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(54) **Bouquet tying**

(57) Apparatus for wrapping and tying a ribbon round a bunch of flowers or the like. Adhesive applicator means 22 apply a patch of adhesive to the ribbon 11. Pusher means 20 and gripper means 21 pass the ribbon round the bunch of flowers 10 to bring a portion of the

ribbon over and against the patch of adhesive 12 so as to form a tie round the bunch. The loose ends of the ribbon may be curled, and/or additional patches of adhesive may be applied and the ribbon brought against them to form bows and the like.

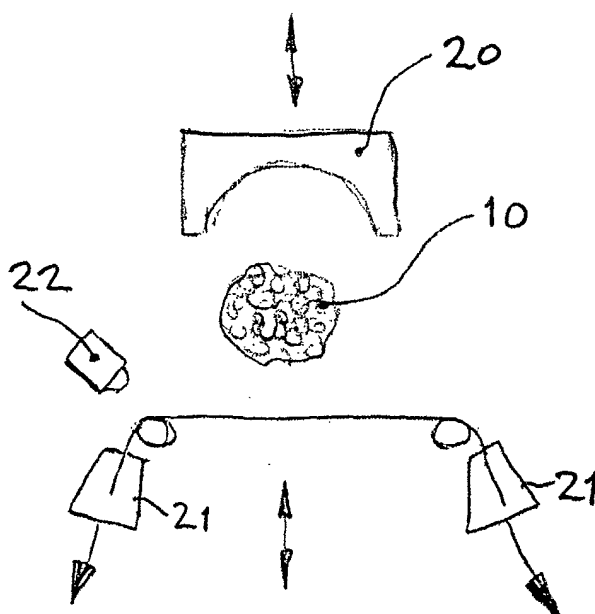


FIG 2

Description

[0001] The present invention relates to the wrapping and tying of bouquets of flowers and the like.

[0002] It is conventional to wrap bunches of flowers in cones of paper or similar foil material. Manual procedures have been employed for a very long time; this usually involves laying the bunch of flowers on a flat sheet of paper and then wrapping the paper around the flowers to form the cone by means of a rolling motion of the bunch of flowers.

[0003] More recently, mechanical techniques have been introduced. There are two main options here; the cones may be formed directly around the bunches of flowers, or they may be pre-formed with the bunches of flowers being inserted into the cones later.

[0004] For the formation of cones around bunches of flowers, a false cone technique is commonly used. For this, two continuous sheets of foil are used, on about the bunch of flowers and the other below. An example of such a system is shown in Olieman, NL 83.02402. The two sheets are attached to each other on each side of the bunch of flowers, and the sheets are cut adjacent to the joins. The result is a wrapping of the bunch which fully encircles the bunch, but is formed from two separate sections of foil, joined by two seams running longitudinally along the sides of the bunch, rather than a true cone formed by wrapping a single sheet of foil.

[0005] A system using true cones has also been proposed, eg in my patent application WO 01/10634 A1. In this, a foil is wrapped around a cone former and glued or otherwise attached to itself to form a self-sustaining cone (in a variant, more than one foil may be used). This cone may be passed directly to a cone filling mechanism in which it is filled with a bunch of flowers. Alternatively, a stack of cones may be formed, eg produced by the cone forming mechanism, and the cones extracted later from the stack one by one and filled with bunches of flowers. Optionally, a tie or tape can be applied around the cone near its base to tie the bunch of flowers into the cone.

[0006] The angle of the cone will normally be chosen partly to match the extent to which the bunch of flowers splay out at the top and partly to match any mechanical constraints. In some circumstances, eg in the Olieman system, the cone can in fact be a cylinder. Similarly, other similar products can be wrapped as well as bunches of flowers.

[0007] Whatever technique is used for forming the wrapped bouquet, ie the bunch of flowers in its cone, it is often desirable to form a tie around the base of the wrapped bouquet. This is primarily to prevent the bouquet from falling out of the cone or wrap.

[0008] Various techniques for tying wrapped bouquets are known. One technique is to use a tying mechanism similar to that used in baling machines. Another is to use some sort of taping procedure, typically involving an orbital taping unit which orbits around the bottom

of the wrapped bouquet, paying out self-adhesive tape as it goes. A third is to use elastic bands, which can be stretched and put over the ends of the wrapped bunches manually. A fourth is to tie a ribbon around the bunch manually.

[0009] All the above techniques have disadvantages. The baler technique produces a tie of utilitarian appearance. The tape used for taping is normally clear, but tends to lose its strength and turn to a somewhat unattractive white appearance when soaked in water (as is likely to happen with bouquets); also, mechanisms handling adhesive tapes tend to suffer from contamination by dirt and thread becomes carried on the tape. Elastic bands are not attractive, and are expensive to apply if applied manually. Similarly, manual tying of ribbons is slow and expensive, although attractive.

