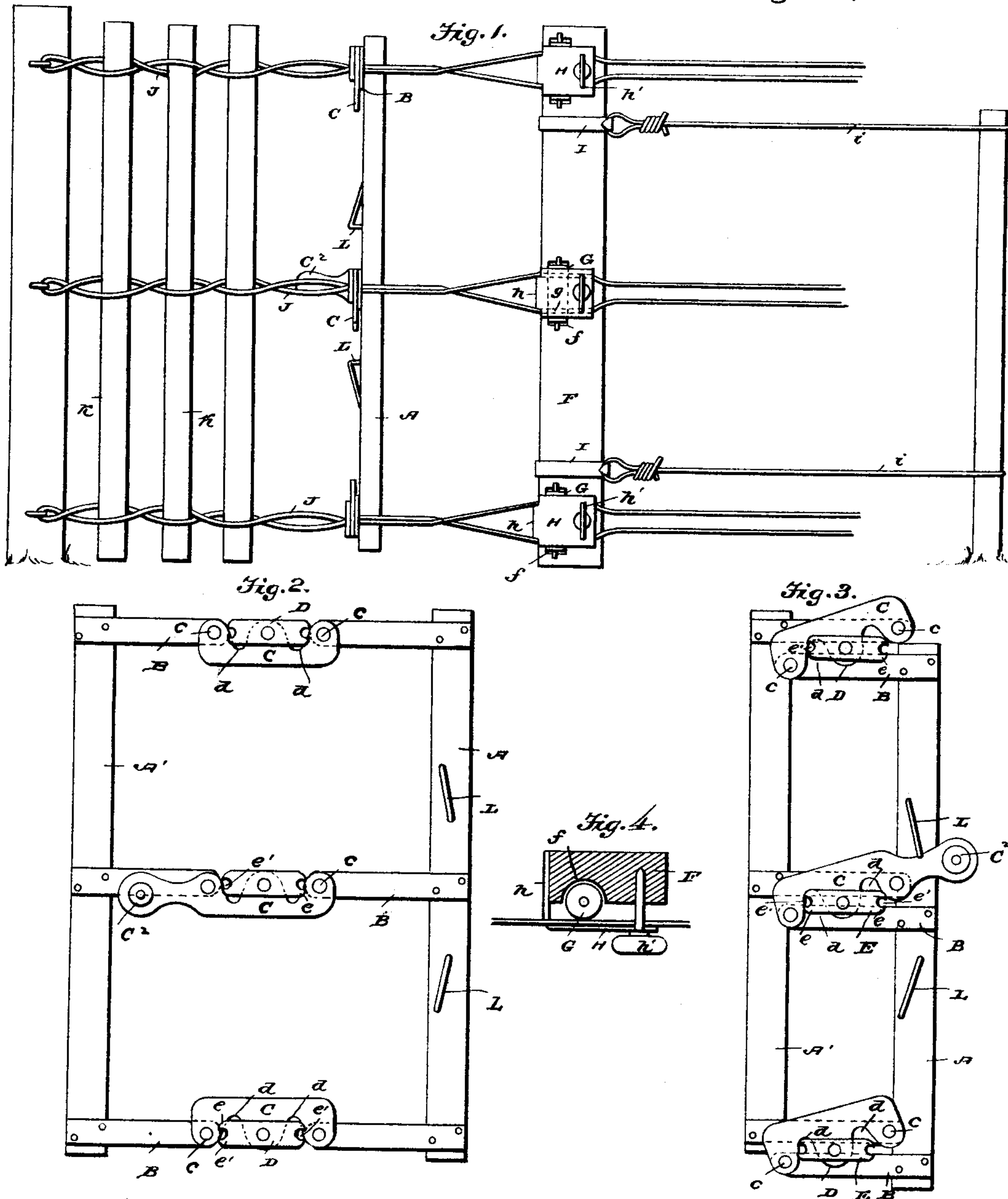


(Model.)

A. K. DEGOOD.  
FENCE MAKING MACHINE.

No. 388,643.

Patented Aug. 28, 1888.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

ALEXANDER K. DEGOOD, OF MILLSBOROUGH, PENNSYLVANIA.

## FENCE-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 388,643, dated August 28, 1888.

Application filed May 18, 1888. Serial No. 274,307. (Model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER K. DEGOOD, a citizen of the United States, residing at Millsborough, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Fence-Making Machines; 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 letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to machines for making wire-and-picket fences; and it consists of the novel combination, arrangement, and construction of devices, as will be hereinafter fully described, and particularly pointed out in the claims.

