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METHOD AND MACHINE FOR THE MANUFACTURE OF
WREATHS, POMPONS, ROSETTES, AND THE LIKE
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Fig. 1

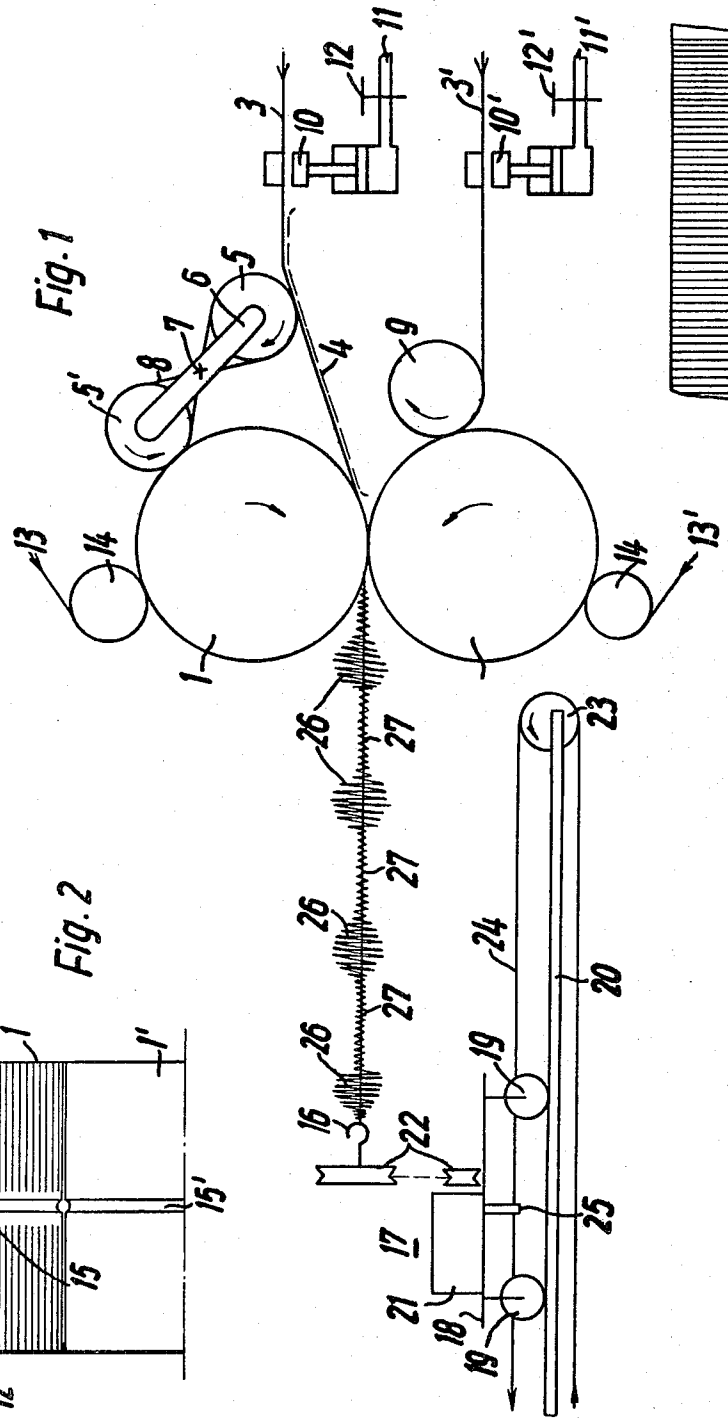


Fig. 3

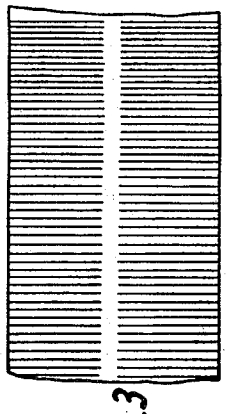


Fig. 2

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3,846,212

METHOD AND MACHINE FOR THE MANUFACTURE OF WREATHS, POMPONS, ROSETTES, AND THE LIKE

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Original application Feb. 9, 1968, Ser. No. 704,462, now Patent No. 3,780,514. Divided and this application Oct. 10, 1973, Ser. No. 404,937

