Sheet 1, 2 Sheets.

W. Field.

Cotton Bale Tie.

No. 21,190. Patented Aug. 17, 1858.

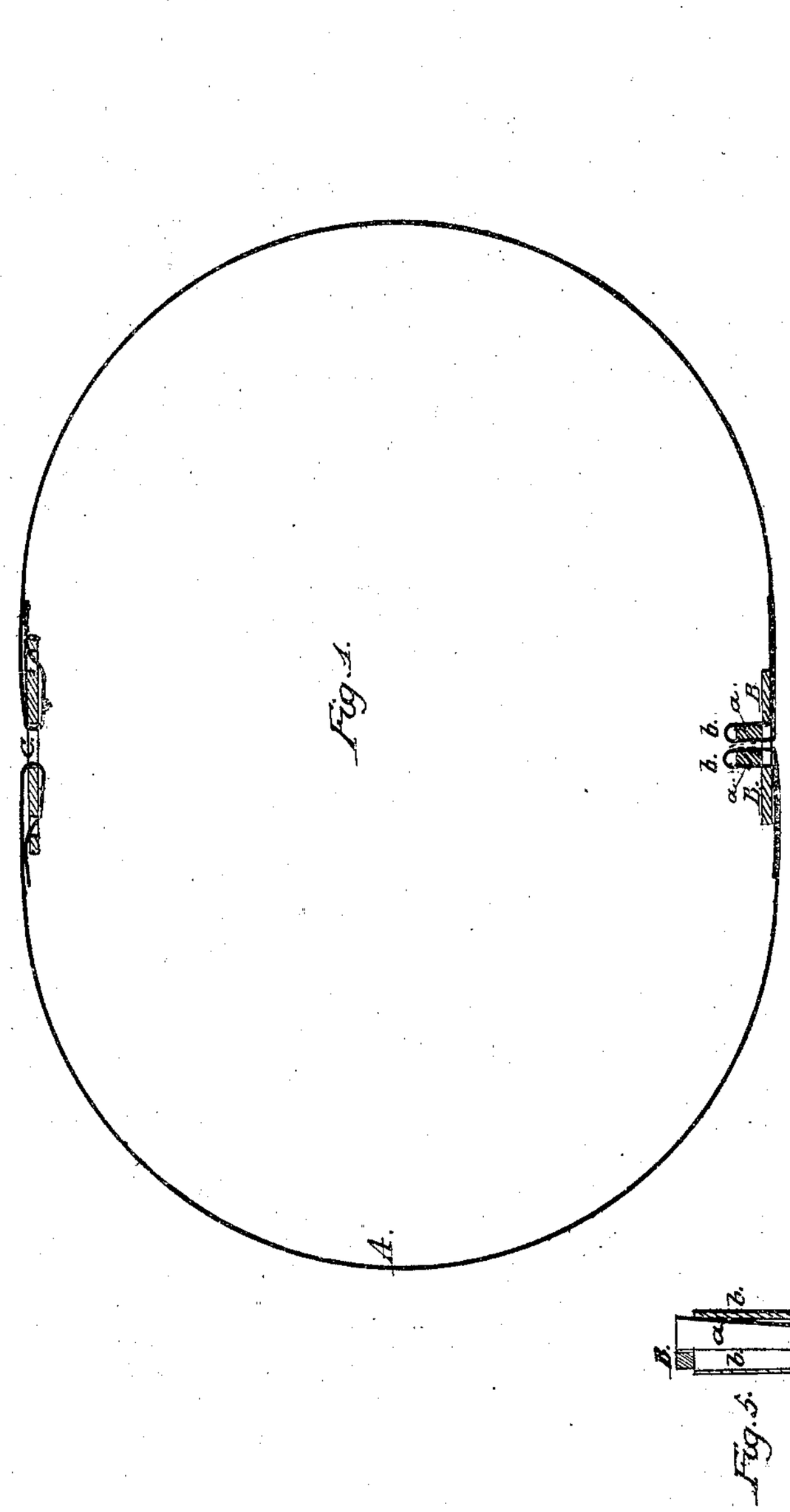

Fig. 1.

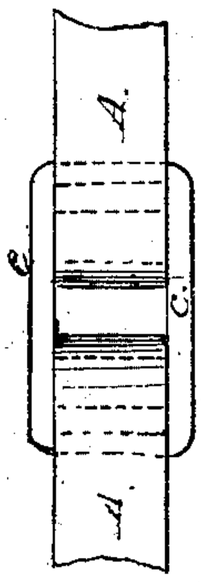

Fig. 4.

