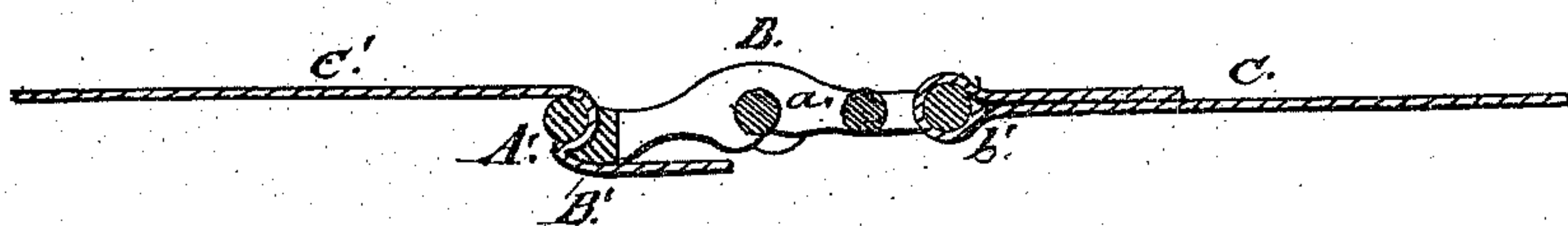


*G. N. Beaud*

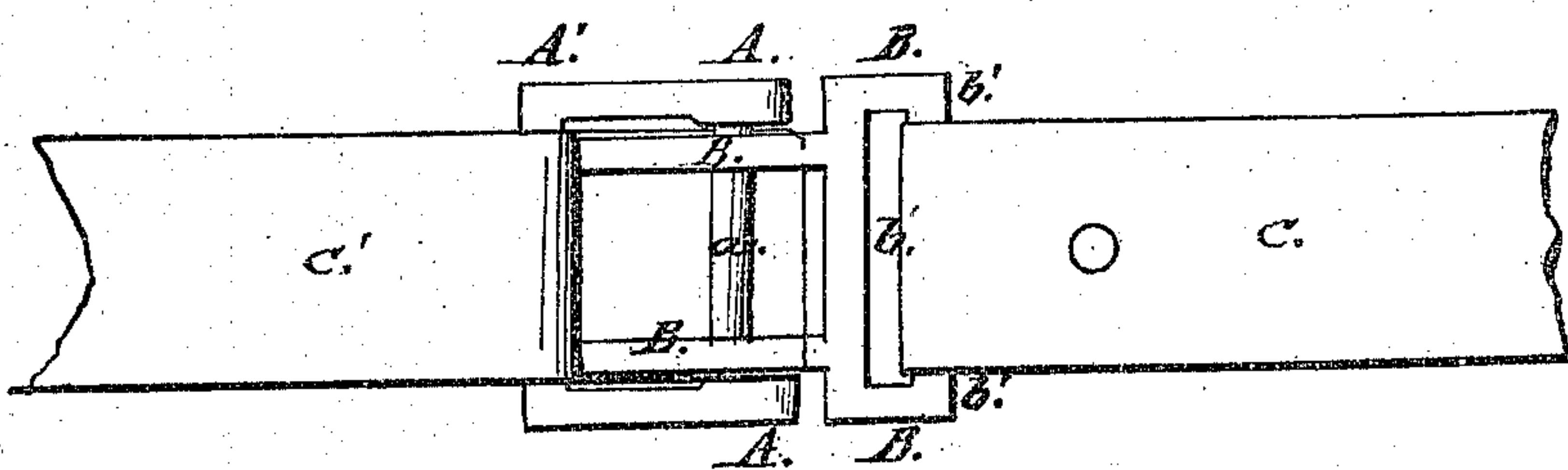
*Bale Tie.*

*No. 82,844.*

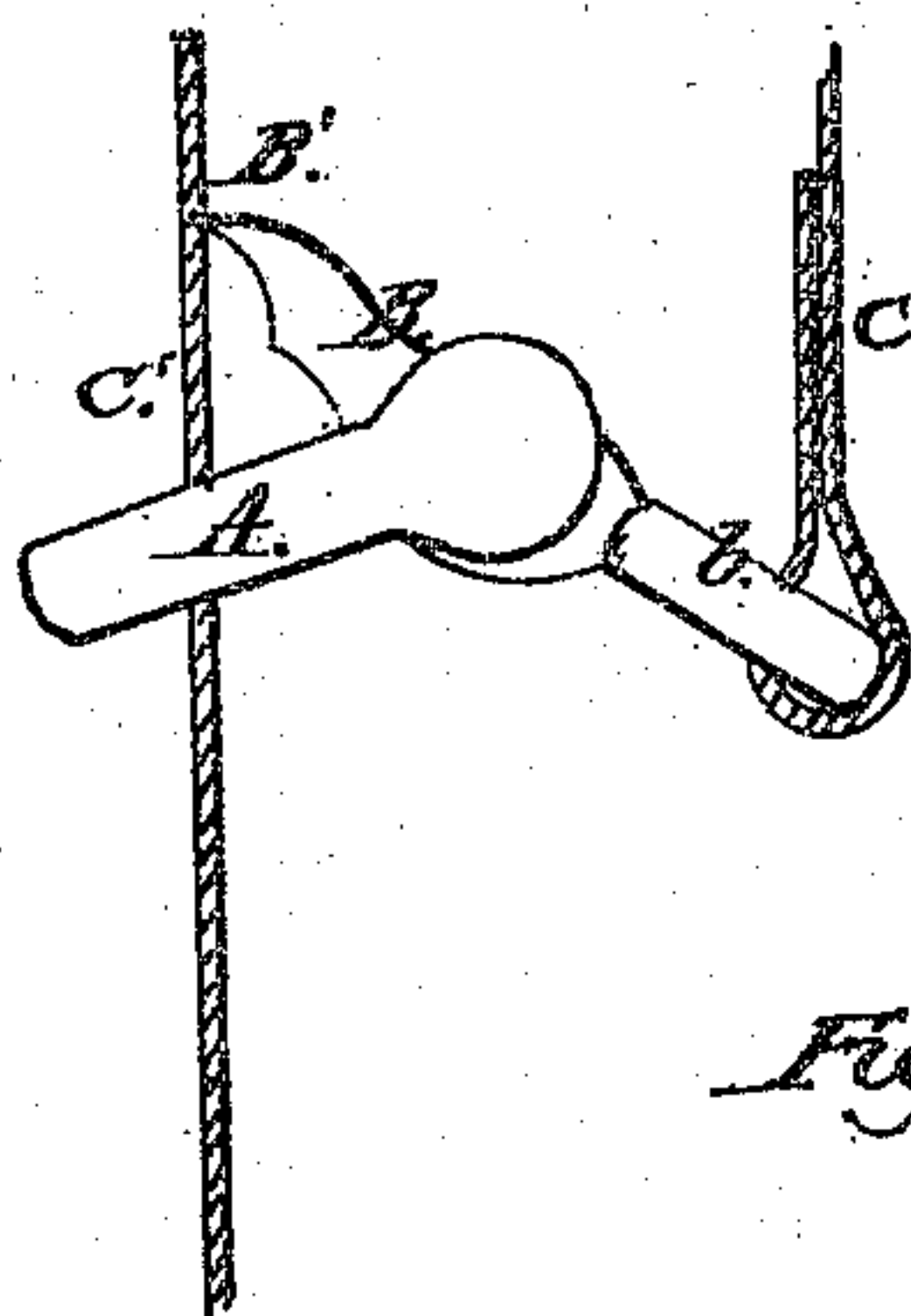
*Patented Mar 11, 1869.*



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

*Witnesses:*  
*William W. Herthel*  
*Robert Burne.*

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*G. N. Beaud*  
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# UNITED STATES PATENT OFFICE.

