L. BRIGHTMAN.

Wire-Splicing Machine.

No. 213,617. Patented Mar. 25, 1879.

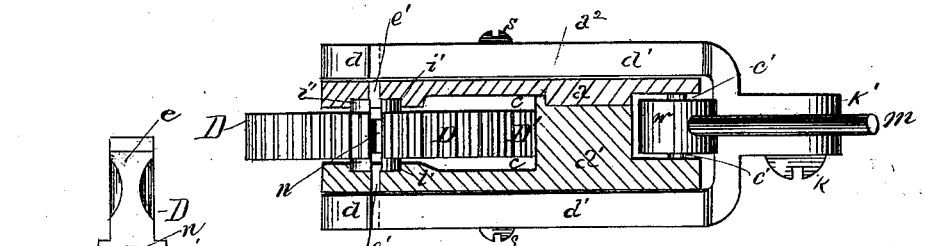

Fig. 2.

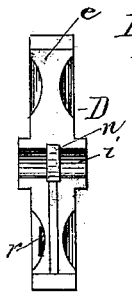

Fig. 4.

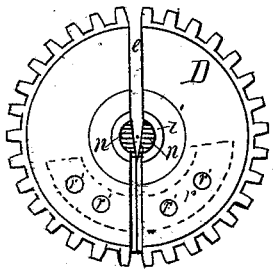

Fig. 3.

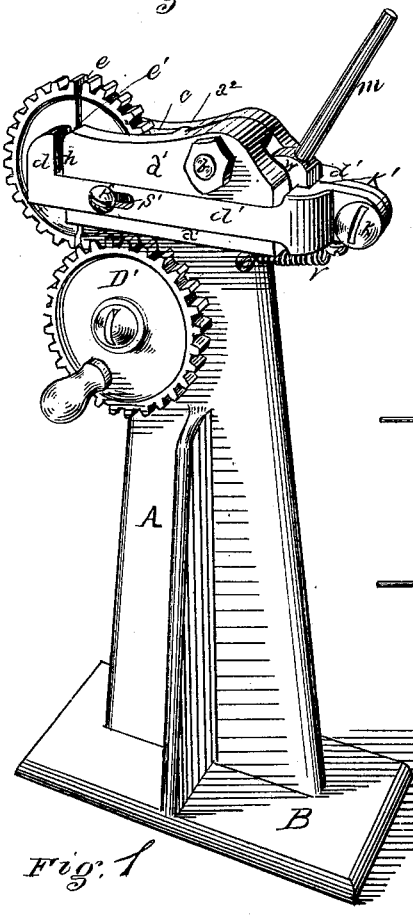

Fig. 1.

Fig. 5.

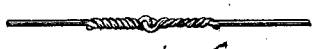

Fig. 6.

Witnesses

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UNITED STATES PATENT OFFICE.

LATHAM BRIGHTMAN, OF CLEVELAND, OHIO, ASSIGNOR TO CLEVELAND ROLLING MILL COMPANY, OF SAME PLACE.

IMPROVEMENT IN WIRE-SPLICING MACHINES.

Specification forming part of Letters Patent No. **213,617**, dated March 25, 1879; application filed August 26, 1878.

To all whom it may concern:

Be it known that I, LATHAM BRIGHTMAN, of Cleveland, county of Cuyahoga, State of Ohio, have invented or discovered a new and useful Improvement in Machines for Twisting Wire-Splices; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a perspective view of my improved device for twisting wire connections or splices. Fig. 2 is a top-plan view, partly in section, of the operative parts of the device, drawn to an enlarged scale. Fig. 3 shows a side elevation of the die or twisting wheel, drawn to the scale of Fig. 2. Fig. 4 is a central edge view of a half of the same, and Figs. 5 and 6 are illustrative of the kind of connection or splice made by my device.

In preparing wire for use in self-binding harvesters, it is desirable that the connections or splices between the several pieces of wire should be made as compact, secure, and flexible as possible. A connection or splice answering these conditions is shown in the drawings, Fig. 6, where the wires are looped or hooked together, as shown in Fig. 5, and then twisted firmly, so as to make a secure connection, yet leaving the wire in suitable condition to be wound on a spool and used as required.

