

United States Patent

[11] 3,612,587

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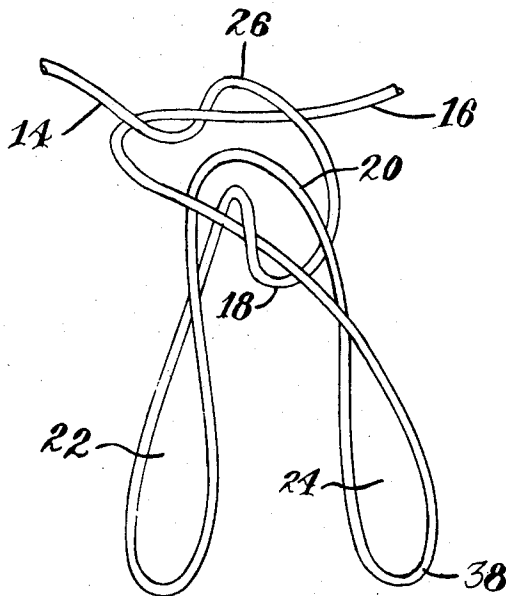
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[54] **UNIVERSAL RESILIENT PACKAGE-TYING
DEVICE AND METHOD FOR ITS ASSEMBLY**
15 Claims, 12 Drawing Figs.

[52] U.S. Cl..... 289/1.2,
289/1.5
[51] Int. Cl..... B65h 69/04
[50] Field of Search..... 289/1.2,
1.5, 18; 223/46

ABSTRACT: A universal package-tying device and the method of its assembly wherein a length of resilient material is formed into a plurality of loops, at least two of which can be mutually and simultaneously adjusted. The adjustability of at least two of the loops and the resiliency of the material used permits the tying of packages having a wide range of dimensions and configurations. The free end portions of the package-tying device are fixedly secured to insure that the device will be reliable in service.



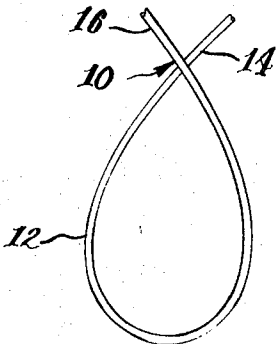


Fig. 1(a)

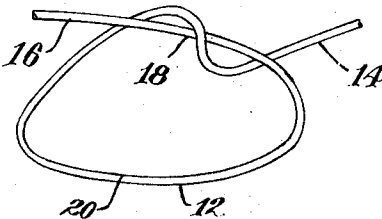


Fig. 1(b)

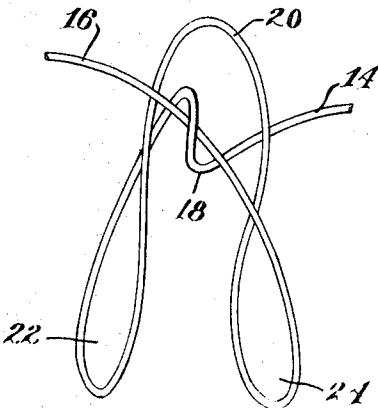


Fig. 1(c)

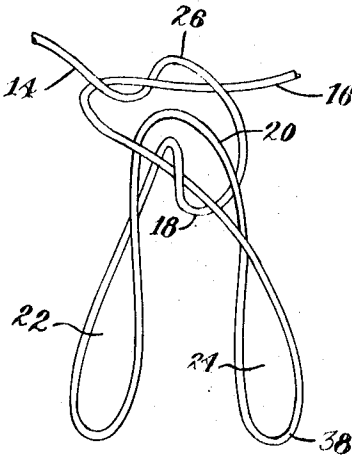


Fig. 1(d)

