

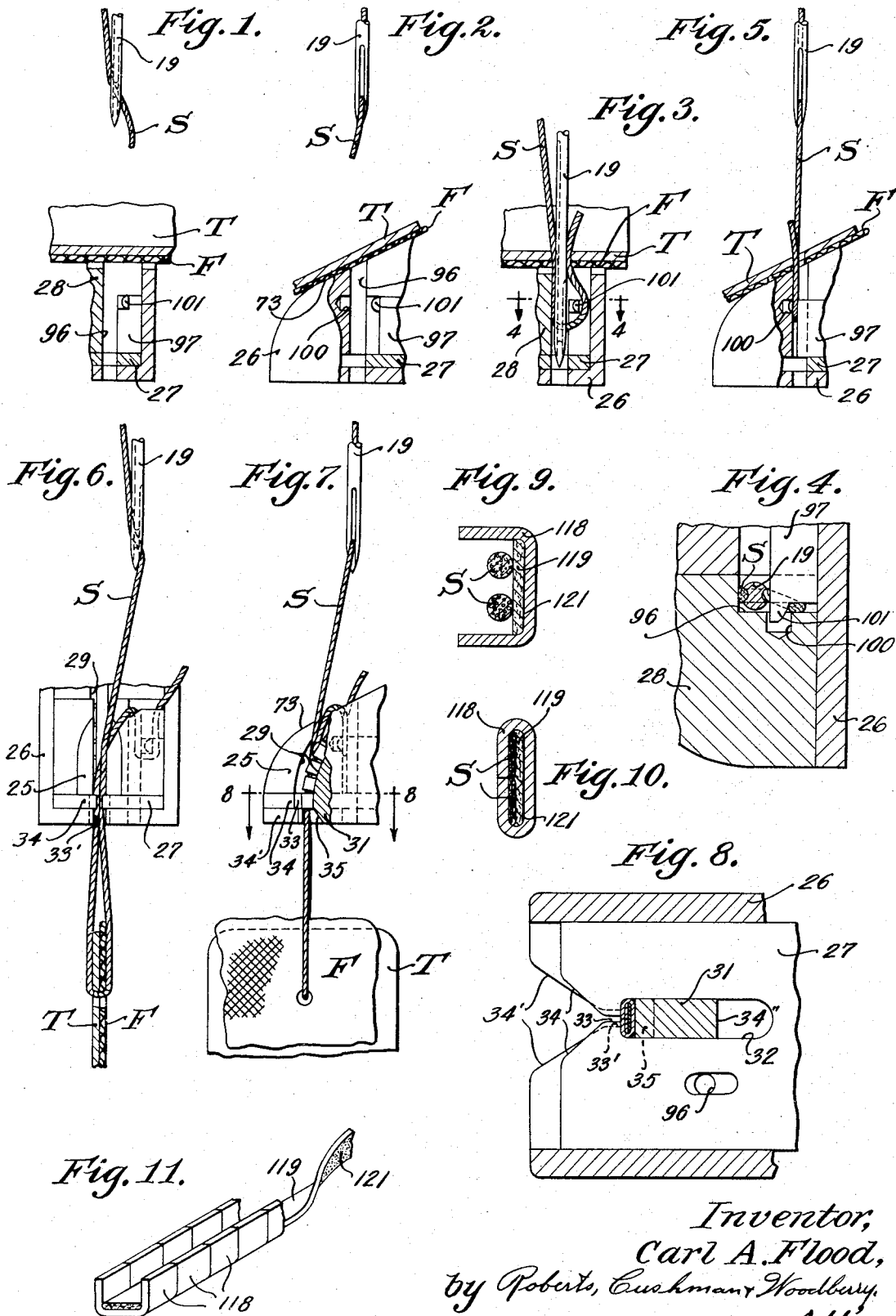
Dec. 15, 1936.

C. A. FLOOD

2,063,918

STRING LOOP ATTACHING METHOD

Filed July 24, 1934



Inventor,
Carl A. Flood,
by Robert, Cushman & Woodbury,
Attys.

UNITED STATES PATENT OFFICE

2,063,918

STRING LOOP ATTACHING METHOD

Carl A. Flood, Framingham, Mass., assignor to
Dennison Manufacturing Company, Framing-
ham, Mass., a corporation of Massachusetts

Application July 24, 1934, Serial No. 736,691

5 Claims. (Cl. 112—265)

This invention relates to attaching materials or articles of the kind having a construction, composition and/or texture of such a character that they may be impaled or pierced as by passing
5 a needle or similar instrument therethrough between surface portions or from one side to the other thereof, or by passing such instrument around or about portions of the article or material, which materials or articles have sufficient
10 strength to be capable of retaining at least temporarily a flexible strand passing about or through portions thereof. Some materials of a comparatively dense compact composition may have relatively thin portions through which a needle may
15 be readily passed while others may have openings adapted to receive a needle. Various articles of merchandise commonly have these characteristics, such for example as pieces of jewelry, textile materials including fabrics, garments and other
20 articles of wearing apparel, also sheet materials whether woven or of irregularly matted fibrous construction; these are therefore representative of this general class of materials.

