L. T. NEWELL.

Wire Bale-Band.

No. 202,954. Patented April 30, 1878.

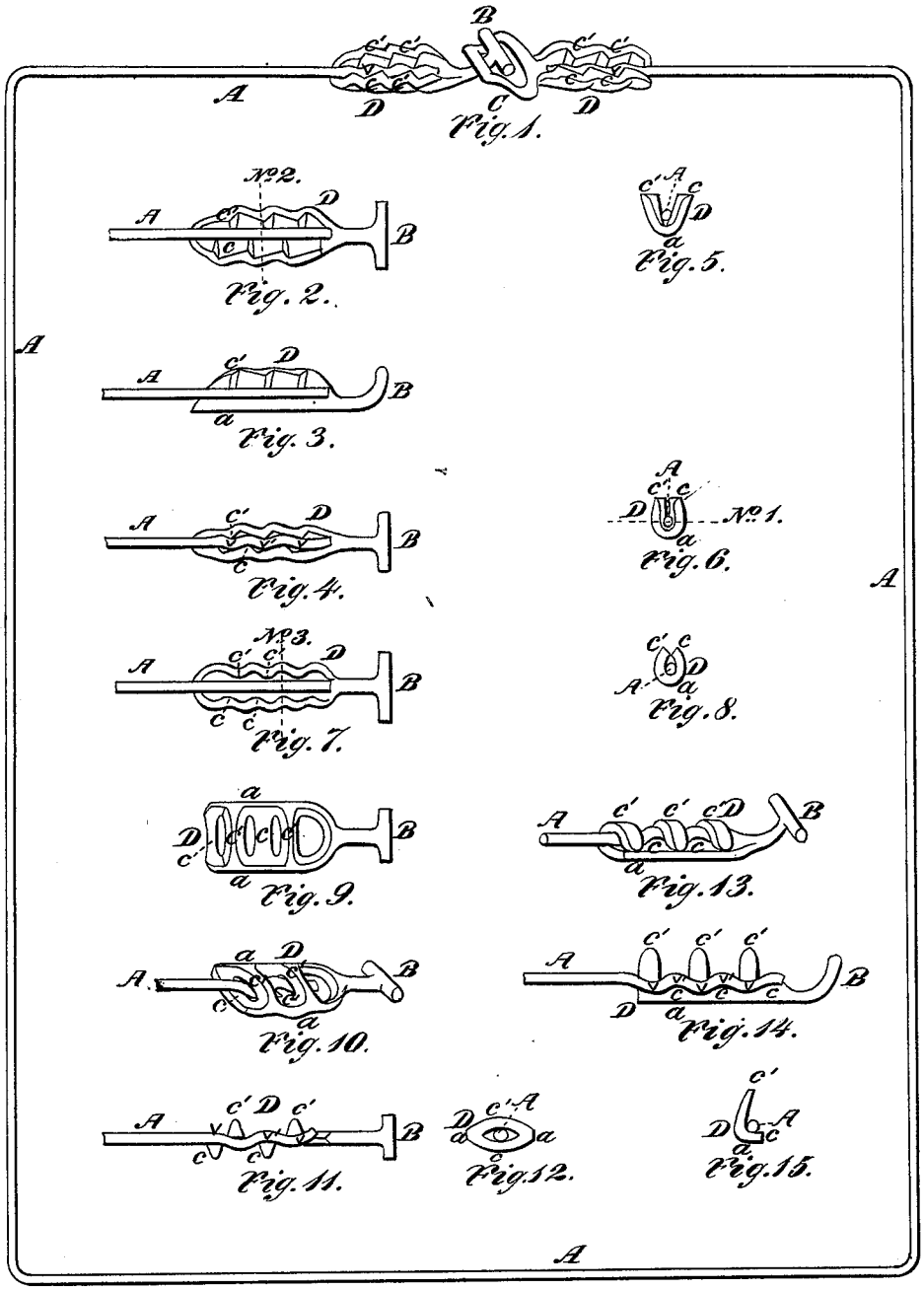


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

Fig. 13.

Fig. 14.

Fig. 15.

Witnesses.

Prentice Edgar

Chas. J. Belcher

Lewis J. Newell

Inventor.

by his attorney

Alex. Belcher

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LEWIS T. NEWELL, OF ALBANY, NEW YORK.

IMPROVEMENT IN WIRE BALE-BANDS.

Specification forming part of Letters Patent No. **202,954**, dated April 30, 1878; application filed May 12, 1877.

To all whom it may concern:

Be it known that I, LEWIS T. NEWELL, of the city and county of Albany, State of New York, have invented certain new and useful Improvements in Wire Bale-Bands, which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a perspective view of a wire bale-band and their connecting ends. Fig. 2 is a plan view of connecting device embodying the features of my invention, with the wire in place, but not secured. Fig. 3 is a sectional elevation of the same. Fig. 4 is a horizontal view taken at line No. 1 in Fig. 6. Fig. 5 is a cross-sectional view taken at line No. 2 in Fig. 2. Fig. 6 is a cross-sectional view taken at line No. 3 in Fig. 7. Fig. 7 is a plan view of the connecting device having some of its parts modified in form of construction. Fig. 8 is a cross-sectional view of the same when holding a wire. Fig. 9 is a plan view of another modification of the invention. Fig. 10 is a perspective view of the same with the wire held in place. Fig. 11 is a sectional elevation of the same. Fig. 12 is a cross-sectional view of the same. Fig. 13 is a perspective view of another modification. Fig. 14 is a side elevation of the same with the wire in place, but not secured; and Fig. 15 is a cross-sectional view of the same.

