

(No Model.)

G. NICHOLSON.

WIRE BALE TIE.

No. 295,419.

Patented Mar. 18, 1884.

Fig. 1.

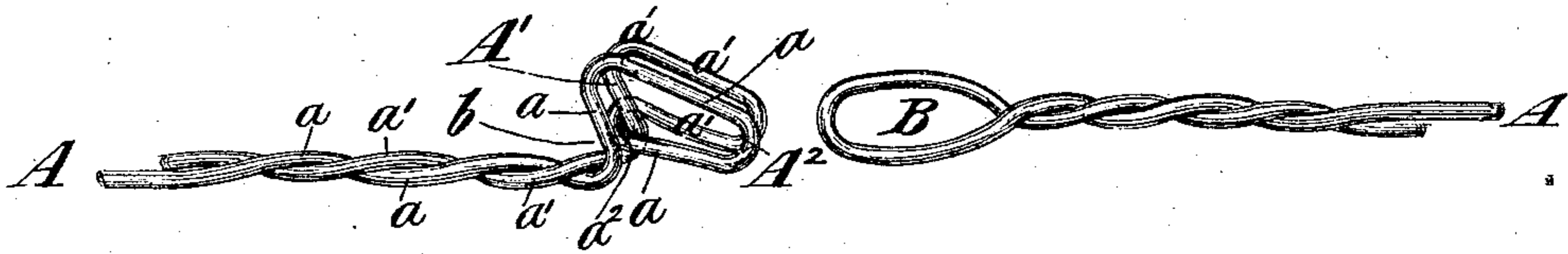


Fig. 2.

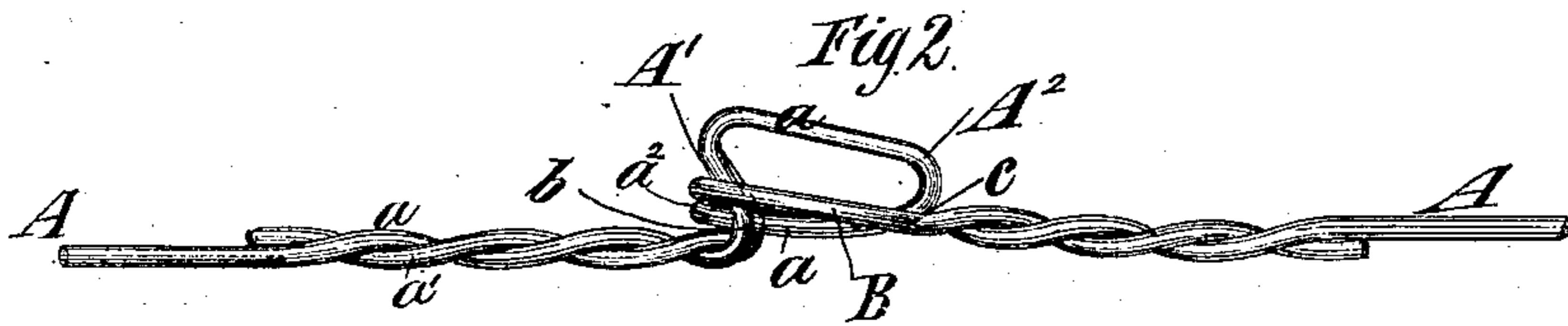


Fig. 3.