Prior methods of attaching string tags do not
25 afford adequate protection against tampering or unauthorized transfer of tags. Moreover these prior methods have been uneconomical of string or other strand material employed. For instance, it is customary to use a tag which has been previously strung. The string may be threaded
30 through a hole in the tag and the ends tied together to form a continuous loop or the ends of the string may be passed between the plies of the ticket to form a closed loop. Such a tag is usually
35 attached to an article by looping it through or over some suitable portion of the article such as through a buttonhole of a garment or over a button. Sometimes a hooked needle is used to pull the string through a portion of the fabric
40 and then the tag is threaded through the loop formed by the string which has passed through the fabric. In all of these instances the string must be long enough to form a loop of such size that the tag may pass through it. Also the tag
45 may be easily removed or shifted to another article by reversing the process.

This invention provides for attaching price tags to material and is also useful for attaching mated articles such for example as a pair of stockings
50 or a pair of gloves. The invention pertains to a method of passing a flexible strand, as a cord or string, through a ticket and an article and uniting portions of the strand to form a closed loop which secures the ticket to the article. The method
55 may be practised by hand or by a unitary device,

typical examples of which are disclosed in my copending application Serial No. 696,017, filed October 31, 1933 of which this is a division. While such a device may assume various forms it is highly desirable that it should be of such
5 compact and efficient construction that it is not only portable, but may be conveniently carried in and operated by one hand of an operator while the other hand is left free to manipulate materials or articles to be ticketed. This requires a
10 construction and relative arrangement of parts which in addition to providing for efficient mechanical operation, also produces a good balance and thus contributes to efficient use. Moreover it is frequently advantageous to be able to attach
15 price tickets in such a way that they may be easily removed by a purchaser and yet the unauthorized transfer of a ticket from one article to another will become apparent immediately upon inspection. The present invention provides
20 for accomplishing this objective by attaching the ticket with a loop of strand material which loop is formed by clenching about the end portions of the strand a clip which is so small especially when
25 clenched that it can not be removed without special tools. The clip may be formed of metal which is capable of bending as required during the clenching operation and yet so brittle that if
30 any attempt is made to spread the clenched clip to remove it, it will break. On the other hand anyone authorized to remove the tag may do so easily by cutting the strand. A preferred clip and the finished product are claimed in copending application Serial No. 736,692 filed on even date
35 herewith.

Objects of the invention are to improve the
35 art of attaching tickets by providing methods of attaining the aforementioned desirable objectives; to provide for attaching tags and the like to articles by means of a flexible strand in a
40 manner which will not require the separate operations of first stringing the tag and then the subsequent operation of attaching it to an article but will simultaneously insert the string through both the tag and the article; to provide for securely
45 attaching a tag or the like with a loop which need not be long enough to permit the tag to pass through it.

According to this invention the material to
50 which the cord is to be attached is pierced with a needle through which the cord is threaded, the portion of the cord thus passed through the material is retained while the needle is withdrawn from the material, the material is then moved
55 away from the needle while allowing the cord to

be drawn through the needle and portions of the cord on opposite sides of the material are then secured together, preferably with a metallic clip clamped around the aforesaid portion.

5 In the accompanying drawing, in which sufficient portions of one of the devices of said Serial No. 696,017 are shown for the purpose of illustrating the method herein claimed,

10 Fig. 1 is a section viewed from the front showing the parts in the positions which they occupy at the beginning of a cycle of operation;

Fig. 2 is a similar section viewed from the side;

Fig. 3 is a section viewed from the front showing the needle in advanced position;

15 Fig. 4 is a section on line 4—4 of Fig. 3;

Fig. 5 is a section similar to Fig. 2 showing the needle again retracted;

Fig. 6 is a front view showing the tag and fabric pulled downwardly;

20 Fig. 7 is a section viewed from the side showing the tag and fabric in the same position as in Fig. 6;

Fig. 8 is a section on line 8—8 of Fig. 7;

25 Fig. 9 is a sectional view showing the string in position ready to be clipped;

Fig. 10 is a similar section showing the clip clenched over the string; and

Fig. 11 is a series of interconnected clips.

30 In the accompanying drawing in which the parts are designated the same as in said Serial No. 696,017, 26 represents a U-shaped frame in which is mounted a clenching die block 28 having an inclined upper surface 73 which constitutes a bed or table upon which the articles to be attached are laid, the forward end of the die block being rounded from top to bottom as shown in Figs. 2 and 7 and having a flaring groove 25 extending vertically as shown in Figs. 6 and 7. Extending vertically through the die block is a 35 needle opening 96 and between the under side of the die block and the bottom of the U-shaped frame is a clenching die plate 27 which reciprocates back and forth through a short range, from right to left in Figs. 2, 5 and 7. Just above the 40 die plate 27 a string gripper 97 reciprocates back and forth, the forward end of this gripper pinching the string against the die block as shown in Figs. 4 and 5 and having a protuberance 101 arranged to project into a socket 100 in the die block 45 for holding the looped end of the string as shown in Fig. 3. The bottom 29 (Figs. 6 and 7) of the flared groove 25 in the forward end of the die block is just wide enough to accommodate the U-shaped metallic clips for securing together the ends of 50 the string loops.

