P. L. VAN DERZEE.

Machine for Forming Bale-Tie Hooks.

No. 202,491. Patented April 16, 1878.

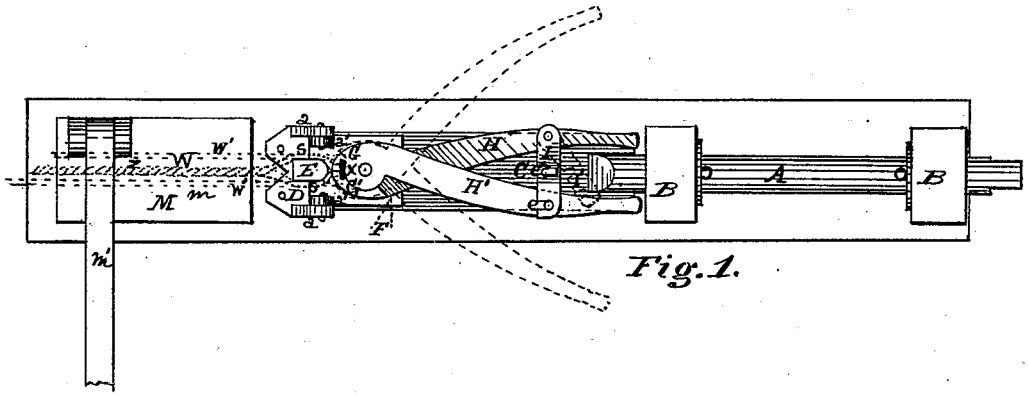

Fig. 1.

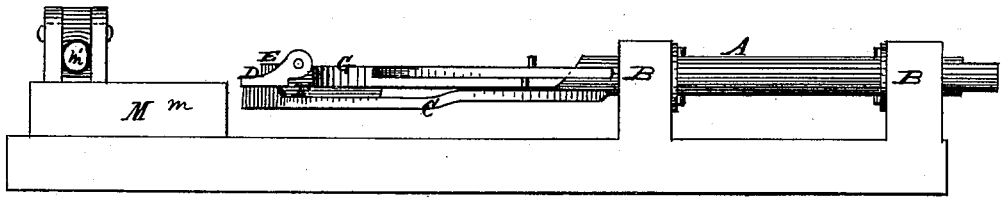

Fig. 2.

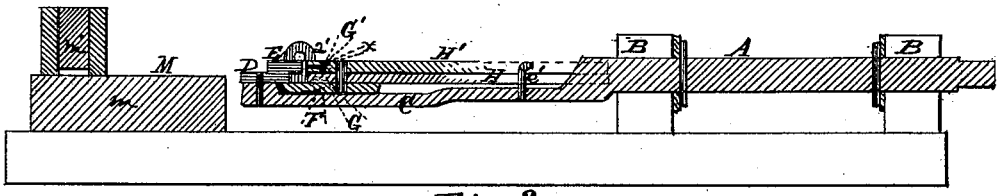

Fig. 3.

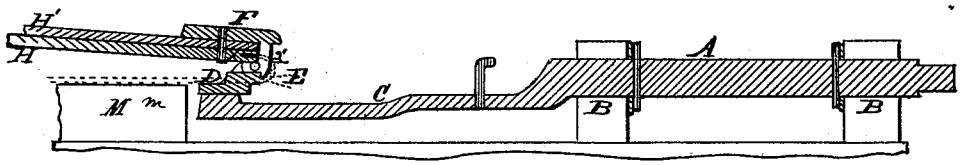

Fig. 4.

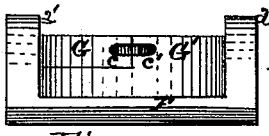

Fig. 5.

Witnesses. { Cors Van Derzee
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Inventor.

# UNITED STATES PATENT OFFICE.

PHILIP L. VAN DERZEE, OF NEW BALTIMORE, N. Y., ASSIGNOR TO WASHBURN & MOEN MANUFACTURING COMPANY, OF WORCESTER, MASS.

## IMPROVEMENT IN MACHINES FOR FORMING BALE-TIE HOOKS.

Specification forming part of Letters Patent No. **202,491**, dated April 16, 1878; application filed October 27, 1876.

