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M. B. BEHRMAN

1,619,803

FASTENING MEANS

Filed Sept. 12, 1925

Fig. 1.

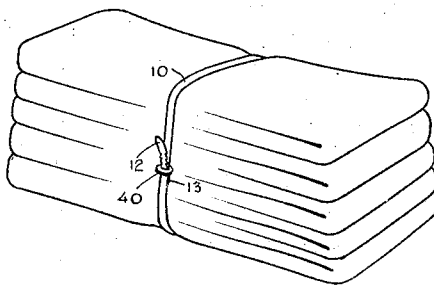


Fig. 2.

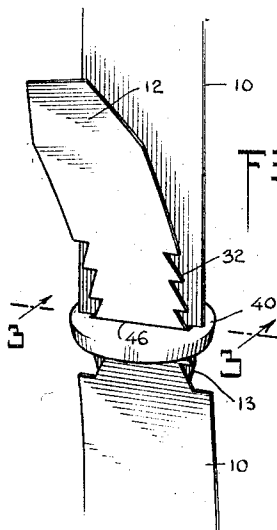


Fig. 3.

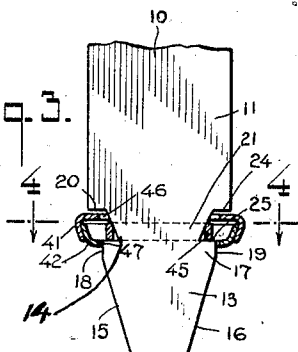


Fig. 5.

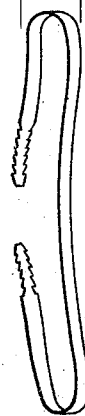
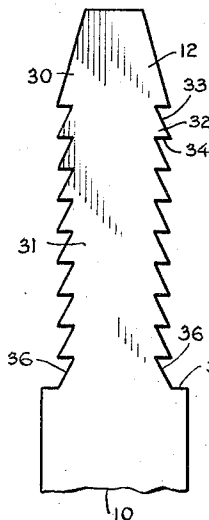
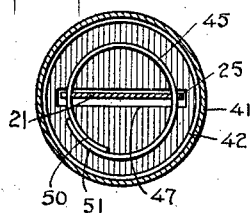


Fig. 4.



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FASTENING MEANS.

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My invention relates generally to tie member securing means and involves an arrangement whereby the ends of a tie element or member passed about a container or articles of merchandise are held in fixed association and against separation and cannot be separated or released without detection and coordinately involves an arrangement whereby the terminal ends while so secured can be made to approach each other by increments so as to correspondingly tighten the tie member about the container or merchandise.

One of the important objects of my invention is the provision of an arrangement for securing a tie member about a container for merchandise which will permit of the taking up of slack without at the same time effecting in any way the theft proof character of the fastening means.

Another object of my invention is the provision of an arrangement whereby the terminal ends of the tie member can be varied within limits without affecting the efficiency of the securing means.

The general object of my invention is the provision of a new, improved, inexpensive, simplified and efficient arrangement for securing the terminal ends of a tie member against separation, and for holding them in any one of the number of relative positions to which they may be moved for tightening the tie member about a package.

For the attainment of these objects and such other objects as may hereinafter appear or be pointed out, I have illustrated embodiments of my invention in the drawings, wherein:

Fig. 1 is a perspective showing of my fastening means secured in position about merchandise;

Fig. 2 shows in perspective, the terminal portions of the tie member and the means for securing them against separation;

Fig. 3 is a section taken on line 3—3 of Fig. 2 showing one of the terminal members secured in position to the fastening means and the other member in position to be passed therethrough.

Fig. 4 is a cross section taken on line 4—4 of Fig. 3 looking in the direction of the arrows;

Fig. 5 is a perspective view of a modified form of tie member.

Fig. 1 illustrates my tie member secured

about a package of merchandise although as will be understood it can equally well be employed to be passed about a container for merchandise, or about a package or casing.

