

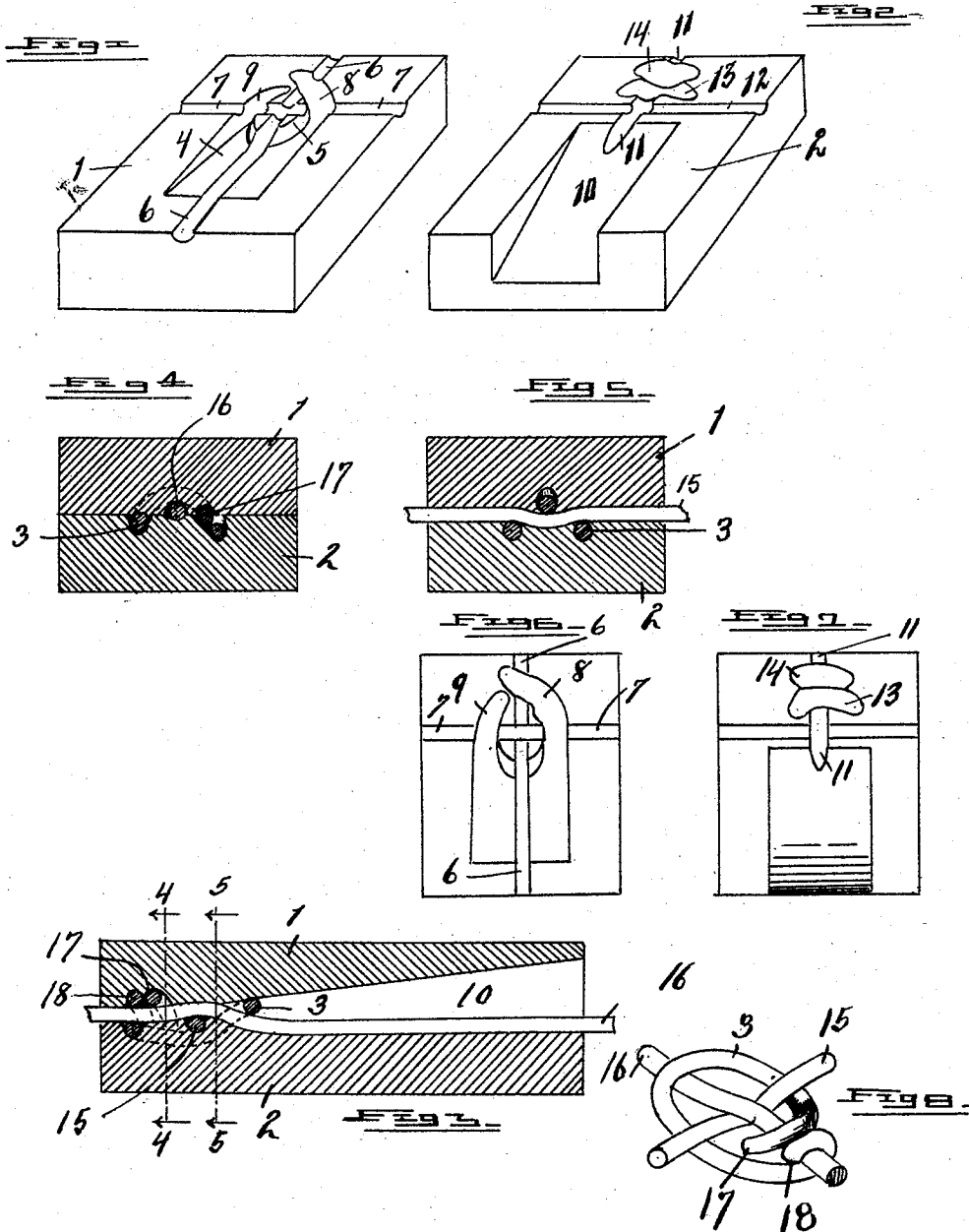
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J. J. MORSE.
DIES FOR TYING INTERSECTING WIRES.

APPLICATION FILED MAR. 12, 1904.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN J. MORSE, OF ADRIAN, MICHIGAN.

DIE FOR TYING INTERSECTING WIRES.

SPECIFICATION forming part of Letters Patent No. 772,169, dated October 11, 1904.

Application filed March 12, 1904. Serial No. 197,774. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. MORSE, a citizen of the United States, residing at Adrian, in the county of Lenawee, State of Michigan, have invented certain new and useful Improvements in Dies for Tying Intersecting Wires; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to dies for tying intersecting wires; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to provide simple and efficient means for forming the tie about the crossed wires of a wire fencing or fabric in a manner to securely unite said wires and retain the tie in position thereon and at the same time dispose of the ends of the tie in a manner to prevent them from forming projecting points liable to engage or catch a passing object.