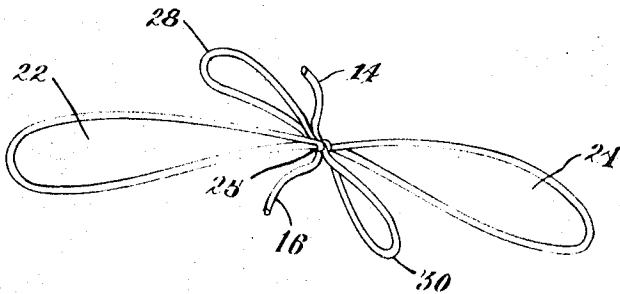


Fig. 2

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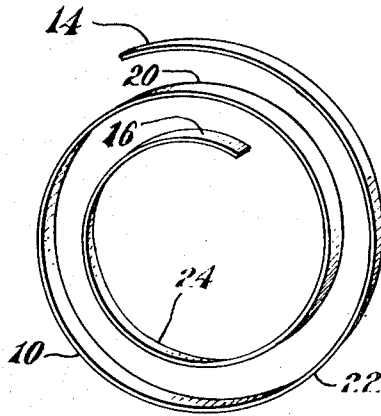


FIG. 3(a)

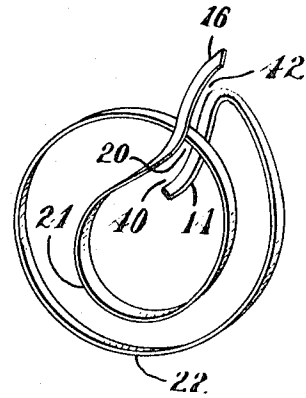


FIG. 3(b)

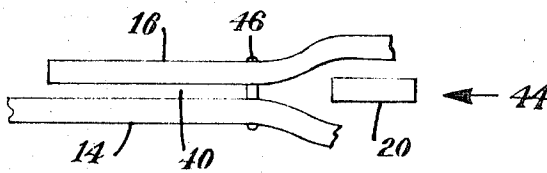


FIG. 3(c)

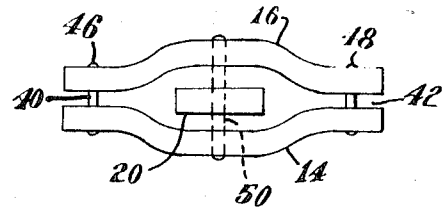


FIG. 3(d)

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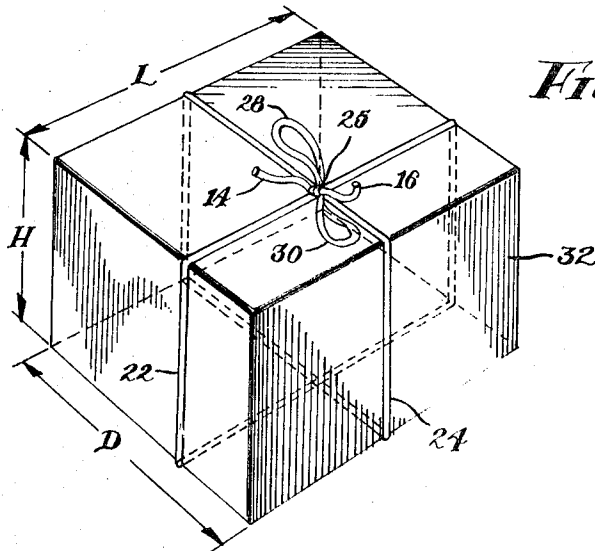