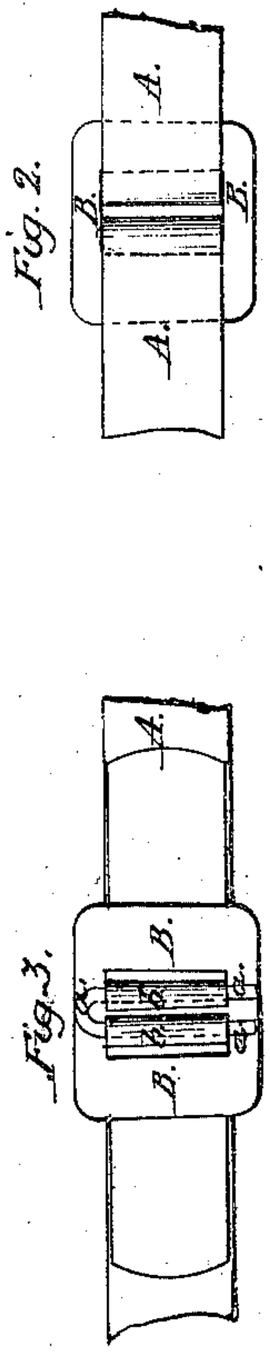

Fig. 2.

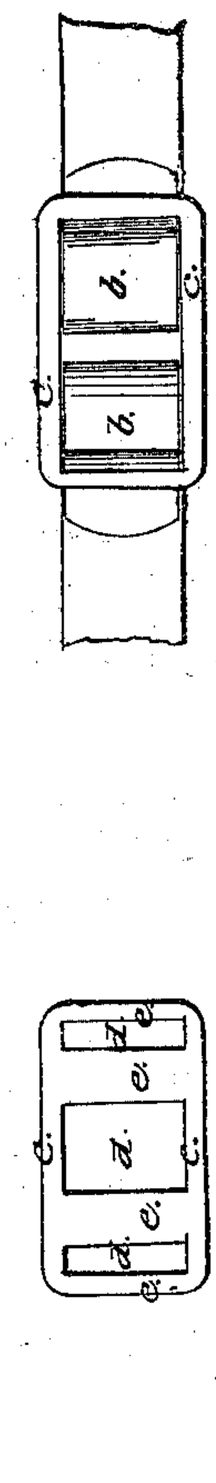

Fig. 6.

Fig. 3.

Fig. 7.

Fig. 5.

Fig. 8.

Sheet 2, 2 Sheets.

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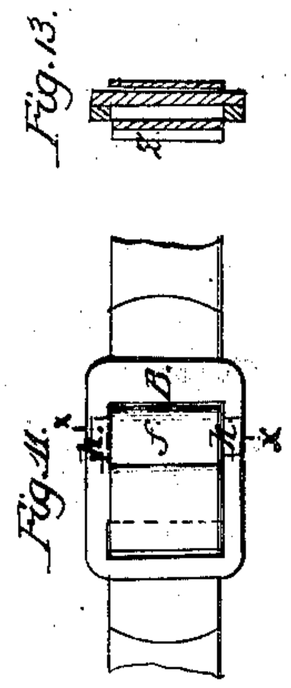

UNITED STATES PATENT OFFICE.

WILLIAM FIELD, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN METALLIC BANDS FOR BINDING BALES.

Specification forming part of Letters Patent No. **21,190**, dated August 17, 1858.

To all whom it may concern:

Be it known that I, WILLIAM FIELD, of the city and county of Providence, and State of Rhode Island, have invented certain new and useful Improvements in Metallic Bands for Binding Bales, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a sectional view of a binding-band embracing my improvements. Fig. 2 represents a plan of a portion of the exterior of the band covering the uniting-clasp. Fig. 3 represents a plan of the band and uniting clasp on the inside. Fig. 4 represents a plan of the uniting-clasp. Fig. 5 represents a section through the clasp and key on the line *x x* of Fig. 3. Fig. 6 represents a plan of the exterior of the band over the splicing-clasp. Fig. 7 represents a plan of the interior of the band and splicing-clasp. Fig. 8 represents a plan of the splicing-clasp. Fig. 9 represents a sectional view of a band in which the ends are connected by a modified form of connecting-plate with a single key. Fig. 10 represents a plan of the exterior surface of the same. Fig. 11 represents a plan of the interior surface of the same. Fig. 12 represents a plan of the clasp. Fig. 13 represents a sectional view of the same in the line *x x* of Fig. 11. Fig. 14 represents a plan of a modified form of a single key-clasp on the interior of the band. Fig. 15 represents a section of the same in the line *x x* of Fig. 14.

In the different modes heretofore devised to connect the ends of metallic bands used in binding bales, the clasp or buckle is placed on the outside and not covered with the band; also, one of the ends of the band, when bent over to loop into the bars of the clasp, is left exposed on the surface of the band, and when keys are used as a mode of connecting the ends of the band to the clasp they also are placed on the outer surface of the clasp. These modes of uniting the ends of the bands are objectionable from the liability of the fastenings being torn out in rolling over the bales, as the projecting end of the band, and also the clasp and key, catch on projecting points or corners which they come in contact with, while in moving the bales, unless great care is used, the projections are constantly cutting and wounding the hands of the laborer.