The above object is attained by the structure illustrated by the accompanying drawing, in which—

Figure 1 is a perspective view of the working face of one of the dies. Fig. 2 is a perspective view of the working face of the other of the dies. Fig. 3 is a longitudinal section through the dies in working position, showing the crossed wires therein and the tie-wire in section as embracing said crossed wires. Fig. 4 is a transverse section through the dies with the crossed wires and tie-wire therein as on line 4 4 of Fig. 3. Fig. 5 is a similar section as on line 5 5 of Fig. 3. Fig. 6 is a plan view of the die shown in Fig. 1. Fig. 7 is a plan view of the die shown in Fig. 2. Fig. 8 is a perspective view of the tie which unites the crossed wires, showing the position of the tie upon said wires.

Referring to the characters of reference, 1 and 2 designate the dies, between which the crossed wires of a fencing or other fabric are

tied together by the wire knot or tie 3, which is driven between the working faces of said dies and is shaped around the crossed wires by the channels and concavities therein through the operation of a plunger (not shown) which drives the tie into said dies in the form of a staple. In the face of die 1 is an inclined depression 4, in the center of which is a raised portion 5. Formed in the inclined face of the depression 4, longitudinally thereof, crossing the raised central portion 5 and continuing outwardly in the face of the die to the extremity thereof, is a channel 6. Also crossing the face of said die at right angles to the channel 6 is a channel 7, which like channel 6, crosses the raised central portion 5. Leading from the inner terminal of the inclined depression 4 are the depressed branches 8 and 9, which pass upon opposite sides of said central portion, the branch 8 crossing the channel 7 and channel 6, the branch 9 crossing channel 7 and terminating adjacent channel 6 and branch 8.

In the face of the die 2 is an inclined way 10, into which leads a longitudinal channel 11, crossing the face of the die and adapted to register with channel 6 in die 1. Also formed in the face of die 2 is a transverse channel 12, which crosses channel 11 and is adapted to register with channel 7 in die 1. Formed in the face of die 2 are the deep depressions 13 and 14, which are transversely of channel 11 and crossed thereby.

When the dies are placed with their working faces together, the terminal of curved branch 9 registers with one terminal of depression 13, while the terminal of curved branch 8 registers with one terminal of depression 14. When the dies are brought together upon the crossed wires, said wires are crimped at their point of crossing, as shown in Fig. 8, in which 15 designates the stay or vertical wire, which lies in the registering channels 7 and 12, and 16 designates the longitudinal or line wire, which lies in the registering channels 6 and 11. When the dies are in position upon said wires, the tie 3 in the form of a staple is forced by a plunger (not shown) into the inclined way 10, so that the loop of said staple is caused to cross the lon-

longitudinal wire 16, while the legs of the staple
 are directed into the curved branches 8 and 9
 under the stay-wire 15. After passing un-
 der said stay-wire the curved branch 9 directs
 5 one leg of the staple upwardly into the de-
 pression 13, which changes the course of the
 leg, so as to cause it to cross over and hook
 partially around the longitudinal wire 16, as
 shown at 17 in Fig. 8. At the same time the
 10 opposite leg of the staple is directed by the
 curved branch 8 under the longitudinal wire
 16 and upwardly into the depression 14, which
 as the operation of driving the staple is com-
 pleted forms the end of said leg around the
 15 wire 16 in the form of an eye, as shown at 18
 in Fig. 8, thereby securely uniting the crossed
 wires and fastening the tie-wire thereto in a
 manner to prevent its disengagement and at
 20 the same time preventing the protrusion of
 the ends of the tie-wire or staple. After the
 completion of driving the staple to tie the
 crossed wires together the dies are separated
 by any suitable means, allowing the removal
 25 of the united strands and the carrying of the
 fabric along for a succeeding operation.

Having thus fully set forth my invention,
 what I claim as new, and desire to secure by
 Letters Patent, is—

1. Dies having longitudinal and transverse
 30 registering channels for the reception of the
 crossed wires, one of said dies having an in-
 clined depression traversed by one of said chan-
 nels, said inclined depression having curved
 continuous branches which cross the trans-

verse channel and curve inwardly, one of said 35
 branches crossing the longitudinal channel be-
 low the plane thereof, there being between said
 branches a raised central portion crossed by
 said channels, the other of said dies having an
 inclined way into which one of said channels 40
 leads, and two concavities crossing the line of
 said channel, one of said concavities register-
 ing with the terminal of one of the branches in
 the other die and the other of said concavities
 registering with the other of said branches. 45

2. Dies having longitudinal and transverse
 registering channels for the reception of the
 crossed wires, one of said dies having an in-
 clined depression and curved continuous
 branches leading therefrom which cross the 50
 transverse channel and curve inwardly, one
 of said branches also crossing the longitudi-
 nal channel below the plane thereof and said
 channels crossing between said branches, the
 other of said dies having two concavities cross- 55
 ing the line of the longitudinal channel, one
 of said concavities registering with the ter-
 minal of one of the curved branches in the
 other die, and the other of said concavities reg-
 istering with the terminal of the other of said 60
 branches.

In testimony whereof I sign this specifica-
 tion in the presence of two witnesses.

JOHN J. MORSE.

Witnesses:

GEO. W. AYERS,
 J. C. ROWLEY.