P. HAYDEN.

BALE-TIE.

No. 186,835. Patented Jan. 30, 1877.

Fig. 1.

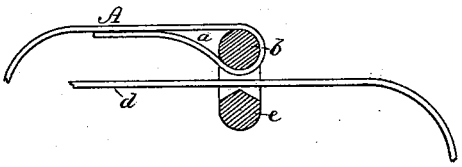

Fig. 2.

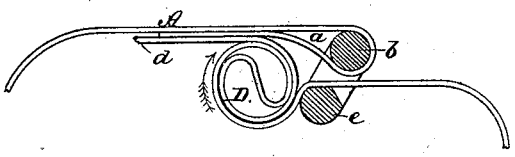

Fig. 4.

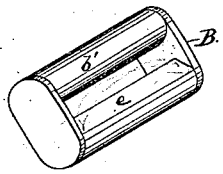

Fig. 5.

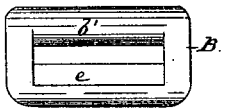

Fig. 6.

Fig. 3.

WITNESSES:

W. W. Hollingsworth

Colon & Kemon

INVENTOR:

Peter Hayden

BY Kemon & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

PETER HAYDEN, OF NEW YORK, N. Y.

IMPROVEMENT IN BALE-TIES.

Specification forming part of Letters Patent No. **186,835**, dated January 30, 1877; application filed January 22, 1877.

To all whom it may concern:

Be it known that I, PETER HAYDEN, of the city, county, and State of New York, have invented a new and Improved Bale-Tie; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figures 1, 2, 3 are sectional views, showing the different steps or operations in effecting the lock. Figs. 4 and 5 are perspective views of the buckle. Fig. 6 is a side view of the turning-key.

My invention relates to an improved mode of tightening bale-bands, and to an improved means for locking both ends of the band.

To this end, the invention consists in coiling the free end of the band by means of a turning-key or other suitable means in the manner hereinafter described.

In the drawing, A indicates a band or hoop, such as is commonly employed for baling cotton, hay, &c., and B a buckle or link, which has a rectangular form and a single slot or aperture. One end, *a*, of the band is attached to the buckle by looping it around the bar *b*, which is preferably made cylindrical in form, to enable the buckle to turn freely. The opposite parallel bar *e* is round on its outer side, to allow it to be moved freely on the bale, and angular on its inner side. The coil D is effected by aid of a forked key, C, as I will proceed to describe

The band A, with buckle or link B attached, having been passed around a bale while in the press, the free end *d* is inserted through the slot in the buckle, while the latter is held in the position shown in Fig. 1. The end *d* is then seized by the fork of the key C, and the latter quickly rotated to the right, thus winding the band around it, and producing the coil D. (Represented in Fig. 2.)

In this operation the band has a short bend, Fig. 2, where it slides over the bar *e* of the buckle, and the looped end *a* is straight or nearly so. But when the key is detached the coil presses the said looped end *a* upward or outward, and the buckle assumes an inclined position, as shown in Fig. 3. The coil thus serves to lock not only the free end of the band, by which it is formed, but also the looped end *a*. In other words, it forms a perfect lock for both ends of the band.

It will be observed that the excess in length of band is not material, since the uncoiled portion of the free end is confined under the looped end *a* of the band, the regular convolutions of the coil being in such case formed of two or more thicknesses of metal.

In the operation of applying bands to bales they can be drawn so tight, by means of the turning-key, as to take up all slack, and thus prevent the expansion of the bales. In other words, the bales will be forced to retain their compressed size when removed from the press—a great advantage in respect to compactness, which facilitates handling, and conduces to economy of transportation and storage of the bales.

By my method the expense of securing the buckle to the band by riveting the looped end *a* is avoided. The bands and buckles may, hence, be shipped in separate bundles or packages, and attached or connected where the baling is done.

The adjacent edges of the forks of the key C should be rounded to prevent cutting the band. The shank of the key may have a cross-head, to serve as a handle, as shown in the drawing, or instead of such construction a pawl and ratchet may be suitably connected with the shank for rotating it. In brief, I propose to employ any form of device suitable for the purpose.

The buckle or loop is preferably made of malleable iron, and may have one or more slots, as well as various forms and proportions.

I purpose manufacturing the bands or hoops of iron and steel combined, so that they may have great tensile strength combined with great flexibility.

My improvement enables bales to be temporarily bound in the field, or wherever else a powerful press is not available. Bands may also be applied very tightly to bales, one or more of whose bands have been broken in transit, since the key C enables almost any required degree of tension to be applied by the leverage of the coil D against the buckle or link B.

What I claim is—

1. The method of tightening a band around a bale by inserting the free end thereof through a buckle, and coiling the same by means of a suitable instrument, in the manner shown and described.

2. In combination with the buckle and looped end *a* of the band, the coil D, formed of the free end of said band on the under side of the buckle, as shown and described.

PETER HAYDEN.

Witnesses:

CHAS. A. PETTIT,

A. W. HART.