The principal object of my improvements is to overcome the before-mentioned defects in the mode of connecting the ends of the bands; and my invention for effecting these objects consists, first, in protecting the ends of the band, and also the connecting-clasp, from being raised by arranging the clasp on the under side of the band, and also forming and arranging the loops by which the band is connected with the clasp so that both of the ends of the band, turned under and backward to form the loops, are covered by and lie adjacent to the band and above the clasp, thus leaving a smooth surface on the band above the clasp without projecting edges or corners that would render the fastening liable to be caught and torn apart; second, connecting the ends of the band by means of a clasp and keys so arranged that when a strain is brought on the band the key turns and binds the loop with a force proportioned to the strain and prevents the band from yielding at the joints; third, arranging the key connecting the band with the clasp on the under side of the clasp, by which it is protected and prevented from slipping or being torn out by being embedded in the bale; fourth, in connecting short pieces of banding by means of a splicing-plate in which there are four bars all arranged in the same plane, and around which the ends of the bands are looped so as to cover and protect the surface and opposite ends of the plate, thus forming a simple, cheap, and strong splice.

In the accompanying drawings is represented my improved mode of connecting the ends of the bands. The band consists of a narrow thin metallic plate, A, the ends of which are united and held by a clasp, B, and keys *a*, as seen in Figs. 1, 2, 3, 4, and 5. A loop, *b*, is formed on each end of the band by bending the ends under and backward, and then bending the loops inward at right angles to the surface. The clasp B consists of a thin metallic plate with a rectangular hole, *c*, of the same width as the band, and of sufficient length to admit both loops through this opening in the plate. The loops on the ends of the band stand at right angles to the face of the plate, and are confined on the under side by a staple-shaped key, *a*, the prongs of the staple passing through both loops. The depth of the key is greater than its thickness, and the edge lies adjacent to and in contact with

the clasp, so that when a strain is brought on the band the lower edges of the keys turn toward each other, bringing the loops in contact at their lower and inner edges, causing them to bind against each other with a force proportionate to the strain on the band. Thus the loops are prevented from slipping.

In order to economize and work up the short pieces of banding, I use a splicing-plate, C, as seen in Figs. 1, 6, 7, and 8. The ends of the pieces to be spliced are passed through the central hole under the second bar through the first opening, and over and lie upon the first bar, and are held in place by the band passing over and covering the ends, drawing the ends tight over the first bar and preventing them from slipping when a strain is brought on the band. The band covers the surface of the splicing-plate which lies below it in the same manner that it does the connecting-clasp. Thus I form a cheap and simple splicing-plate, all the bars of which are in the same plane, and costing but little more than the same length of banding, thus doing away with the necessity of riveting the short pieces of banding together, which not only requires more time than it does to connect them with this splicing-plate, but leaves one end on the surface of the band.

In Figs. 9, 10, 11, and 12 is represented a modified form of a connecting or uniting clasp in which one end of the band is connected to the clasp in the same manner as in the splicing-plate, and the opposite end by a single loop, *f*, passing through a hole, *g*, in the clasp and confined on the under side by a single key, *h*, in which the wide side of the key is adjacent to and in contact with the under side of the plate.

A third modification of the uniting-clasp is shown in Figs. 13 and 14. This is also a single-key clasp, and on its under side is a projecting bar or brace, *z*, which is formed by bending down toward the center of the clasp, instead of cutting off the metal that is punched out to make the hole for the looped end of the band. Through the hole *k* thus formed the loop on the end of the band is passed and confined by a single key, *q*, which, like the key in the first-described clasp, is placed with its edge in contact with the under side of the clasp. The turning of this key, when a strain is brought on the band, brings the loop in contact with the bar *z*, between which and the key it is pinched, and thus it is prevented from slipping.

I do not confine myself to the staple-shaped key as shown in the first-described clasp, as two single keys may be used and produce the same effect in preventing the loops from slipping.

Having thus described my improvements in metallic bands for binding bales, what I claim therein as new, and desire to secure by Letters Patent, is—

1. Arranging the band over the clasp and the ends of the band, which are bent under to form the loops by which the band is connected with the clasp, so that the ends lie above the clasp and the band covers and protects both of these ends and also the clasp, substantially as described.

2. Connecting the looped ends of the band with the clasp by means of a double key or its equivalent, arranged substantially as described, so that the turning of the key prevents the loop from slipping, as described.

3. Arranging the key or keys on the under side of the band and clasp, for the purpose described.

In testimony whereof I have subscribed my name.

WM. FIELD.

Witnesses:

JOHN S. HOLLINGSHEAD,

WM. MARTIN.