

(No Model.)

2 Sheets—Sheet 1.

H. A. KING & A. J. WRIGHT.

MACHINE FOR ATTACHING CROSS WIRES IN WIRE FENCES.

No. 490,600.

Patented Jan. 24, 1893.

FIG. 1.

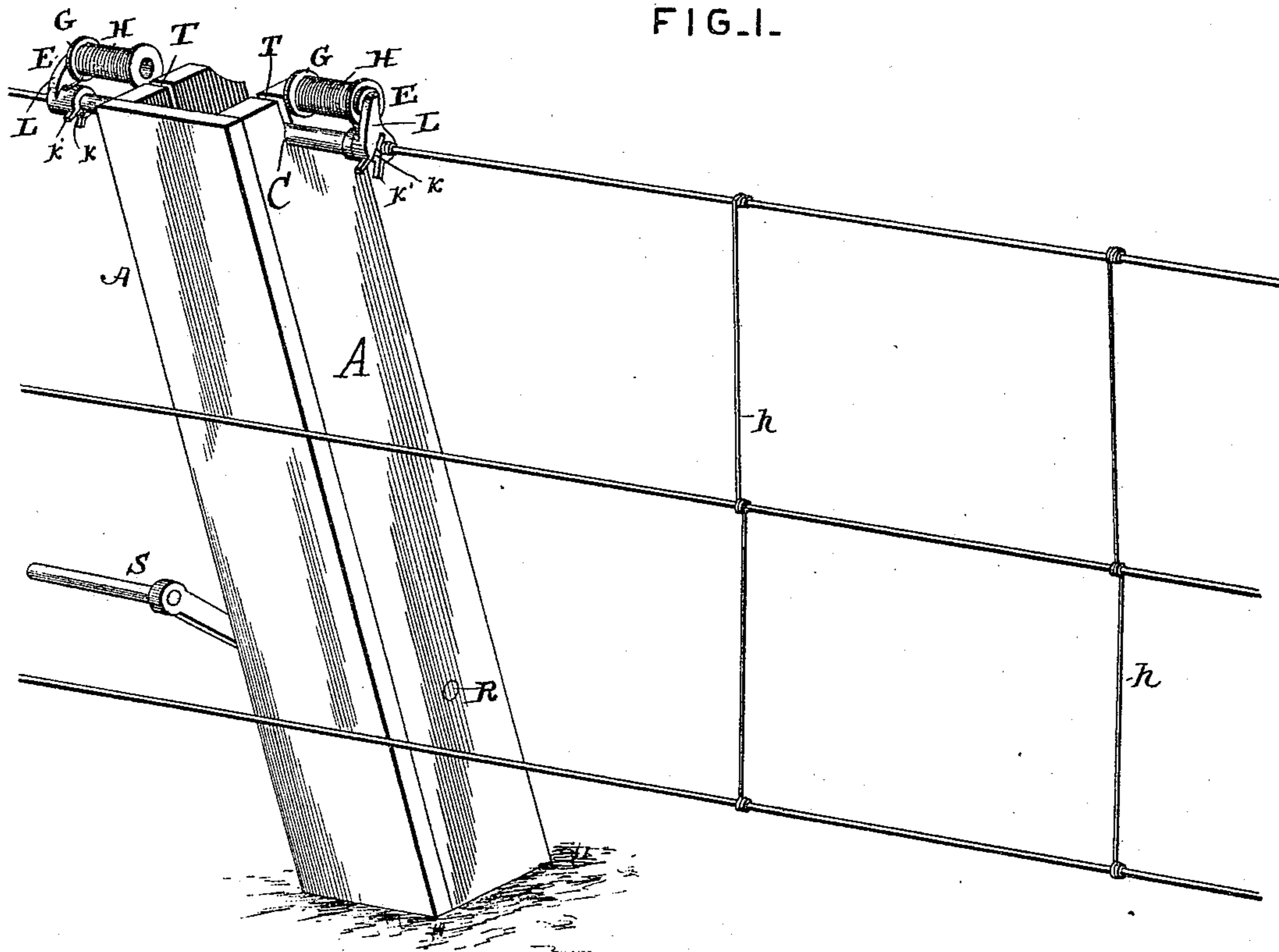
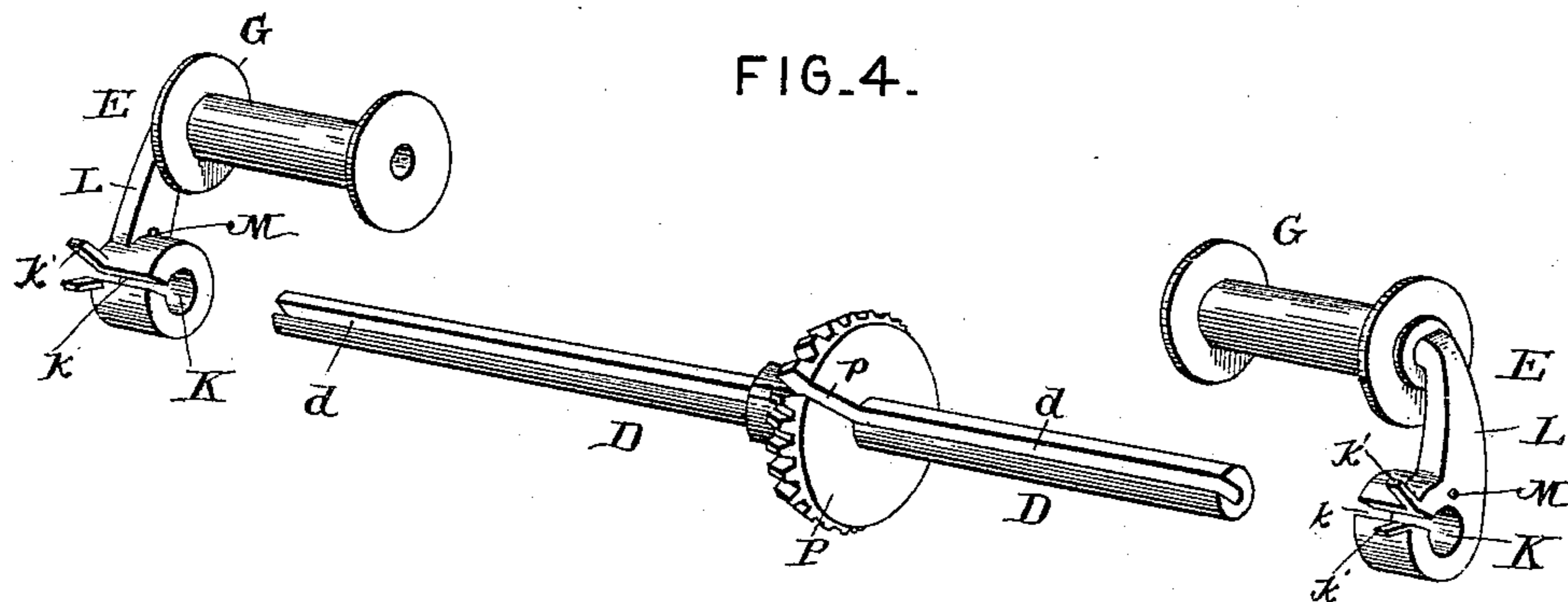