Fig. 4

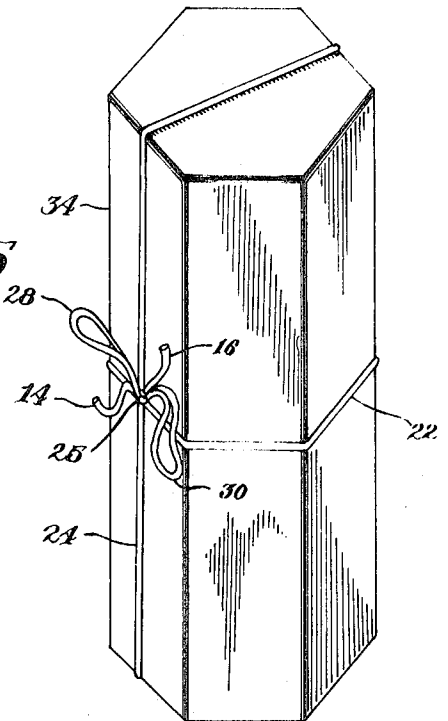


Fig. 5

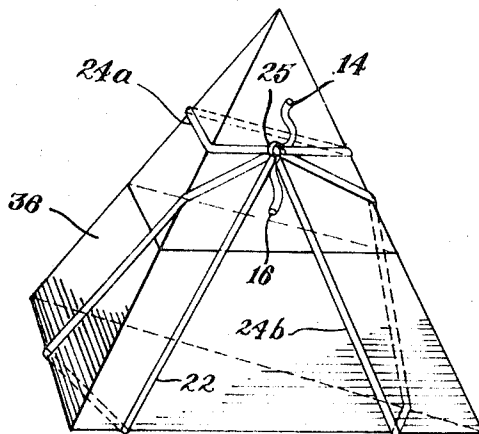


Fig. 6

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UNIVERSAL RESILIENT PACKAGE-TYING DEVICE AND METHOD FOR ITS ASSEMBLY

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a device for securing packages and to a method for assembling such a device and, in particular, to such a device formed from a length of resilient material having a plurality of loops formed therein at least two of which can be mutually and simultaneously adjusted.

2. Description of the Prior Art

One of the many problems facing the large, high volume, modern department store is the familiar bottleneck which arises at the wrapping counter. All too often, the employees on duty have neither the experience or proper materials to cope with the ever increasing number of shoppers bearing packages they wished to have wrapped. The inability to successfully deal with this problem usually resulted in excessive delays and customer frustration or both, which led, in turn, to lost sales. These results were acutely magnified and forcibly brought home to management and consumer alike during peak shopping periods such as the Christmas shopping season.

The lack of a versatile pretied package-tying device was also apparent in the home. Consumers attempting to wrap and secure the wide range of package shapes and sizes were very often frustrated by their inability to properly or reliably fashion a decorative and functional package tie. In addition, the limited versatility of the few pretied package-tying devices available on the market usually required that an assortment be purchased to cope with the differently shaped or sized packages. All too often however, employment of these prior art devices was frustrated by the unusually shaped or dimensioned package.

Consequently, efforts were made to alleviate the problem. Improved ready made or pretied ties formed from a variety of materials and having a variety of shapes were introduced. In some instances these prior art package-tying devices were single elastic loops of varying cross section, usually affixed diagonally across the package from corner to corner. Still other ties appeared which had at least two loops, but these were not resilient, were not preadjustable, were unreliable and were not pretied, but assembled hastily by a wrapper. Thus, while some inroads into the problem were made on the one hand, the large variety of different sized products being sold only served to extend it on the other. The logistics of supplying ties of various sizes to handle the large assortment of package dimensions became burdensome and only added to the substantially unsolved earlier problem caused by the lack of a truly versatile pretied package-tying device.

SUMMARY OF THE INVENTION

The present invention is an improved pretied package-tying device which is readily and easily adaptable to packages of varying dimensions. This new and improved device comprises at least two loops, formed from a single length of resilient material, the ends of which are joined together at a common point in a manner which can leave at least two of the loops mutually and simultaneously adjustable. As a result, the adjustable loops can easily be mutually and simultaneously increased or decreased in size to accommodate a large number of different sized packages. In addition, due to the resiliency of the material employed, no adjustment need be made where only a relatively small change in a particular dimension is encountered between any two or more packages.

The present invention can also be assembled with more than two loops so that it can secure a package of very unusual or irregular configuration or size. Thus, one of the improved pretied package-tying devices herein described can accommodate an almost indefinite variety or combination of package dimensions and configurations.