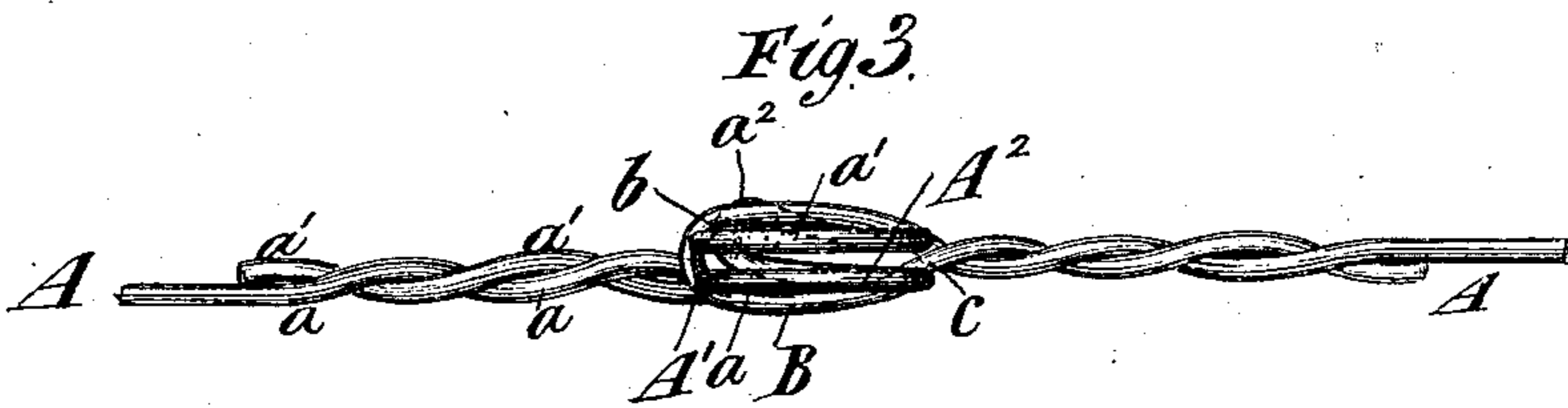


Fig. 4.

