

(Model.)

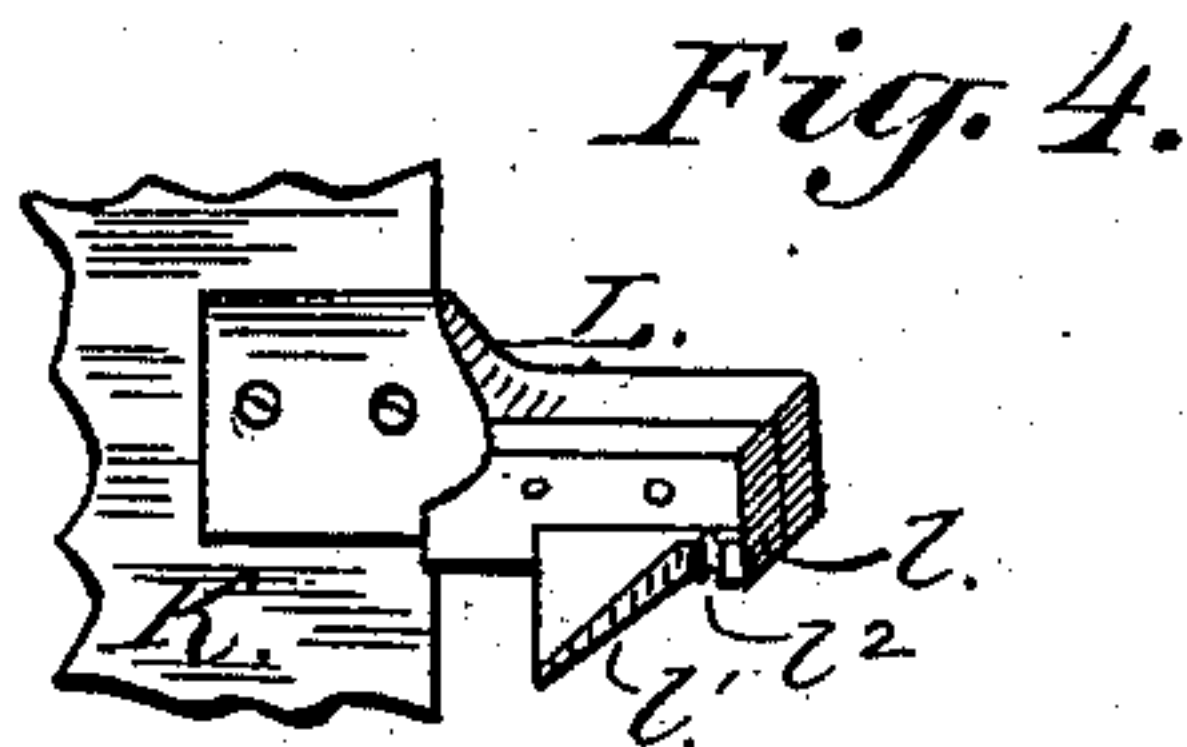
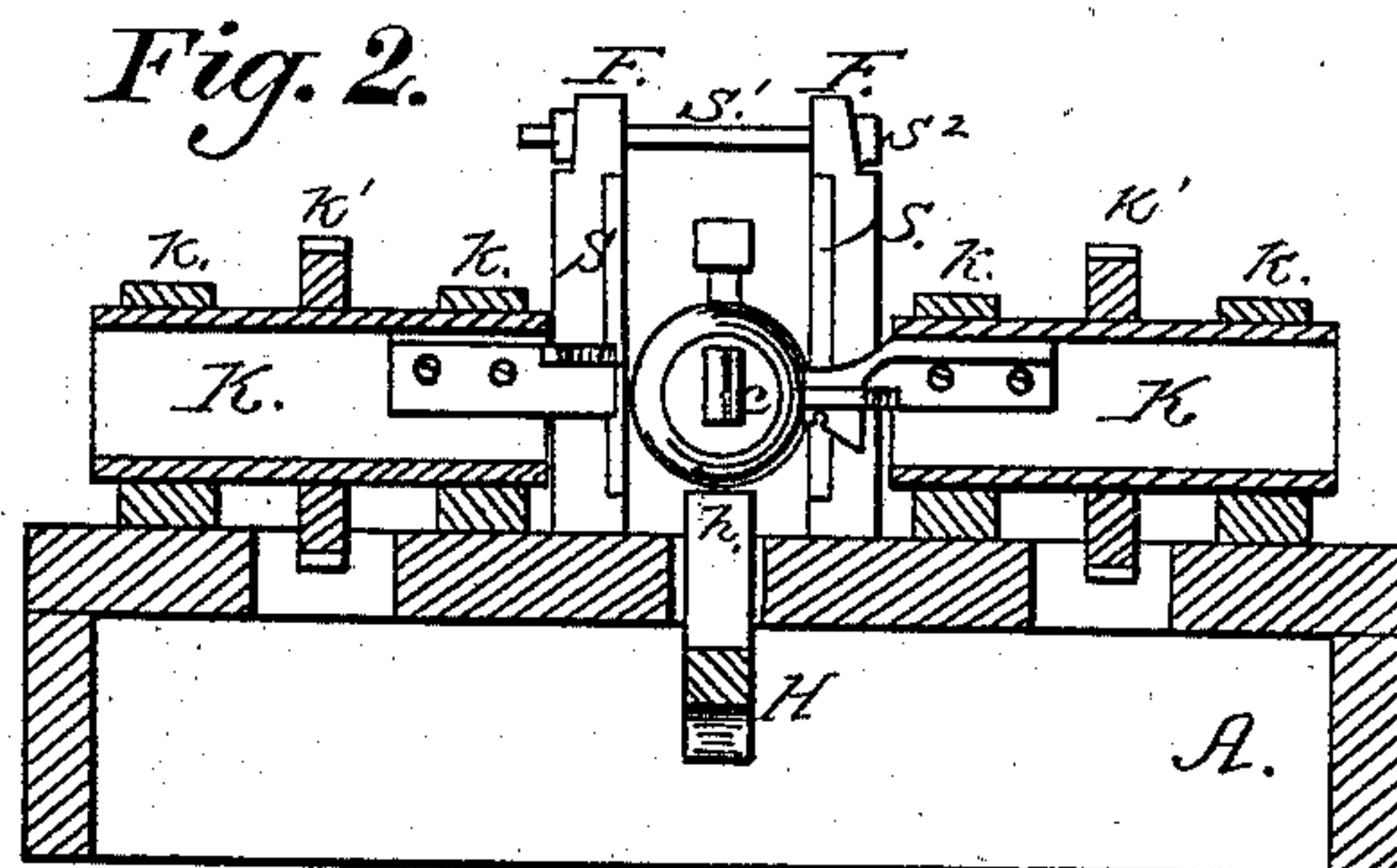