The object of my invention is to furnish a device by which the hooks or loops of bale-bands may be secured to a wire strand, forming the same without bending, looping, or twisting the wire for effecting a connection of the hook or loop with the band, as heretofore practiced by the trade.

In the drawings, A represents a strand of wire intended to form the bale-band, which strand is cut with a length about three-quarters of an inch (more or less) shorter than the required length of the bale-band when finished.

B is the hook or catching device, and C is the loop or hook receiving device. The said hook and loop may be made with any known form heretofore employed for interlocking the ends of the band, as they form, in themselves, no part of my invention, but are only used in combination with my improvements.

Made continuous with the hook B or loop C, or with each, is the wire-holding device D, composed of the web or splicing-bar *a*, made solid and continuous with the hook or loop, and running back from the same, as shown, and the two series of teeth, or bars, or ribs, *c* and *c'*, each so separated from the other that a wire may be placed between, and so arranged in relation with each that the teeth, bars, or ribs *c c* of one of the series will be directly opposite the depressions, sinuses, or spaces between the teeth, bars, or ribs *c' c'* of the opposite series, as shown in Figs. 1, 2, 4, 7, 10, and 14. The end of the wire intended to be secured to the hook or loop is laid between the two series of teeth, bars, or ribs *c* and *c*, as shown in Figs. 2, 5, 12, and 15, when the said teeth, bars, or ribs will be crowded or forced toward each other, or rather forced so as to carry their edges contiguous with the wire inward toward the sinuses or spaces between each opposite series of teeth, bars, or ribs, and thereby crimp the wire between, to give it a sinuous form, or produce a corresponding two series of sinuses, *v v'*, with the wire, as shown in Figs. 1, 4, 11, and 13.

It should be understood that the wire-holding device D should be made of either cast malleable metal or wrought or struck metal that will be capable of being bent without cracking or breaking.

In practice any of the forms of my improved device shown may be employed with great advantage, as it may be readily seen that, besides the saving of six or seven inches of wire that heretofore was required to form the hook and loop, if the bale-band was finished from a single and continuous strand, or to connect the hook or loop by bending the wire back and twisting when a supplemental connecting link or piece was used, I also am enabled to save the greater portion of labor heretofore required to complete the connecting ends, as a single operation is only required to form a perfect connection of my holding device with the wire, while in the practice of the trade heretofore several distinct operations were required.

When the several teeth, bars, or ribs *c* and *c'* are arranged in relation to each other and the web or splicing-bar *a*, as shown in Figs. 12, 14, and 15, the end of the wire is to be simply laid between the two series of teeth, bars, or ribs *c* and *c'*, when the said teeth or

ribs are to be crowded against the wire and toward each other to a distance sufficient to produce in the wire a series of sinuses, *v v'*, as shown in Fig. 4. When the said bars or teeth are arranged in relation to each other, and the webs *a a* in Figs. 9½ and 10, the end of the wire will be simply inserted between said teeth or bars endwise, when the same will be crowded or forced against the opposite sides of the wire to a degree to bend or crimp the same, substantially as in Fig. 4, as the said teeth or bars are pressed inward; and when the said teeth, bars, or ribs are arranged as shown in Figs. 13 and 15, in which one series of bars or teeth, *c*, is made to start from one of the sides of the web *a* and the other series, *c'*, is made to start from the upper side of the said web, the wire is to be simply laid in the corner of the device, as shown in Fig. 15, when the bar having teeth or ribs *c* is to be forced over the wire and down on the same, to form a crimping of the wire by the same principle of operation had in devices in Figs. 4 and 11.

It is evident that the wire may be corrugated, or have given to it a sinuous form, previous to its being put in place; yet this is not necessary, as the same pressure and operation will be sufficient to throw the teeth, ribs, or bars inward, and also bend the wire at the several points *v v'* shown. It is also evident that by so placing the teeth, bars, or ribs directly opposite each other that when crowded inward they would be made to indent or produce in both opposite sides of the wire a series of indentations or sinuses, the same secure holding of the wire would be effected, the only difference in such a case being that a greater force would be required to bend the teeth toward each other and produce the required nipping or indenting of the wire, while the wire itself would be apt to become somewhat weakened at the indented points.

It is evident that, in cases where it is desirable to splice the wire-band strand, as is often practiced by the trade, to lengthen the same, the wire holding or securing device D may be used with great advantage, as by simply laying the two ends of the two pieces to be spliced end to end between the teeth *c c* and *c' c'*, and forcing said teeth inward on said ends, they would be firmly held in a conjoined manner, while the splice would be rendered as strong as the wire itself.

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

1. The wire-holding device D, formed with a web or splicing-bar, *a*, and two series of teeth, bars, or ribs, *c* and *c'*, arranged opposite each other, and continuous with said web, all adapted to grasp, crimp, or corrugate and hold a strand of wire between when said teeth, bars, or ribs are forced inward, substantially as and for the purpose set forth.

2. The combination, with the wire-holding device D, composed of a web or splicing-bar and two series of teeth, bars, or ribs, *c* and *c'*, adapted to crimp or corrugate and hold a wire strand when forced inward against said strand, of the hook B or loop C, or their well-known equivalents, substantially as and for the purpose set forth.

3. The method of securing the free end of a wire to a connecting device, which consists in placing the same between toothed jaws of malleable metal, or their equivalents, and then forcing such jaws or equivalents inward, thereby bending and clamping such free end, substantially as specified.

LEWIS T. NEWELL.

Witnesses:
ALEX. SELKIRK,
CHAS. J. SELKIRK.