Int. Cl. A47g 33/06

U.S. Cl. 161—15 8 Claims

ABSTRACT OF THE DISCLOSURE

A method and apparatus for manufacturing wreaths, prompons, rosettes and the like by utilizing a pair of rotating cutting and counter rolls each of which is provided with a peripheral groove at the passage of twistable wires for at least one strip which runs between the rolls and a take-off and twisting device. The strip is fed at a velocity which is substantially greater than the take-off speed of the twisted wires.

This is a division of application Ser. No. 704,462, filed Feb. 9, 1968 and now U.S. Pat. 3,780,514.

The invention relates to a method and a machine for the manufacture of wreaths, pompons, rosettes and the like, as well as the objects produced.

Machines, particularly for the manufacture of artificial decorative evergreens, are well known. Such machines are equipped with two steel rolls, disposed parallel to one another, and making contact peripherally as they are driven continuously. Both rolls are fashioned with peripheral grooves which make it possible to pass a wire or thread through each of the two rolls. After they pass through the rolls, the wires or threads are twisted together and removed. One of the two rolls, the so-called cutting roll, is channeled with fine, axially disposed teeth, while the other is fashioned with a smooth periphery. If a strip in the form of a thin sheet is fed between the pair of rolls symmetrically to the two opposite peripheral grooves, the strip, as it passes through the rolls, is spread out feather-like on each side of its longitudinal center line and then is bound in between the two intertwined wires. In this way it is possible to produce a wreath which, with the proper selection of color and material, resembles natural evergreen.

For ornamental and decorative purposes there is a demand for wreaths which are substantially "fuller," that is have more strip material per unit length, than the above described artificial, decorative evergreen. It has been found that wreaths of this kind can be produced on a machine of the aforesaid type, by working with the method according to the invention at a strip feed speed which is considerably greater, preferably five to fifty times greater, than the take-off speed of the twisted wires or threads.

According to the invention, the wires or threads to be twisted, which run through the peripheral grooves in the pair of rolls, are removed and twisted substantially slower than would correspond to the peripheral velocity of the two rolls. In this way the rolls push so much strip material between the twisted wires or threads that, per unit length of the finished wreath material, preferably between five and fifty units of length of the strip are present.

The material considered for the strip in particular includes plastic sheet material, for example made of hardened polyvinyl chloride or polyethylene, which may be metallized or, in addition, colored on one or both sides, in order to achieve an effective appearance. Insteadd of one strip, two or more strips may be fed in at the same time. It is not necessary that the strip be spread (feathered) out

by the pair of rolls. Instead of a wreath with tufted projecting needles, a rosette garland is formed when the strip is not spread out in this way, such that when the strip is multiply folded when pushed together it passes around the twisted wires or threads in the form of a tight coil. In order to prevent the feather-like spreading out of the strip, it is sufficient to widen the gap between the rolls slightly.

Pushing together and folding the strip can be facilitated in that the gap between the rolls is widened only so far that only light impressions are made in the strip, rather than the cuts which are necessary to give it a feather effect.

The method according to the invention can be modified in such a way that the strip is fed in intermittently and that the take-off and twisting device operates only during the feed rest periods. For this purpose the strip is stopped at specified time intervals, and the take-off and twisting device is activated. The strip then is torn off between the two rolls and the previously established strip length is bound in between the twisted wires. As the take-off and twisting device continues to run, a piece of "garland," consisting only of the twisted wires, is formed. The process is then repeated, that is the braking action on the strip is released and the take-off and twisting device is inactivated. If the garland is cut between the section consisting only of twisted wires and the pushed together strip material, so-called pompon sticks are obtained in case the strip has been "feathered" out and so-called rosette sticks in case the strip has not been so treated. The section consisting only of twisted wires then is used as the mounting or fastening stick for the pompon or rosette.

