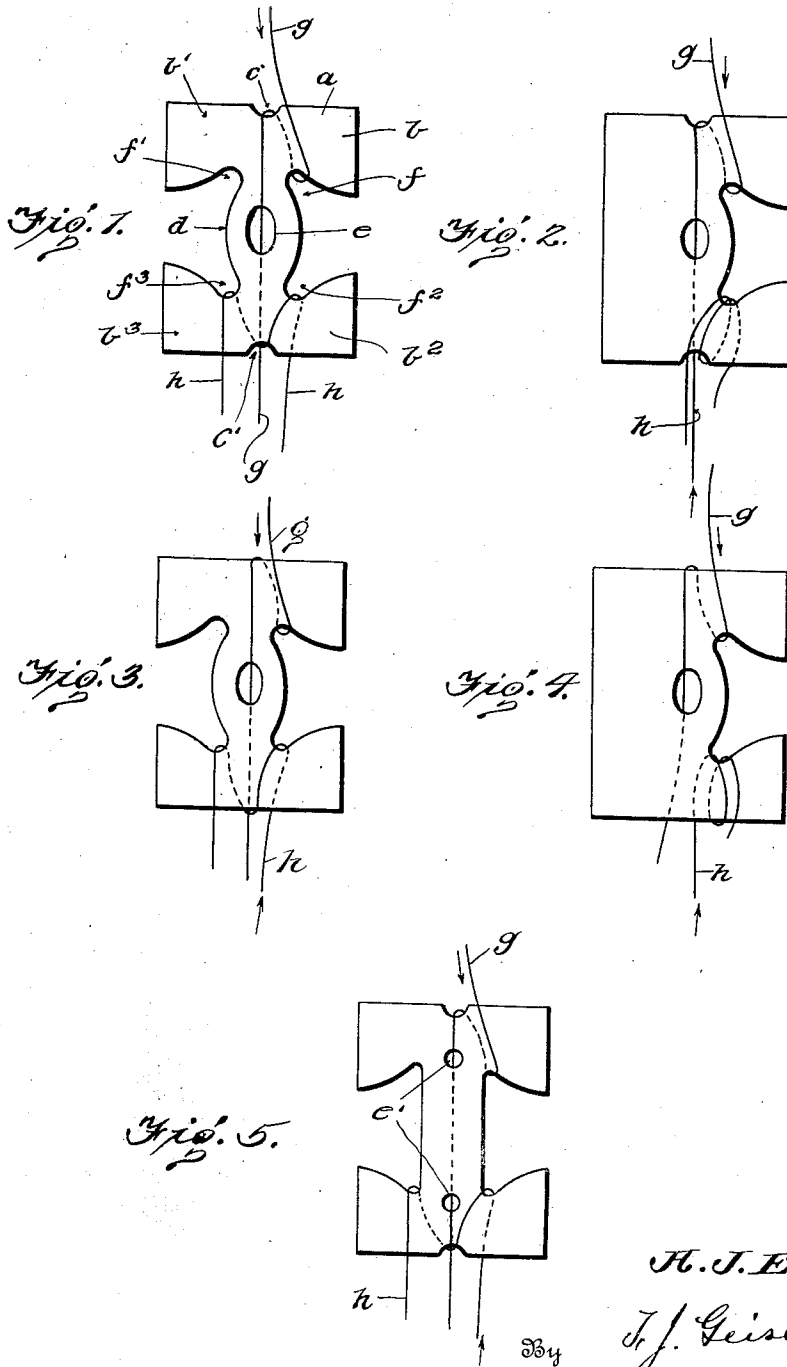


A. J. ERSTED,
BALE TIE.
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1,350,860.

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BALE-TIE.

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To all whom it may concern:

Be it known that I, ALFRED J. ERSTED, a citizen of the United States, and a resident of Portland, county of Multnomah, State of Oregon, have invented a new and useful Improvement in Bale-Ties, of which the following is the specification.

My invention relates to bale-ties to be used for fastening the ends of a wire, or cord but more particularly the former, together, in typing up loose articles in the form of a package, bale or bundle; or for tying up a box.

The object of my invention is to produce a bale-tie which shall simplify the tying operation, render the same more speedy, and besides be easier on the workman's hands.

The manner in which I attain my object is more readily understood by having reference to the accompanying drawing, which:

Figure 1 shows an enlarged view of the preferred type of my bale-tie, and illustrates the manner in which the ends of a wire are fastened together by means thereof;

Figs. 2, 3 and 4 show modified types in which my bale-tie may be constructed; and

Fig. 5 represents a type like Fig. 1 with two holes—one located at each end—instead of a single hole at the middle; such variation, however, is merely a matter of choice.