*To all whom it may concern:*

Be it known that I, PHILIP L. VAN DERZEE, of the town of New Baltimore, county of Greene, in the State of New York, have invented certain Improvements in Machines for Forming Bale-Tie Hooks; and I do hereby declare that the following is a description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a plan view of the machine embodying the improvements in this invention. Fig. 2 is a side view of the same. Fig. 3 is a sectional elevation of the same, taken at line No. 1 in Fig. 1. Fig. 4 is a sectional view of the same, illustrating the machine when the hook is formed. Fig. 5 is an end view of the crimping-jaws and turning-plate.

My invention relates to a machine for forming bale-tie hooks from wire; and consists in the combinations of devices hereinafter described and set forth.

The object of this invention is to twist the short strand turned back on the long strand with the same, and form, forward of the twist, a loop, that may terminate with a hook standing over said loop.

To enable others skilled in the art to make and use my invention, I will proceed to describe it in reference to the drawings and letters of reference marked thereon, the same letters indicating like parts.

In the drawings, A represents a shaft, supported in proper bearings B, and adapted to be revolved by a crank, gear, or other known equivalent mechanical means. C is a flattened piece, made with said shaft, or secured to the same, which piece is intended to operate as a bed-plate for carrying the other parts of the machine, and is intended to be revolved with said shaft. Secured to the said bed-plate at its extreme end, and projecting above the same, is the table D, on which it is intended the wire may rest when being twisted and formed in shape. Secured centrally on the said table, and projecting above the same, is the loop-forming block E, at the sides of which the side strands *s s* of the bent wire W are to lie when the same have been placed in position, as shown by dotted lines in Fig. 1.

Hinged to the table D by the ear *a a a' a'* is the turning plate F, which plate is rendered capable of being turned from position shown in Figs. 2 and 3 to that shown in Fig. 4. Pivoted to the said turning plate are the crimping-jaws G G', each pivoted with the other, as well as with said turning plate, so as to be capable of being extended from a closed position, as shown by full lines in Fig. 1, to that shown by dotted lines in the same figure. In the facing sides of said jaws are made the recesses *c c'*, each facing the other, and on about the same plane with the upper surface of table D, and running back to a distance about equal to the length of the hook intended to be formed. The said recesses are made in the sides of the said jaws with an aggregate depth of about one-half the width of the block E, and are intended to receive the portion of the wire intended to form the hook termination. Levers H H', made with the said jaws, are provided, by which the said jaws may be opened or closed, and carried from position shown in Figs. 1, 2, and 3 to that in Fig. 4.

Pivoted to one of the levers H is the latch I, which is capable of being thrown from position of dotted lines I', Fig. 1, to that shown by full lines in the same figure, so as to engage with pin *e*, secured to the opposite lever H', and the pin *e'*, secured to the shaft A.

Placed in front of the table D, and at a short distance from the same, is the wire-holder M, consisting of the block *m* and the lever *m'*, pivoted to said block, which lever, when pressed down, is capable of pinching the doubled strands and holding the same from shifting.

The manner in which this improved machine is to be operated is as follows: The wire to be twisted and formed is first bent in the form shown by dotted lines W' in Fig. 1, and placed on the table D, with the strands *s s* at the sides of the block E, and its bent end projected back within the jaws G G' to the rear termination *x* of the same, as shown in Figs. 1 and 3. The jaws G G' are then closed by pressing the levers H H' toward each other, when the bent end will be crimped or com-

pressed together, while the block E will hold the wire at its sides distended. The latch I is then thrown forward to engage with the pins *e* and *e'*, to hold the jaws together and preserve them in a line central with the shaft A. The lever *m'* of the wire-holder M is then pressed down upon the strands *s s*, resting on the block *m*, when the said strands will be firmly held. The shaft A is then made to revolve, when the twisted neck *z* will be formed. The lever *m'* is then to be thrown up and the latch I thrown back, when the operator is to throw the levers H H' up and over the table D, so as to carry the turning plate F and its associate jaws G G' over the said table, as shown in Fig. 4, when the hook will be completed. The levers H H' are then to be thrown apart, when the jaws will disengage from the hook, and the wire may be removed, having the desired form and the twisted neck.

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

In a device for forming the hooks of wire bale-ties, the shaft A, capable of being rotated, and loop-forming block E, in combination with crimping-jaws G G', carried by the turning plate F, hinged to table D, substantially as and for the purpose set forth.

PHILIP L. VAN DERZEE.

Witnesses:
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