FIG. 4.



Witnesses

Jas. H. McCathran

[Handwritten signature]

By their Attorneys,

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Inventors

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(No Model.)

2 Sheets—Sheet 2.

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FIG. 2.

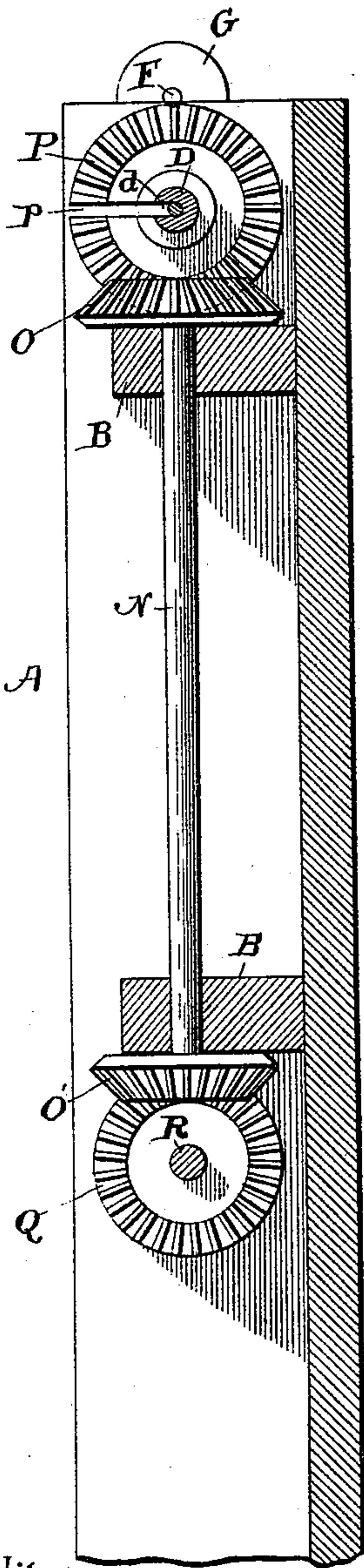


FIG. 3.

