M. C. SMITH.
Bale-Tie.

No. 205,918. Patented July 9, 1878.

Fig. 1.

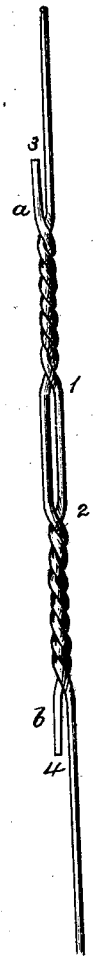
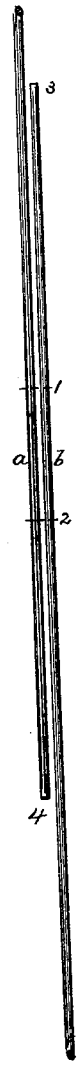


Fig. 2.



Fig. 3.



Moses C. Smith.
Inventor.

Attest:
H. L. Perrine
D. P. Lowe

By Wm. H. Ginnell
Attorney.

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

UNITED STATES PATENT OFFICE.

MOSES C. SMITH, OF STARKVILLE, ASSIGNOR TO EDWIN S. LENOX, OF NEW YORK, N. Y.

IMPROVEMENT IN BALE-TIES.

Specification forming part of Letters Patent No. **205,918**, dated July 9, 1878; application filed January 24, 1877.

To all whom it may concern:

Be it known that I, MOSES C. SMITH, of Starkville, in the county of Herkimer, in the State of New York, have invented certain new and useful Improvements in the Art of Tying Wire Bale-Bands, of which the following is a full, clear, and exact description.

In the drawings hereto annexed, Figure 1 illustrates my improvements; and Fig. 2 shows the mode heretofore employed, as described in my patent of June 6, 1876, No. 178,388, and also in Patent No. 176,049, dated April 11, 1876, and granted to S. D. Purdy. Fig. 3 shows the overlapping wires before being twisted.

In using wire bale-ties heretofore their ends have been looped and passed one within the other, or hooked together, and the ends thus looped or bent back have been twisted around the body of the wire for securing the tie or band. Telegraph-wires and wires for fences and other purposes have also been similarly connected.

In the patents above referred to, the ends of a wire bale band or tie are caused to overlap without bending, or looping, or hooking, and are united by holding rigidly the outer extremities of such overlapping ends, and applying a twisting mechanism about midway between such extremities, whereby the said ends are twisted or wound spirally around one another in the same direction from the twisting-point.

This method is defective in that it leaves the wires one above the other at the points where the twisting begins, and renders the tie liable to separation by the strain of expansion of the bale. It is this defect that my invention is chiefly designed to remedy.

The invention consists in uniting the overlapping ends of a wire bale-band, while the bale is in the press and under pressure, by rigidly holding said wires midway between the extremities of the overlapping portions, and twisting said portions or ends together in opposite directions from the grasping or holding point, by applying suitable twisting mechanism at their said extremities, whereby one end of the wire or wires is caused to pass under the other at one of the beginnings of the twisting or twisted portions, and over the said other wire or wires at the opposite beginning, so that the said wires or ends are united beyond the possibility of separation by expansive force or other strain. Fig. 1 shows this construction.

The lapped ends *a b* of a bale-band, while the bale is in the press and under pressure, are grasped, say, between the points 1 and 2, so as to be fixedly held. Their extremities 3 and 4 are then grasped by suitable mechanism that will admit of a twisting motion being imparted thereto in opposite directions, whereby said extremities are twisted together, the wire *a* passing under the wire *b* at 1, (the beginning, relatively to the center of the lap, of one twist) and over said wire *b* at 2, (the beginning of the other twist,) and firmly and securely uniting said ends.

In Fig. 2 it will be noticed that the wire *a* passes over the wire *b* at both points 1 and 2, and not over at one point and under at the other, as just described, and that the twist is in the same direction on both sides of the center, although described in Purdy's patent, above referred to, as being right and left handed.

The machine shown in my patent referred to above may be adapted to this method of tying wires by substituting slotted revolving devices—as gear-wheels—for the slotted stationary arms, for use in twisting the ends together, and using a fixed stationary device for holding the ends rigidly midway between the extremities thereof, when lapped, in place of the revolving gear-wheel D, while said ends are being twisted. Other mechanism may, however, be employed.

Wires tied together by my improved method are only more firmly tied by strain upon them.

I hereby disclaim in this application all improvements described and shown in my application filed December 10, 1877, and I also disclaim all the improvements and inventions described and shown in the Letters Patent

granted to A. J. Williams, April 11, 1849, No. 6,701.

What I claim is—

In the art of baling hay, the mode or process of uniting the ends of the bale-wire about the bale while in the press and under pressure, by first overlapping the ends and then twisting the lapped ends and overlapped portions of the bale-tie in opposite directions, substantially as shown and described.

MOSES C. SMITH.

Witnesses:
F. F. WENDELL,
J. O. WENDELL.