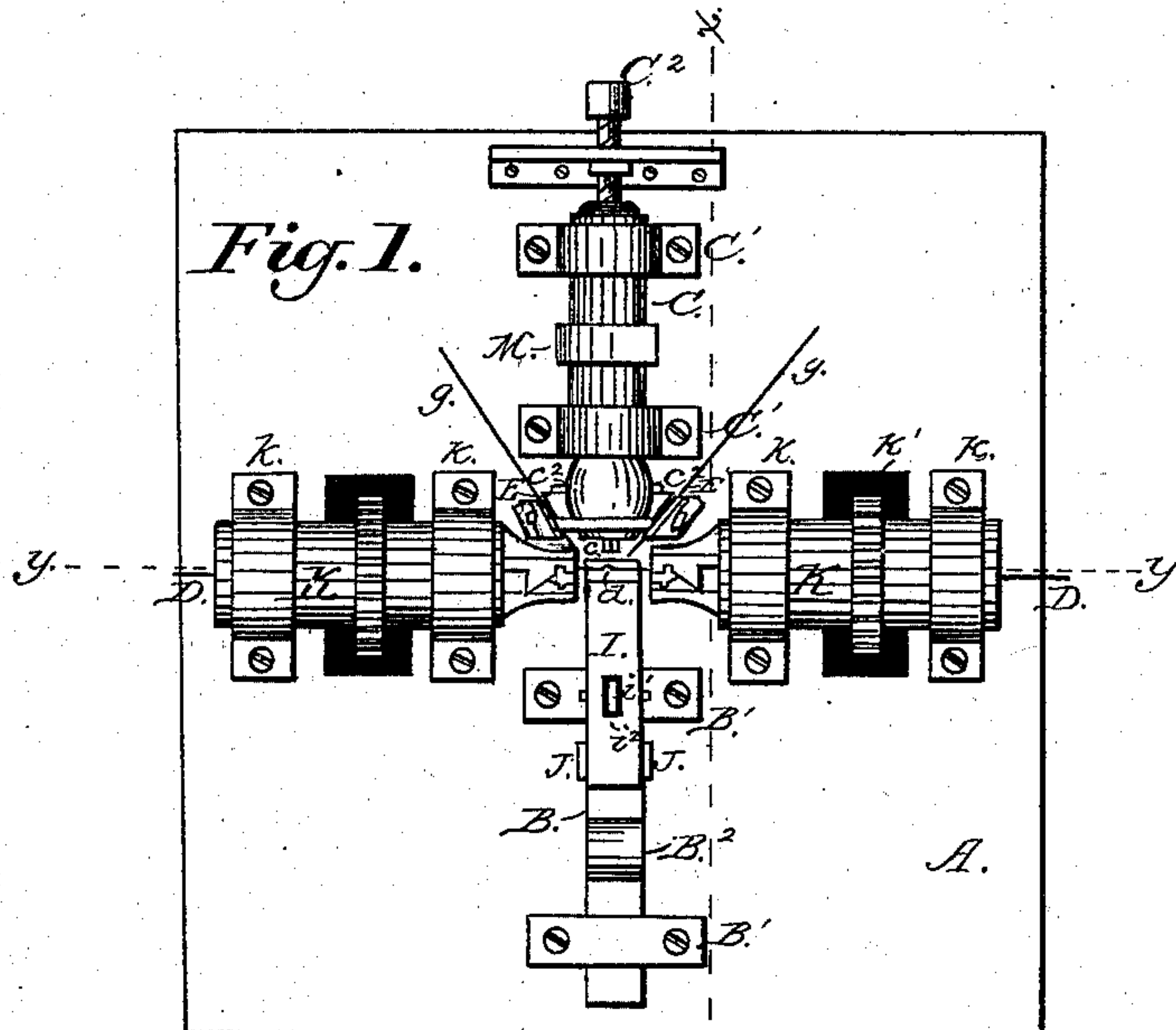
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A. M. & B. MUNSON.

