

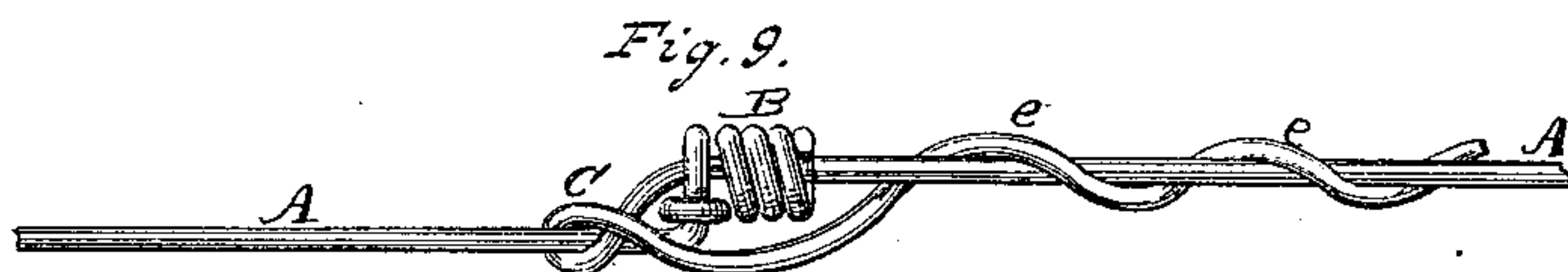
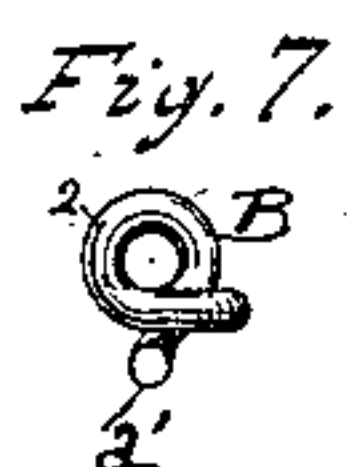
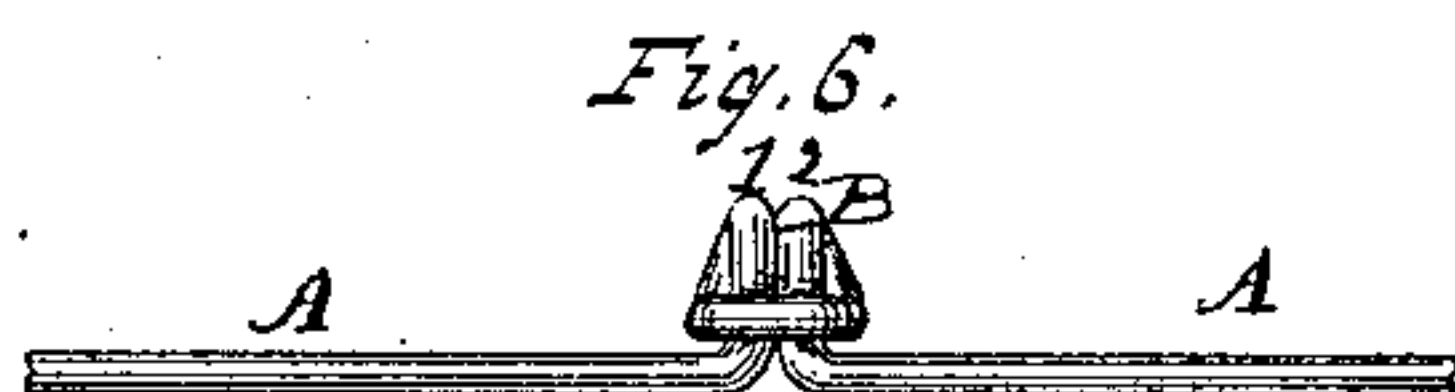
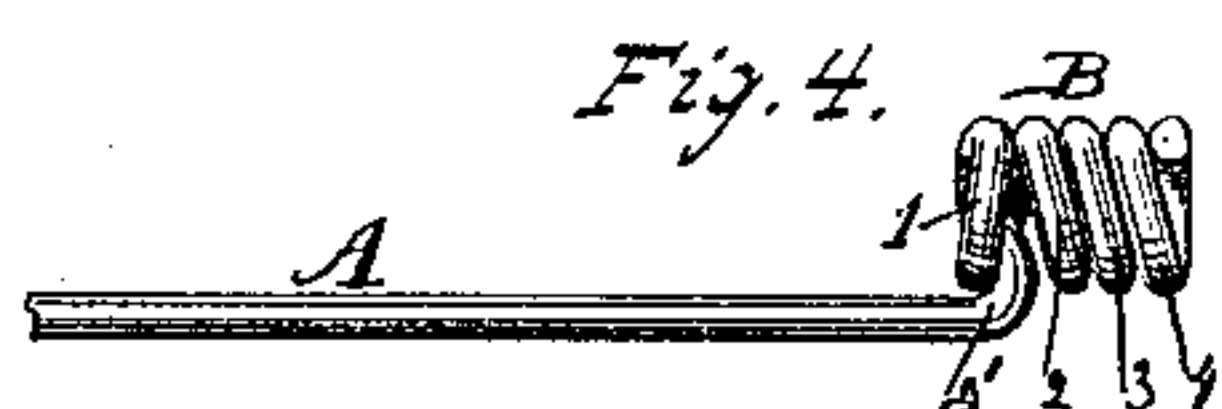