55 As shown in Fig. 11, and as more fully described in the aforesaid copending application Serial No. 736,692, the metallic clips 118 are preferably secured together by a paper strip 119 cemented in the bottom of the U-shaped clips by a 60 coating of adhesive 121, thus forming a ribbon of clips which may be conveniently fed into the device from a reel or the like. This ribbon of clips feeds downwardly along the bottom 29 of the 65 groove 25 to a position where the foremost clip occupies a position immediately to the right of the parts marked 34 in Fig. 7.

70 The bottom of the U-shaped frame 26 has, in its forward end, a flaring slot 34' which inclines inwardly to a narrow throat, then widens at the vertical plane of the forward edge of the clenched clip to the width of the clip and thence extends back to the line 34" (Fig. 8). The die block 28 has a depending anvil 31 extending through the 75 slot 32 in the die plate 27 and the slot in the bot-

tom of member 26, the forward surface of the anvil being beveled at 35 to facilitate removal of the clenched clips.

The cycle of operations is as follows: With the needle threaded and in elevated position as shown 5 in Fig. 1 the articles to which the string loop is to be attached are laid on the table 73, the articles in the illustration comprising a piece of fabric F and a tag T. The needle 19 carrying the string S then descends through the articles and 10 thence into the passage 96 to the position shown in Fig. 3. The gripper 97 then moves from the retracted position shown in Fig. 2 to the advanced position shown in Figs. 4 and 5 thereby gripping 15 the end of the string while the needle returns to the elevated position shown in Fig. 5. The operator then pulls the tag and fabric forwardly and downwardly causing the string loop to slide 20 into the flaring groove 25 and thence into the U-shaped clips 118 at the bottom of the groove. The clenching die plate 27 then moves to the rear causing the shoulders at the inner ends of the flaring notch 34 to clench the foremost clip 25 around the string loop as shown in Figs. 8 and 10. The string is then cut off at a point intermediate 25 the clenched clip and the needle. After the die plate 27 returns to retracted position the ticket and fabric and attached string loop may be removed from the device by tearing off the paper ribbon 119 along the line between the clenched 30 clip and the next clip of the series. The ribbon of clips is then advanced a distance equal to the width of one clip and the device is ready for another series of operations.

35 It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

I claim:

40 1. The method of attaching a strand to material with a needle, comprising providing a needle with a flexible strand, passing the needle and strand along a line of movement through the material, retaining the strand thus passed 45 through the material at a fixed point in relation to the line of needle movement, withdrawing the needle from the material, moving the material out of the line of needle movement while continuing to retain the strand at said fixed point, 50 thus drawing the strand through the needle and the material to bring strand portions into juxtaposition beyond the edge of the material, uniting the juxtaposed portions, and releasing the strand at said point where it has been retained. 55

2. The method of attaching a strand to material with a needle, comprising providing a needle with a flexible strand, passing the needle and strand along a line of movement through the material, retaining the strand thus passed 60 through the material at a fixed point in relation to the line of needle movement, withdrawing the needle from the material, moving the material out of the line of needle movement while continuing to retain the strand at said fixed 65 point, thus drawing the strand through the needle and the material to bring strand portions into juxtaposition beyond the edge of the material, uniting the juxtaposed portions, releasing the strand at said point where it has been retained, and cutting the strand portion between 70 the united portions and the needle.

3. The method of attaching a strand to material with a needle, comprising providing a needle with a flexible strand arranged so that a 75

strand end projects from the needle, passing the needle and strand along a line of movement through the material, retaining the strand end thus passed through the material at a fixed point in relation to the line of needle movement, withdrawing the needle from the material, moving the material out of the line of needle movement while continuing to retain the strand end at said point, thus drawing the strand through the needle and material to bring strand portions into juxtaposition beyond the edge of the material, uniting the juxtaposed portions, and releasing the strand end.

4. The method of attaching a strand to material with a needle, comprising providing a needle with a flexible strand having a free end, passing the needle and strand end through the material, retaining the strand end thus passed through the material, withdrawing the needle from the material, moving the material away from the needle and the retained strand end, thus drawing the strand through the material, bringing portions of the strand between the material and the needle and between the retained free end and the needle into juxtaposition beyond

the edge of the material, uniting the juxtaposed portions to provide a loop, releasing the free end of the strand, and cutting the strand portion extending from the united portions to the needle.

5. The method of attaching a strand to material with a needle, comprising providing a needle with a flexible strand having a free end, effecting relative movement of the needle and the material to cause the needle and strand to extend through the material, effecting a relative sliding movement of the needle and the material and of the needle and the strand while retaining the strand end to cause the needle to be separated from the material and the strand end with the material between the needle and the strand end, bringing portions of the strand between the material and needle and adjoining the retained strand end into juxtaposition beyond the edge of the material, uniting the juxtaposed portions to provide a loop, releasing the free end of the strand, and cutting the strand section extending from the uniting portions to the needle.

CARL A. FLOOD. 25