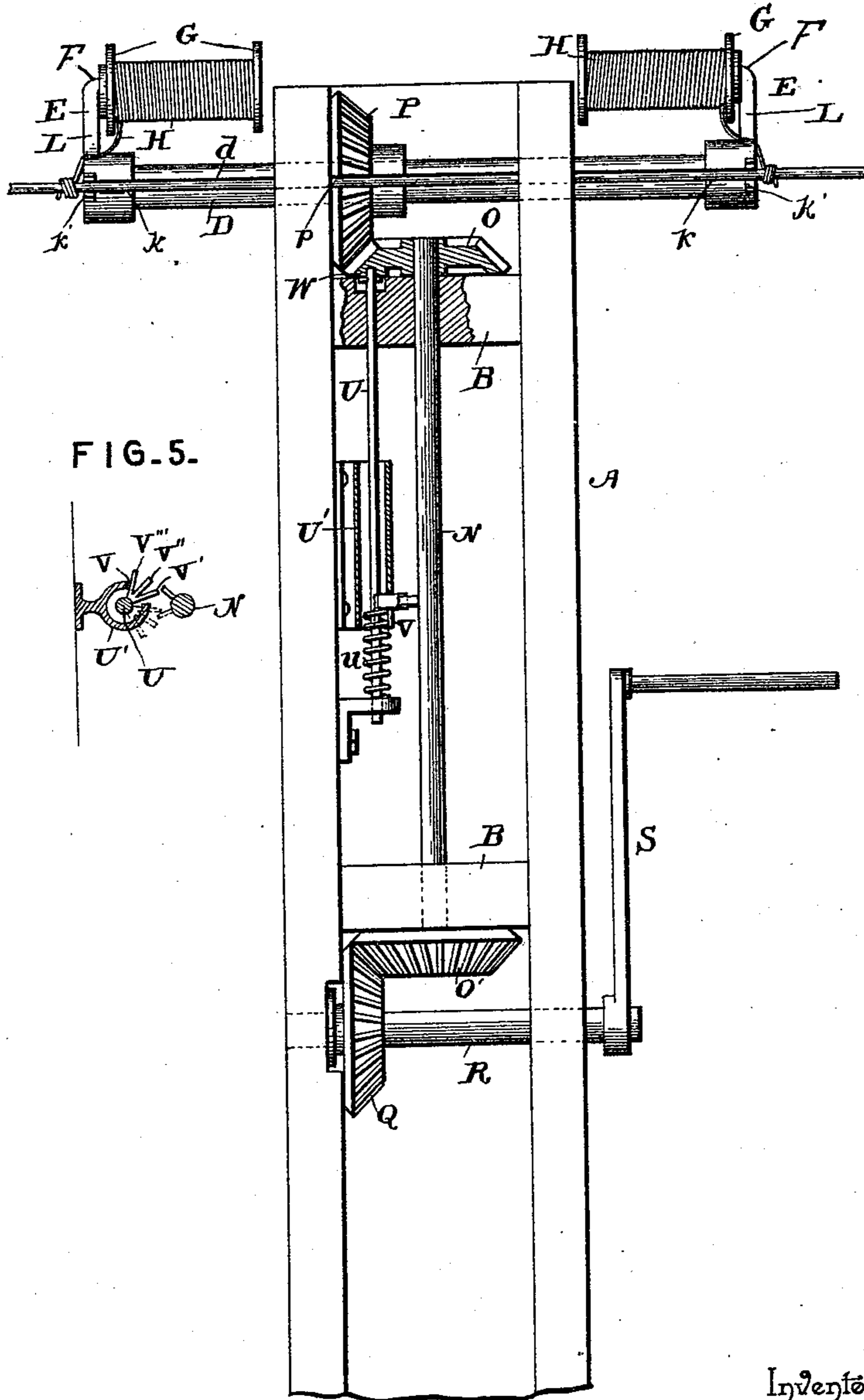
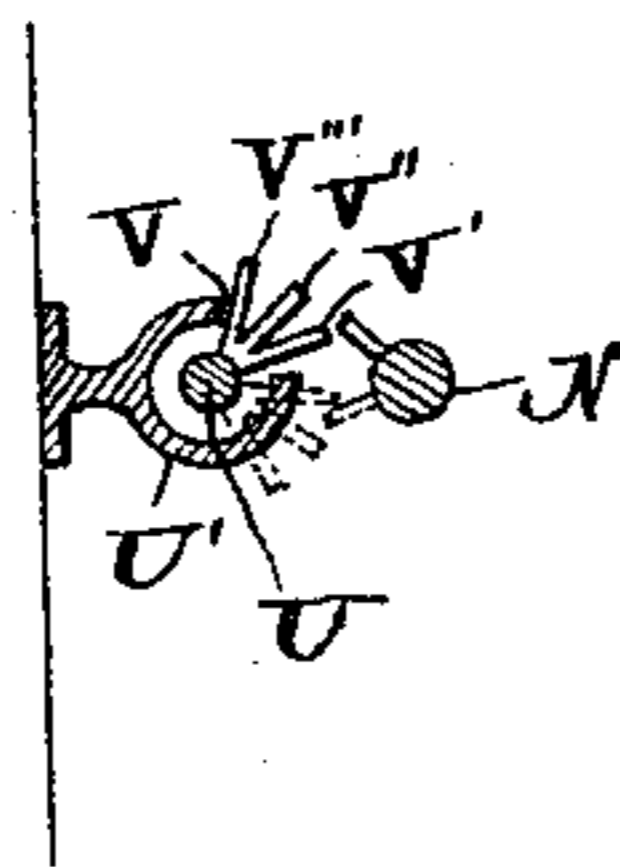


