(No Model.) 2 Sheets—Sheet 1.

T. W. EATON & F. H. PRINCE.

BARB WIRE FENCE MACHINE.

No. 275,810. Patented Apr. 17, 1883.

Fig 1.

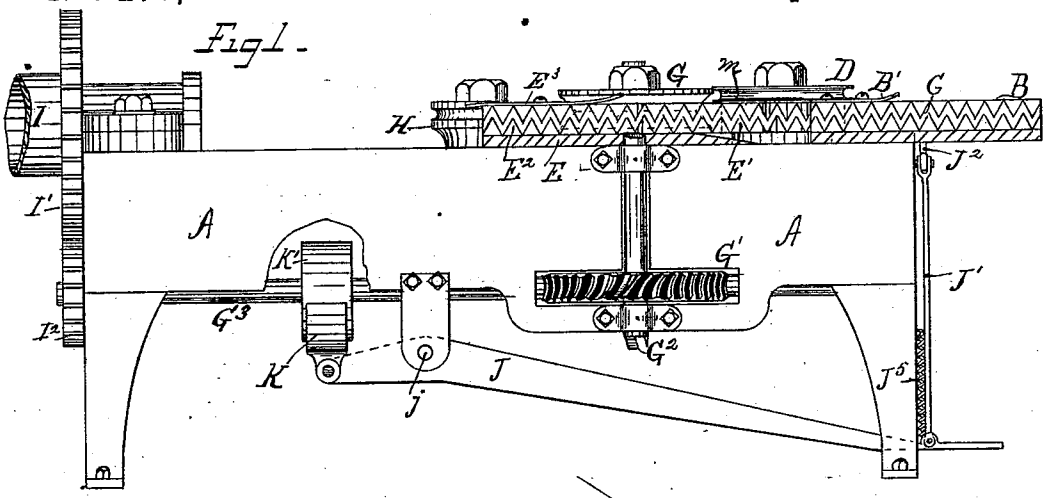
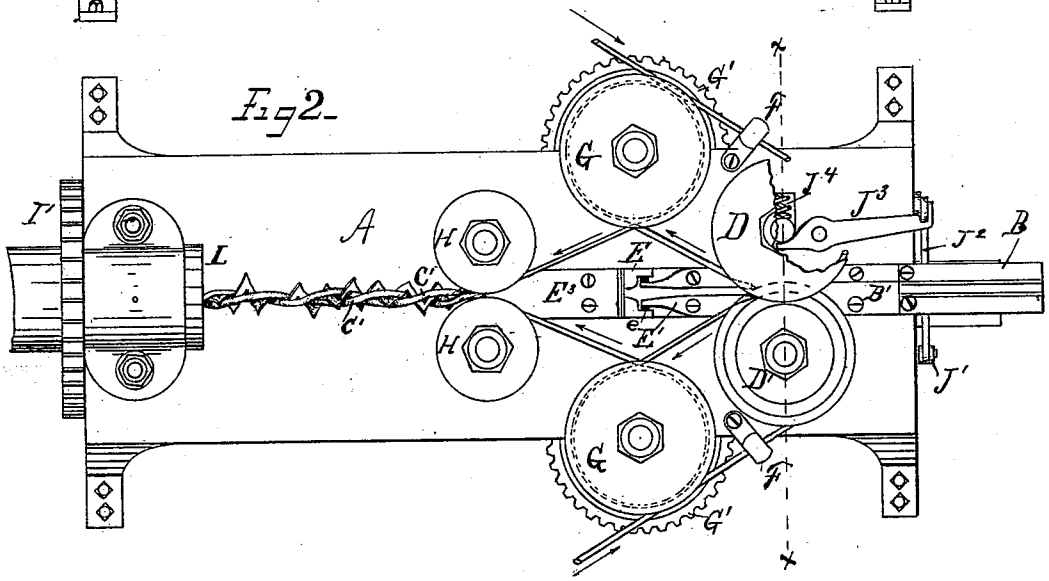


Fig 2.



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(No Model.)

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Fig 3.

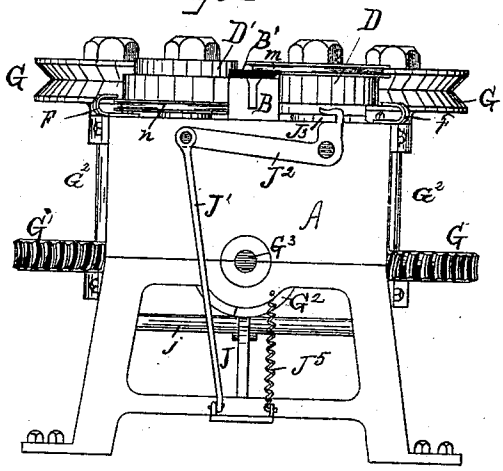


Fig 4.

