

No. 685,603.

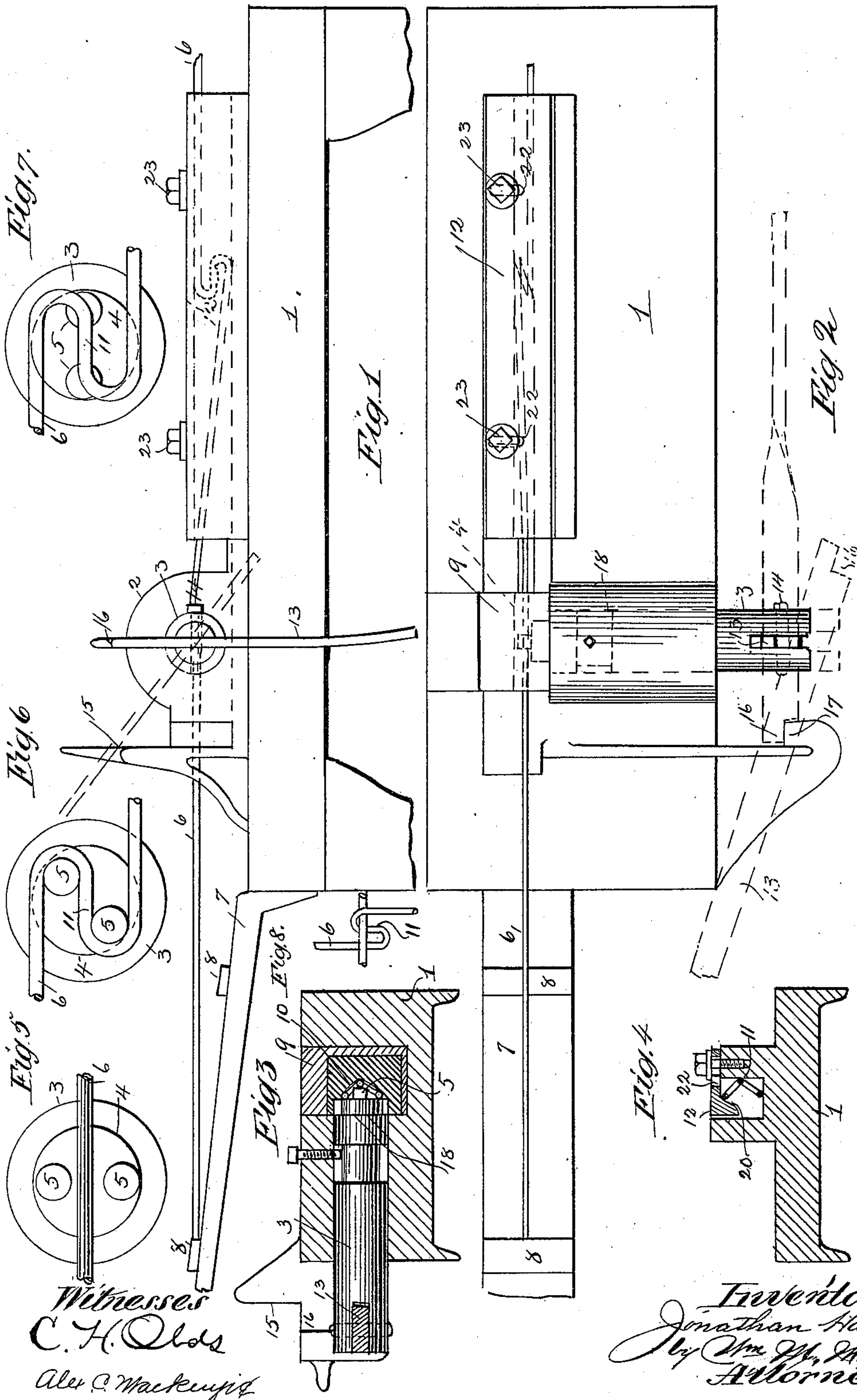
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J. HARRIS.

MACHINE FOR MAKING STEEL WIRE FENCE STAYS.

(Application filed May 2, 1900.)

(No Model.)



UNITED STATES PATENT OFFICE.

JONATHAN HARRIS, OF CLEVELAND, OHIO.

MACHINE FOR MAKING STEEL-WIRE FENCE-STAYS.

SPECIFICATION forming part of Letters Patent No. 685,603, dated October 29, 1901.

Application filed May 2, 1900. Serial No. 15,288. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN HARRIS, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Machines for Making Steel-Wire Fence-Stays, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in mechanism for forming loops upon the stay-wires of wire fencing; and it consists in the rotary looping-head and actuating-lever, with the details of construction and combination and arrangement of the various parts, as hereinafter described, shown in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the device. Fig. 2 is a plan view thereof. Fig. 3 is a transverse section through center of transverse cylinder. Fig. 4 is a transverse section of guides. Fig. 5 is a front view of the looping-die, showing it in the position it is in when the wire is inserted. Fig. 6 is a view of the same, showing the loops completely formed thereon. Fig. 7 shows the same with the die in position to bend the loop so that it can hook over the wire, and Fig. 8 is a view of the looped stay-wire.