MACHINE FOR MAKING WIRE BARB FENCES.

No. 257,887.

Patented May 16, 1882.



WITNESSES

WIFW ESSES
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Fig. 3.

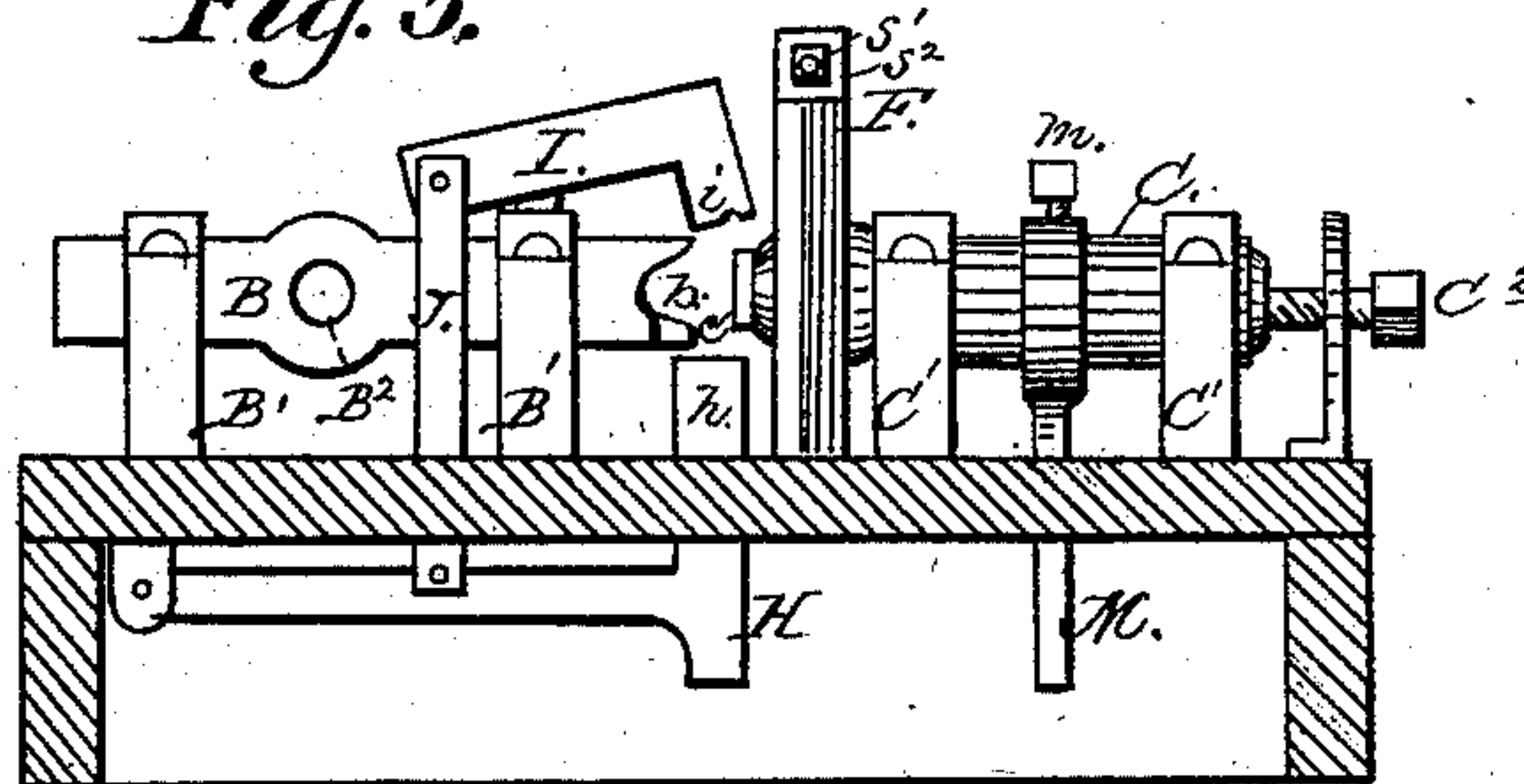


Fig. 5.