[0010] The object of the present invention is to provide an improvement in the wrapping and tying of bunches of flowers and the like in foil cones.

[0011] According to the invention there is provided apparatus for wrapping and tying a ribbon round a bunch of flowers or the like, **characterized by** means for applying a patch of adhesive to the ribbon and means for passing the ribbon round the bunch of flowers to bring a portion thereof over and against the patch of adhesive so as to form a tie round the bunch. The loose ends of the ribbon may be curled, and/or additional patches of adhesive may be applied and the ribbon brought against them to form bows and the like.

[0012] The primary distributors of cut flowers are looking for better presentations, whilst the packers are looking for higher speed with reduced cost. The present invention, in its preferred form, satisfies both these requirements. It uses an instantaneous bonding technique combined with a decorative material. It allows ribbons and the like to be used without involving the impracticabilities of tying.

[0013] The present invention, in its preferred form, has the further advantage that the joint is more easily opened when it is desired to remove the wrap and place the flowers in a vase. Many complaints have been received about the difficulties of the removal of tape at present, particularly when orbitally applied.

[0014] Flower bunch wrapping and tying apparatus in accordance with the invention will now be described by way of example and with reference to the drawings, in which:

Fig. 1 is a side view of a bunch of flowers being wrapped;

Fig. 2 is a simplified plan view of the taping unit of the apparatus; and

Figs. 3 and 4 show more elaborate tyings.

[0015] The present system uses tape or the like material for tying. The tape may consist of ribbon, strip plastic material, elastic strip material, etc. The crux of the present system is that the binding strip or material is se-

cured using an adhesive. Preferably the adhesive uses hot melt or other instantaneous technique such that as the materials come into contact, so they are in effect bonded immediately.

[0016] Fig. 1 shows the bottom end 10 of a wrapped bunch of flowers with a ribbon 11 passed round it and bonded at the overlap region 12. This is a simple overlap joint. However, tails can be used in addition to create a more attractive effect, as shown in Fig. 3, using conventional curling techniques to give curl the tails as shown. Further, multiple adhesions may be used, producing simulated bows, etc, as shown in Fig. 4. Additional elements can also be attached if desired.

[0017] If desired, the material of the strip may be elasticated. If the ribbon material is elasticated in some way, then after the joint is closed, tension will be continually applied. This will combine the advantage of the elastic string tying method with the aesthetics of a ribbon tie.

[0018] Fig. 2 shows a simple form of tape applying mechanism for forming the tie shown in Fig. 1. A supporting yoke 20 is advanced to hold the bunch of flowers 10 in place. A pair of grippers 21 hold a length of ribbon, which may conveniently be cut from a ribbon supply mechanism (not shown), and an adhesive applicator 22 is mounted adjacent to the gripper 21.

[0019] In use, a length of ribbon 11 is cut from the ribbon supply mechanism (not shown) and held by the grippers. The adhesive applicator 22 is then swung against the ribbon 11 to deposit a patch of adhesive on the ribbon, and then swung away again. The grippers 21 are then advanced towards the bunch as shown at 23 and swung round the bunch as shown at 24, one slightly after the other, so as to bring the end of the ribbon with the adhesive patch round to the front of the bunch and then the other end round and over the adhesive patch. The grippers hold the ribbon in place for long enough for the two ends of the ribbon to be stuck together firmly by the adhesive patch. They then release the ribbon and return to their initial positions.

[0020] The yoke 20 can be either fixed or used to push the wrap and stems through the tying mechanism. Alternatively the ribbon tying system can be moved past the stems, with the yoke being used for support.

[0021] The ribbon supply mechanism may comprise a ribbon reel and a ribbon holding element which interacts with the grippers 21. The ribbon holding element will hold the end of the ribbon and pull the ribbon across the gripper elements 21, which will then grip the ribbon. The ribbon holding element will then return to its initial position and grip the ribbon adjacent to the reel, and a cutter will then cut the ribbon between the ribbon holding element and the nearest gripper element 21.

[0022] If desired, the wrap can be pre-tensioned (by means not shown) ready for the decorative tying to be applied.

[0023] The technique described results in the front side of one end of the ribbon being stuck to the rear side of the other end. It is of course possible to stick the rear

side of the one end to the rear side of the other end, but that will generally produce a less attractive appearance and a weaker bond.

[0024] The preferred form of the system has various advantages. The use of ribbons strips etc that do not have adhesive pre-applied provides more aesthetic opportunities. Non-adhesive tape is used, which makes the gathering process easier, and applying adhesive specifically where required allows greater diversity of design. Posy vases for pot plants can also be decoratively tied by this technique.

