Oct. 7, 1930. H. C. PORTER 1,777,532

TAG FASTENER

Filed Nov. 14, 1927

Fig. 1.

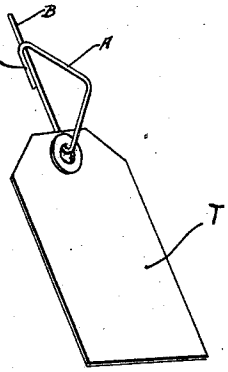

Fig. 2.

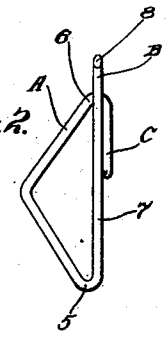

Fig. 3.

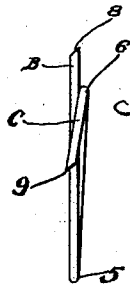

Fig. 4.

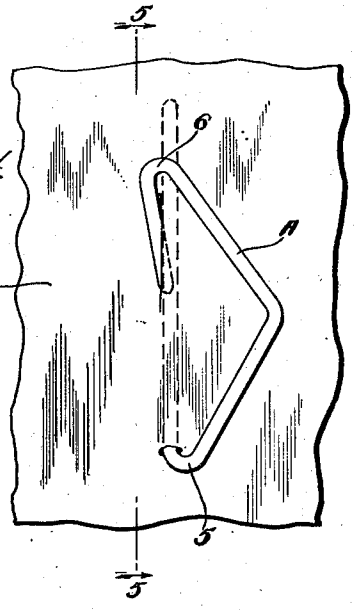

Fig. 5.

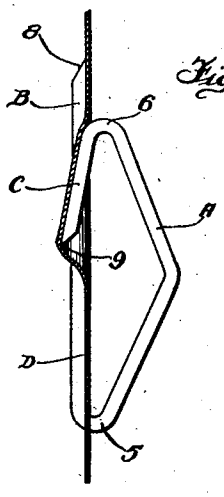

Fig. 6.

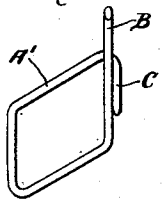

Fig. 7.

Fig. 8.

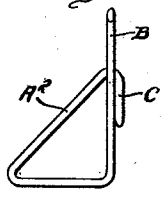

Fig. 9.

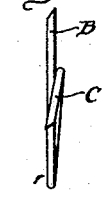

Fig. 10.

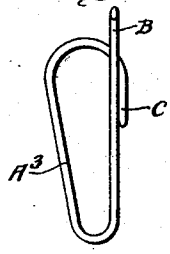

Fig. 11.

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UNITED STATES PATENT OFFICE

HOWARD C. PORTER, OF LA GRANGE PARK, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SIGNODE STEEL STRAPPING COMPANY, A CORPORATION OF DELAWARE

TAG FASTENER

Application filed November 14, 1927. Serial No. 232,974.

My invention relates to tag fasteners.

It relates particularly to tag fasteners employed to secure tags to package binders, fabric sacks, bales, etc., pieces of meat and the like.

An object of the invention is to provide an improved tag fastener.

Another object is to provide a tag fastener in which positive and complete engagement of the fastener with the article to be tagged is made with simple, easy and natural movements.

A further object is to provide a tag fastener in which positive and complete engagement of the fastener with the article to be tagged is assured, even when the fastener is carelessly applied.

A further object is to provide such a tag fastener which will not readily become disengaged with the article by pulling upon the tag and which possesses relatively great tensile resistance against movement in that direction coincident with a pull of the tag away from the article, and which especially resists a sidewise pull such as might be caused by the fastener catching in a projection of some other article.

A further object is to provide a tag fastener in which but a relatively small portion of the fastener is projected through the article and one of the points of the fastener within the article lies close along another portion of the fastener without abrupt angular projection therefrom, so that the possibility of injury to the interior thereof is reduced to a minimum.

A further object is to provide a tag fastener having its piercing ends so disposed as to permit the use of the same point for a wide variety of fabric, paper and other substances to which the fastener is secured.

Other objects and advantages will be more particularly pointed out from the following description, in which

Fig. 1 is a perspective view of one form of my improved tag fastener, with a tag attached;

Fig. 2 is a side elevation thereof;

Fig. 3 is a rear elevation of the tag fastener shown in Figs. 1 and 2;

Fig. 4 is a fragmentary front elevation of an article showing the fastener in process of being affixed thereto;

Fig. 5 is a sectional view along the line 5—5 of Fig. 4;

Figs. 6, 8 and 10 are side elevations of modified forms of the tag fastener; and

Figs. 7, 9 and 11 are rear elevations of the tag fasteners illustrated in Figs. 6, 8 and 10, respectively.