The object of my invention is to provide a simple, inexpensive, and easily-operated machine for twisting the wires upon one another for receiving and holding the pickets of a fence, and in which the twisting-plates are engaged with the wire strands at all times and in such manner that the machine can be moved or slipped over the wires when required with ease and facility.

A further object of my invention is to provide an improved device for holding the several strands of wire under the necessary tension while building the fence, the friction-plates of which device can be readily clamped upon and released from the wires.

In the accompanying drawings, Figure 1 is an elevation of my machine in position for building a wire-and-picket fence. Figs. 2 and 3 are side elevations of the twisting mechanism, showing the positions of the parts before and after forming the twists in two or more strands of wire. Fig. 4 is a transverse section on an enlarged scale of one of the friction-plates of the tension device, taken on the line *x x* of Fig. 1.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, *A A'* designate two vertical parallel bars or uprights, to each of which are secured three or more arms, *B*, arranged at suitable intervals along the bars *A A'* and firmly secured to the same at right angles

thereto. These upper, lower, and intermediate arms *B* of the bar *A* are connected by means of links *C* to the corresponding arms of the other bar, *A'*, the ends of the links *C* being pivotally connected to the free or unattached ends of the arms *B*, as at *c*. The adjoining arms of the bars *A A'*—as, for instance, the upper, lower, and intermediate arms—are arranged one below the other when the bars *A A'* are brought into close relation after the twist in the several strands of wire has been formed, said arms *B* all lying in the same vertical plane, and the connecting-links *C* being arranged at one side of the arms and lying flat against the same when the arms are brought together. One of the links *C*, preferably the middle one, has an extension at one end, as at *C'*, which projects beyond the pivot connecting this end of the link to one of the arms *B*, and to this extended end of the link is affixed a hand-piece, *C''*, whereby the link can be operated by hand, and thus serve as a lever for moving the bars *A A'*.

I will hereinafter designate the middle link *C*, having the hand-piece, as the "operating-lever," to distinguish it from the other links, the lever being pivotally connected to the outer ends of the middle arms of the bars *A A'* in the manner described, whereby, when the lever is raised, the bar *A'* will be moved laterally of the bar *A*, and the links *C* and lever *C'* will assume a position in line with the arms *B*, as indicated in Fig. 2 of the drawings.

In one of the edges of each link *C* and the lever *C'* are formed two deep notches or recesses, *d*, which leaves an intermediate lug, *D*, between the notches integral with the links and the lever, and when the bars *A A'* are moved near together in the position shown in Fig. 3 the strands of wire pass through these notches or recesses in said links and the lever, which latter devices lie laterally against the arms *B* in the inclined positions shown in Fig. 3, and the arms *B* are separated slightly to leave enough space for the wire to pass between the edges of said arms.

*E* are the twister-plates, made in the form of a flat rectangular plate and pivoted centrally to the lug *D* of the links and lever. These twisting-plates are thus carried by the links and the lever on the side thereof opposite to the arms *B*, and these plates are of such a



length that the ends thereof just span or close over the notches or recesses *d* in the links and lever. The outer extremity of each twister-plate has a perforation, *e*, formed therein for the passage of the wire, said perforation opening through the extreme outer end of the plate, as at *e'*, to permit the wire to be readily inserted therein when the plate has been turned on its pivot to cause the end to clear the upper or lower edge of the link or lever. These perforations normally are in line with the notches or recesses *d*, to permit the wires to pass without obstruction through the twister-plates and links and lever, and the wires are prevented becoming detached from the twister-plate during the operation of making the twists because of the ends of said twister-plates spanning the recesses or notches *d* and lapping the solid parts of the links and lever. The twister-plates, although loosely pivoted to the links and the lever, follow the course and assume the same positions as the links and the lever, and the twist or lap in the wires is formed by the inner edge or boundary-wall of the recesses or notches *d* impinging against the wires when the lever is operated to alternately move the bars *A A'* toward and from one another.

