J. C. HARPER.
Bale-Tie.

No. 207,273. Patented Aug. 20, 1878.

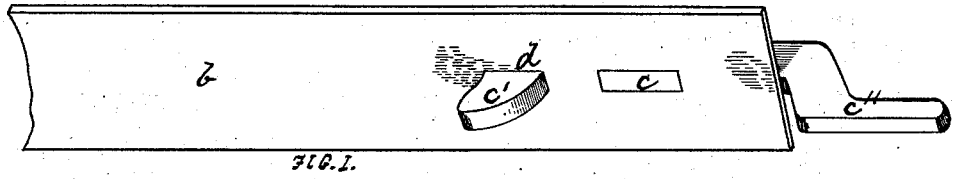

FIG. 1.

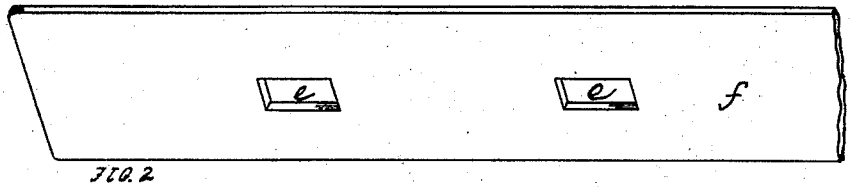

FIG. 2

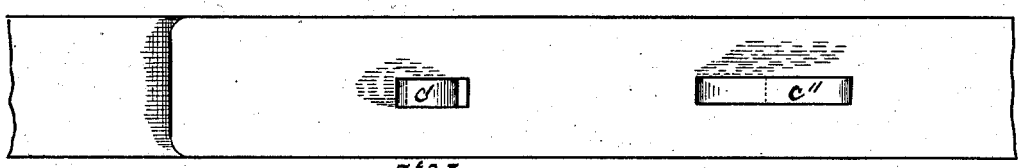

FIG. 3.

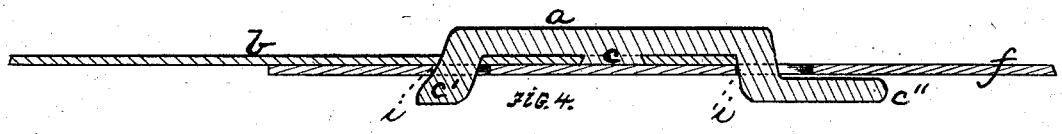

FIG. 4.

Witnesses.
J. K. Smith
R. C. Winchell

Inventor.
Joe C. Harper
by Bakewell & Kerr
attys

UNITED STATES PATENT OFFICE.

JOE C. HARPER, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN BALE-TIES.

Specification forming part of Letters Patent No. **207,273**, dated August 20, 1878; application filed July 10, 1878.

To all whom it may concern:

Be it known that I, JOE C. HARPER, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Bale-Ties; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification, in which—

Figures 1 and 2 are detached perspective views of the ends of the bale-band and the clevis. Fig. 3 is an under-side view of the clevis as applied, and Fig. 4 is a longitudinal central section of the same.

Like letters of reference indicate like parts.

In that class of bale-ties in which the fastener, buckle, or cleat has its body on one side of the band and the bent and fastening ends on the other side the buckle has been made of round iron rods or wire, and has been secured only by the passing of such ends through the band. This construction is objectionable, for the reason that when the pressure of the expansion of the bale comes on the tie the round iron or wire bearing against the slot in the band will often cut or slit it, thereby loosening the band. Furthermore, the pressure on the ends of the rod or wire buckle causes it to bend up in the middle on the reverse side of the band and loosen the fastening. In bale-ties in which the fastening device is set back from the end of the band, the latter is frequently injured or bent in transportation, so that the button, cleat, or clevis cannot be entered readily into the slots in the other end of the band without straightening the end of the band, to the great inconvenience of the user.

My improved tie obviates these difficulties, and has several important advantages:

First. The clevis is firmly secured to the band by riveting, and also by passing one end of it through a slot or mortise, so that it cannot be displaced by handling in transportation and use and thereby lost, nor bent up in the middle by the pressure of the band on its ends. Furthermore, the fastening is greatly strengthened thereby.

Second. The clevis has square edges, which bear upon square slots or mortises in the band, so that it will not slit or shear its way out when the pressure of the bale comes upon it, as is often the case with the round wire fastener or clevis.

Third. The clevis passes over the end of the band, and, being rigid, will not bend itself, and will prevent the end of the band from being bent.

Fourth. Both of the slots of the band, in which the clevis may be inserted, bear or bind on the clevis, thereby increasing the strength of the fastening over those having a single bearing, and proportionately reducing the liability of the clevis to shear or strip the band, while the same features, in conjunction with the extended toe which bears against the face of the band, decreases the liability of the displacement of the locked band by jars or shocks on the bale.

The clevis is shown at *a* in the drawing. It is fastened to the band *b* by riveting, as at *c*, which prevents its disconnection and loss and strengthens the fastening. The ends are curved outward in opposite directions. One of them, *c'*, extends through the band *c* backward, and the other, *c''*, beyond the end of the band forward, forming respectively a heel and a toe, under which the other end of the band is passed. The clevis is made with square edges and sides, and the slots or mortises *d* and *e e*, through which it is passed, are of corresponding shape, so as to constitute a square bearing on each. This prevents it from shearing or slitting its way through the band as the expansion pressure of the bale comes upon it when the bale is released from the press. The extension of the clevis *a* around and beyond the end of the band protects the latter from being bent by striking hard surfaces during transportation or use. This toe *c''*, being long, forms a good bearing on the band, and prevents its escape from the heel *c'*. The end *f* of the band is provided with slots *e e*, which are so spaced and arranged that when the band is fastened it has a bearing upon each end of the clevis, as at *i i*. This greatly increases the strength of the fastening, and that without any corresponding increase in the weight or size or decrease in the simplicity and ease of manipulation of the clevis, and also prevents displacement and loosening of the band by any heavy jar or handling the bale.

In use, the toe *c''* is inserted in one of the

slots *e* and pressed forward until the heel enters a second slot, *e*, when the contact of the two ends of the band completes the tie, the square ends of the slots *e* bearing against the square edges of the clevis, and the two being held together by the overlapping parts *c'* and *c''*.

In practice, this fastening stands a greater test than the band itself, notwithstanding the fact that the latter is made of the best Norway iron, while the ties which are in general use are weaker at the fastening. This strength is not superfluous, as the fastening is required and needed to be very strong.

I am aware that bale-ties having a fastener or clevis with its body on one side of the band and the locking ends or lugs projecting through slots in the band, and adapted to engage with slots in the opposite end of said band, have heretofore been devised, and do not claim such subject-matter; but

What I claim, and desire to secure by Letters Patent, is—

1. A bale tie or fastening consisting of the staple-shaped clevis having square edges and sides, riveted to the band on one side, and having its rear end passed through the band and its front end extending beyond the end of the band, substantially as and for the purpose specified.

2. The clevis riveted to the band on one side and having overlapping heel and toe projecting, the heel projecting through the band and the toe extending over and beyond the band, in combination with the slotted band fastened thereby, and having a double bearing thereon, substantially as described.

In testimony whereof I, the said JOE C. HARPER, of city, State, and county aforesaid, have hereunto set my hand.

JOE C. HARPER.

Witnesses:
F. W. RITTER, Jr.,
JAMES I. KAY.