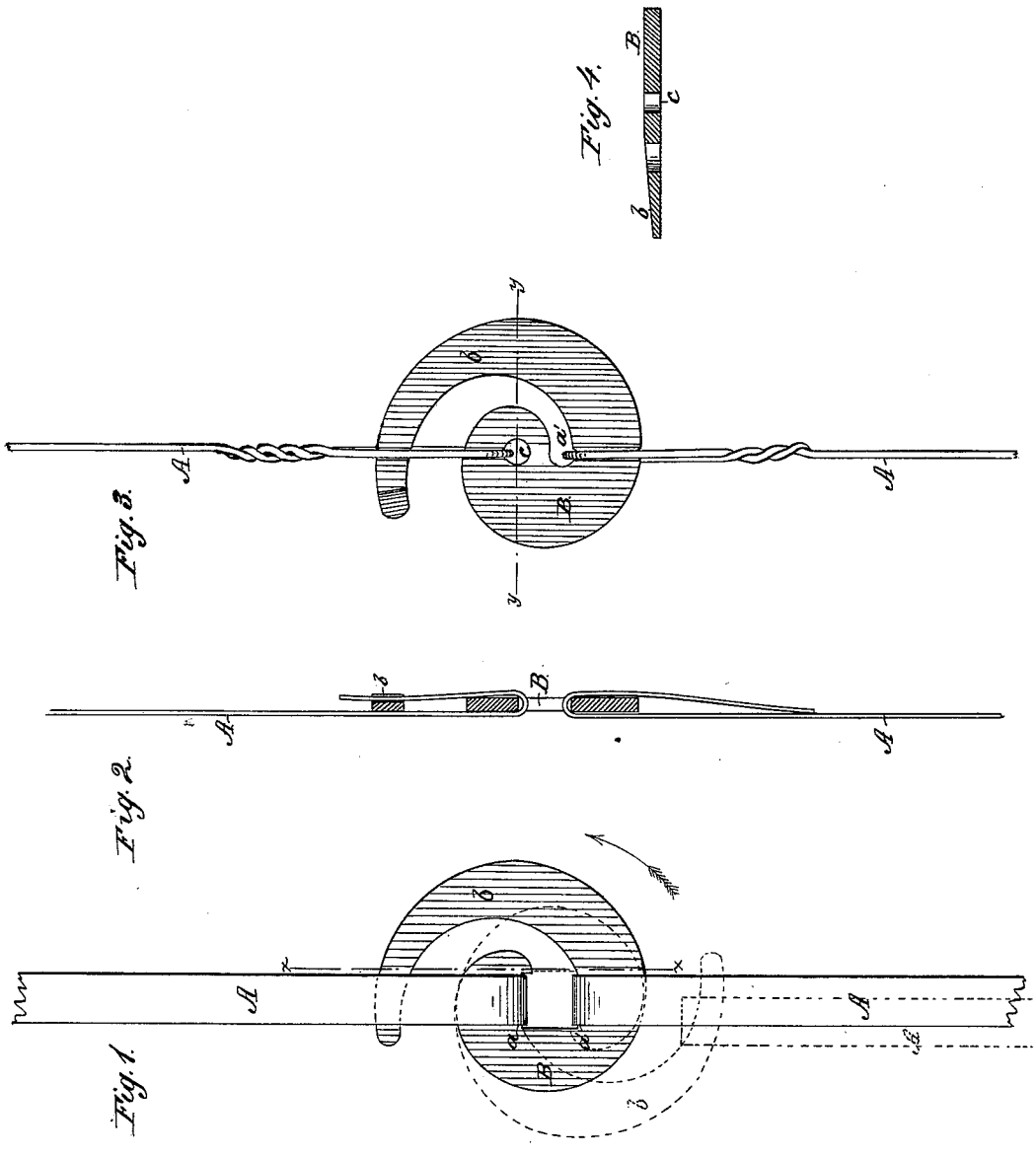
2 Sheets—Sheet 1.

I. M. CAMP.

Bale-Tie.

No. 222,241. Patented Dec. 2, 1879.



WITNESSES:

W. W. Hollingsworth

Edw. U. Byrn.

INVENTOR:

Ira M. Camp

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2 Sheets—Sheet 2.