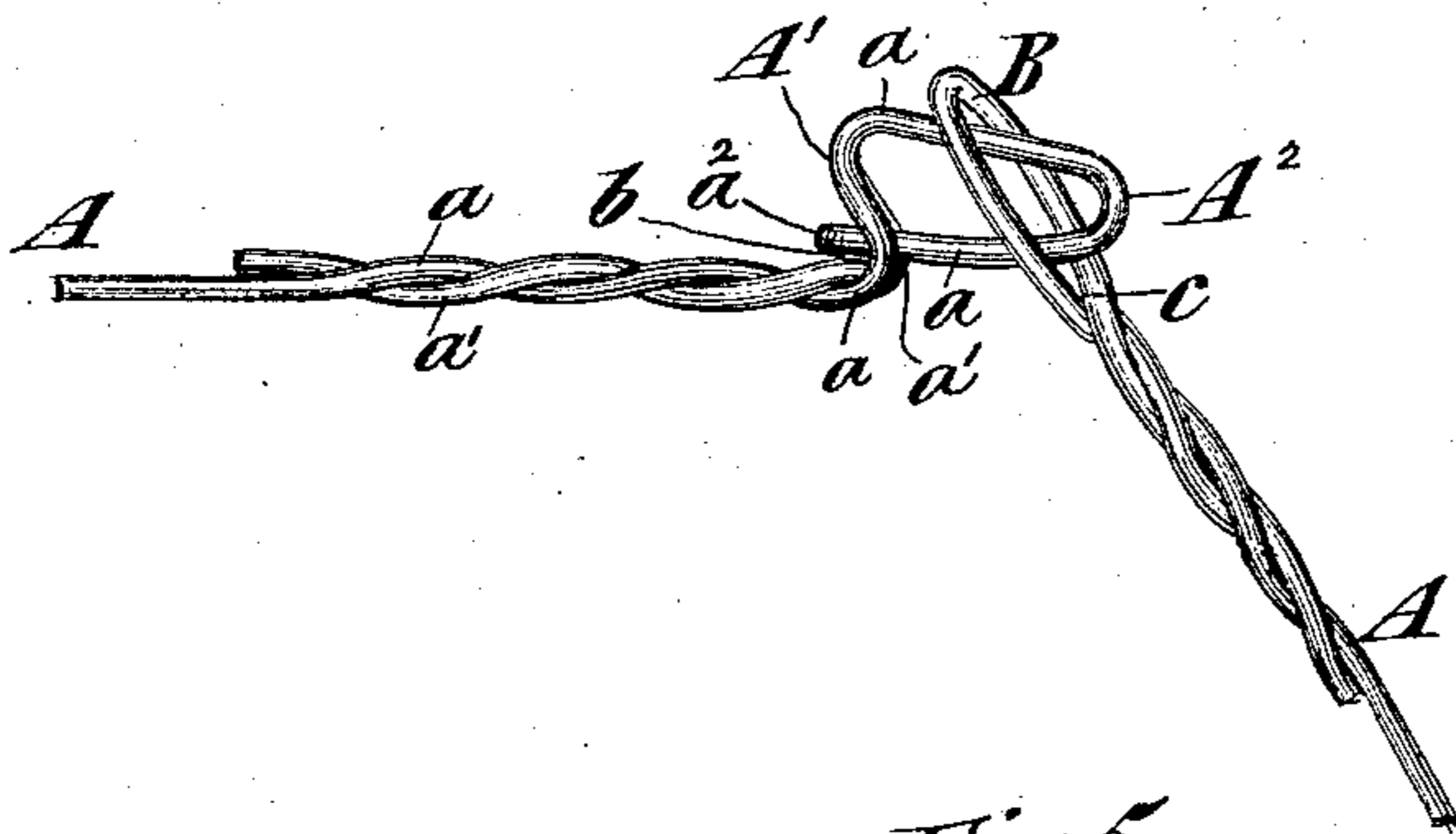
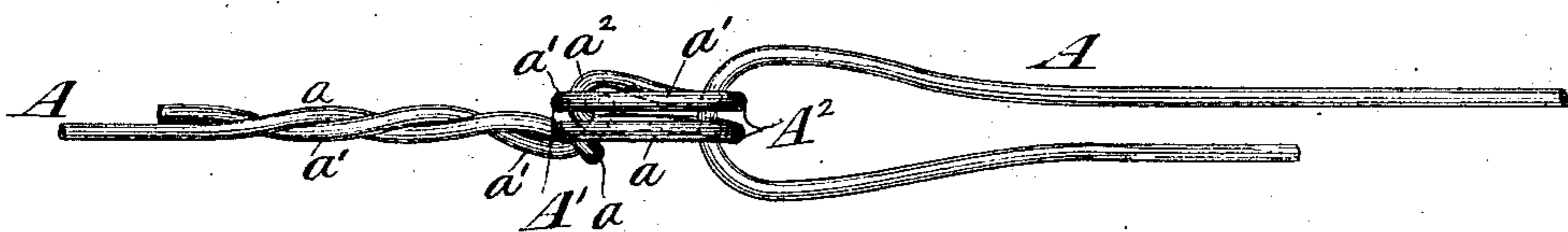


Fig. 5.



Witnesses

Ed. L. Moran

Chandler Hall

Inventor

Granville Nicholson  
by his attorney

Brown & Hall

# UNITED STATES PATENT OFFICE.

GRANVILLE NICHOLSON, OF NEW YORK, N. Y., ASSIGNOR TO JOHN L. CLARK,  
OF SAME PLACE.

## WIRE BALE-TIE.

SPECIFICATION forming part of Letters Patent No. 295,419, dated March 18, 1884.

Application filed December 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, GRANVILLE NICHOLSON, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Wire Bale-Ties, of which the following is a specification.

My invention relates to a wire bale-tie having at one end a hooked head, and having at the other end a loop which may be slipped over the head when the tie is one of fixed length, or having the other end left plain, so that it may be inserted through the head and bent backward and twisted when the tie is adjustable in length.

