

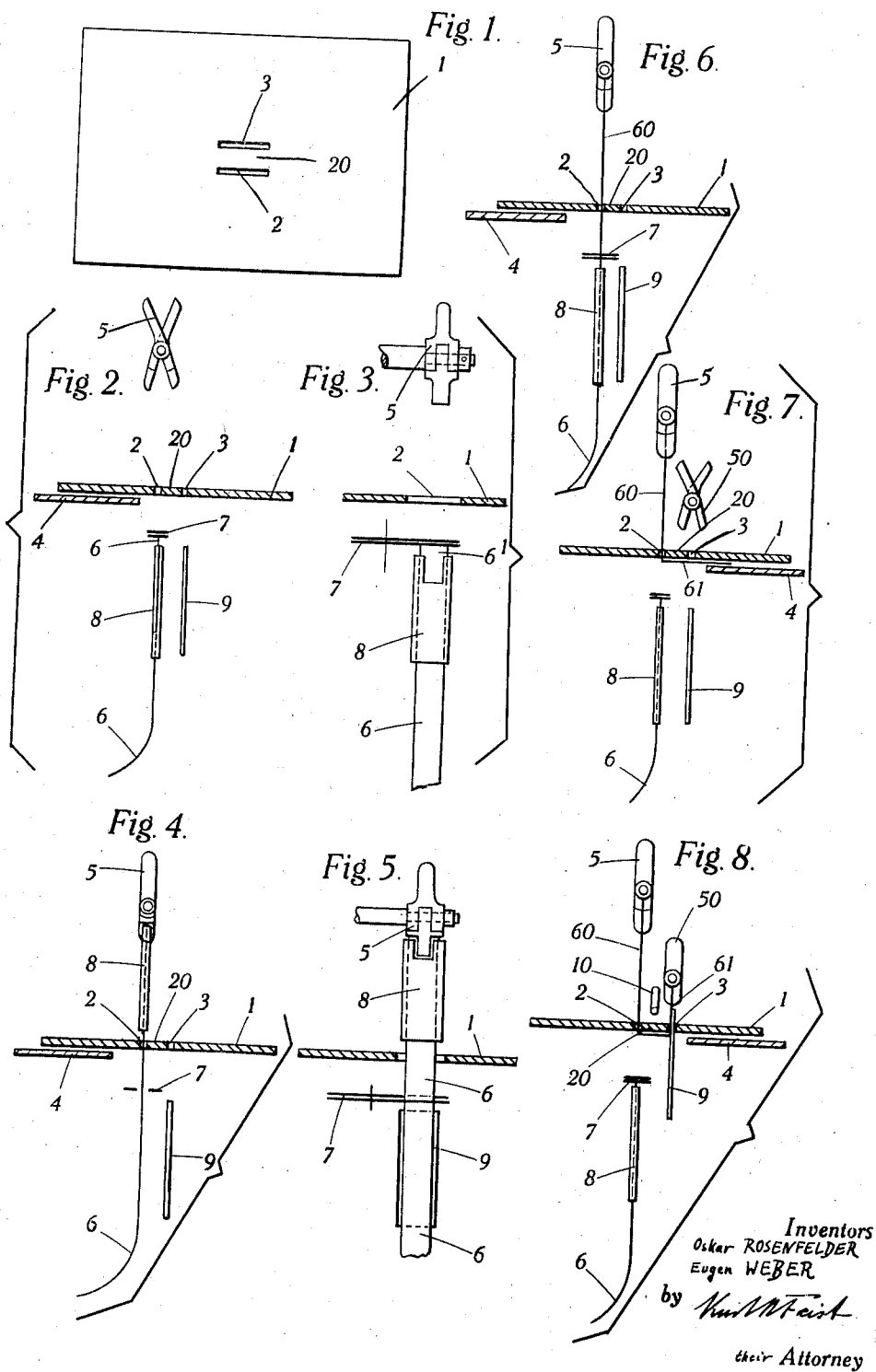
April 22, 1941.

O. ROSENFELDER ET AL
METHOD OF TYING BOWS OR KNOTS

2,239,342

Filed May 8, 1939

4 Sheets-Sheet 1



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4 Sheets-Sheet 3

Fig. 16.