In general the tag fastener comprises a single piece of wire bent upon itself to provide a loop A for receiving a tag T and a portion of the article to which the tag is attached, one of the extremities of the wire constituting a piercing arm B adapted to be passed through the article to which the tag is to be secured and the other extremity of the wire being formed to constitute a retaining hook C adapted to prevent withdrawal of the fastener from the article when the fastener has been secured thereto.

The fastener illustrated in Figs. 1 to 5 will first be described.

The loop A is in the form of a triangle having two acute angles 5 and 6, angle 5 forming the tag supporting portion of the fastener and angle 6 forming in part the article engaging portion of the fastener. The side 7 of the triangular loop, constituting the hypotenuse of the triangle, extends beyond the loop to form piercing arm B which is sheared at its outermost end at an angle preferably of about 45 degrees, to form a piercing point 8.

Retaining hook C lies in a plane parallel with arm B at the rear thereof, (see Fig. 2) crossing arm B at an acute angle to the plane of the loop to cause its piercing point 9 to lie slightly beyond the remote side of loop A (see Fig. 3). Point 9 is formed by shearing the end of hook C at an angle preferably of about 45 degrees, the outermost tip of which extends laterally beyond arm B as shown in Fig. 3.

With reference to Figs. 4 and 5, when piercing arm B is inserted through an article as illustrated at D with loop A swung slightly to the right of a plane perpendicular with the surface of the article, this being the natural

position of the fastener as it is held in the hand of the person applying the tag, piercing point 9 of retaining hook C will closely contact that portion of the article at the adjacent side of piercing arm B, (see Fig. 5). Thus a straight downward pull, without any other special manipulation of the fastener (such as turning it), will cause piercing hook C to pass into the article and thereby secure a portion of the article within loop A at that end defined by angle 6.

If the substance of the article is relatively stiff, then hook C will be urged slightly to the left (see Fig. 4) as piercing arm B is inserted therein, the piercing point 9 of the retaining hook C constantly bearing against the article and urged away from its normal position shown in Fig. 3. Consequently a downward pull upon the fastener, without any other movement or manipulation thereof, will cause retaining hook C to pierce and enter the article so as to securely receive and retain a portion of the article within loop A.

If the fastener is carelessly applied by merely inserting the piercing arm B so that side 7 is within the article as illustrated in Fig. 4, and loop A is allowed to lie flat against the article, the hook C will still be pressing inward on the article with point 9 so disposed that any pull on the tag at angle 5 will cause point 9 to enter the article and positively engage hook C. This is also apparent by considering Fig. 5 with the article as shown and loop A turned toward the article so that the fastener takes the position of Fig. 3.

Further, with reference to Fig. 4, it will be seen that if the portion of the fastener lying outside the article D should catch on any outside article with resultant sidewise stress away from article D, the fastener will resist any tendency to be bent open by such stress because as illustrated in Figs. 2 and 3, the portion C will engage against the portion 7.

In Figs. 6 to 11, inclusive, I have illustrated modified forms of the invention which differ from that form illustrated and described in Figs. 1 to 5 only in that the contour of loop A is altered to meet particular requirements of the trade. The operation of these modified forms of tag fastener is identical to that of the preferred form.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A tag fastener comprising a single wire bent in the form of a closed loop, one end of the wire forming a side of the loop and extending beyond the same to constitute a piercing arm, and the other end of the wire turned back and in a straight line crossing the piercing arm at an acute angle to the plane of the loop and projecting slightly beyond the same.

2. A tag fastener comprising a single piece of wire bent to form a closed loop, one end of the wire comprising a straight side of the loop and projecting beyond the same to constitute a piercing arm, and the other end of the wire bent back to cross at an acute angle the back of the wire forming the piercing arm and extending slightly beyond the same at an angle to the plane of the loop to constitute a piercing and retaining hook.

3. A tag fastener made from a single piece of wire bent to form a closed loop, one end of the wire forming a side of the loop and projecting therebeyond to constitute a straight piercing arm in the plane of the loop, and the other end of the wire turned back along and straight across the outside piercing arm to a point slightly beyond the plane of the loop.

In witness whereof, I hereunto subscribe my name this 9th day of November, 1927.

HOWARD C. PORTER.