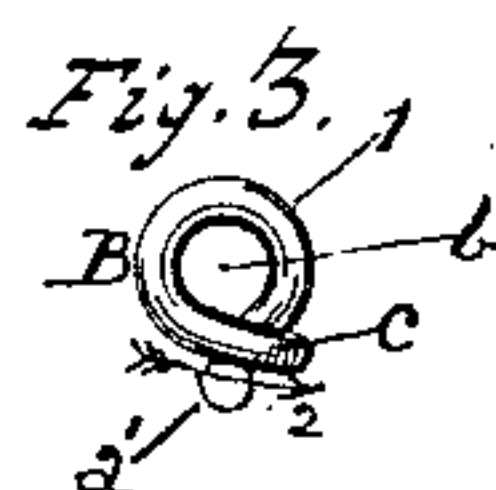
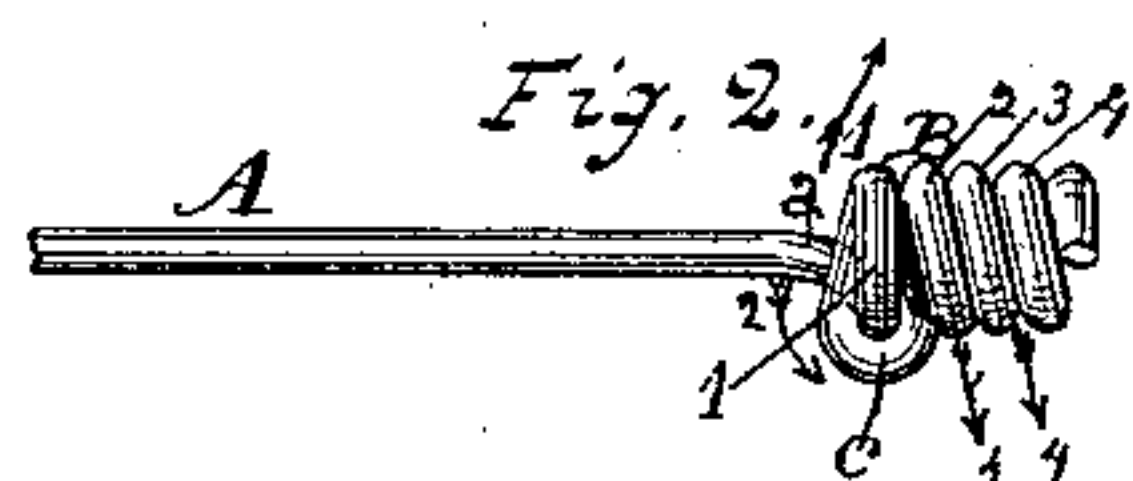
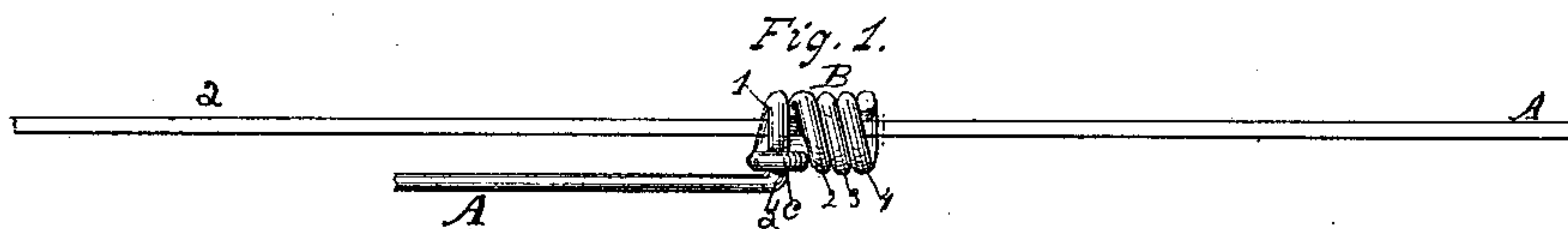
(No Model.)