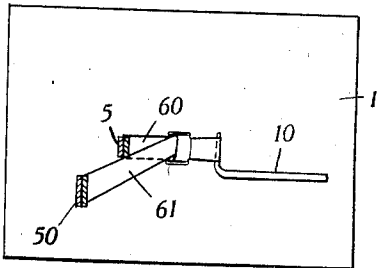


Fig. 17.

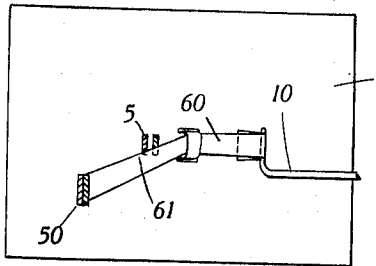


Fig. 18.

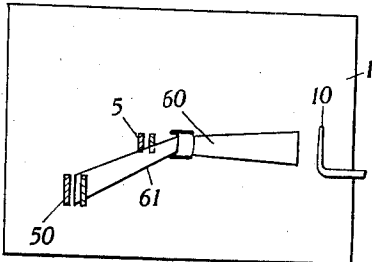


Fig. 20.

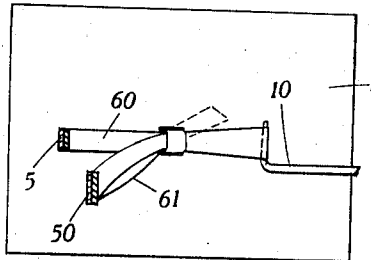
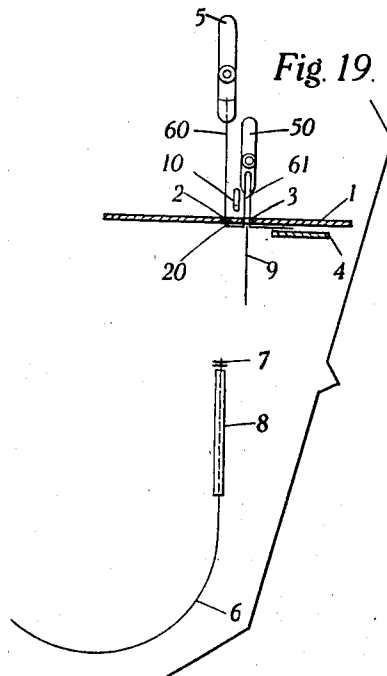


Fig. 19.



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Fig. 21.

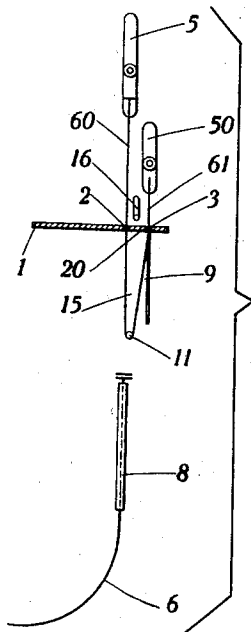


Fig. 22.

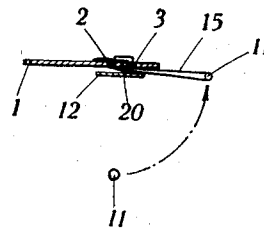


Fig. 23.

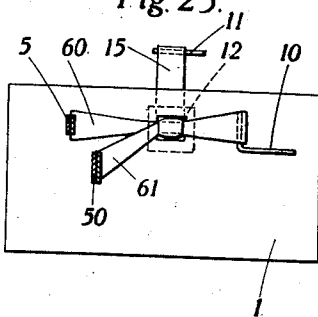
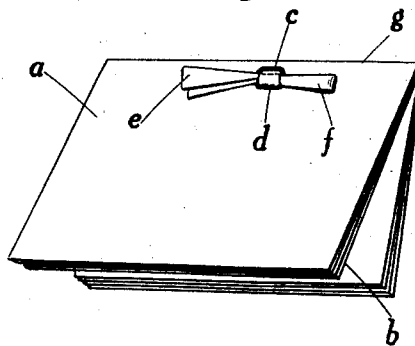


Fig. 24.



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UNITED STATES PATENT OFFICE

2,239,342

METHOD OF TYING BOWS OR KNOTS

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Application May 8, 1939, Serial No. 272,542
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13 Claims. (Cl. 289—1)

The present invention relates to a method of tying ribbon, tape or the like into bows or knots.