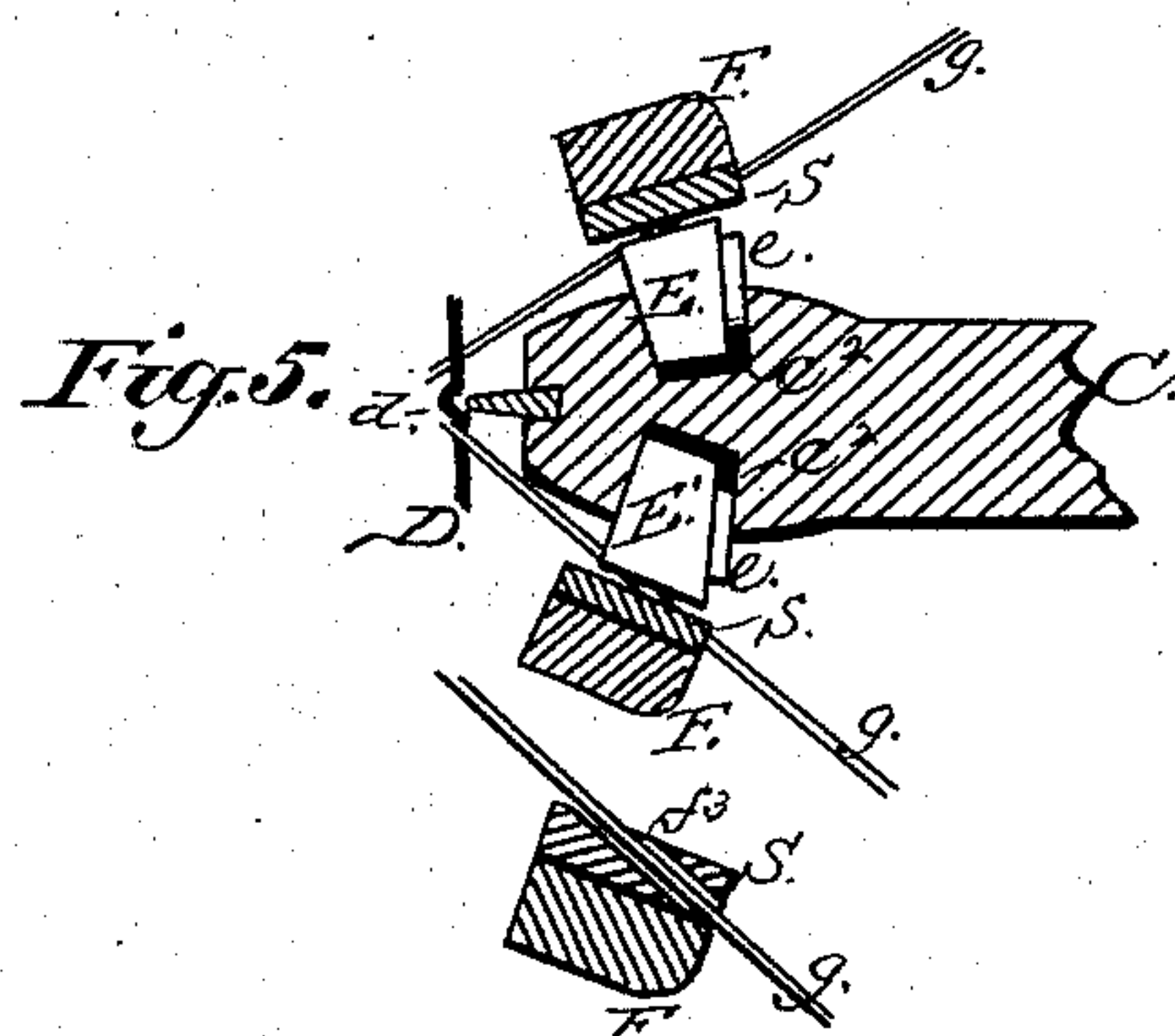
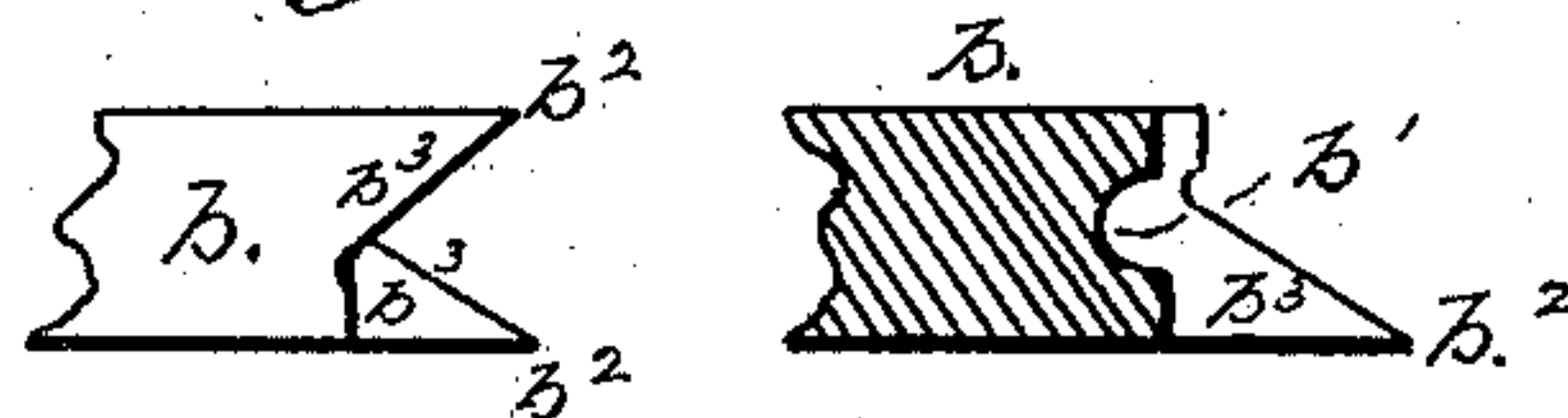


Fig. 6.



