

(No Model.)

A. A. SOUTHWICK.

BALE TIE.

No. 277,367.

Patented May 8, 1883.

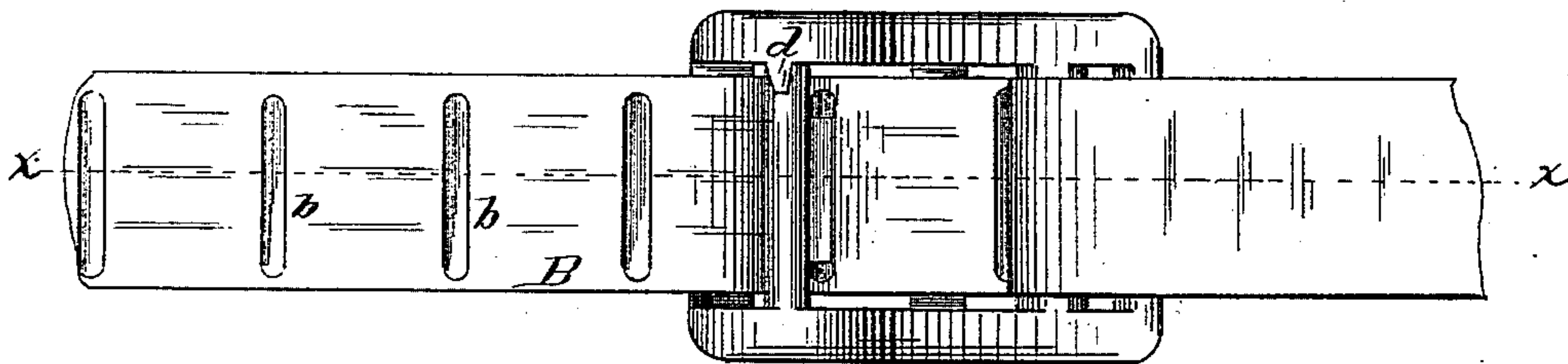


Fig. 1.

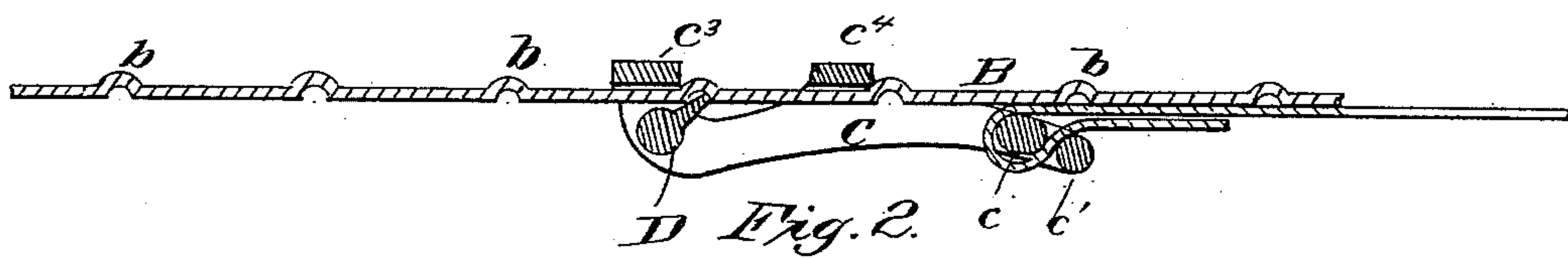


Fig. 2.

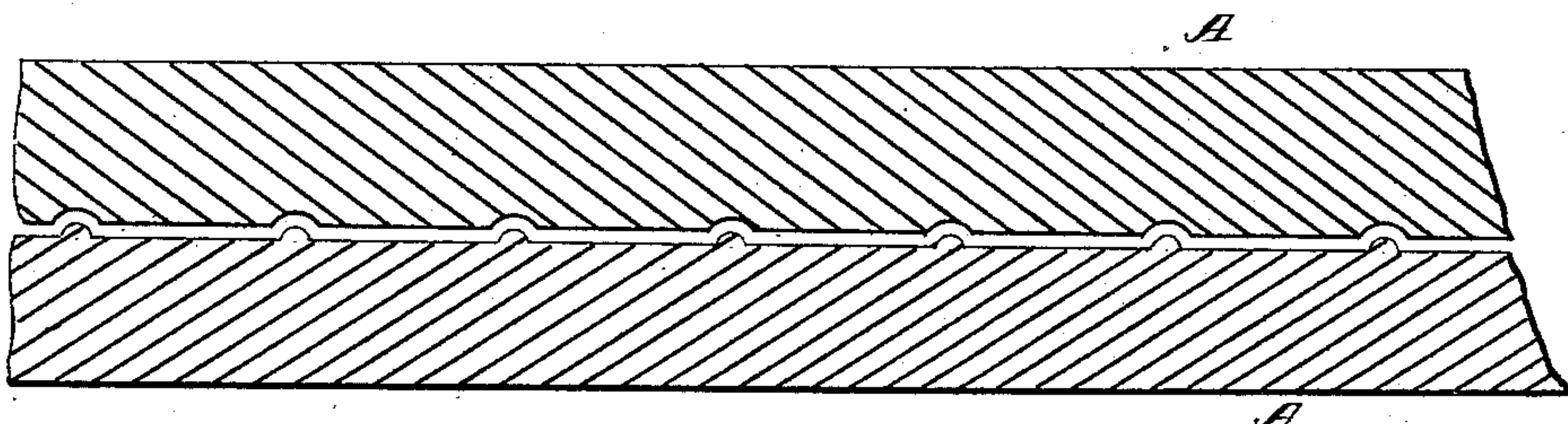


Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

AMOS A. SOUTHWICK, OF ASHTABULA, OHIO.