The principal object of the present invention is to simplify and thus facilitate the manner of making bows or knots, and more particularly, but not exclusively, ornamental bows or knots attached to cardboard or the like, such as greeting cards.

Another object is a new method of making at will either single-looped or double-looped bows.

Still another object is to decrease the length of ribbon or tape needed for tying the bow or knot.

A further object of the invention is to make a bow or knot attached to cardboard, for example a calendar, in such a manner that part of the tape can be employed for suspending the cardboard or the like.

Other objects of the invention will become clear from the specification as its proceeds.

In the drawings:

Fig. 1 illustrates an object to be provided with a ribbon tied into a knot or bow.

Figs. 2-14 illustrate steps in a method of making a bow.

Fig. 15 illustrates a modification of the method. Figs. 16, 17 and 18 illustrate a method of tying a ribbon into a knot without a bow.

Figs. 19 and 20 illustrate a method of making a double bow.

Figs. 21-23 illustrate a method of making a bow provided with a suspension loop.

Fig. 24 illustrates an article provided with a bow according to the invention.

An essential feature of the present invention resides in the fact that the bow is made by forming a slip knot, but without a preliminary knot, from a flat ribbon or tape wound around a portion of cardboard or other material, the width of which is essentially not greater than the width of the ribbon or tape.

If the bow to be made is required as a separate article for subsequent attachment to an object such as a greeting card, calendar or the like, the aforesaid portion of cardboard or other material may be employed merely as a former on which to tie the bow, and is subsequently removed. Alternatively, however, the portion of material around which the ribbon or tape is wound may form part of a cardboard or like sheet 1 (Fig. 1) used in the production of, for instance, a greeting card, this portion of material, denoted by reference 20, being defined by two parallel slits 2, 3 side by side in the sheet 1, which are each of a length not less than the width of the ribbon or

tape and the distance between the slits being essentially not greater than said width.

Although for the purpose of explaining the invention, the parallel slits 2, 3 are shown and will be referred to, it is not essential for the performance of the invention that these slits be parallel, or even that both apertures cut in the sheet 1 shall be slits. The formation of a bow as later to be described can equally well be accomplished with a sheet 1 having two slits inclined to each other therein or having one slit together with a circular or other suitably shaped hole in place of the other slit.

Referring now particularly to the drawings, Figs. 2 and 3 illustrate various elements of mechanism in their home positions at the commencement of operations for making a bow. 4 indicates a slide the purpose of which will be explained below; 5 indicates pliers or pincers for eventually gripping the ribbon or tape 6 which may be stored on a spool (not shown). Shears 7 are provided for eventually severing a length of the ribbon or tape. 8 and 9 indicate guides for the tape, the ribbon 6 being gripped at the commencement of operations by the guide 8 with a part 6' of the ribbon protruding from the upper end of the guide.

The next step in making the bow is illustrated in Figs. 4 and 5. The guide 8 for the ribbon or tape 6 has been moved through the open shears 7 and the slit 2 of the cardboard sheet 1, the free end of the tape 6 being gripped by the pincers 5.

In Fig. 6 the guide 8 has been moved down again, the shears 7 have been closed and have cut off a length 60 from the ribbon or tape 6.

In Fig. 7, the slide 4 has moved to the right, thereby bending the lower end 61 of the length of tape 60 to the right so as to lie flat against the lower side of the sheet 1. 50 indicates a second pair of pincers in a position opposite to slit 3 (not shown for the sake of simplicity in the previous figures).

In Fig. 8 the second guide 9 has been moved upwards through slit 3 so that the pincers 50, on closing, grip the end 61 of the length 60. 10 indicates a hook (not shown for the sake of simplicity in the previous figures).

Figs. 9 and 10 illustrate the next step in making the bow in different views corresponding respectively to the views shown in Figs. 2 and 3. The pincers 5 have started their movement around the pincers 50, the hook 10 being turned upwards.

In Fig. 11 the pincers 5 have completed their movement around the pincers 50 so that the length 60 of the ribbon gripped by pincers 5 is

wound around its end 61 gripped by pincers 50. The hook 10 has been turned through an angle of 180° to hook the length 60.

In Fig. 12 the hook 10 has moved to the right (the pincers 5 following this movement) so as to form a loop.

In the position illustrated in Fig. 13, the hook has been turned through 90° so that the bow lies flat against the sheet 1 and the pliers 5 and 50 have been moved to the left so as to tie the bow firmly.