GEORGE N. BEARD, OF ST. LOUIS, MISSOURI.

## IMPROVED COTTON-BALE TIE.

Specification forming part of Letters Patent No. 89,844, dated May 11, 1869.

*To all whom it may concern:*

Be it known that I, GEORGE N. BEARD, of St. Louis, in the county of St. Louis and State of Missouri, have made certain new and useful Improvements in Cotton-Bale Ties; and I do hereby declare that the following is a full and correct description thereof, reference being made to the accompanying drawings, and to the letters of reference thereon.

The nature of this invention is in the application of a buckle with a hinged tongue in such wise that the usual band or hoop shall connect to the said tongue, and act by a leverage, when the strain of the bale comes thereon, to cause the other end of the band to fold about the transverse end of the buckle and the rounded end of the tongue-lever, and, moreover, so that the end of the hoop thus bent shall suffer no abrupt distortion or angular deflection, and avoiding cracking or splitting of the hoop-iron, which usually occurs in ordinary buckle-ties under great strain.

It is well known that in self-adjusting ties or locks the band is quickly deflected, in order that the distortion thus formed may prevent slipping of the tie on the band. Such quick deflections are usually more or less angular, thereby creating great liability to rupture of the fiber of the iron band, and necessitating the use of a superior quality of iron at a correspondingly-increased cost. To avoid these disadvantages, and to form in general an improved band-tie, is the object of my said invention.

To enable those herein skilled to make and use my said improvement, I will now more fully describe the same, referring herein to the accompanying drawing.

Figure 1, as a section; Fig. 2, as a plan; and Fig. 3, as an elevation, showing the lock immediately after insertion of the band.

As is well known, the bands usually employed for fastening bales of hemp, cotton, rags, and similar matter are thin strips of wrought-iron, to join the ends whereof I employ the tie now to be described.

Said tie is formed of a buckle, A, which

has the pivot-bar *a*, to which the tongue-lever B is connected and secured, leaving, however, the tongue B free to turn readily on the said pivot-bar.

The tongue B has at its end a rectangular loop, *b*, and the end bar, *b'*, of said loop is arranged of a circular or rounded exterior form or section, so that one end of the band C may be wound about said end bar, giving a bend of easy curvature and avoiding angular turns.

To retain the band, and in transportation to prevent the detachment of the buckle, the overlapping end of the band may be riveted down, as indicated in the accompanying drawings.

The forward end of the tongue B has the form indicated at B', said form being determined by the necessity of clutching and holding the other end, C', of the band, when it has been inserted in the buckle A, and said form is, moreover, determined by curvature of the band, to be produced in drawing the same to a firm engagement about the end of the tongue and the end rail, A', of the buckle.

The band end C' will be more usually inserted from the upper side in the buckle A. Its projecting part, in the strain caused by the compressed bale and transmitted by the end C and the tongue-lever B, will be held by the end B' of the tongue-lever pressing against it, and thus this projecting part, under the influence of the tongue-lever, is gradually bent over (rounding about the end rail A') until the bent part lies snugly about this end rail.

In order to secure a proper curve, and to prevent an angular bend, the rail A' is circular or approximately circular in section, and the lower surface of the tongue end B' is similar in form.

The end B' laps over the end rail A'. Hence it is plain that, as the band C' lies next to the bale, this end C' will be forced, in the expansion of the bale, to a return bend, and finally lie close to the end C. The band is therefore caused to form an S-shaped curve,



which is gradual in its deflections, and presents great security against rupture or disengagement.

It is, moreover, plain that the leverage gained by the attachment of the band C to the loop *b* is of essential importance to cause the forward end of the tongue B' to hold fast upon the band C'.

Having thus fully described my invention, what I claim is—

The tongue-lever B B', in combination with

the buckle A, so shaped as, when drawn down by the band C. to cause the end C' of the band to bend about the end rail A', forming, by the counter-pressure of the compressed bale, an S-shaped curve, substantially as herein described.

G. N. BEARD.

Witnesses:

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