BALE-TIE.

SPECIFICATION forming part of Letters Patent No. 277,367, dated May 8, 1883.

Application filed April 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, AMOS A. SOUTHWICK, a citizen of the United States, residing at Ashtabula, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Bale-Ties; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to cotton-bale ties; and the novelty consists in the construction, adaptation, and arrangement of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The object of the invention is to produce a bale-tie which shall be of ready and cheap construction, efficient and durable in service, and simple in operation; and to these ends the invention consists, essentially, in the mechanisms fully illustrated in the accompanying drawings, which form a part of this specification, and in which--

Figure 1 is a top plan view of the tie in its position when applied to the bale. Fig. 2 is a central longitudinal section of the parts inverted, or inner side up; and Fig. 3, a longitudinal section of the dies with which the tie ends of the straps are formed.

In what I consider the best manner of carrying out the invention I employ the ordinary hoop-iron of commerce, which for a proper portion of its free end is subjected to the action of the dies A to form the lugs or ribs *b* upon the strap B. It is important that the fiber of the strap B should not be injured materially in the formation of these ribs, and for this reason the dies are formed with properly-rounded projections and recesses. To further prevent the strap from being weakened by the formation of the ribs, the said ribs are not made to extend entirely across the strap, but a space is left untreated upon either side to maintain the tensile strength. The ribs are arranged at equal distances apart, and these distances are sufficient to give the tie end of the strap two separate bearings on the buckle

C, as will be seen by referring to Fig. 2. The buckle C is made with four cross-bars, the bars *c* and *c'* being arranged at one end of the buckle and on a different plane from the others, the bar *c*³ on the opposite end and the binder-bar *c*⁴ near the center being on the same plane. For convenience, hereinafter, I will designate the bars *c* and *c'* as "strap-bars," the bar *c*³ as the "tie-bar," and the bar *c*⁴ as the "binder." The buckle is curved longitudinally to give a binding effect to the strain produced by the expanding material, and it is secured to the strap by the said strap at one end being passed around the strap-bar *c*, between the bars *c* and *c'*, and then between the latter and the body of the strap B.

Pivoted in the side plates of the buckle C is a pawl, D, and formed upon the inner face of one of such side plates is a lug, *d*, which is adapted to properly limit its back action.

To a proper understanding of the invention it is necessary that the importance of the formation of the tie end of the strap should be considered fully. This part of the invention must not be confounded with a strap having steps or ribs formed on one side only, the other being left plane. Such a contrivance has been suggested for a similar purpose; but its manufacture imposes the heating and rolling of the metal between a recessed and a plain roll.

In this invention not only is the projection formed on one side, but a recess is formed on the opposite side, and while the pawl D engages in one recess to hold the opposite projection against the bar *d*³ with a force due to the expansion of the material, the next succeeding projection locks firmly against the binder-bar *d*⁴. The buckle and dies are made in view of each other, so that the distance between each two of the projections is equal to the distance between the inner edge faces of the bars *d*³ and *d*⁴.

The tie is applied while the material is in the press, after the great pressure necessary has been applied and before it has been released. The tie end of the strap, having been passed between the pawl D and the bars *d*³ and *d*⁴, is caught by the pawl engaging one of the recesses. While in this condition two of the projections are engaged; but as soon as the pressure is released the expanding material

forces the strap closely around the edge of the pawl, and the strain on the strap turns the pawl on its bearing to bind the projection at that point more tightly against the bar d^3 .

5 When the tie is in position the ends are both projected along the inner side, and the pawl, to release the tie, may readily be forced to release its grip.

10 Having thus described the invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

15 1. In a bale-tie, the strap B, of hoop-iron, having formed upon a portion thereof transverse projections and recesses, the recesses being on one side of the strap and the projections on the other, the strap having an unbent portion at either edge and the projections being equidistant, the whole being adapted to serve with a buckle having a pawl or locking-
20 lever, substantially as and for the purposes set forth.

2. In a cotton-bale tie, a buckle having strap-bars, a tie-bar, a binder, a pivoted pawl, and a stop, constructed, arranged, and adapted to serve with a tie-strap having equidistant pro- 25 jections and recesses, as set forth.

3. In a bale-tie, the combination, with the buckle C, having strap-bars c and c' , the tie-bar c^3 , and binder c^4 , of the pawl D and stop d , and the strap B, having equidistant projec- 30 tions and recesses b , the whole being adapted to serve together, as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

AMOS A. SOUTHWICK.

Witnesses:

GEO. A. EASTMAN,
C. B. WELLS.