[0025] Strip materials suitable for use in the present system include conventional non-adhesive tapes or strips of material such as plastic, metal, etc, woven ribbons, woven elasticated materials, or strips of rubber or other stretchable materials.

Claims

1. Apparatus for wrapping and tying a ribbon round a bunch of flowers or the like, **characterized by** means (22) for applying a patch of adhesive to the ribbon and means (20, 21) for passing the ribbon round the bunch of flowers (10) to bring a portion thereof over and against the patch of adhesive (12) so as to form a tie round the bunch.
2. Apparatus according to claim 1 **characterized by** means for curling the ends of the ribbon.
3. Apparatus according to either previous claim **characterized by** means for applying additional patches and bringing the ribbon against them to form bows and the like.
4. Any novel and inventive feature or combination of features specifically disclosed herein within the meaning of Article 4H of the International Convention (Paris Convention).

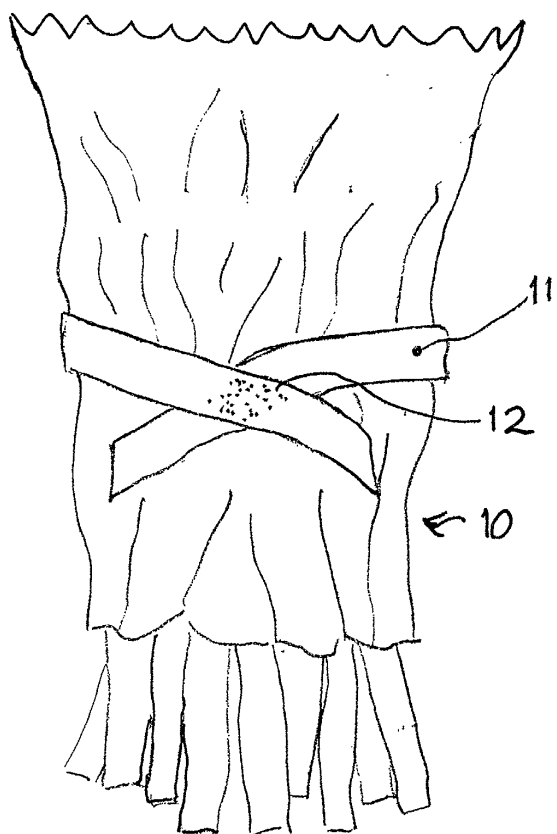


FIG 1

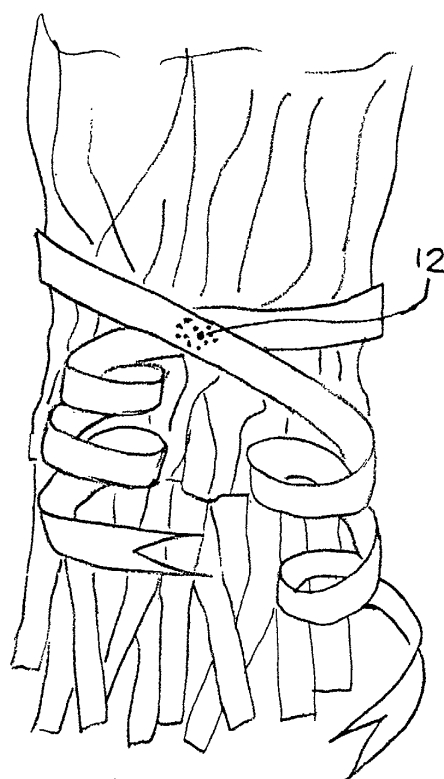


FIG 3.

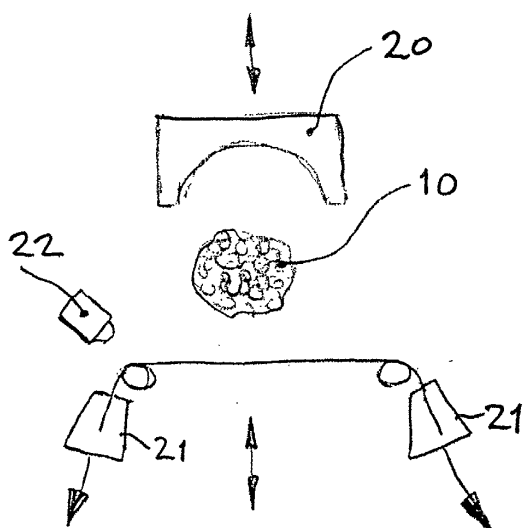


FIG 2

FIG 4.