Fig. 14 is a plan view corresponding to Fig. 13. It will be seen from Fig. 14 that the bow made is a single bow which lies in the main direction of slits 2 and 3 (Fig. 1); the length 60 of the ribbon or tape lies in the opposite direction, whereas its end 61 is slightly diverted.

Alternatively, the hook 10 when in the position shown in Fig. 12 may be turned through 90° in a direction opposite to that illustrated in Fig. 14. In this case, the hook 10 and the bow assume the position illustrated in Fig. 15, the pincers 5 and 50 being moved so as to assume finally the position shown in Fig. 15. The bow made in this way is slightly different from that illustrated in Fig. 14, its appearance as a whole being somewhat neater, and the length 60 of the tape and its end 61 do not diverge to the same degree as shown in Fig. 14.

From the foregoing it will be appreciated that the bow forms part of a sliding knot without preliminary knot.

A simple experiment will show that if the distance between the slits 2 and 3 is greater than the width of the ribbon or tape 6, the knot will work loose. When, however, the said distance is substantially equal to or even less than the width of the ribbon, the knot will not work loose since the tape is crumpled at the knot and there is thus enough friction to keep the knot tight.

Figs. 16, 17 and 18 illustrate how a knot instead of a bow may be made. Fig. 16 corresponds substantially to Fig. 14, the only difference being that the bow engaged by the hook 10 and the length 60 of the tape and its free end 61 are all smaller than the corresponding parts shown in Fig. 14. This can be achieved by arranging the pincers 5 and 50 closer to the sheet 1 than illustrated in the previous figures. Referring to Fig. 17, the pincers 5 have released their grip on the length 60 of the ribbon or tape and the hook 10 has been moved to the right so that the bow shown in Fig. 16 has been opened. In Fig. 18, the pincers 50 have also been opened and thus released the free end 61. The hook 10 has been moved still farther to the right, the knot being completed.

It will be appreciated that instead of forming a bow or knot by pulling the ends of a length of tape through two slits in a cardboard, the knot (or sliding knot in the case of a bow) may be formed simply around a small portion of material. When the bow or knot has been formed, the portion of material may be removed from the bow or knot; afterwards the bow or knot may be finally tightened.

Figs. 19 and 20 serve to illustrate how a double bow can be made.

Fig. 19 corresponds substantially to Fig. 8, the only difference being that in Fig. 19 the end 61 of the length 60 of the ribbon or tape is longer than that of Fig. 8, so that when the guide 9 has pushed the end 61 into the pincers 50, this end is folded around the guide 9 and part of it is still held by the slide 4 against the lower side

of the sheet 1. In this way, the second bow is prepared. The further steps of making a double bow correspond to those previously explained in connection with Figs. 9-14. Fig. 20 corresponds substantially to Fig. 14, the only difference being that the end 61 held by pincers 50 forms a bow as well, the end of this second bow lying still underneath the sheet. If desired, it may be pulled up when the double bow is completed.

Figs. 21, 22, and 23 illustrate the formation of an additional loop, for example, for suspending the cardboard or other sheet when the bow or knot is made. Fig. 21 corresponds substantially to Fig. 8, the difference being that a small rod or the like 11 is provided around which the length 60 is turned before passing its end 61 through the hole 3 to form a loop 15. A bow or knot may now be formed as explained above. When the bow or knot is finished, the rod 11 is moved from its initial position 11' as indicated by the arrow (Fig. 22), so that the loop formed below the sheet 1 lies against it. This loop is fastened to the surface of the cardboard by any suitable means, for example, a piece of gummed paper 12 stuck so as to cover the slits 2 and 3 and to fix the bow or knot and the loop in their final position. Fig. 23 corresponds substantially to Fig. 14, but showing the loop 15 still held in position by the rod 11.

Fig. 24 shows in perspective view a greetings card or the like comprising a single-folded cardboard wrapper *a* and an insert *b*. The wrapper *a* and the insert *b* each possess two parallel slits *c* and *d*, through which a length of ribbon *e* is drawn. The length of ribbon is tied in a slip knot without a preliminary knot, forming a bow *f* and attaching the insert *b* to the folded wrapper *a*, the distances between the slits *c* and *d* being at most equal to the width of the ribbon *e*. The length of the slits is equal to or somewhat greater than the width of the ribbon *e*. In the embodiment illustrated, the slits are parallel to the fold *g* of the folded wrapper, but it is obvious that alternatively they may be inclined to said fold. Instead of providing two parallel slits on both the cardboard and the insert, the slits may be inclined to each other. Again, instead of providing two slits on both the wrapper and insert, one slit and an opening, for example of circular shape, may be provided, in which case the distance between each slit and its associated opening is at most equal to the width of the ribbon.