FIG. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

HAWKINS A. KING AND ALMERON J. WRIGHT, OF QUINCY, MICHIGAN.

MACHINE FOR ATTACHING CROSS-WIRES IN WIRE FENCES.

SPECIFICATION forming part of Letters Patent No. 490,600, dated January 24, 1893.

Application filed August 12, 1892. Serial No. 442,865. (No model.)

To all whom it may concern:

Be it known that we, HAWKINS A. KING and ALMERON J. WRIGHT, citizens of the United States, residing at Quincy, in the county of Branch and State of Michigan, have invented a new and useful Fence-Machine, of which the following is a specification.

Our invention relates to improvements in fence machines and refers particularly to means for attaching cross-wires, or vertical wires, to the usual horizontal wires of a fence, and the improvement consists in providing a simple and cheap device whereby the cross-wires, or stays, may be applied rapidly and effectively to the horizontal wires, being twisted or coiled around each in turn, to hold the same in place and strengthen the fence.

In the drawings:—Figure 1 is a perspective view of the fence machine, embodying the invention, applied in the operative position to a fence: Fig. 2 is a vertical sectional view of the same: Fig. 3 is a rear view, showing the gearing: Fig. 4 is a view of the twisting rod and spools, detached from the frame. Fig. 5 is a detail cross-section of the stop-mechanism.

The frame of the machine comprises the side-bars, A A, connected at intervals by the braces, B B, and provided in their upper ends with the registering bearings, C C, in which is mounted, transversely, the twisting-rod, D. Upon the extremities of the twisting-rod, which extend beyond the side-bars of the frame, are secured brackets, E E, provided with spindles, F F, upon which are mounted the reels or spools, G G, carrying the wire, H, for the stays or cross-wires, *h h*, as shown in Fig. 1. The brackets comprise eyes, K, fitted upon and encircling the twisting-rod, and arms, L, which leave the rod at right angles thereto and curve rearwardly toward their free ends so as to bring the side of the spool from which the wire leaves the latter practically in line with an oblique guide-perforation, M, which is formed in the eye of the bracket at the point of connection therewith of the arm.

The twisting-rod is longitudinally grooved, as shown at *d*, said groove extending inward to the center or axis of the rod, and the eyes of the brackets are slotted, at *k*, to register

with the groove, so that a horizontal wire of the fence may be inserted in the latter, as indicated in Fig. 1.

The wire from the spools passes through the guide-perforations in the eyes of the brackets to the outer sides of said brackets, as shown in the drawings, to enable the free ends of the wires to be attached to the top horizontal wire of the fence, and it will be seen that when said free ends are secured to the fence wire or strand, if the twisting rod is rotated around the latter as a center the wire will be drawn from the spools and twisted or coiled around the fence-wire or strand, for the reason that the wire-bearing spools travel around the fence wire or strand in a circle of which the axis of the twisting-rod is the center.

The operating mechanism for the twisting-rod comprises a shaft, N, mounted in bearings in the braces, B, and carrying, at opposite ends the bevel gears, O and O', the bevel gear, P, carried by the twisting-rod and meshing with the gear, O, and the bevel gear, Q, carried by a horizontal shaft, R, mounted in bearings in the side-bars, and meshing with the gear, O'. The horizontal power shaft, R, is provided with a crank, S, by which it may be rotated by hand. The bevel gear, P, which is carried by the twisting-rod, is provided with a radial slot, *p*, to register with the groove in said rod, to permit the insertion of the fence-wire.