Referring first to Fig. 1:

My bale-tie is preferably stamped out of sheet metal, and comprises a flat, rectangular body *a*, the middle part of which is made with a hole or eye *e*, located in the central, longitudinal axis of the body, and both ends of the body are provided at the sides with opposite, lateral arms or projections, as *b*, *b*² and *b*³; the lateral projections of each side being separated by a substantial space. The body, in short, may be said to have the form of a double ended T-shape; and the inner edges of said lateral arms are preferably undercut, as shown at *f*, *f*² and *f*³, so as to provide wire-seating recesses.

The outer edges of the ends of the body are provided with wire-seating notches *c*, *c*², longitudinally alined with said eye or perforation *e*.

The sides of the body between said lateral projections are bulged out as at *d*, substantially concentric with the sides of the eye, so as to provide sufficient stock and strength.

But there is a further reason for this construction, namely: it is necessary that the

wire-seating recesses *f* and *f*², and *f*² and *f*³, be located close to the central, longitudinal axis of the body; or in other words, close to the notch, *c* or *c*², in the adjacent end of the bale-tie, so as to bring the laps of the wire around a lateral projection close to the longitudinal center of the tie-plate. For, if the laps are located too great a distance from this point, there will be a tendency for the tie-plate to tilt, and stand on an edge, instead of lying down flatwise.

In using my bale-tie one wire end is first fastened thereto. Let this end be represented by *g*. It is first inserted through the hole or eye *e* downward under the lower end of the bale-tie, assuming the latter to be held as shown in Fig. 1. The wire is then brought up over the upper or opposite end; then the wire is lapped under and around the lateral projection *b*, and finally is drawn upward over the latter. In so wrapping this wire end around the lateral projection *b* it is drawn into the wire-seating notch *c* and the wire-seating recess *f*, as illustrated.

In fastening the opposite end of the wire, represented by *h*, it is first brought up under the lateral projection *b*² into the wire-seating recess *f*², then by pulling it down over said projection *b*² and in said wire-seating recess *f*², it may be drawn tight around the bundle; then the wire is brought into the wire-seating notch *c*², and up and under the lateral projection *b*³, into the wire-seating recess *f*³; and is finally brought forward and down as illustrated; the latter laps of the wire firmly securing the end *h* on my bale-tie.

Where a cord is used instead of a wire an extra lap is, of course, required to prevent the end of the cord from slipping.

The wire-seating notches *c*, *c*² in the ends of my bale-tie are desirable to facilitate the tying operation; they serve to guide the wire ends to their required place on the bale-tie, and induce short turns of the wire ends around the lateral projections of my bale-tie, and in this way make the fastenings of the wire ends secure.

The important function of the eye or perforation *e* in the body of my bale-tie is to facilitate the fastening of the initial end of the wire to my bale-tie with a single turn. In order to do this it is necessary that the extremity of the wire be gotten under the

body of the bale-tie, so that the latter will hold it down, and also exert a frictional hold thereon; because otherwise, when the pull comes on the wire, there would be a tendency to pull the free end of the wire up and away from the bale-tie, and then the wire would be apt to unwrap and pull off.

As obvious my bale-tie is also adapted for tying together the ends of a cord, and the word wire is to be understood as designating any suitable tying material.

My device may be modified by providing only one side with lateral projections spaced apart, as shown in Fig. 2. Furthermore, the wire-seating notches *c*, *c'* at the ends of my bale-tie could be omitted as illustrated in Figs. 3 and 4. But I prefer the construction illustrated in Fig. 1, since that is the most perfect and practical form of my bale-tie, in my opinion.

The use of my bale-tie having the variation illustrated in Fig. 5 is the same as described with regard to Fig. 1. Only the upper hole is used in attaching the upper end of the wire, and the lower hole idles; the lower wire-end being preferably fastened in the same manner as illustrated in Fig. 1.

I claim:

1. A bale tie consisting of a substantially

rectangular flat plate formed to present a double ended T-shaped body, one or more eyes located on the central longitudinal axis of the body, the latter being recessed at both sides, said recesses terminating in inwardly inclined portions located close to said axes and tapering toward the heads of said body, and the ends of the body having notches located on said axis.

2. A bale tie consisting of a flat double ended T-shaped plate having centrally located triangular notches at the sides thereof, and a plurality of notches or recessed portions arranged centrally of said plate, the bases of said triangular notches being adjacent said centrally arranged recesses and at right angles thereto.

3. A bale-tie consisting of a substantially rectangular flat plate formed to present a double-ended T-shaped body with recessed portions at the sides of the stem or central longitudinal axis thereof, and other recessed portions located centrally on said axis and also at the ends of the plate, and the sides of the stem conforming in shape to the adjacent side of said centrally located recessed portions.

Signed at Portland, Oregon, this 29th day of Aug., 1918.

ALFRED J. ERSTED.