An improvement in this process for manufacturing pompon or rosette sticks consists in that, during the feed shut-down periods for the first strip, a second, narrower strip is fed into the pair of rolls. This narrower strip, which preferably is fashioned featherlike on passing through the rolls, decorates the twisted wires between the pompons or rosettes made from the wider strip.

According to a further embodiment of the method according to the invention, there is also the possibility of feeding to the pair of rolls alternately strips of the same width, of different or differently colored material. This makes it possible to obtain very attractive color effects in the finished wreaths.

In addition to strips of plastic sheet material, strips of another material are contemplated for the method according to the invention. For example, this would include paper.

With reference to a machine for the manufacture of wreaths, pompons, rosettes or the like, with the initially discussed structure, the invention proposes that a braking devices be provided for the strip, or for each strip, and furthermore a device which feeds the strip or the strips into the pair of rolls, and an adjustable cycle control for the braking device and the take-off and twisting device. The cycle control can be so adjusted, depending on the product desired, that the braking devices stop and release the corresponding strips at the correct points of time, and that the take-off and twisting device also is activated and inactivated at the correct points of time. The device which feeds the strip or the strips to the pair of rolls assures that, when its brake is released, the corresponding strip immediately again enters the pair of rolls.

In the following, the invention will be described in greater detail, in the light of the drawing. Namely:

FIG. 1 is a schematic representation of a machine, according to the invention, for carrying out the method according to the invention.

FIG. 2 is a front view of the pair of rolls shown in FIG. 1.

FIG. 3 is a section of strip, fashioned feather-like in the pair of rolls.

The machine depicted in FIG. 1 is equipped with a pair of rolls which consists of the upper cutting roll **1** and the counter roll **1'**, disposed under it. Both rolls are suitably mounted and are kept in continuous rotation by a motor (not shown). The two axes of rotation of the rolls **1** and **1'** are parallel and the generated surfaces of the rolls are directly in contact. As is shown more accurately in FIG. 2 the cutting roll **1** is provided with a dentate channelling consisting of cutting edges **2**, disposed axially at uniform intervals over the generated surface. As a strip runs through, the cutting edges **2**, in conjunction with the smooth surface of the counter roll **1'**, act to give the strip a feather-like structure. FIG. 3 shows a section of the strip **5** which has been treated in this manner.

According to FIG. 1, two strips **3**, **3'** may be fed into the pair of rolls **1**, **1'**. The upper strip **3** runs over a guide **4** (drawn in broken line) to the rolls. In order always to give strip **3** a tendency to move in the direction of the pair of rolls, even when not yet engaged by them, a roller or roll **5**, equipped with a friction lining, rests loosely on strip **3**, in the vicinity of guide **4**. The roll **5** is mounted on a swing support **6**, which can rotate about the point **7**. At the other end of this support **6**, another roll **5'** is disposed, so as to make contact with the periphery of the cutting roll **1**. The two rolls **5**, **5'** are coupled by means of a crossed belt **8**, so that roll **5** will have the correct direction of rotation.

The lower strip **3'** is fed into the pair of rolls **1**, **1'** by means of a roller or roll **9**, likewise provided with a friction liner. Both strips **3**, **3'** can be braked selectively by means of pneumatically operated pistons **10**, **10'**. For this purpose, valves **12**, **12'**, shown only schematically, are provided in the compressed air lines **11**, **11'**.

A twistable wire **13**, **13'** is fed to each of the rolls **1**, **1'**. Both wires run over deflecting rolls **14**, **14'** and then into peripheral grooves **15**, **15'**, which are shown in FIG. 2. After they have passed through the rolls **1**, **1'**, the two wires **13**, **13'** are caught into the hook **16** of a take-off and twisting device **17**.

