D. OLMSTED.

LOCKS FOR BALE-TIES.

No. 180,910. Patented Aug. 8, 1876.

Fig. 1.

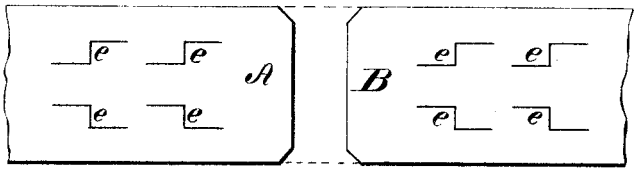


Fig. 2.

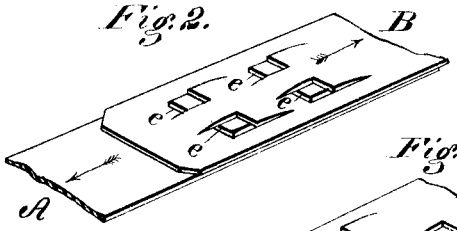


Fig. 3.

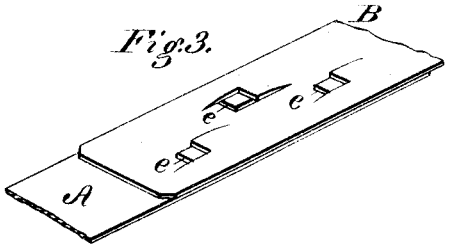


Fig. 4.

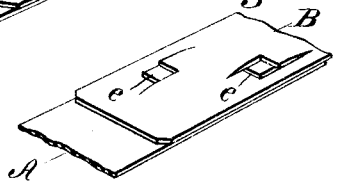


Fig. 5.

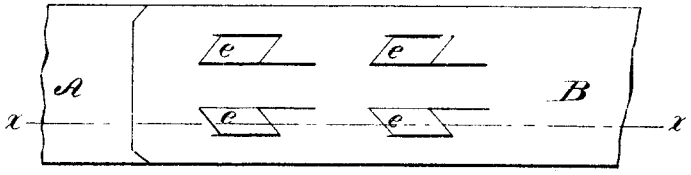
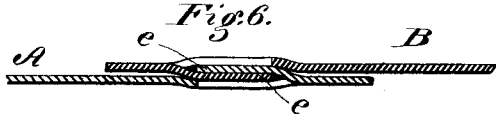


Fig. 6.



Witnesses:

Donn S. Twitchell.

Hill & Dodge

Inventor:

D. Olmsted.

by Dodger & Son

Attys.

UNITED STATES PATENT OFFICE.

DAVID OLMSTED, OF MINNEAPOLIS, MINNESOTA.

IMPROVEMENT IN LOCKS FOR BALE-TIES.

Specification forming part of Letters Patent No. **180,910**, dated August 8, 1876; application filed July 19, 1876.

To all whom it may concern:

Be it known that I, DAVID OLMSTED, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Locks for Bands, Bale-Ties, &c., of which the following is a specification:

My invention consists of a novel lock or fastening for bands for binding bundles of grain, cotton-bales, and similar articles, as hereinafter more fully explained.

Figure 1 is a plan or face view of the two ends of a band made on my plan. Figs. 2, 3, 4, and 5 are views of the same united as in use. Fig. 6 is a longitudinal section on the line *x x* of Fig. 5.

This invention may be considered as an improvement on the plan of locking or securing together the ends of a band shown in the patent granted to me January 11, 1876, numbered 171,050, the object being to secure a stronger and more efficient fastening, and one that will not weaken the band so much in its construction. In that, the locking was effected by cutting or punching one or more T-shaped tongues in each end of the band, and locking the head of the tongues of one end of the band in the holes formed by cutting the tongues in the other end. As these were made the tongues were entirely severed at one end, while in my present plan I avoid this, thus rendering both the band and the locking stronger, which is a great object. The manner in which I accomplish this is shown in the drawings.

Having provided a band of the required size, I punch or cut in each of its ends A and B a series of right-angled slots or cuts, as shown in Fig. 1, thus forming at each cut a tongue, *e*, which is severed only across one end and along one side, thus leaving its opposite end and side solidly attached to the body of the band. The ends are then lapped one upon the other, the ends of the tongues *e* pushed through the cuts in the other piece or end, and the band pulled, so as to draw the tongues endwise against the solid metal at the end of the slits, as represented in Figs. 2, 3, 4, and 5, the arrows in Fig. 2 indicating the direction in which the parts A and B are drawn after the ends of the tongues have entered the slits.

By examining Fig. 6 it will be seen that these tongues and slits each form a double lock, for the reason that while the tongues *e* of the under part A bear against the solid portion at the end of the slit in the upper part B, the tongues *e* of the upper part in like manner bear against the solid portion at the end of the slits in the part A. To produce this result, of course, the tongues or slits in the parts A and B must be made of uniform lengths. In fact, the slits and tongues in one end of the band are an exact duplicate of those in the other end, as shown in Fig. 1. In cutting these slits the corners of the tongues *e* are naturally bent down or made to protrude slightly beyond the face of the band, so that when the ends of the band are placed one upon the other, with the slits over each other, the points or corners of the tongues will readily enter the slits, after which it is only necessary to pull them tight, thus making the locking of the band a very simple and easy matter. These slits may be duplicated to any desired extent, and may be arranged or located at various points, as represented in the drawings. For instance in Fig. 2 there are two pairs, those of each pair being arranged opposite each other transversely, while in Figs. 3 and 4 they are shown arranged diagonally. This latter plan is preferable, especially where the bands are narrow, as it leaves more of the metal unsevered at any one point across the band.

As these tongues are not required to be of much width in order to interlock—only two or three times the thickness of the band—a large number of them may be made in a band of a given width, thereby making a very strong and secure fastening.

This fastening is equally well adapted for use with the paper bands for binding grain, described in my patent hereinbefore referred to, and also to metallic bands for securing cotton-bales, or indeed to bands for any similar use.

When made of metal for cotton-bales, the slits would naturally be formed in the bands before applying them to the bales, though they may be made when applied, and while the bale is in the press, by using a suitable hand-tool to cut the slits. In the case of paper bands for grain, the slits will preferably be cut by a suitable tool after the band is applied to the bundle, though it may be done before, in case of hand-binding. In using them for binding

grain, I contemplate the use of a machine which will both apply the bands to the bundle, and at the same time punch or cut the slits; but, as the tools or machine to be used for this purpose form no part of the present invention, they need not be herein described.

It is obvious that the transverse portion of the slits need not be at an exact right angle to the longitudinal portions of the same, but may be made more or less inclined, as shown in Fig. 6. Indeed, this plan has the advantage of making the corners of the tongues *e* pointed, whereby they will more readily enter the slits in the other part, and, moreover, will be more securely held therein, being less liable to slip out in case the band should be accidentally bent or folded longitudinally.

Having thus described my invention, what I claim is—

1. The herein-described lock or fastening for bands, bale-ties, &c., consisting of one or more angular slits and tongues *e*, formed in each end of the band, substantially as shown and described.

2. A band having the angular slits and tongues *e*, formed by cutting or punching the slits in the solid body of the band at each end, as set forth.

3. The herein-described mode or method of locking or fastening the ends of bands by means of the tongues *e*, and the angular slits whereby the tongues of both parts are made to engage against the solid metal at their ends, as set forth.

DAVID OLMSTED.

Witnesses:
HENRY WILSON,
PHINEAS PAGE OLMSTED.