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Fig. 7.

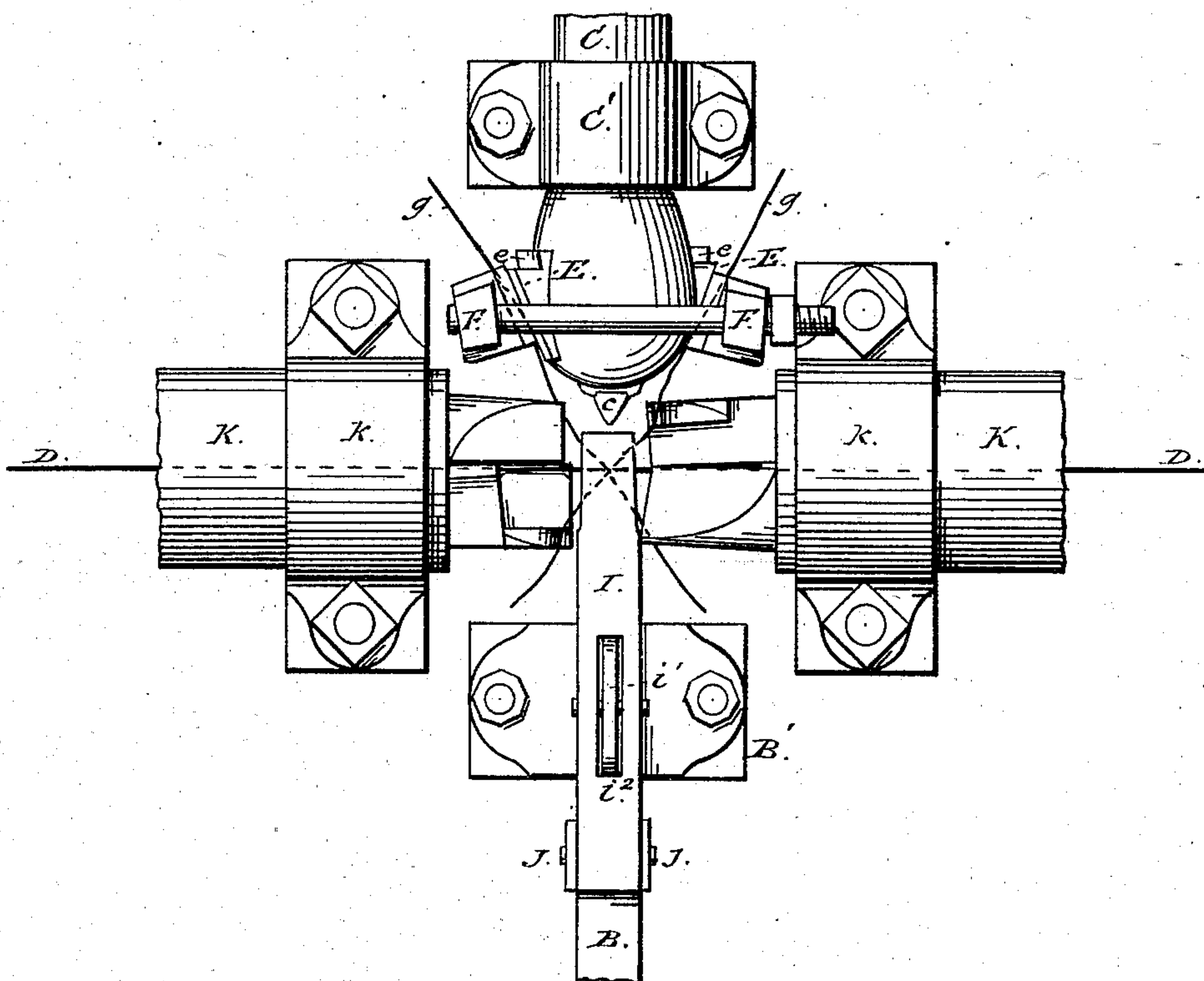


Fig. 8.