While we have illustrated and described in detail certain preferred forms of our invention, it is to be clearly understood that changes may be made therein, and we therefore do not desire to limit ourselves to the specific methods described above, but intend to cover our invention broadly in whatever form its principle may be utilised.

We claim:

1. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of drawing the ribbon about a piece of solid material, the width of said piece of solid material being at most equal to the width of said ribbon, passing one free end of said ribbon around the other to form an unknotted loop around said piece of solid material, engaging drawing means with an intermediate portion of said one free end and drawing said intermediate portion by said drawing means through said unknotted loop and along said piece of solid material to form a

bow, twisting said bow through 90°, and tightening said bow.

2. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of drawing the ribbon about a piece of solid material, the width of said piece of solid material being at most equal to the width of said ribbon, passing one free end of said ribbon around the other to form an unknotted loop around said piece of solid material, engaging drawing means with an intermediate portion of said one free end and drawing said intermediate portion by said drawing means through said unknotted loop and along said piece of solid material to form a bow, twisting said bow through 90° in such a direction that in the final position of the bow said one free end lies on top of the other end, and tightening said bow.

3. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of drawing the ribbon about a piece of solid material, the width of said piece of solid material being at most equal to the width of said ribbon, passing one free end of said ribbon around the other to form an unknotted loop around said piece of solid material, engaging drawing means with an intermediate portion of said one free end and drawing said intermediate portion by said drawing means through said unknotted loop and along said piece of solid material to form a bow, twisting said bow through 90°, drawing said one free end through said loop, and tightening said bow.

4. A method of tying a ribbon into a double bow by means of a mechanical device, comprising the steps of drawing the ribbon about a piece of solid material, the width of said piece of solid material being at most equal to the width of said ribbon, doubling back one free end of the ribbon upon itself to form a fold, passing the other free end of the ribbon around said fold to form an unknotted loop around said piece of solid material, engaging drawing means with an intermediate portion of said other free end and drawing said intermediate portion by said drawing means through said unknotted loop and along said piece of solid material to form a bow, twisting said bow through 90°, and tightening said bow.

5. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of drawing the ribbon about a piece of solid material, the width of said piece of solid material being at most equal to the width of said ribbon, passing one free end of the ribbon around the other to form an unknotted loop around said piece of solid material, engaging drawing means with an intermediate portion of said one free end and drawing said intermediate portion by said drawing means through said unknotted loop and along said piece of solid material to form a bow, twisting said bow through 90°, removing said piece of solid material from said loop, and tightening said bow.

6. A method of tying a ribbon into a double bow by means of a mechanical device, comprising the steps of drawing the ribbon about a piece of solid material, the width of said piece of solid material being at most equal to the width of said ribbon, doubling back one free end of the ribbon upon itself to form a fold, passing the other free end of the ribbon around said fold to form an unknotted loop around said piece of solid material, engaging drawing means with an intermediate portion of said other free end and draw-

ing said intermediate portion by said drawing means through said unknotted loop and along said piece of solid material to form a bow, twisting said bow through 90°, removing said piece of solid material from said loop, and tightening said bow.

7. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of making a first aperture in a body, making a second aperture in said body at a distance from the first aperture at most equal to the width of the ribbon, drawing the free ends of said ribbon through said apertures, one through each, passing one free end of the ribbon around the other to form an unknotted loop around the portion of the body between said two apertures, engaging drawing means with an intermediate portion of said one free end and drawing said intermediate portion by said drawing means through said unknotted loop along said portion of the body, twisting said bow through 90° to lie flat against the surface of said body, and tightening said bow.

8. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of making a first aperture in a body, making a second aperture in said body at a distance from the first aperture at most equal to the width of the ribbon, drawing the free ends of said ribbon through said apertures, one through each, passing one free end of the ribbon around the other to form an unknotted loop around the portion of the body between said two apertures, engaging drawing means with an intermediate portion of said free end and drawing said intermediate portion by said drawing means through said unknotted loop along said portion of the body, twisting said bow through 90° to lie flat against the surface of said body, drawing said one free end through said loop, and tightening the bow.

