L. E. EVANS.

BALE-TIE.

No. 186,121. Patented Jan. 9, 1877.

Fig. 1.

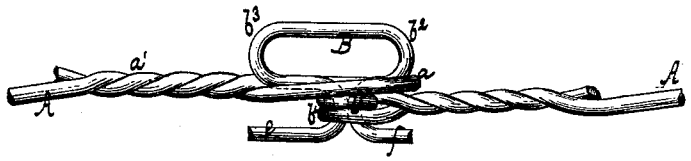


Fig. 2.

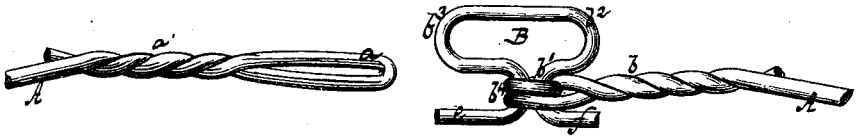
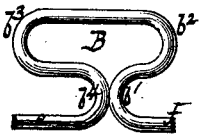


Fig. 3.



Witnesses.

Otto Skyeland

Robt. E. Miller.

Inventor.

Lemuel E. Evans

by

Van Santwood & Hauff

his attorneys.

UNITED STATES PATENT OFFICE.

LEMUEL E. EVANS, OF NEW YORK, N. Y.

IMPROVEMENT IN BALE-TIES.

Specification forming part of Letters Patent No. **186,121**, dated January 9, 1877; application filed December 18, 1876.

To all whom it may concern:

Be it known that I, LEMUEL E. EVANS, of the city, county, and State of New York, have invented a new and useful Improvement in Bale-Ties, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a side view of my bale-tie when its ends are connected. Fig. 2 is a similar view of the same when its ends are disconnected. Fig. 3 is a side view of the retaining-hook detached.

Similar letters indicate corresponding parts.

This invention relates to an improvement on that class of bale-ties which I have described in Letters Patent granted to me October 3, 1876, No. 182,810, and which consists of a piece of wire, one end of which is formed into a loop of moderate length, while its other end is formed into a hook of peculiar form, adapted to bear on the body of the bale when subjected to strain, and by virtue of such bearing on the bale to resist a straightening force.

Since the time I obtained the above-named patent, I have found that it is desirable, for several reasons, to make a compound retaining-hook separate from the tie; and my present improvement consists in the combination of a compound retaining-hook, bent as hereinafter described, with a wire bale-tie, said compound retaining-hook being made separate from the tie, and connected to one end of the same by carrying said end once or more times around its neck, so that wire of different thickness can be used for the hook and for the tie, and at the same time the hook and the tie are firmly retained in the desired relation toward each other.

In the drawing, the letter A designates the wire which is used for my tie. On one end of this wire is a loop, *a*, formed by turning a portion of said end back upon itself and twisting the neck *a'*. The other end of the wire A is connected to the compound retaining-hook B, which is made of a separate piece of wire, in the manner shown in Fig. 3, said separate wire being bent at four points, b^1 b^2 b^3 b^4, the bents b^1 and b^4 being brought quite close together. The bent b^2 is closer to the point of contact of the bents b^1 and b^4 than the bent b^3, and the entire bent forms a double hook, one part b^1 b^2 being directed one way, and the other part b^3 b^4 being directed the other way. The hook part b^4 b^3 is longer than the hook part b^1 b^2. The metal extending beyond the bent b^4 1 mark *e*, and the metal extending beyond the bent b^1 is marked *f*.

The operation of forming a compound hook of this kind can be performed very easily by suitable machinery, and I am enabled to select wire of any desired thickness for these hooks, without regard to the thickness of the wire A, which forms the body of the tie.

After the hook B has been formed in the manner described, I secure it to the wire A by carrying the end *b* of said wire round the neck of the compound hook, and then twisting it upon itself, as shown in Figs. 1 and 2 of the drawing. In the example shown in the drawing the end *b* is carried twice round the neck of the compound hook; but it may be carried round said neck only once, or more than twice, according to the thickness of the wire A.

To lock the tie around the bale, such bale must be compacted in a suitable press, and then the tie is passed around and its ends are brought together. The point b^3 is then introduced into the loop *a*, and after having been forced as far as possible into the bent b^4, the loop *a* drops over the point b^2, and the tie then attains the fully secured position, as shown in Fig. 1. When once locked my tie is not liable to become accidentally detached.

The operation of locking my tie can be performed with the same ease as it can when the compound hook is made in one piece with the tie A. My new tie, therefore, retains all the advantages which can be claimed for the tie described in my Patent No. 182,810, and at the same time the cost of manufacturing my new tie is materially reduced.

I disclaim in this application everything shown and described in my Patent No. 182,810.

What I claim as new, and desire to secure by Letters Patent, is—

A bale-tie composed of a wire, A, and a

compound retaining-hook b^1 b^2 b^3 b^4, one end of the wire A being provided with a loop, *a*, while its opposite end is carried once or more times round the neck of the compound retaining-hook, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 14th day of December, 1876.

LEMUEL E. EVANS. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.