D. F. BOUGHTON.

WIRE BALE TIE.

No. 336,084.

Patented Feb. 16, 1886.



Witnesses:  
Dr. F. Schlinghoff  
Charles Seisung

Darius F. Boughton  
Inventor.  
Oley Selkirk  
his atty

# UNITED STATES PATENT OFFICE.

DARIUS F. BOUGHTON, OF CHICAGO, ILLINOIS, ASSIGNOR TO HENRY W. HARTMAN, OF BEAVER FALLS, PENNSYLVANIA.

## WIRE BALE-TIE.

SPECIFICATION forming part of Letters Patent No. 336,084, dated February 16, 1886.

Application filed December 28, 1885. Serial No. 186,855. (No model.)

*To all whom it may concern:*

Be it known that I, DARIUS F. BOUGHTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wire Bale-Ties, of which the following is a specification.

My invention relates to a wire bale tie in which one end is provided with a spiral coil which has its rearward coil tied in place from shifting by a loop which is formed by the wire being continued from its neighboring forward coil and passed around one side of this rearward coil at a point where the wire is extended straight back to form the band, and thereby producing a hollow coil for holding with the plain wire of the opposite end of the band.

The objects of my invention are, primarily, to provide means for re-enforcing the rearward coil of a hollow holding-coil in a wire bale-band, so that the coil will resist the strain from the pull of the opposite end of the band, and, secondarily, to provide specific means by which the wire in the holding coiled end of the band will be held from being drawn out from its original coiled form by the pull of the opposite end of the band, and to provide means for holding the coiled holding device from being moved from its normal position when receiving the strain on the band, and, further, to provide means by which the plain wire of the opposite end of the band will have its hitch about the neck of the tie to draw against the re-enforced portion of the holding-coil. I attain these objects by the means illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my improved wire tie before the ends of the tie are permanently secured together. Fig. 2 is a view of the same from its top side. Fig. 3 is a view of the rearward coil of the holding device, illustrating the same re-enforced. Fig. 4 is a side view illustrating a modification of means for re-enforcing the rearward coil of the holding-coil. Fig. 5 is a rear side view of the same. Fig. 6 is a view of another modification, taken from one of its sides. Fig. 7 is a rear end view of the same. Fig. 8 is a view of the same, taken from the opposite side to that shown in Fig. 6; and Fig. 9 is a side view of

the tie when the opposite ends are securely connected.

The same letters of reference refer to like parts throughout the several views.

A A represent a wire bale-band to which my invention is applied.