9. A method of tying a ribbon into a double bow by means of a mechanical device, comprising the steps of making a first aperture in a body, making a second aperture in said body at a distance from the first aperture at most equal to the width of the ribbon, doubling back one free end of the ribbon upon itself to form a fold, drawing a portion of the fold through the first aperture and the other free end of said ribbon through the second aperture, passing the other free end of the ribbon around said fold to form an unknotted loop around the portion of the body between said two apertures, engaging drawing means with an intermediate portion of said other free end and drawing said intermediate portion by said drawing means through said unknotted loop along said portion of the body, twisting said bow through 90° to lie flat against the surface of said body, and tightening the bow.

10. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of making a first aperture in a sheet, making a second aperture in said sheet at a distance from the first aperture at most equal to the width of the ribbon, placing holding means at a distance from a first surface of said sheet, passing said ribbon around said holding means, drawing the free ends of said ribbon through said apertures, one through each, from said first surface of said sheet facing said holding means to form a loop-like hanger, passing one free end of the ribbon around the other to form an unknotted loop around the portion of the sheet between said two apertures, engaging drawing means with an intermediate portion of said one free end and draw-

ing said intermediate portion by said drawing means through said unknotted loop along said portion of the sheet, twisting said bow through 90° to lie flat against a second surface of the sheet opposite said first surface, tightening said bow, moving said holding means to bring said hanger alongside said first surface of said sheet, securing said hanger in this position so as to prevent opening of said bow, and removing said holding means from said hanger thus secured.

11. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of making a first aperture in a sheet, making a second aperture in said sheet at a distance from the first aperture at most equal to the width of the ribbon, placing holding means at a distance from a first surface of said sheet, passing said ribbon around said holding means, drawing the free ends of said ribbon through said apertures, one through each, from said first surface of said sheet facing said holding means to form a loop-like hanger, passing one free end of the ribbon around the other to form an unknotted loop around the portion of the sheet between said two apertures, engaging drawing means with an intermediate portion of said one free end and drawing said intermediate portion by said drawing means through said unknotted loop along said portion of the sheet, twisting said bow through 90° to lie flat against a second surface of the sheet opposite said first surface, tightening said bow, securing the portion of said hanger that is adjacent the bow so as to prevent opening of the bow, and removing said holding means from said hanger thus secured.

12. A method of tying a ribbon into a bow by means of a mechanical device, comprising the steps of making a first aperture in a sheet, making a second aperture in said sheet at a distance from the first aperture at most equal to the width of the ribbon, placing holding means at a distance from a first surface of said sheet, passing said ribbon around said holding means, drawing the free ends of said ribbon through said apertures, one through each, from said first surface of said sheet facing said holding means to form a loop-

like hanger, passing one free end of the ribbon around the other to form an unknotted loop around the portion of the sheet between said two apertures, engaging drawing means with an intermediate portion of said one free end and drawing said intermediate portion by said drawing means through said unknotted loop along said portion of the sheet, twisting said bow through 90° to lie flat against a second surface of the sheet opposite said first surface, drawing said one free end through said loop, tightening said bow, moving said holding means to bring said hanger alongside said first surface of said sheet, securing said hanger in this position so as to prevent opening of said bow, and removing said holding means from said hanger thus secured.

13. A method of tying a ribbon into a double bow by means of a mechanical device, comprising the steps of making a first aperture in a sheet, making a second aperture in said sheet at a distance from the first aperture at most equal to the width of the ribbon, placing holding means at a distance from a first surface of said sheet, doubling back one free end of the ribbon upon itself to form a fold, drawing a portion of the fold through the first aperture and the other free end of said ribbon through the second aperture from said first surface of said sheet facing said holding means to form a loop-like hanger, passing the other free end of the ribbon around said fold to form an unknotted loop around the portion of the sheet between said two apertures, engaging drawing means with an intermediate portion of said other free end and drawing said intermediate portion by said drawing means through said unknotted loop along said portion of the sheet, twisting said bow through 90° to lie flat against a second surface of the sheet opposite said first surface, tightening said bow, moving said holding means to bring said hanger alongside said first surface of said sheet, securing said hanger in this position so as to prevent opening of said bow, and removing said holding means from said hanger thus secured.

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