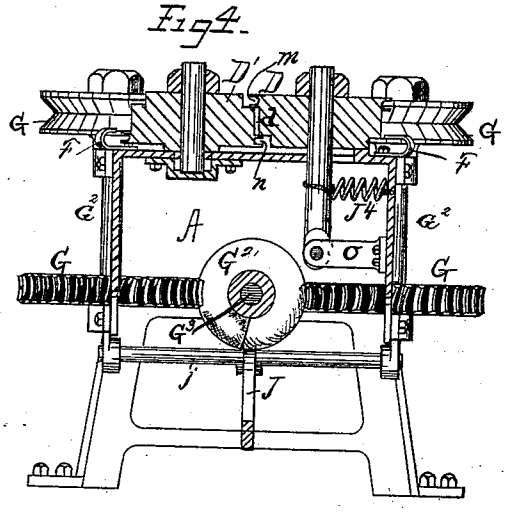
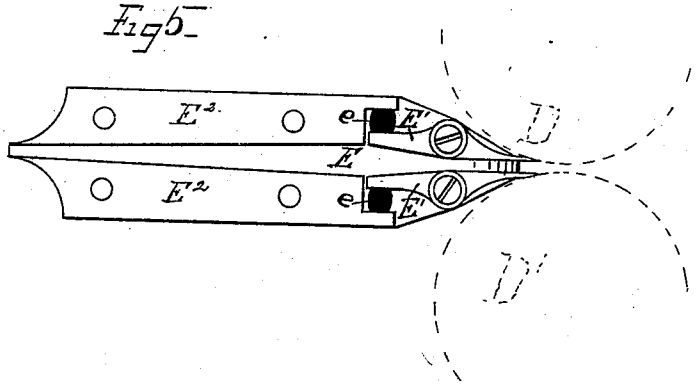


Fig 5.



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UNITED STATES PATENT OFFICE.

THOMAS W. EATON AND FREDERICK H. PRINCE, OF CHICAGO, ILLINOIS.

BARB-WIRE-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 275,810, dated April 17, 1883.

Application filed December 16, 1881. (No model.)

To all whom it may concern:

Be it known that we, THOMAS W. EATON and FREDERICK H. PRINCE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Barb-Wire-Fence Machines, of which the following is a specification.

These improvements relate to machines for manufacturing continuous barb-wire fencing of the class shown in Letters Patent No. 221,158; and it consists in the novel construction and combination of devices, as hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side view of the machine with some of the parts removed to disclose the path of the barb-strip. Fig. 2 is a plan view, and Fig. 3 an end elevation, of the machine. Fig. 4 is a cross vertical section upon the line *x x* of Fig. 2. Fig. 5 is an enlarged top view of one of the guides.

Similar letters of reference indicate like parts wherever the same are used in the drawings.

In said drawings, A represents the bed and frame of the machine.

B is a slotted guide, into which the zigzag or other sheet-metal barb-strip C is first placed by the operator, and from which it is drawn by two friction-wheels, D D′, passing in so doing through the channel *d* between said wheels. Beyond these wheels is another guide, composed of a horizontal piece, E, tapered off at the receiving end, two pivoted side pieces, E′, and two stationary side pieces, E^2. The strip is forced into this second guide and pushed along therein by the friction-wheels until the strip is seized in the bight of the fence-wires C′ C′. The points of the pivoted side pieces, E′, lie against the surfaces of the friction-wheels, as indicated in Fig. 5, and are caused to hug the same closely by the rubber springs *e*, acting against their other ends, so that the barb-strip cannot follow either wheel in its revolution, but must continue in a straight forward movement. In its passage through the second guide the strip passes under a flat plate, E^3, spanning the channel between the pieces E^2, the front end of which is turned up to avoid catching the points. A similar plate, B′, is also used upon the guide B to guide and position the strip in its entrance to the friction-wheels.

The fence-wires are fed to the machine, passing first through guides F at either side, and then partially around said friction-wheels, one strand around each wheel. A groove, *m*, is provided upon the wheel D, at the top side thereof, and upon the wheel D′ a like groove, *n*, at the bottom side thereof, to permit this. The frictional surface of these wheels which acts upon the barb-strip lies between the grooved portions, the latter being of the larger diameter, so that the strip can neither rise above nor fall below the surfaces provided to carry it. From the grooves *m* and *n* the wires are each passed entirely around one of the grooved feed-wheels G G, which wheels are positively actuated so as to control the movement of the wire by means of the worm-gears G′ upon the same shaft therewith intermeshing upon opposite sides with a single worm, G^2, upon the shaft G^3, by which the parts thus far described are motived. The feed-wheels deliver the wires to grooved guide-wheels H H, which bring them close together, and here the twist begins.