Upon viewing Figs. 2 and 3 of the drawing, it will be observed that I here show a tie member having terminal ends 11 and 12. The terminal end 11 comprises generally the head 13 and the neck portion 14 which connects this terminal head 13 to the body of the tie member 10. The head 13 is tapered at its outermost end by having the side edges 15 and 16 diverge outwardly from its free or outermost end and the head 13 at its innermost part has its side edges 17 and 18 parallel, and upon viewing Fig. 3 of the drawing, it will be observed that the head 13 is at all points narrower than the tie member 10 proper and has its side edges within the confines or side edges of the tie member proper. The connecting neck 14 also has its opposite side edges 20 and 21 diverging outwardly in the direction of the tie member proper and are shown in the drawings as diverging at a greater angle than the edges 15 and 16 of the head 13 to provide the oppositely positioned shoulders 24 and 25 on each side of the connecting member, which shoulders are shown as parallel and as predeterminedly spaced for purposes that will be pointed out hereinafter, although as will be understood, the exact relationship of the spacing with reference to the fastening means shown in the drawings can be varied without departing from my invention.

The opposite terminal end 12 of the tie member has its head 30 substantially of the same character and size as the head 13 of the terminal end 11 and tapered as is also that head, although it is not essential that the two heads 13 and 30 be exactly alike in their dimensions or character. The head 30 of the terminal end 12 is connected to the tie member proper by a connecting neck 31 which is toothed or serrated at its opposite edges as shown to provide the teeth 32, each of which is made up of an inclined side or edge 33 directed inwardly toward the free end of this terminal edge and of a shoulder portion 34 shown as positioned at right angles to the length of the tie member 10, although as will be understood this may be varied. The number of teeth shown in the drawings are merely for purposes of illustration, it

being understood that this can be increased or decreased as desired. The head 30 and the teeth 32 at their widest portions are all narrower than the width of the tie member proper 10 and the terminal end 12 is connected to the tie member proper by the part 35 which has its opposite side edges 36 inclined as shown so as to provide the abutment shoulders 37 which extend beyond and laterally of the pointed ends of the teeth 32.

The two terminal ends 11 and 12 are connected by the fastening means 40 shown in horizontal cross-section in Fig. 4 and vertical section in Fig. 3. This fastening member 40 is in the form of a casing which is illustrated in the drawings as being made of two sections 41 and 42 which may be assembled in any desired or preferred way so as to cause them to partake of the nature of an integral unitary container construction, it being merely essential to the objects of my invention, that the fastener 40 shall have therewithin a compartment within which is to be received a locking member 45 to be described shortly. Where the fastener 40 is in the form of a flat disk-like casing as shown in the drawings, I provide in the opposite flat faces thereof, the openings 46 and 47 shown for purposes of illustration as elongated in character, although as will be understood, the dimensions and shape of these openings will be determined more or less by the character of terminal ends which it is desired to secure together.

The fastening member 45 is in the form of a spring member so arranged and constructed that its free terminal ends 50 and 51 will assume when the spring is in normal position, the superposed relation shown in Fig. 4 of the drawing and the spring will be annular in shape. The diameter of the spring 45 when in its normal position of Fig. 4 is less than the length of the openings 46 and 47 but is however greater than the narrowest portion of either of the terminal ends 11 and 12.

In the use of my invention, the head 13 of the terminal end 11 is first passed through the openings 46 and 47 and completely through the container until the shoulder 24 is in the abutting relation to one face of the container, the dimensions of the parts being such that in this position the head 13 will have passed completely beyond the extreme position which the spring 45 can assume in the casing 40 and that in this movement through the container, the inclined sides 15 and 16 will first cause the spring 45 to expand until the spring 45 has passed the shoulder 25, upon which the spring will contract and position itself between the shoulders 24 and 25 and immediately in back of the shoulder 24. It will be understood that the length of the openings 46 and 47 is less than the width of the tie member proper 10.

Any reverse movement given to the terminal end 11 will carry with it the spring 45 and due to the arrangement of the parts, this movement will be limited wholly to the amount of longitudinal movement which can be given the spring 45 which is very small. The parts however can be so constructed and arranged that no substantial longitudinal movement can be given this spring 45. In this manner, I irremovably fix one terminal end of the tie member 10 to the fastening member 40.

The other terminal end 12 is then passed through the openings 46 and 47 in the fastening container 40 in an opposite direction, it being understood that the openings 46 and 47 are sufficiently wide to permit of the positioning of both fastening members therethrough in superposed relation.