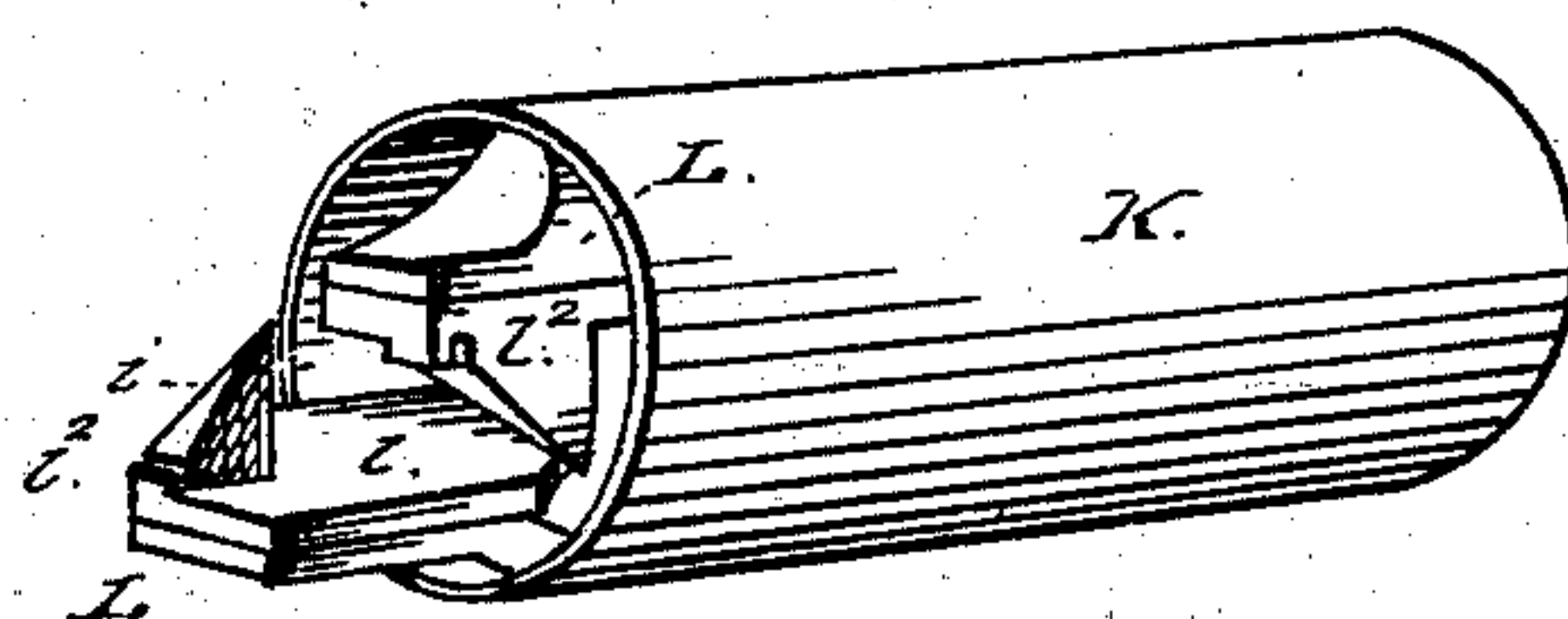
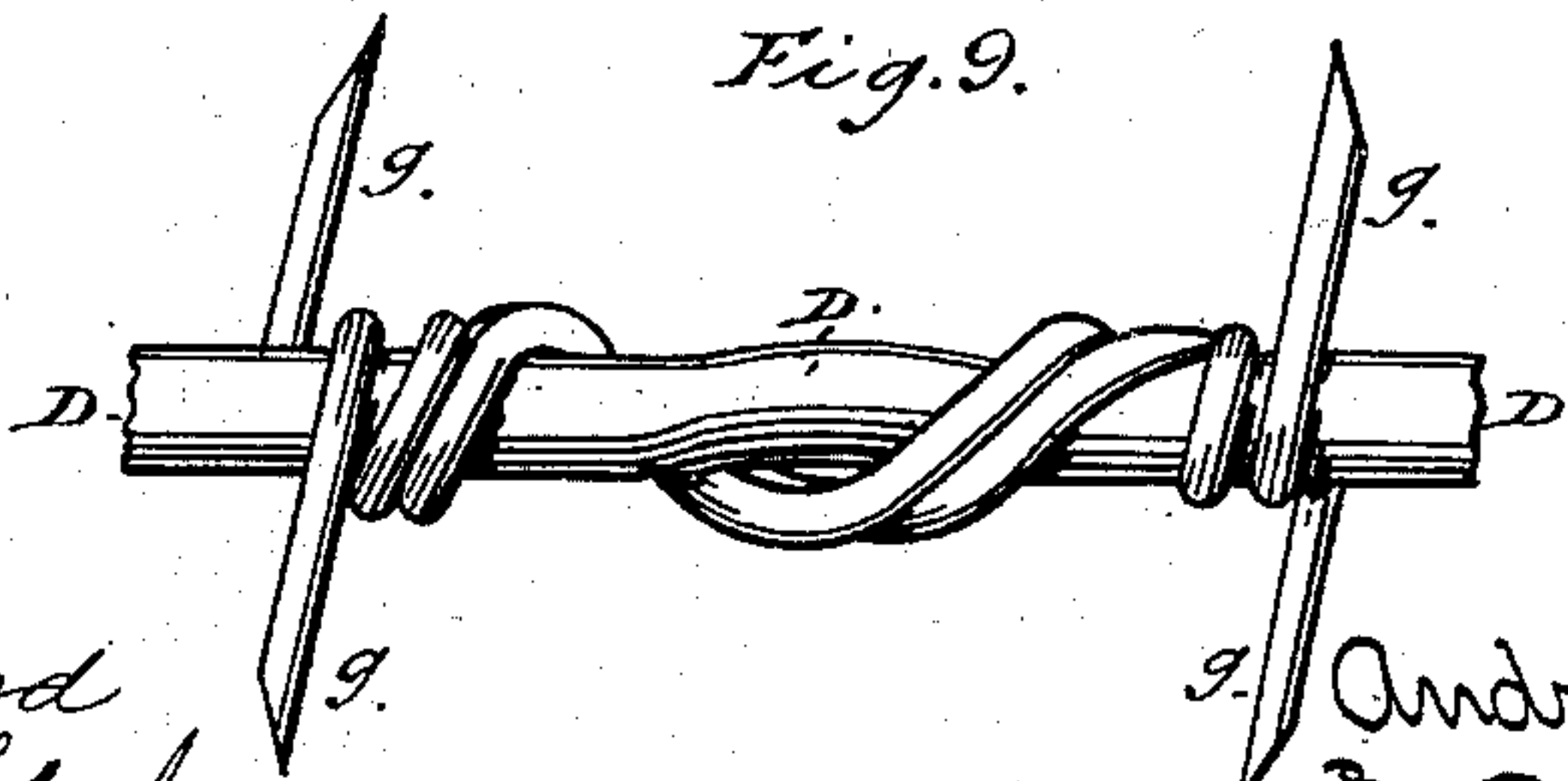