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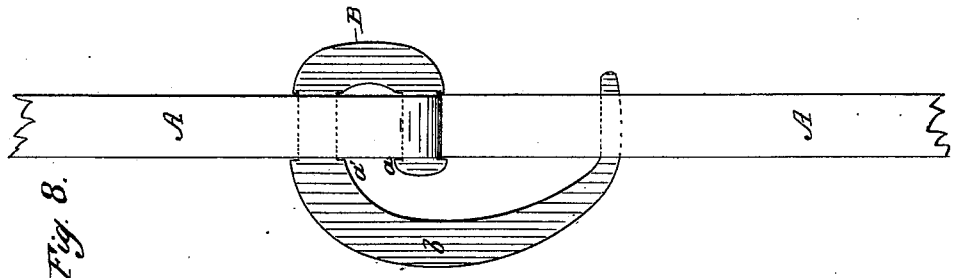


Fig. 8.

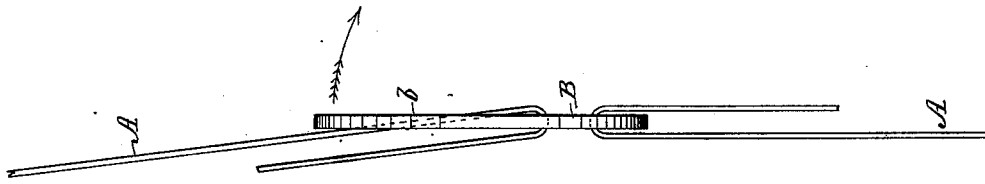


Fig. 7.

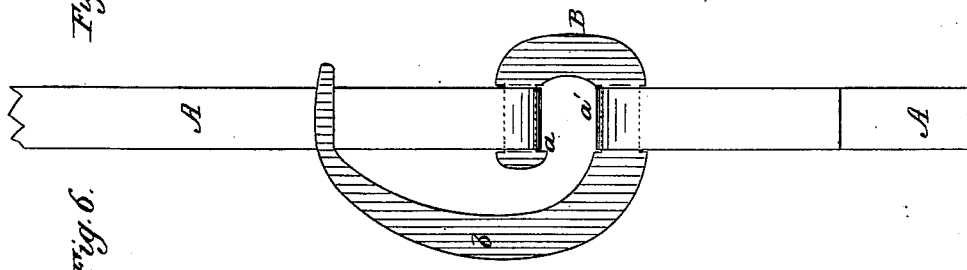


Fig. 6.

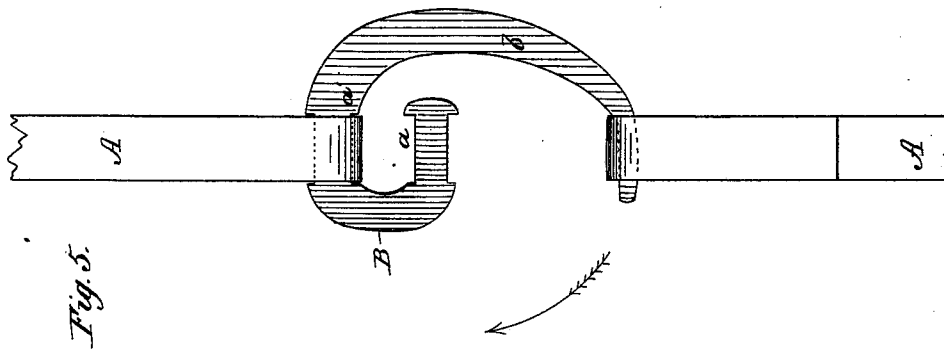


Fig. 5.

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UNITED STATES PATENT OFFICE.

IRA M. CAMP, OF NAVASOTA, TEXAS.

IMPROVEMENT IN BALE-TIES.

Specification forming part of Letters Patent No. **222,241**, dated December 2, 1879; application filed October 18, 1879.

To all whom it may concern:

Be it known that I, IRA M. CAMP, of Navasota, in the county of Grimes and State of Texas, have invented a new and Improved Bale-Tie; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a face view of the tie or buckle as applied to a band. Fig. 2 is a longitudinal section of the same. Fig. 3 is a modification of my invention, designed for wire bands. Fig. 4 is a section of the buckle shown in Fig. 3, taken through line *y y*. Figs. 5, 6, 7, and 8 represent the different positions of a further modification of my invention.

My invention is designed to provide an improved fastening for the ends of bale-bands, whether the latter be constructed of sheet metal or wire.