I accomplish this twisting of the splice by means of the following-described mechanism. In Fig. 1, A is a metal standard, supported on any suitable base or foundation, B. The head or block, which carries the twisting mechanism proper, is made in two main parts, a a^1, the part or plate a being cast with the standard A, and forming substantially a part of it, while the part or plate a^1 is firmly secured to the part a by means of bolt b and the interlocking faces of these parts, as at a^2.

Both in front and rear of the interlocking faces a^2 the plates are cut away on their adjacent sides, so as to leave open slots c c' between them, as seen in Figs. 1 and 2. In the slot c is mounted the twisting-wheel D. This is a spur-gear wheel, as shown, and it is driven by a wheel, D′, gearing with it, which is mounted on the standard A.

The wheel D is made with a hollow hub, i, which projects a little from both faces of the wheel; and the ends of this hollow hub are seated or journaled in sockets i', burred out of the adjacent faces of the plates a a^1. The wheel is thus free to turn on its hub as bearings, while the center is left open. This hub forms essentially a hollow shaft. An opening, e, is made from the periphery of this wheel to the opening in the hub, which is of suitable size for a looped wire, as o, Fig. 5, to be passed through it to the hollow center of the wheel; and for a like purpose slits e' are cut from the tops of the plates a a^1 down to or a little below the axial line of this wheel.

Dies n n are set in suitable recesses in the hub i, so as to give a V-shaped opening to the slit e, and their adjustment is such that they will wedge or take a bite upon the loops o of the wires at the center, or in the axial line of the wheel. These dies should be made of some hard material, and they may be made in two pieces, as shown; or the V-shaped opening may be made in a single piece, of suitable shape for securing in position in the hub i. For convenience in thus setting or securing the dies, I prefer to make the wheel D in two parts, as shown, and set one of the dies in each of these parts.

The two parts of the wheel may be held together by means of a strap, r, (shown in dotted lines, Fig. 3,) and screws r', or by other suitable means. The dies n n may, however, be arranged in a suitable case or sleeve, having an opening corresponding to the slit e, and this sleeve may be slipped endwise into the hub i.

A key and groove may be employed to keep the sleeve in proper position. In any case I prefer to so seat or secure the dies that they may be readily removed or adjusted, so as to adapt the wheel to twisting wire of different sizes.

In order to hold the wire firmly on both sides of the wheel D while the loops o are twisted, I employ griping-jaws d h, one pair on each side. The jaws h are fixed, and are

made by notching or cutting away a part of the outer corners of the plates $a\,a^1$, while the jaws d are attached to bars d', which slide in grooves cut in the sides of the plates $a\,a^1$. The bars d' are secured in their respective grooves in any convenient way, as by screws s passing through slots s' in the bars. At the rear end the bars are bent or fitted together and united by a screw, k, thus making a kind of cross-head, k'. In front of this cross-head k', in the slot c^1, is pivoted an eccentric, w, having a lever-arm, m, by which it is operated. This eccentric w is so adjusted that as it is turned downward it will press against the cross-head k', and force the jaws d against the jaws h, and as the eccentric is turned back a coiled spring, v, will force the jaws apart, one end of the spring being attached to the cross-head k', and the other end to the standard A.

In operating my improved device, the wires to be spliced or connected are hooked or looped together, as shown at o, Fig. 5. The wires are then passed through the slits $e\,e'$ to the axial line of the wheel D, or until the loop o is wedged or griped in the V-shaped dies $n\,n$. The wires are then firmly griped between the jaws $d\,h$ on either side of the wheel by pressing down the eccentric w, as described. The twisting-wheel D is then rotated by means of the wheel D', or in other convenient way, and in so doing the looped parts of the wires between the opposite jaws d will be twisted, as shown in Fig. 6. When this is done sufficiently, the jaws d are released and the wire removed through the slits $e\,e'$, and the operation repeated on another loop or splice.

I claim herein as my invention—

1. In a machine for twisting wire-splices, a slotted twisting-wheel, having a hollow hub or shaft, in combination with dies mutually arranged in the hollow of the hub or shaft to form a V-space between their adjacent faces, substantially as set forth.

2. The combination of twisting-wheel D, griping-jaws $d\,d\,h\,h$, bars d', eccentric w, and spring v, substantially as set forth.

In testimony whereof I have hereunto set my hand.

LATHAM BRIGHTMAN.

Witnesses:

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W. J. HAYES.