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

ANDREW M. MUNSON AND BENDIX MUNSON, OF LEE, ILLINOIS.

MACHINE FOR MAKING WIRE-BARB FENCES.

SPECIFICATION forming part of Letters Patent No. 257,887, dated May 16, 1882.

Application filed January 16, 1882. (Model.)

To all whom it may concern:

Be it known that we, ANDREW M. MUNSON and BENDIX MUNSON, citizens of the United States, residing at Lee, in the county of Lee and State of Illinois, have invented certain new and useful Improvements in Machines for Making Wire-Barb Fences; and we 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.

Our invention relates to certain new and useful improvements in the class of wire-barbing machines especially designed for putting a four-pointed barb on a single wire, and more particularly to the manufacture of the novel construction of barbed fence-wire for which an application of Andrew M. Munson is now pending in the United States Patent Office, consisting of a single main wire having bends or offsets at regular intervals and four-pronged barbs composed each of two short parallel pieces of pointed wire wound around said bends or offsets, with their ends twisted around the shoulders of said bends or offsets and bent in opposite directions, forming the four-pronged barb; and to this end the invention consists in novel features of construction and combination and arrangement of parts, all as will be hereinafter fully described, and specifically designated in the claims.

Referring to the drawings, Figure 1 represents a top plan view of our complete invention; Fig. 2, a section taken on the line *y y* of Fig. 1; Fig. 3, a section taken on the line *x x* of Fig. 1; Figs. 4 to 8, detail views thereof, and Fig. 9 a view of the barb as attached to the fence-wire.

Similar letters of reference occurring on the several figures indicate like parts.

In the drawings, A represents the supporting-frame or base of the machine, and B' B' bearings for the reception of a movable or sliding bar, B, provided at its inner or forward end with a peculiar-shaped die, *b*, which, in connection with a tapering die, *c*, facing said die *b*, and on the inner or forward end of a vibrating shaft, C, arranged in suitable bear-

ings, C' C', forms bends or offsets *d* on the main wire D at suitable intervals as it is fed forward, and around which bends or offsets the barbs are subsequently twisted. The die *b* is provided with a central depression, *b'*, and has two of its corners, *b² b²*, diagonally opposite each other, provided with tapering or pointed projections *b³ b³*, which, when said die is pressed forward against the die *c*, will come on opposite sides of the said die *c*, pressing the main wire D against it, thus forming a bend or offset, *d*, on said wire, all as clearly shown in the drawings. The bar B is provided with a transverse opening, B², through it for the reception of a shaft, to which suitable mechanism may be connected for intermittently moving it forward and backward when desired for forming the bends or offsets on the main wire D. The shaft C is enlarged near its inner end, and is provided on its opposite sides at its enlarged portion with recesses *c² c²* for the reception of the detachable knives E E', secured therein by wedges *e e*. These knives are for the purpose of cutting and forming the pointed barbs, and their cutting-edges are reversed so that one knife will cut downward and the other upward as the shaft C is rocked or vibrated in its bearings. This shaft C is adapted to receive a slight longitudinal adjustment through the medium of an adjusting-screw, C², engaging the rear end of the shaft, whereby the knives can be always kept up close to the steel dies S S, in order to have sharp edges to bear on the barbs.

The dies S S are mounted in uprights F F, connected together at their upper ends by a headed and threaded rod, S', and secured by a nut, S². These dies S S are arranged obliquely to the knives E E, so that their front vertical edges facing said knives will form the points against which the wires *g g* for forming the barbs are pressed and cut obliquely across by said knives to separate and form the pointed ends. The dies S S, near their rear sides and front faces, are provided with grooves *f³ f³*, arranged on different horizontal planes, forming guides for the wires *g g*, so that one of the wires will pass under and the other over the main wire D, all as clearly shown in the detail drawings.