DESCRIPTION OF THE DRAWINGS

FIGS. 1a through 1d illustrates a sequential series of detailed views showing one step-by-step procedure by which an adjustable section can be formed in the package-tying device;

FIG. 2 is a top plan view of a package-tying device embodying the present invention;

FIGS. 3(a) through 3(d) illustrates a sequential series of detailed views, some in partial section, showing another step-by-step procedure by which another adjustable section can be formed in the package-tying device;

FIG. 4 is a perspective view of a package-tying device embodying the instant invention shown securing a package of arbitrary size; FIG. 5 is a perspective view of a package-tying device embodying the instant invention shown securing a package different in size and configuration than the package depicted in FIG. 4; and

FIG. 6 is a perspective view of a package-tying device embodying the instant invention shown securing a package different in size and configuration than the packages depicted in either of FIGS. 4 or 5.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings wherein like reference numerals have been used in the several views for like elements, FIG. 1 shows one step-by-step procedure which can be used to form the adjustable section in the instant package-tying device. While the procedure shown and described is preferred, it is not the only method by which the adjustable section can be formed. Consequently, it is easily appreciated that many other methods could be employed to form the adjustable section of the present invention without departing from the spirit and scope thereof.

As is shown in FIG. 1(a), a single length of resilient material, generally indicated by the reference numeral 10, having a circular cross section, is initially formed into a major loop 12 by crossing its respective end portions 14 and 16, one over the other leaving sufficient material exposed with which to work. Next, as shown in FIG. 1(b), end portion 14 is placed within major loop 12 by passing it over end portion 16 and then removed from major loop 12 by passing it under end portion 16. This procedure, familiar to most as the beginning of the "shoestring-tie," forms half knot 18. As shown in FIG. 1(c), the bottom portion 20 of major loop 12 is then draped over half knot 18, thereby forming the mutually and simultaneously adjustable package loops 22 and 24. Finally, as depicted in FIG. 1(d), another half-knot 26 is tied above portion 20 by passing end portion 14 first over and then under end portion 16, thereby completing the "shoestring-tie" started with half-knot 18. By drawing the end portions 14 and 16 outwardly, away from the knotted section 25 formed by half-knots 18 and 26, the package-tying device is completed. The knotted section 25 comprises the two half-knots 18 and 26 and the adjustable section formed by the slidable capture of major loop portion 20. In performing this final step, care must be taken not to draw end portion 14 and 16 too tightly about portion 20, in order to avoid locking portion 20 between half-knots 18 and 26. Instead, the end portions 14 and 16 of the resilient length of material 10 are drawn outwardly only so far as to cause portion 20 to be snugly and slidably captured between half-knots 18 and 26. As a result, the end portions 14 and 16 are sufficiently secured to insure that their normal movement will not cause package loops 22 and 24 to change size. At the same time, the snug but slidable capture of portion 20 by half-knots 18 and 26 permits mutual and simultaneous adjustment of the package loops 22 and 24 only upon a positive intended movement of portion 20. The phrase "simultaneous movement" as employed herein is used to denote the concurrent increase in the size of one of the two package loops 22 and 24 and a corresponding decrease in the other loop as a result of the movement of portion 20. The direction of movement of portion 20, of course, determines which of the package loops

grows larger or smaller. Alternatively, should it be desired, end portions 14 and 16 could be pulled tightly about portion 20 to form a pretied package-tying device having fixedly secured, but still resilient package loops 22 and 24. Such a device would be handy, for example, where it is contemplated that only a relatively small range of different sized packages will have to be secured. Employing such a fixed loop device yields some manufacturing savings in that care is not required to form an adjustable section.

In addition, the resilient nature of the tie material urges the two half-knots 18 and 26 to remain snugly secured, yet also permits both independent, resilient expansion of each of the package loops 22 and 24 or the mutual and simultaneous change in their sizes without expansion. By selecting the proper length of resilient material, a package of arbitrary length, width and height or arbitrary configuration, falling within a given volumetric range could be accommodated by the present package-tying device disclosed herein.