In the views, 1 is the bed-plate, upon which is placed the sleeve-bearing 2, in which the cylindrical shaft 3 turns freely, to the projecting face or head 4 of which are attached two pins 5, by means of which the loops are formed in the wire.

The stay-wire 6 is laid upon the inclined bed 7, which is provided with stops 8, against which the end of the wire rests and which are used to determine the distance apart upon the stay that the loops are to be formed, the distance between the stops being equal to the distance between the loops on the stay plus the amount of wire employed in making the loop.

About the end of the die-head is placed the block 9, having the curved or V-shaped recess 10, into which the middle strand 11 between the loops is forced after the loop has been formed to produce the desired offset, so

that the loop can be hooked freely over the line-wire of the fence, as shown in Fig. 8.

12 is a guide employed to retain the loops in line and prevent them from winding upon the wire as the offset is made in each loop. This guide is merely a longitudinal plate provided with a downwardly-projecting flange 20, which engages the upper edge of the loop as it passes through a longitudinal groove 21 in the bed-plate. This flanged plate is transversely adjustable by means of slots 22 and set-screws 23, so that by means of the flange the loop can be tipped to any angle required.

The operation and use of the machine are as follows: The stay-wire being placed against the outer stop is run between the pins 5. The handle 13, pivotally attached at 14 to the outer extremity of the die-cylinder, is turned a little more than one revolution until the pins have caught the wire and looped it over into the double curve shown in Fig. 6. The pins 5 are then withdrawn from engagement with the wire by placing the handle in the position shown in the dotted lines in Fig. 1, resting against the shoulder 15, projecting vertically from the bed-plate, and by using the projection as a fulcrum the die-cylinder will move backward in its bearing. Then by placing the handle in the horizontal position shown in Fig. 2 in the dotted lines, with its extension 16 resting against the inner face of the hook 17, which projects horizontally from the bed-plate, the two pins will assume a horizontal position, and by forcing in the handle the pins will be driven against the middle strand 11 between the loops and will force the strand into the V-shaped recess 10 in the former 9. This action serves to bend back the middle strand, and then the loops stand at an angle to one another, as shown in Fig. 8, thus throwing the loops upon different planes, so that one can be thrown over the horizontal wire of the fence like a hook in readiness for wrapping thereon. As soon as the wire is looped the handle is placed in the original position ready to form another looped section.

A recess 18 in the die-cylinder is adapted to receive the set-screw 19, which limits the forward and backward movement of the handle.

It has been found that the act of forcing

outward the central strand in the double loop will give a partial twist to the stay-wire, and hence the guide 12, with its downwardly-projecting flange, has been utilized to overcome this liability and insure that all the loops shall be in exact line upon the stay when completed. For this reason it has been found necessary to set the guide so that each loop will enter at a different angle from the position it was in when the center strand was forced outward. This angle corresponds with the twist given the wire by the punching act of the pins, and in this manner the free end of the wire will be rotated by the twist and the looped end of the wire will remain straight. This angle can be determined by adjusting the flanged plate 12.

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

1. In combination, in a machine for the purpose described, a machine-bed, an inclined platform provided with stops, a transverse shaft provided with a die-head and projecting pins in the path of the wire, means for rotating said shaft and for reciprocating the same in its bearings, a former provided with a V-shaped recess opposite the extremity of the die-head, and a guide for the looped wire after it leaves the die, substantially as described.

2. In combination, a bed-plate, a transverse cylinder mounted thereon, pins projecting from the inner face of the cylinder, a guide for the wire in line with said projecting pins, means for rotating said cylinder to form a double loop in the wire, a former provided with a V-shaped groove placed opposite the inner end of the cylinder, means for withdrawing the cylinder when the loops are formed and for forcing outward the cylinder to press the extremities of the pins against the central strand of the loop, and a guide for the finished stay, substantially as described.

3. The combination with a die-head and looping-pins, of a former opposite the extremities of the pins, the said former being provided with a V-shaped recess, substantially as and for the purpose described.

4. The combination with a die-head and looping-pins, of a former provided with a V-shaped slot placed opposite the extremities of the pins, and means for counteracting the twist of the wire caused by the action of the pins on the central strand of the loop, consisting of a guide-slot and guide-plate provided with a depending flange, substantially as set forth.

5. In combination, a cylinder and looping-pins thereon between which the stay-wire is arranged to pass, a former provided with a V-shaped recess opposite the extremities of the pins, means for rotating said cylinder to loop said wire about the pins, for withdrawing the pins from the wire, for forcing the pins against the central strand of the loop and for counteracting the twist of the wire caused by bending said central strand, substantially as set forth.

6. In combination, in a machine for the purpose described, a bed-plate, a cylinder and two looping-pins thereon placed transversely of the bed-plate, between which pins longitudinally of the bed-plate and transversely across the line of the cylinder the stay-wire passes, an inclined gage-plate, provided with stops, whereby the position of the loops on the wire is determined, and a guide for the finished stay, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JONATHAN ^{his} × HARRIS.
mark

Witnesses:

WM. M. MONROE,
C. H. OLDS.