The invention consists in a novel formation or construction of the said head, as particularly hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of the head and loop which are at opposite ends of the tie, said head and loop being separated. Fig. 2 is a side view of the head and loop engaged with each other. Fig. 3 is a plan view of the same. Fig. 4 illustrates the relative positions of the head and loop when engaging the loop with the head; and Fig. 5 illustrates the manner in which the plain end of the wire may be engaged with the head in a tie of adjustable length.

Similar letters of reference designate corresponding parts in all the figures.

My invention relates solely to the construction or formation of the head at one end of the wire A, and will be best understood from Fig. 1 of the drawings. The said head consists, essentially, of two members or portions—namely, a hook or shoulder, A', and a sustaining-brace, A<sup>2</sup>, which prevents the hook or shoulder A' from straightening out when strain is applied to it. The wire is doubled throughout both said hook or shoulder and brace, and the two portions a a' thereof, which combine to form the head, are twisted together in rear of the head. These two portions a a', in advance of the point where they are twisted together, are bent outward transversely to form the hook or shoulder A', and they are also bent slightly rearward or backward, so as to form a seat or recess, b, at the base or root of the hook or shoulder A', for a purpose hereinafter de-

scribed. The two portions a a' extend forward from the top of the hook or shoulder A' to the forward end of the brace A<sup>2</sup>, and thence backward to the base or root of the hook or shoulder A'. At the base or root of said hook or shoulder the two portions a a' are joined or connected by a bend or loop, a<sup>2</sup>, which embraces the portion a' at the base or root of the hook or shoulder. In other words, the portion a' is passed through the bend or loop a<sup>2</sup> in that end of the brace which is at the base of the hook or shoulder A'. When the bale-tie is of fixed length, the tail end of the wire A has a loop, B, formed by doubling and twisting the wire, as shown in Fig. 1.

When the loop B is to be engaged with the hooked head, the loop is brought into the position shown in Fig. 4, and it may then be readily passed over the head and brought into the position shown in Figs. 2 and 3, in which position the bight of the loop rests in the seat or recess b, while the forward end of the brace A<sup>2</sup> is supported at c on the spring of the loop. When a strain is applied to the tie, it is impossible for the loop B to escape from the hook or shoulder A', because it would have to be moved backward in order to free it from the recess or seat b, and the hook or shoulder is prevented from straightening out by the brace A<sup>2</sup>, which has its support on the loop B at the spring c thereof. When the bale-tie is of adjustable length, the tail end of the wire A may be left plain, and to fasten the tie said plain end is passed through the brace A<sup>2</sup> and is bent backward, as shown in Fig. 5, and twisted. When the tail end of the wire tie is thus connected with the head or fastened, it is impossible for the brace A<sup>2</sup> to straighten out and release the tail end of the wire, because the portion a' of the wire, being passed through the bend or loop a<sup>2</sup> at the end of the brace A<sup>2</sup>, secures the end of the brace positively. The hook or shoulder A' and brace A<sup>2</sup> are formed entirely of a doubled wire, and, whether the tie is of fixed length or adjustable in length, the tail end of the wire is always bent around and supported by two portions of wire. The tail end of the wire then forms a broad bend around or on these two portions, and is not liable to break. When the head is formed throughout with a single portion of wire, the bend

formed in the tail end of the wire is very short and the wire is very apt to break at said bend.

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

5 1. The wire bale-tie  $\Delta$ , having a hooked head formed by the doubled portions  $aa'$ , which are twisted together in rear of the head, and are bent outward and rearward to form the hook or shoulder  $A'$ , with the recess or seat  
10  $b$  at the base or root thereof, substantially as and for the purpose herein described.

2. The wire bale-tie having a head formed

by the double portions  $aa'$ , which are twisted together in rear of the head, and are bent to form the hook or shoulder  $A'$  and brace  $A^2$ , 15 the portion  $a'$  being passed through the loop  $a^2$  at that end of the brace which is adjacent to the base or root of said hook or shoulder, substantially as herein describe.

GRANVILLE NICHOLSON.

Witnesses:

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MAT. POLLOCK.