Such a device, completed in accordance with the above-described method, is shown in FIG. 2. In this view, the end portions 14 and 16 have been further adapted to describe an ornamental element having bow loops 28 and 30. Alternatively, the end portions 14 and 16 can be adapted to removably retain an ornamental element (not shown) rather than being formed into one themselves. It is also possible to trim the free end portions 14 and 16 almost to their point of securement and attach an ornamental element (not shown) to the crossed portions of the package-tying device itself. Needless to say, the aesthetic appearance of the tying device can be greatly varied by capturing such items as gift cards (not shown) or party favors (not shown) between end portions 14 and 16. In addition, the appearance of the package-tying device can be enhanced by employing a resilient material having a highly decorative appearance of its own. An example of such material can be found in U.S. Pat. No. 3,339,355, particularly FIG. 7 thereof, issued to J. E. O'Neill.

It is important to note that in connection with the package-tying device illustrated in FIG. 2 and described above, it is preferred to tie or knot the free end portions 14 and 16 of the circular cross-sectional material used. However, if the resilient material were suitably chosen, the free end portion 14 and 16 thereof could have been secured by fusing them to each other on the resilient material. In the alternative, the free end portions 14 and 16 could have been stapled or otherwise mechanically secured. It is, therefore, readily understood that the free end portions 14 and 16 of a package-tying device embodying the present invention can be satisfactorily secured in a number of ways.

FIG. 3 illustrates the step-by-step assembly of an alternative package-tying device embodying the present invention fashioned from a single length of resilient material having a flattened or rectangular cross section. For the sake of clarity, some partial views have been used in FIG. 3. As is shown therein, a length of resilient material 10 having free end portions 14 and 16 and a generally rectangularly shaped cross section is coiled to form two complete loops. The first loop, generally indicated by reference numeral 22 is described by that section of the length of material 10 between end portion 14 and the approximate midportion 20 of length 10. The second loop, generally indicated by reference numeral 24, is described by that section of the length of material 10 between end portion 16 and portion 20. Either one of the end portions, and in this description end portion 14 has been arbitrarily chosen, is passed beneath portion 20 and the other end portion 16 is passed over portion 20. This forms two overlapped section 40 and 42 respectively, which are separated by portion 20. The end portions 14 and 16 can be temporarily secured by hand, using a common paper clip or like device. In mass production, of course, a machine element would restrain the otherwise free end portions 14 and 16 after overlapped sections 40 and 42 have been formed. Note, as indicated by sagittal line 44, portion 20 is urged against one of the temporary securement points to insure its snug capture when the

device is later permanently secured. The free end portions 14 and 16 are then fixedly secured to each other at point 46 along overlapped section 40 and at point 48 along overlapped section 42, as shown in FIG. 3(c). While the securement need not be made in the described order or at the exact points specified, it is preferred to have points 46 and 48 separated by a distance only slightly wider than the width of the resilient material 10. Thus, while the first point of securement can be freely chosen within relative limits, the location of that point determines the location of the second securement point.

If it is desired to have the free end portions 14 and 16 used for an additional purpose, such as holding or forming an ornamental element (not shown) it is best to select the length of the overlapped sections 40 and 42 long enough for this purpose. In other words, the unsecured free end portions 14 and 16 should extend far enough beyond points 46 and 48 to allow retention or formation of the ornamental element. On the other hand, if end portions 14 and 16 are to be entirely secured, the length of the overlapped sections 40 and 42 should be selected as short as possible. Once the proper length, for whatever purpose, of the overlapped sections 40 and 42 and the location of the securement points 46 and 48 have been selected, the actual securement can be made by stapling or fusing, assuming the resilient material is compatible with these joining techniques, the overlapped sections 40 and 42 respectively. It will be appreciated that any other convenient joining technique can be effectively utilized for this purpose. It will also be appreciated that the actual securement can be completed in two separate steps, as described, or in one step which would probably be the case in large production runs of the device illustrated in FIG. 3.