The head 30 of the terminal end 12 which, as stated, has been illustrated substantially as a duplicate of the head 13 of the other terminal end 11, will, as it is forced inwardly spread the spring member 45 sufficiently to permit of its admission and this head can be inserted through the opening to any desired extent so as to position the spring ring 45 in back of any of the shoulders 34 which act as a stop to prevent retrograde or reverse movement of this terminal end. In this manner, a tie member can be provided of predetermined length for a predetermined character of package and any slack that may develop can be taken up by pulling the head 12 through the fastening member 40.

The provision of making the terminal heads narrower than the tie member proper 10 so as to provide the shoulders 24 and 37 is a very important one because not only do these shoulders form limiting stops, but where the tie member proper is made of the same width as the widest portion of the terminal ends, one of the terminal ends could be released from the fastener merely by forcing the other terminal end sufficiently far therethrough to cause the spring member 45 of the fastener to seat upon the tie member proper in which event it would be spread sufficiently to permit the other terminal end to be readily withdrawn.

In Figure 5 there is shown a modification of the tie member wherein both terminal ends are formed similar to the terminal end 12 of Figure 3. This allows adjustments along similar lines to the arrangement of Figure 3 while attaining even greater flexibility or variation of movement. This modified form, therefore, has the additional advantage of a greater indeterminate length.

Having thus described my invention and illustrated its use, what I claim is new and desire to secure by Letters Patent is:

1. A fastener for connecting the terminal ends of a tie member of indeterminate length, said fastener comprising a casing,

means for securing one end of the tie to said casing, expansible means within said casing constructed and arranged to permit of the insertion of the other terminal end of the tie member but to prevent its withdrawal, said casing being provided with a transverse slot just sufficiently large to permit of an insertion of said other terminal end in overlapping relation to the first end but otherwise completely encasing said second mentioned means to prevent any manipulation or operation thereof, whereby the insertion of such terminal end locks said other terminal end to the fastener against removal without detection.

2. A fastener for connecting the terminal ends of a tie member of indeterminate length in overlapping relation with respect to each other, said fastener comprising a substantially disk-like casing having a transverse opening therein to receive one terminal of the tie member and means within said casing to permit of the insertion of such terminal end of the tie member in one direction but to prevent its movement in the opposite direction, said means comprising an expansible annular member.

3. A fastener for connecting the terminal ends of a tie member of indeterminate length, said fastener comprising a casing and a slot in said casing for receiving the terminal ends of said tie member and an expansible annular member in said casing normally of a diameter less than the widest portion of the slot.

4. A tie member having terminal ends adapted to be secured together, one of said terminal ends comprising a tapering head and a tapering neck connecting said head to the tie member, so as to provide substantially parallel shoulders on opposite edges positioned transversely of the length of the tie member and engageable with a fastener for locking the ends of the tie member in position.

5. A tie member having terminal ends adapted to be secured together, one of said terminal ends comprising a tapering head and a tapering neck connecting said head to the tie member, so as to provide substantially parallel shoulders on opposite edges positioned transversely of the length of the tie

member, one set of said shoulders extending on opposite sides laterally beyond said head.

6. A fastener for connecting the terminal ends of a tie member of indeterminate length, said fastener comprising a casing and an opening in said casing for receiving the terminal ends of said tie member and an expansible annular member in said casing normally of a diameter less than the widest portion of the opening, said annular member having normally overlapping free terminal ends.

7. In a device of the character described in combination, a tie member having tapering terminal heads and a neck connecting said heads to said tie member, means for securing said terminal ends against separation, said means comprising a casing having an opening therein to receive the terminal ends and an annular expansible spring having its free ends in normally superposed relation and normally of a diameter to cause it to be expanded as either terminal end is passed therethrough, whereby the annular ring can position itself in the neck portion of the terminal ends to lock such neck portion from separation therefrom.

8. A fastener for connecting the terminal ends of a tie member of indeterminate length, said fastener comprising a casing and an opening in said casing for receiving the terminal ends of said tie member and an expansible annular member in said casing normally of a diameter less than the widest portion of the opening, said annular member having its edges curved.

9. A fastener for connecting the terminal ends of a tie member adapted to be passed about articles of indeterminate size comprising a casing composed of mutually engageable sections and having aligned transverse openings therein for receiving the terminal ends of said tie member in superposed relation and a split expansible ring in said casing normally of a size less than the widest portion of the opening and having its ends in normal overlapping relation.

In witness whereof, I have signed this specification, this 11th day of September, 1925.

MARCUS B. BEHRMAN.