H represents a lever fulcrumed at its outer

end to bearings depending from and secured to the under side of the frame A. This lever extends inwardly, and is provided at its inner and free end with an upwardly-projecting die, *h*, which, in connection with a downwardly-projecting die, *i*, secured to the inner or free end of a lever, I, arranged above the frame A, forms a holder, by means of which the projecting ends of the wires *g g* to form the barbs are held in position, and prevented from jumping out of their places during the operation of severing the barbs from the wires *g g* through the medium of the knives E E. The lever I is fulcrumed near its center to a lug, *i'*, on the forward bearing, B', and which projects up through a slot, *i''*, in said lever. The rear end of said lever I is connected with the lever H by pivoted bars J J passing down through a suitable opening in said frame A. By the above-described arrangement of said levers H and I, and their connection to each other, their forward ends are caused to move toward or from each other, so that when the forward end of the lever H, which may be operated by a cam or other suitable mechanism, is raised the dies *h* and *i* of said levers will be brought together, so as to clamp the projecting portions of the wires *g g* between them, and also the main wire during the operation of cutting said projecting portions to form the barbs, and also during the subsequent operation of twisting the barbs around the main wire, which is accomplished by the following mechanism: Two tubes, K K, arranged at right angles to the vibrating shaft C and movable die-bar B, with their inner ends facing each other, are mounted in bearings *k k* on the upper side of the base or frame A, and which are adapted to be revolved in opposite directions through the medium of pinions *k' k'*, rigidly mounted thereon and engaging or meshing with suitable gear-wheels projecting up through openings in the base or frame A, and which may be operated in any suitable manner by power applied to the shafts upon which they are mounted. The main wire D is fed intermittently and longitudinally through said tubes by any suitable feeding mechanism. Each of the tubes K is cut away at its inner end, so as to leave projecting portions L L, upon the inner faces of which are detachably secured plates *l l*, having inwardly-projecting beveled lugs *l' l'*, which are provided at their forward ends with slots *l'' l''*, in which the projecting ends of the barbs are caught and twisted around the main wire as said tubes are turned in opposite directions, the inclined or beveled lugs guiding the projecting ends of said barbs in the slots *l'' l''*.

M represents a rock-shaft mounted upon the shaft C and adjustably secured thereon by an adjusting-screw, *m*. This rock-shaft extends down through an opening in the base of the frame A, and which may be intermittently operated by a cam-wheel, in order to give a rocking or vibrating movement to the shaft C

when it is desired to cut the barbs from the wires *g g* and form the pointed ends.

Any suitable mechanism may be employed for intermittently feeding the wires *g g* forward.

The wrapping or twisting plates *l l* can be removed when worn out and replaced by new ones, as well as the die *b* and knives E E.

The two wires *g g*, being fed obliquely into the machine from opposite sides of the shaft C, cross each other on opposite sides of the main wire D and at the bend or offset *d*, formed on said wire, so that the portions cut off from the wires *g g* to form the barbs will lie side by side and interlock as much as possible when they are being looped or twisted around the shoulders *d'' d''*, formed by the bend *d* on said main wire.

The operation of our improved machine is as follows: The main wire is first forced between the dies *b* and *c* to form the bend or offset *d* by the bar B being forced toward the die *c*. After the bar carrying the die *b* is pushed back to its place, or while it is being pushed back, the two wires *g g*, from which the barbs are formed, are fed forward so that they cross the main wire, one above and the other below, and after being fed up to the proper length the shaft C is rocked or vibrated, so that the knives E E will cut off from the wires *g g* the portions fed forward to form the barbs. While the knives are being operated, or just before, the holder composed of the levers H I is operated so that the projecting or barbed portions of the wires *g g* and the main wire D will be clamped or secured between the dies of said levers H I. As soon as the portions to form the barbs are cut off the two tubes K K are set to work and revolve in opposite directions, the end of one piece being caught in the slots *l'' l''* of the two plates *l l* of the two tubes that are diagonally opposite each other, while the ends of the other piece will be caught by the slots *l'' l''* in the other two plates of the tubes diagonally opposite each other. Each tube revolves one and a half times round, thus twisting the barbs around the main wire and leaving their ends projecting in opposite directions. The main wire is then released from the holder and fed intermittently forward a suitable distance to receive the next barbs, when the above-described operation is repeated.

Having thus fully described our invention, what we claim as new and useful is—

1. In a wire-barbing machine, the combination, with mechanism for cutting the barbs and mechanism for twisting them around the main wire, of a movable die, *b*, and a die, *c*, for forming a bend or offset, *d*, on the main wire D, prior to cutting and twisting the barbs around the main wire, substantially in the manner herein shown and described.

2. In a wire-barbing machine, the combination of the steel dies S S, having grooves or guides *f'' f''*, arranged on different horizontal

planes for the reception of the wires *g g*, and the rocking or vibrating shaft provided with the knives *E E*, arranged relatively to each other, substantially in the manner as and for the purpose specified.

3. In a wire-barbing machine, the combination of the tubes *K K*, adapted to be revolved in opposite directions, and each provided with the projecting portions *L L*, provided with plates *l l*, having beveled lugs *l' l'*, provided with slots *l² l²*, substantially as and for the purpose specified.

4. In a wire-barbing machine, the combination, with the steel dies *S S*, of the longitudinally-adjustable and transversely rocking or vibrating shaft *C*, provided with the knives *E*

E, substantially in the manner as and for the purpose herein shown and described.

5. In a wire-barbing machine, the combination, with the die *c*, of a movable die, *b*, having a central depression, *b'*, and two of its corners diagonally opposite each other, provided with tapering or pointed projections *b³ b³*, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

ANDREW M. MUNSON.
BENDIX MUNSON.

Witnesses:

S. W. WEEKS,
OLE. O. KITTLESON.