After securement has been effected, the resultant device is ready for use. Portion 20 is snugly but slidably captured between the securement points 46 and 48, thereby permitting package loops 22 and 24 to be mutually and simultaneously adjustable. As previously mentioned in connection with the package-tying device illustrated in FIGS. 1 and 2, it may be desirable to fixedly secure end portions 14 and 16 so that the package loops 22 and 24 are not slidably adjustable. If this were the case for the FIG. 3 device, securement would be made, at least, at point 50 through portion 20 and the end portions 14 and 16 which sandwich it. This would produce a package-tying device having fixed loops, each of which is independently resilient.

FIG. 4 illustrates one use of a package-tying device embodying the instant invention. A rectangular package 32 is shown secured or tied by the package loops 22 and 24. In actual use, the device is easily and rapidly slipped over and around package 32 by stretching the package loops 22 and 24 as required. Should the combination of any two of the package's three dimensions prove greater than the maximum size of either of package loops 22 and 24, an intentional pull on the slidably captured portion 20 can expand either loop 22 or 24 to accommodate the package. Either or both of these operations take but a few seconds. Consequently, the time required to secure or completely wrap a package is substantially reduced since no time is lost in sizing and/or cutting a ribbon, string or like material. Furthermore, the adjustability of the loops, either independently due to material resiliency or simultaneously, due to the adjustable section formed in the material 10 allows one package-tying device, which is pretied to save additional time, to be utilized over a wide range of different sized packages. This versatility substantially reduces the number of different sized tying devices required heretofore in those instances where a great variety of package size and configuration was encountered.

In FIG. 5, package 34, which is appreciably different in size and configuration than package 32, is shown secured by the same package tying device. It is obvious that a simple adjustment, of portion 20 or none at all, allows the one device to cover a multitude of package sizes.

In FIG. 6, triangularly shaped package 36 is shown secured by a modified version of the previously described package-

tying devices. Here, a third package loop 24a is formed in the package tie to assist in securing the unusually shaped package 36. In the preferred method of assembly, loop 24a is formed in the same manner as were package loops 22 and 24. In this version, however, package loops 22 and 24 are initially formed with one of the loops approximately twice as large as the other, although this particular ratio is not an element of the instant invention. In the following exemplary description, package loop 24 has been chosen the larger of the two. With respect to the device illustrated in FIG. 2, after half-knot 26 has been completed in the manner previously described, the bottom point 38 of the larger package loop 24 is draped across the top of half-knot 26, just as portion 20 was placed atop half-knot 18. The end portions 14 and 16 are again intertwined, as previously described, to form a third half-knot (not shown). Of course, when the bottom portion 38 of package loop 24 is placed atop half-knot 26, the resultant three package loops 22, 24a and 24b are all approximately equal in size. Only a simple change, that of the size of the larger of the two original package loops 22 and 24, is required to alter this result if necessary. The device shown in FIG. 3 can also be modified in a similar manner to include a third package loop. After bottom portion 20 of the major loop has been slidably secured as previously described, bottom portion 38 of the package loop 24 formed thereby is placed adjacent the securement points 42 and 44. The free end portion, either 14 and 16 on which the bottom portion of the package loop rests is then brought back or folded back over the package loop bottom portion 38 and secured to yield a triloop device. In addition, the exposed end portions 14 and 16 of either device can again be utilized for decorative purposes to either form or removably retain an ornamental element (not shown).

It will be understood that the above description of the present invention is susceptible of various modifications, alterations and adaptations, and the same are intended to be comprehended within the spirit and scope of the present invention and within the meaning and range of equivalents of the appended claims.