I is the hollow arbor of the twisting mechanism, and I′ I^2 are the gears by which power is carried from such mechanism to the shaft G^3.

In feeding the sheet-metal strip C it frequently happens that the operator will be delayed in inserting a length thereof in time to have the same connect with the last preceding length, and hence we have provided means whereby the delayed length may be pushed ahead faster than the normal feed until it catches up with its predecessor, and also a brake whereby the feed and twisting may be entirely stopped if the first-mentioned means do not enable the strip to be crowded forward sufficiently. These devices we will now specify.

A foot-lever, J, pivoted at *j* to the stationary frame of the machine, is depressed by the operator whenever he desires to thus hasten one of the strip lengths, and by so depressing it he actuates the connecting-rod J′ to depress the horizontal arm of the pivoted elbow-lever J^2. This movement of said lever compels the horizontal pivoted lever J^3 to push or tip the spindle around which the friction-wheel D rotates, and which is pivoted at its lower end to the

arm *o*, projecting from the frame-work, away from the line of travel of the barb-strip, so that the channel *d* is temporarily widened sufficiently to allow the strip to be pushed through without hinderance. As soon as the operator withdraws his foot the spring J^4 pushes the wheel and spindle back to their normal position, and the spring J^5 raises the foot-lever. The side strip, E′, follows the roll D in this operation, being forced to do so by its rubber spring. If the barb length last fed has proceeded so far that the next one cannot be pushed up to it in time to prevent a lapse in the continuity of the barbs, by the employment of the means last described, the operator exerts a further or additional pressure on the foot-lever, carrying it down somewhat farther than before, and thereby he causes the friction-producing yoke K upon the end of the foot-lever beyond the pivot *j* to engage with the pulley K′ upon the shaft G^3. By means of this brake the machine may be entirely stopped or slowed, as the occasion requires.

It will be noticed that the wheels by which the barb-strip is fed forward are actuated by the wires independently of other means. This insures uniformity in the speed of the feed of the wires and strip.

The plates E^3 and B′ are in reality of spring metal, and they serve very important functions. Their front or turned-up ends deflect the barb-strip, so that it is impossible for the points to catch, while their rear ends confine the strip in the proper horizontal plane. Thus the spring-plate B′, in connection with the groove in the guide B, insures the entrance of the strip into the channel *d* and prevents interference with the projecting flanges or grooved portions of the friction-wheels; and in like manner the spring-plate E^3, in connection with the other portions of the second guide, insures the presentation of the strip to the wires in exact position to cause the latter to embrace the central line between the points thereof. If necessary, the rear ends of these spring-plates may be bent down somewhat.

We claim—

1. In a barb-fence machine, the combination of mechanism for feeding the two cable-wires, mechanism for feeding the barb-strip between the cable-wires, and mechanism for operating said feed mechanisms continuously and at the same speed, and a twister whereby both strip and wires are presented to the twister at a uniform rate and are longitudinally intertwisted, substantially as specified.

2. The combination of mechanism for feeding the fence-wires and rollers for feeding the barb-strip, the latter being operated by the fence-wires, substantially as set forth.

3. The slotted guide, the friction-rollers, and the second guide, in combination with mechanism for feeding the fence-wires together at the end of said second guide, substantially as set forth.

4. In a wire-fence machine, the combination of the wheels D D′, having opposing surfaces for feeding the barb-strip, and each a groove for one of the fence-wires, substantially as set forth.

5. In a barb-fence machine, the combination, with twisting mechanism, of mechanism for continuously feeding the fence-wires, and mechanism arranged and adapted to continuously feed the barb-strip forward in line with the fence-wires, substantially as and for the purpose set forth.

6. The combination of the feed-rolls D D′, one of which is mounted upon a tipping spindle, the brake by which the rolls may be stopped or slowed, and the foot-lever and connecting devices whereby the roll-spindle is tipped and the brake is applied, substantially as specified.

7. In a barb-fence machine, the combination, with mechanism for feeding the fence-wires and mechanism for feeding the barb-strips, of a brake connected with both said mechanisms, whereby the feed of both wires and strips may be simultaneously slowed or stopped as occasion requires, substantially as specified.

8. The combination, with the friction-rolls D D′, of the second guide having pivoted side pieces and springs to cause the points of said side pieces to hug the rolls, substantially as and for the purpose set forth.

9. The combination, with one or both the guides, of top spring-plates, substantially as and for the purpose set forth.

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FREDERICK H. PRINCE.

Witnesses:
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