The device **17** consists of a small carriage **18** which runs on rails **20**, by means of rolls **19**. An electric motor **21** fed through flexible leads, is disposed on the carriage **18** and turns the hook **16**, by means of a belt drive **22**. A chain **24**, which passes over wheel **23** is driven by it, is attached at **25** to the carriage **18**, thus pulling the carriage **18** away from the pair of rolls **1**, **1'**. In the manufacture of pompon garlands, the pair of rolls **1**, **1'** first is supplied with the relatively broad strip **3** alone, with the take-off and twisting device **17** shut down. The rolls **1**, **1'** give the strip **3** a feather-like structure and push a predetermined length of strip between the twist wires **13**, **13'**. Then strip **3** is braked by means of the compressed air piston **10**, and the compressed air brake **10'** for strip **3'** is released. At the same time the take-off and twisting device **17** is activated, that is the hook **16** starts to rotate and carriage **18** is pulled away by means of chain **24**. Thus the supplied length of strip **3** first is bound into the twisted wires **13**, **13'**, and then the narrower strip **3'**, likewise given a feather-like structure by the rolls **1**, **1'**. After a predetermined interval of time, the strip **3'** is again braked, the brake **10** for strip **3** is released, and the take-off and twisting device is inactivated. By alternating repetition of the procedure described, pompons **26** are formed from the broader strip **3**, and the narrower strip **3'** decorates the sections **27** of twisted wire located between the pompons. The finished garlands can be cut apart into individual pompon sticks, with the twisted wire sections **27** forming the sticks.

A cycle control, not shown, operates the alternating braking of strips **3**, **3'** and turns the take-off and twisting device **17** on and off. The cycle control has relays for this purpose, as well as suitable devices for operating valves **12**, **12'**. If so desired, electromagnetically operated brakes may be used in place of the pneumatically operated pistons **10**, **10'**.

If during the above described manufacture of a pompon garland, the two rolls **1**, **1'** are displaced somewhat from one another, the strips **3**, **3'** are no longer cut featherwise and a rosette garland is formed.

This, in turn, can be divided into rosette sticks. To make it easier to fold the strip **3** into rosettes, the distance between the rolls **1**, **1'** is chosen just large enough for the cutting edges **2** (FIG. 2) to make only light impressions in the strip **3**. There is also the possibility of providing cutting edges which cover only the width of strip **3'**. Then the twisted wire sections **27**, between the rosettes, are clad with feathery material.

It is easy to see that, if strip **3'** is permanently braked or omitted entirely, a continuous wreath, consisting of strip **3** only, is formed, and strip **3** can be fashioned with a feather-like structure, or not, as may be desired.

On the other hand, two strips of the same width **3**, **3'** can be used, but made of differently colored material, for example differently metallized sheet plastic. Then if the strips **3**, **3'** are fed alternately to the rolls **1**, **1'**, a continuously shaped, but alternately colored, wreath is formed.

What is claimed is:

1. A wreath characterized by its structure consisting of two intertwined wires, between which at least one strip, shoved together in its longitudinal direction, preferably to 1/5 to 1/50 of its origial length, is bound.

2. A wreath according to claim **1** characterized in that the strip has a feather-like structure transversely on both sides of its longitudinal center line.

3. A wreath according to claim **1** characterized in that the strip has closely spaced parallel impressions, transversely on both sides of its longitudinal center line.

4. A wreath according to claim **1** characterized in that strips of different or differently colored material are positioned alternately.

5. A wreath according to claim **1** characterized in that sections in which there is no strip material are present at regular intervals.

6. A wreath according to claim **1** characterized in that a wide and a narrow strip are alternately positioned.

7. A rosette characterized by its structure consisting of two short intertwined pieces of wire, between which at least one strip, shoved together in its longitudinal direction, is bound, the original length of the strip being between five to fifty times greater than the length of the wire pieces.

8. A pompon characterized by its structure consisting of two short intertwined pieces of wire, between which at least one strip, with a transverse feather-like structure on both sides of its longitudinal center line and shoved together in its longitudinal direction, is bound, the original length of the strip being between five and fifty times greater than the length of the wire pieces.

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57—156; 161—9