I claim:

1. A package-tying device formed from a single length of resilient material which comprises:
 - a. a knot tied in said length of material;
 - b. two loops formed in said length of material, each of said loops having a common portion slidably passing through said knot, said knot being snugly drawn about said common portion so that only an intentional movement of said common portion is sufficient to effect a mutual and simultaneous change in the respective sizes of said loops; and
 - c. free end portions emerging from said knot fixedly secured thereby so that movement of said free end portions cannot affect the size of said loops.
2. The device according to claim 1 wherein said free end portions of said length of resilient material are adapted, beyond said fixed knot, to form an ornamental element.
3. The device according to claim 1 wherein said free end portions of said length of resilient material are adapted, beyond said fixed knot, to removably retain an ornamental element.
4. A package-tying device formed from a single length of resilient material which comprises:
 - a. a knot tied in said length of material;
 - b. two loops formed in said length of material, each of said loops having a common portion passing through said knot, said knot being tightly drawn about said common portion so that the respective sizes of said loops are only resiliently adjustable; and
 - c. free end portions emerging from said knot fixedly secured thereby so that movement of said free end portions cannot affect the size of said loops.
5. The method of forming a package-tying device from a single length of resilient material which comprises:
 - a. intertwining the end portions of said length of material to form one-half of a "shoestring-tie" and a major loop;
 - b. draping a portion of the major loop over the partially formed "shoestring-tie" to form two package loops;

c. intertwining the end portions of said length of resilient material one again to form another one-half "shoestring-tie" above the draped portion of the major loop thereby capturing said draped portion between said halves of said "shoestring-tie"; and

d. drawing said end portions sufficiently snug over said draped portion to allow completion of said "shoestring-tie" and thereby fix said end portions so their movement cannot affect the size of said package loops and additionally allow said captured portion to be slidably moved within said "shoestring-tie" by only an intentional movement of said draped portion to thereby mutually and simultaneously increase and decrease the respective sizes of said package loops.

6. The method according to claim 5 which further comprises the additional step of forming said end portions, beyond said "shoestring-tie," into an ornamental element.

7. The method according to claim 5 which further comprises the additional step of adjusting said end portions, beyond said "shoestring-tie," to removably retain an ornamental element.

8. The method according to claim 5 which comprises the additional steps of:

- a. draping a portion of one of said two package loops over the knot formed by said "shoestring-tie" to form two new package loops from said draped package loop; and
- b. intertwining the end portions of said length of resilient material snugly about said draped portion of said package loop to thereby form a package-tying device having three package loops at least two of which are mutually and simultaneously adjustable.

9. The method according to claim 5 wherein said end portions are drawn tightly about said draped portion to fixedly capture said draped portion within said "shoestring-tie" so that the respective sizes of said loops are only resiliently adjustable.

10. The method of forming a package-tying device from a single length of resilient material which comprises:

- a. coiling said length of resilient material to form two package loops;
- b. passing one of the end portions of said length of resilient material under the midportion of said loops;
- c. passing the other of the end portions of said length of resilient material over the midportion of said loops thereby forming two overlapped sections of end portions separated by the midportion; and
- d. securing the end portions of each of said overlapped sections to each other closely about the midportion so that it is snugly but slidably captured between said securement points.

11. The method according to claim 10 which further comprises the additional step of forming the free end portions beyond said securement points into an ornamental element.

12. The method according to claim 10 which further comprises the additional step of adjusting the free end portions beyond said securement points to removably retain an ornamental element.

13. The method according to claim 10 wherein said securing step comprises fusing the free end portions together.

14. The method according to claim 10 wherein said securing step comprises stapling the free end portions together.

15. The method of forming a package-tying device from a single length of resilient material which comprises:

- a. coiling said length of resilient material to form two package loops;
- b. passing one of the end portions of said length of resilient material under the midportion of said loops;
- c. passing the other of the end portions of said length of resilient material over the midportion of said loops to form a sandwich about said midportion; and
- d. securing the end portions to each other through said sandwich so that the respective sizes of said loops are only resiliently adjustable.