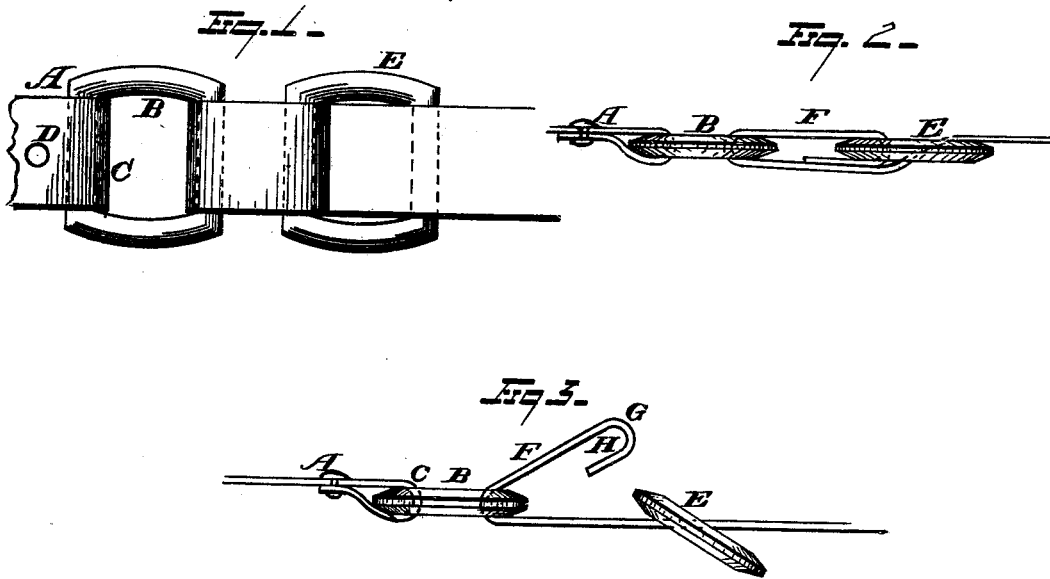


J. S. DURNING.

BALE-TIE.

No. 188,610.

Patented March 20, 1877.



WITNESSES

*Ed. K. Nottingham*  
*A. W. Bright*

INVENTOR

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# UNITED STATES PATENT OFFICE.

JOSEPH S. DURNING, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO JAMES M. HAMILL, OF SAME PLACE.

## IMPROVEMENT IN BALE-TIES.

Specification forming part of Letters Patent No. 188,610, dated March 20, 1877; application filed December 4, 1876.

*To all whom it may concern:*

Be it known that I, JOSEPH S. DURNING, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bale-Ties; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved bale-tie.

The object of my invention is to construct a bale-tie which shall serve to secure the ends of the bands by the frictional contact of the buckles with the band, and also of such form and arrangement of parts that the tie will take up all slack in the band, and retain the ends of the band in a fixed position after the pressure has been removed from the bale.

In the drawings, Figure 1 represents a plan view of my invention, and Fig. 2 is a side view of the same. Fig. 3 shows the relative position of the band and buckles when they are to be tied.

A represents the band, and B the stationary buckle, which is secured to the end C of the band by means of a rivet, D, the end of said loop being turned under in order to preserve a smooth, unbroken surface on the outer side of the band. On the other end of the band is placed an open buckle, E, similar to buckle B in form and size. After the bale has been compressed and the slip-buckle E placed on the free end F of the band, the end F is passed upwardly through the buckle B. The extreme end of the overlapping end G is then bent under to form a loop, H, which latter is then bent backwardly against the band. The slip-buckle is then moved toward the buckle B and inserted in the loop H, thereby forming an unyielding frictional locking device, which serves to prevent the expansion of the bale after the pressure has been removed therefrom.

Heretofore many bale-ties have been patented wherein the sole object to be attained consisted in securing the tie by the expansive power of the cotton or other material contained in the bale, while my improved tie is not dependent on such expansive force for its security, but is retained by the frictional pressure of the slip-buckle and looped end of the band. Again, many single buckles have been patented wherein the sole virtue of the device consisted in the facility offered in tying the ends of the band; but the great majority of such buckles have been found utterly useless to the trade for the following reasons:

In compressing cotton the bales are subjected to a pressure varying from six to twelve hundred tons, and the bale is reduced from fifty to seventy-five per cent. from its original size. As it is a matter of great importance to reduce the bale to its minimum bulk in order to economize in the attending expense of freightage, insurance, and bagging, the prime object of a bale-tie is to retain the bale within the reduced dimensions secured by the expensive process of compression.

Single buckles, as ordinarily constructed, necessitate the expenditure of a certain amount of slack band in order to secure the looped end of the band within the buckle, and thus, after the pressure has been removed from the bale, the latter expands and fills the slack in the bands wasted in tying the same, thereby rendering the process of compressing and baling only partially effective, as the power exerted in reducing the mass to the minimum bulk is partly lost, owing to the employment of ineffective bale-ties.

A bale constructed in accordance with my invention, while simple and economical in manufacture, and adapted to be readily secured, also serves to retain the bale within the smallest compass to which it may be reduced, as no slack band is wasted in tying the band.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A bale-tie consisting of a buckle formed with a single opening, said buckle riveted to one end of the band, in combination with a similar buckle adapted to be adjustably secured in a loop, H, having a downwardly-turned end, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of November, 1876.

JOSEPH S. DURNING.

Witnesses:

JAMES M. HAMILL,  
CHAS. HAUCH.