B is the holding-head of the tie, and *a* is the plain terminal wire of the opposite end of the band, which is to have connection with this holding-head B when the ends of the band are united. This holding-head B is made in the form of a spiral coil in which a series of two or more coils, 1 2 3 4, is concentric with eye *b*, made in direction of the axis of the same. The rearward coil of the series, as coil 1, is held to coil 2 by loop *c*, and this loop binds coil 1 to coil 2 at a point neighboring neck *a'*, where it connects with coil 1, as shown. By Figs. 1, 2, and 3 this holding-head is shown to be formed by the wire being bent as follows: The wire is continued from neck *a'* and turned in direction of arrow 1 to form coil 1 around central eye, *b*, and is then carried back and behind the base of this first coil, 1, at neck *a'* in direction of arrow 2, and is then bent forward in direction of arrow 3, when it is turned back on the base of the first coil, 1, and passed to the opposite side of the head, beneath the plane of eye *b*, when the wire will be turned in direction of arrows 4 4 and form several coils, 2 3 4, as shown. By this manner of manipulation of the wire in forming head B the rearward coil, 1, of the series will be held by loop *c* with coil 2, and this loop operates to re-enforce this rearward coil at its point of union with neck *a* and hold it from being drawn out of shape or position when the head B is drawn on. By Figs. 4 and 5 this holding-head B is shown to embody the same essential elements contained in the head shown in Figs. 1, 2, and 3, the difference being that the lower side portion of coil 2 loops around the side portion of coil 1 at *c'* and neighboring neck *a'*, and thereby re-enforces said coil 1, and also that the several coils 2, 3, and 4 are all turned in the same direction as coil 1 around the central eye, *b*, of the head, instead of being turned in direction opposite to coil 1, as shown in Figs. 1, 2, and 3. By Figs. 6 and 7 this holding-head is shown to be composed of but two coils,



1 and 2, concentric to eye *b*, and that the rearward coil is re-enforced at its point of union with neck *a'* by loop *c*, made continuous with both coils, as shown. The opposite ends of this tie are secured together by the plain wire end portion, *a*, being passed endwise through eye *b* in the holding coil or head B, as shown in Fig. 1, when the operator will draw the wire through the eye in the head and tightly against the bale all around, and then turn the end portion down against neck portion *a'* rearward of said head, and then beneath and around the same and back across itself, (the said end portion, *a*,) and thence forward of head B, when it will be bent around the main strand, forward of said head, in one or more coils, as shown in Fig. 9, and thereby forming with the end portion, *a*, around neck *a'*, back of head B, a hitch similar to the well-known Blackwall hitch, which will securely hold against being drawn out, by reason of the coils *e e* holding with strand or band A.

In this tie the central eye, *b*, in head B operates with the wire within the same to hold said head in its relative normal position and form, and from shifting in any direction. The loop *c* operates to re-enforce the rearward coil in the head, and also operates as a receiver of the strain or pressure from the pull of the opposite end wire as the hitch C is drawn forward by the pull on end portion, *a*.

This tie is intended to be used for the tying of bales made in the class of presses known as "perpetual presses," though it may be used with other bales.

The advantage attending this tie is, that the operator can more readily tighten the tie around the bale, as he will draw on the wire end *a* in a direction parallel with the central

eye, *b*, or axis of head B, and not against the head, and when the wire band is sufficiently tight on the bale he can, without any inconvenience, make the hitch C and secure the ends of the tie-wire securely together.

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

1. In a wire bale-tie, the holding coil or head B, formed by two or more coils made concentric to central eye, *b*, and having loop *c*, re-enforcing the rearward coil in said head, substantially as described, for the purposes and operations set forth.

2. In a wire bale-tie, the loop *c*, made continuous with the two neighboring rear coils of a series forming a holding-head and operating to hold the rearward coil at its point of union with neck *a'* from shifting in relation to its neighboring coil, substantially as and for the purposes and operations set forth.

3. In a bale tie, the combination, with holding-head B, having eye *b* in direction of its axis, and loop *c*, re-enforcing the rearward coil at its point of union with neck *a'*, of the plain opposite wire end, *a*, operating with the holding-head and its neck substantially as by a hitch, for the purposes set forth.

4. In a bale-tie, the combination, with the holding-coil B, having its rearward coil re-enforced by loop *c*, and provided with eye *b* in direction of its axis, of the Blackwall hitch made from the opposite end wire portion of the tie, all substantially as and for the purposes and operations set forth.

DARIUS F. BOUGHTON.

Witnesses:

WM. D. HASLAM,  
N. B. WILLIAMS.