during the full rotation of the container 15, notwithstanding that the exit point 59 of the roping is at a constantly varying distance from the point of winding on to the wreath during the rotation of the container 15.

The invention has thus far been described as a method and means for covering, by winding, a wreath whose core is pre-formed, as from two cardboard rings, each semi-circular in cross-section and positioned together to form a hollow continuous annular tube. However, by means of the attachment shown in Fig. 5, a type of wreath employing an extrusion process, and utilizing moss, or like compressible material, may be made. This consists essentially of a hopper 61 positioned above the operating table 14 and into which the moss or like compressible and extrudable material is adapted to be fed. Near its lower or exit end, it is restricted in area and at this point there is positioned a vane wheel, 62, made to rotate as by a driven shaft 63, which picks up the material and forces it downwardly through a further restricted opening, where it is compressed to the cross-sectional shape of said opening—usually circular—and there fed out through flexible tubing 75, as

a string continuous in length, on to a suitable annular form 64, positioned on the table. This form 64 is caused to revolve in the same manner as was the pre-formed core of the previously described type of wreath, and as it does so, the extruded material 65 drops into the container 64, which revolves one revolution, at which point the continuous strip of material is severed to make an annular shaped object, the material being of a character that the ends can be manually compressed together to temporarily retain this shape.

In order to preserve the contour of the wreath so formed, it is usually necessary to cover it, as with a more or less wide strip of paper, 66. For this purpose, an attachment is applied to the machine, as shown in detail in Fig. 4.

This consists of a pedestal, 67, mounted on the inner side of revolving rail 17, and revolvably mounting a roll of the strip paper or other winding material 66, which, through suitable tensioning take-up means of a character as previously described, is fed on to the surface of the wreath core 65, and wound around it, by the operation of the machine, to enclose it and preserve its contour, at the same time providing a suitable covering.

It is to be understood that the present disclosure is for the purpose of illustration only, and that the invention is not limited thereto. To those skilled in the art, various modifications of the invention will be readily apparent, and it will be also obvious to such skilled persons that parts of the device may be used without other parts thereof, many such combinations of the parts readily suggesting themselves. Therefore, it should be, and is to be distinctly understood that for a definition of the limitations of the invention, reference must be had to the appended claims.

Having now described the invention what is claimed as new, and for which Letters Patent of the United States is desired is:

1. The method of completely covering an annular-shaped object with compressible roping material including the steps of compressing the material along its inner periphery to permit the outer periphery to be fully covered.

2. A device for performing the method of claim 1 including a table, a member resiliently hinged to the table, a resilient pushing member hinged to the member and adapted to compress the turns along the inner periphery of the wreath, the device being adapted to be moved away from the wreath when the same is being changed.

Signed at New York, in the county of New York and State of New York, this 1st day of August, A. D., 1927.

GEORGE PULLETS.