*F* designates the tension-bar, which has a series of recesses or chambers, *f*, formed in one of the lateral faces thereof, which correspond in number with the twist-ers. Within these chambers or recesses are housed friction-rollers *G*, having their shafts or trunnions fitted in notches formed in the same face of the tension-bar as the chambers *f* at one side of the latter, so that the rollers project laterally from the face of the bar. In the periphery of each roller are formed two annular grooves, *g*, (indicated in dotted lines in Fig. 1,) in which the wires are fitted, and a spring friction or binding plate, *H*, presses the wires firmly against the friction-rollers to prevent the wires from slipping after the proper tension has been exerted thereon. Each of these friction-plates has an arm, *h*, projecting at right angles from one end of the plate, said arm being fixed or rigidly secured to one of the edges of the tension-bar, while through the unconfined or free edge of the friction-plate passes a regulating-screw, *h'*, that works in a suitable threaded opening in the tension-bar *F*, whereby the force or pressure of the yielding friction-plate on the strands of wire can be varied.

Hooks *I* are secured to the tension-bar, to which are connected rods or wires *i*, that are connected to stakes *i'*, by which the tension-bar is maintained or held in proper position.

*J* are the fence-wires, arranged in pairs and adapted to be twisted together, and *K* are the pickets to be inserted immediately after a twist has been made in the wires and before they are again twisted.

To the bar *A* are secured fixed stops *L*, which are inclined in opposite directions, as indicated in Fig. 1, with their abrupt shoulders *l* in juxtaposition, and the free end of

the operating-lever is adapted to impinge against one of these abrupt shoulders after it has been moved to operate the parts and make a twist in the wires, so that the lever is held in a stationary position while a picket is being inserted in the bight of the wires.

The operation of my machine for making wire-and-picket fences is as follows: The wires *J* are secured to a post, and then passed through the tension-bar, between the friction-plates and rollers thereof, and the wires drawn taut to the proper degree of tension by suitable appliances, the tension-bar being held in place by the wires *J* and rods *i*. The lever *C'* is turned to separate the bars *A A'* and the arms *B* of each pair, so that the wires of each pair can be readily connected to one of the twister-plates by fitting one wire of the pair in the notch at one end of the twister-plate and the other wire in the other notch at the opposite end of the twister-plate. The machine is now ready for operation, and the lever *C'* is turned to make a complete revolution, or substantially so, so that its free end will take against the abrupt shoulder of the fixed stop *L* opposite to the other stop against which the lever previously rested. During the first half of the revolution of the lever the bars *A A'* are forced laterally away from one another, and the links *C* and the twister-plates assume a vertical position, until, at the completion of said first half-revolution of the lever, the links and arms *B* lie substantially in line with one another, while the independently-pivoted twister-plates, which are connected to the wires, move with the links to prevent the displacement of the wires, the wires of each pair being crossed during the first half of the revolution of the lever and the twister-plates. As the lever continues its rotation the bars *A A'* and the arms *B* of each pair approach one another, while the links *C* and lever again assume a vertical position, and at the completion of the last half of the revolution of the links, the lever, and twister-plates the parts assume the positions shown in Fig. 2 and the twist in the strands of wire is completed. A picket is now inserted in the bight formed between the wires, the lever is reversed to form another twist in the wires for the reception of another picket, and the operation repeated to build the fence the desired length. The machine can be easily and readily moved along the wires to allow the pickets to be inserted in the successive bights of the wires without obstruction from the machine.

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

1. In a machine for making picket fences, the combination of a pair of bars, links pivotally connected to the bars, twister-plates pivoted centrally to the links and having perforations in each end thereof for the reception of the wires, and a lever for moving the bars toward and from one another, substantially as described, for the purpose set forth.



2. In a machine for making picket fences, the combination of a pair of bars, each having a series of arms fixed thereto, links pivoted to the ends of the arms and having notches or  
5 recesses formed in one edge thereof, a lever pivoted to an arm of one bar and to a corresponding arm of the other bar, and twister-plates pivoted centrally to the links at a point between the notches thereof, the ends of said  
10 plates having wire-receiving openings and spanning the notches or recesses in the links, substantially as and for the purpose described.

3. The combination of a tension-bar having a series of recesses, a roller fitted in each re-  
15 cess, and a yielding friction-plate arranged to bear against wires passing between itself and the roller and provided with a regulating-

screw, substantially as and for the purpose described.

4. The combination of a tension-bar having 20 a series of recesses formed in one of the lateral faces thereof, an annularly-grooved roller fitted in each recess of the bar, and a yielding friction-plate secured at one end to the bar and having a regulating-screw passing through its 25 unconfined or free end, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER K. DEGOOD.

Witnesses:

W. P. BOYD,

G. A. FOSTER.