The eyes of the brackets are provided, at opposite sides of their slots, *k*, with divergent guide-fingers, *k' k'*, to facilitate the insertion of the fence-wire.

The upper ends of the side-bars of the frame are provided with vertical slots, T T, which communicate with the bearings and are adapted, when the groove of the twisting-rod is aligned therewith, to allow the fence wire to pass freely into the latter.

The operation of the improved fence machine is as follows: Having placed the frame in an upright position beside the fence and engaged the twisting-rod with the top fence-wire, or strand, as shown in Fig. 1, the twister is operated by the mechanism provided therefor, thereby causing the wire carried by the

spools to wind or twist around the fence-wire two, three, or more times, as necessary and desired, after which the machine is disengaged from the top fence-wire and engaged in like manner with the next lower fence-wire, where the twisting operation is repeated, and so on to the bottom wire. It will be understood that as the twisting-rod is moved from one wire to the next the wire carried by the spools is reeled off a sufficient distance to extend from the last wire to the next, and thus form a vertical cross-wire or stay, twisted at each intersection with the fence-wires, as shown to the right in Fig. 1.

By means of the machine which we have herein-described two cross-wires or stays are applied simultaneously, but it will be understood that the machine may be constructed with but one spool, or it may be provided with three or more, without altering the construction herein-described, except by a duplication of some of the parts, as, for instance, the spools. We also employ, in connection with our fence-machine a stop-mechanism, to limit the number of twists of the cross-wire or stay around the fence-wire, or, in other words, to limit the number of consecutive revolutions of the twisting-rod, and the construction of the same is as follows: U represents a locking-pin, which is mounted in a tubular guide, U', and lies parallel with the shaft, N, a spring, u, being coiled around the lower end of said pin to normally elevate the same. The guide is provided with a slot, V, and the pin with a series of radial studs, V', V'' and V''', which are adapted, when the pin is in a particular position, to align with said slot and allow the spring to elevate the bolt or pin to engage a socket, W, in the underside of the bevel gear, O.

The shaft N is provided with a striking pin, which, as the shaft rotates during the operation of twisting the stays around the fence-wires, engages the studs upon the locking-pin successively, turning the same at each engagement a short distance and finally, when the third stud is engaged, bringing them into alignment with the slot in the guide and allowing the pin to be operated by its actuating spring to stop the operating mechanism. In this way the number of coils of each stay around each fence-wire is limited, automatically, to three. By changing the number of studs upon the locking pin, and arranging them closer together the number of coils of the stays around the fence-wires may be increased, as will be understood. Also, by employing two studs and setting them substan-

tially as indicated in the drawings, the mechanism may be stopped at the end of two coils.

The locking pin U is disengaged from the gear O by hand. The operator may grasp the studs V' V'' V''' and draw the locking pin down just before the crank is turned to twist the wire.

Having thus described our invention what we claim and desire to secure by Letters Patent, is:

1. In a fence-machine, the revoluble longitudinally-grooved twisting-rod, combined with the brackets provided with eyes fitting upon said rod and provided with slots to register with the groove in the latter, the spools carried by said brackets, and operating mechanism for the twisting-rod, substantially as specified.

2. In a fence-machine, the revoluble grooved twisting-rod, the brackets carrying spools and provided with eyes fitting upon the twisting-rod, which eyes are provided with slots to register with the groove in the twisting-rod, guide-fingers arranged upon opposite sides of said slots, and oblique guide-perforations, and operating means for the twisting-rod, substantially as specified.

3. In a fence machine, the combination with a longitudinally-grooved twisting-rod, and feeding-spools connected to said rod, of a shaft N carrying a striking-pin and connected to the twisting-rod, a spring-actuated locking-pin carrying radial studs in the path of said striking-pin, and a guide in which the locking-pin is mounted, substantially as specified.

4. In a fence machine, the combination with a grooved twisting-rod and spools, of a shaft N carrying a striking-pin, intermeshing gears O and P fixed to the shaft N and twisting rod, respectively, a slidable locking pin U, a tubular slotted guide U' containing said locking pin, an actuating spring u arranged in the guide and connected to the locking-pin, and lateral studs carried by the locking-pin in the path of the said striking pin and adapted to be received by the slot in the guide U', the gear O being provided with a socket to receive the end of the locking-pin, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

HAWKINS A. KING.
ALMERON J. WRIGHT.

Witnesses:

M. S. SEGUR,
N. C. PEASE.