The invention, to which I have given the name of the "C" or "Camp" tie, consists of a buckle or plate made in the form of the letter **C**, and having opposite seats in the short bend of the letter for the looped ends of the bale-band, from one of which seats there extends the curved or semicircular arm, completing the **C**, and which serves both to contract the band with a cam-and-lever action when inserted and to lock the buckle or plate by lapping over underneath, or through the looped end of the band on the opposite side, as hereinafter fully described.

In the drawings, A represents a bale-band, which is made of flat sheet metal, and both ends of which are looped or bent and brought together to be fastened. B is the buckle or plate, which is formed with a seat, *a*, for one of the looped ends of the band, and with a seat, *a'*, for the other looped end of the band. From the side of the buckle carrying seat *a'* the plate is extended in the form of a curved semicircular arm, *b*, which passes across or through the opposite end of the band fixed in seat *a*. This curved locking-arm may pass either through the loop of the band on the top of the loop, or between the loop and the bale. In either case the expansion of the bale throws the band against a notch or recess in the end of arm *b* and locks the buckle in a position in which the two ends of the band are pulling in exactly opposite directions, in which position the strain of the bale does not come upon the locking end of the arm *b*, and has no tendency to disengage the fastening.

The general appearance of the tie is, as will be seen, that of the letter **C**, and in securing it in the ends of the band it is disposed in the position indicated by dotted lines in Fig. 1, and then turned in the direction of the arrow to the locking position shown in full lines. In thus fixing the tie it will be seen that one end of the bale-band binds against the inner edge of the arm *b*, which, acting as a cam, draws the ends of the band tighter and tighter until the two ends of the band reach their fixed position in locking-seats *a a'*.

It will thus be seen that after the buckle is adjusted there is no relaxation of the bale-band, as occurs with many other forms of ties.

In adapting my invention to wire bands also, I may make it in the form shown in Fig. 3, in which an eye, *c*, is formed in the center of the **C**, in which the wire is permanently looped, and about which point the buckle turns as a center.

To guard against accidental disengagement there may be formed lateral recesses, notches, or depressions, in which the ends of the band seat themselves when in the locked position.

In further modifying my invention with a view to securing a still greater draw on the bands, I may make the tie as shown in Figs. 5, 6, 7, and 8, in which the **C**-tie has both a cam and a lever action.

Thus, the tie is first inserted in the band, as in Fig. 5, in which it resembles the form of a figure **9**, the free end of the upper loop of the band being bent under, and next to the bale, while the free end of the lower loop is on the outside. The tie is then turned in the direction of the arrow in Fig. 5 and draws the ends of the band together with a cam action until the tie is in the position of Fig. 6, in which it resembles the form of a figure **6**. The arm *b*, resting on the top of the upper end of the band, as shown in Figs. 6 and 7, is then drawn toward the operator and down, as indicated by the arrow in Fig. 7. This gives another draw upon the band with a lever action, and the tie then presents the shape of the letter

C, and its arm *b* is secured by being pressed under the band.

In securing a wire band the same mode of action is followed, care being taken, however, that the upper wire loop is on the right-hand side, and the lower loop on the left-hand side, when the tie is adjusted, so that the strain of the bale will have a tendency to hold arm *b* under the band, instead of drawing it out.

In defining my invention more clearly I would state that I am aware of the Patent No. 200,428, in which is shown a square buckle having two U-shaped slots, which construction is designed for insertion into the looped ends of the band by being turned horizontally to produce a cam action. I therefore fully disclaim this construction, and limit my invention to the buckle made in the shape of a letter C, or in the shape of a volute spiral. This permits the body part B to be made very strong, and reduces the points of weakness at the places where the strain comes without greatly increasing the weight of the buckle, still allowing the buckle to be locked by its single curved arm *b*.

Having thus described my invention, what I claim as new is—

1. A bale-tie buckle constructed in a continuous volute spiral form, like the letter C, with a heavy body portion, B, provided with locking-seats for the band, and a curved arm, *b*, substantially as and for the purpose described.

2. A bale-tie buckle constructed in volute spiral form, like the letter C, with a body portion, B, provided with locking-seats for the band, and a curved arm, *b*, combined with the looped ends of the bale-band by two rotary movements in planes at right angles to each other to draw the band by both a cam and a lever action, as described.

IRA M. CAMP.

Witnesses:
SOLON C. KEMON,
EDWD. W. BYRN.