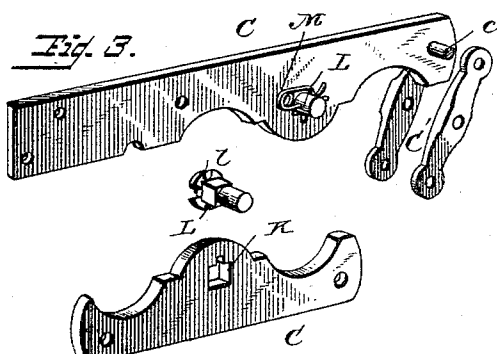
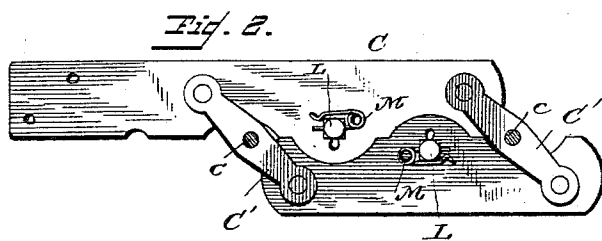
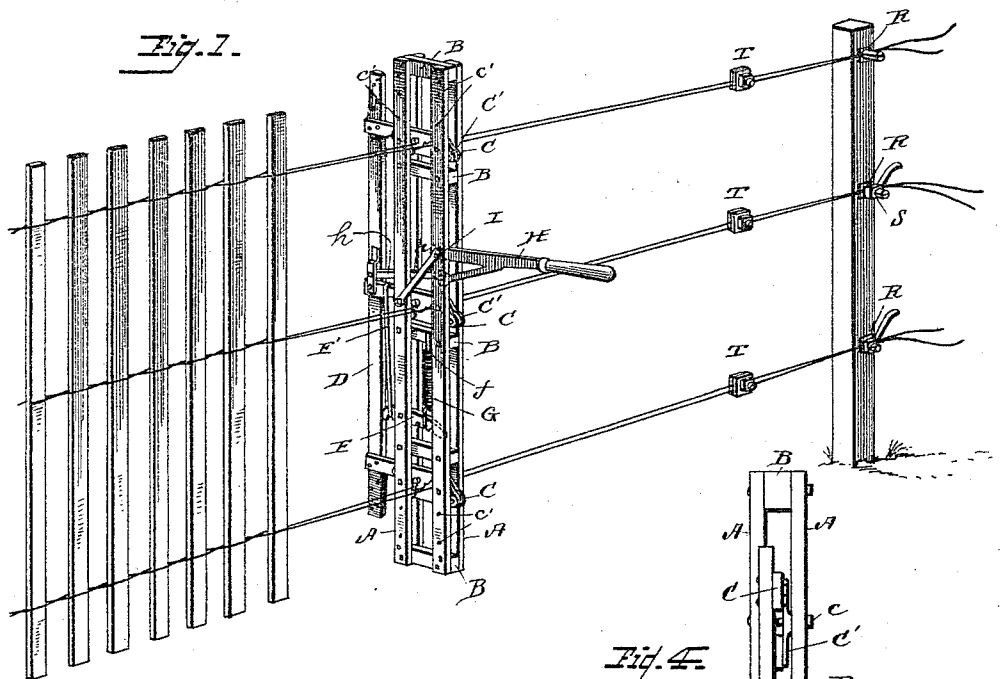


(No Model.)

E. A. LEINARD & G. W. SHEETS.  
FENCE MACHINE.

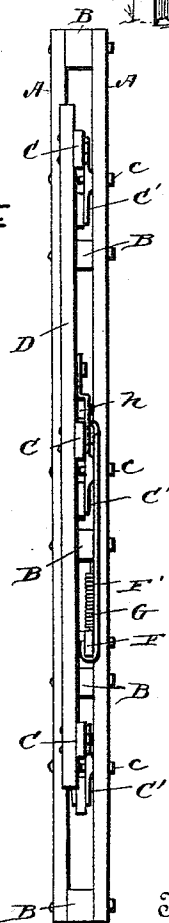
No. 438,007.

Patented Oct. 7, 1890.



Witnesses

"Herrn Schneider."  
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Inventor

and  
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# UNITED STATES PATENT OFFICE,

EDGAR A. LEINARD AND GEORGE W. SHEETS, OF KARLE, OHIO.

## FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 438,007, dated October 7, 1890.

Application filed March 27, 1890. Serial No. 345,585. (No model.)

*To all whom it may concern:*

Be it known that we, EDGAR A. LEINARD and GEORGE W. SHEETS, both of Karle, in the county of Williams and State of Ohio, have  
5 invented certain new and useful Improvements in Fence-Machines; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming  
10 a part of this specification, and to the letters of reference marked thereon.

This invention relates to certain improvements in that class of fence-machines for which we obtained a patent, No. 412,634, dated  
15 October 8, 1889; and the invention consists in certain novel details of construction, combinations, and arrangements of parts to be now described, and pointed out particularly in the claims at the close of this specification.

Referring to the accompanying drawings, Figure 1 is a perspective view of the improved machine and a section of the fence. Fig. 2 is an enlarged elevation of one of the wire-carriers. Fig. 3 is a view of the same with  
25 the parts separated, and Fig. 4 is a view looking at one edge of the frame of the machine.

Like letters of reference indicate the same parts in all the figures.

The main features of the present machine are shown and described in our aforesaid patent, and therefore will not be particularly described here, it being sufficient to say that in the present instance the rectangular frame in which the parts are mounted consists of four  
35 side pieces A, two of which are mounted on each side of relatively-thick cross-pieces B, preferably five in number, disposed at top and bottom and at suitable intermediate points, all being of such thickness as to leave the necessary space between the side pieces for the reception of the carriers and complementary parts. At the proper points between the side pieces the carriers are located, their position being gaged by the desired space between the  
45 wires of the fence, and, if desired, made adjustable, as follows: Each of the carriers C is, as in the former instance, mounted on centrally-pivoted links C', said carriers each consisting of two arms, one below and shorter than the other, which other or upper arm has  
50 one end attached to the operating-bar. These

co-operating carrier-arms are mounted on opposite ends of the same links, and one of the carrier-arms of each pair is extended and connected to an operating-bar D. Thus when  
55 the operating-bar is moved in or out the carrier-arms are shifted from one position to the other. The links are pivoted on bolts c, passing through the side pieces, and should it be desired to vary the vertical space between the  
60 wires it is only necessary to change the position of the pivot-bolts c by moving them into any of the series of holes c' and changing the point of attachment to the operating-bar correspondingly. It will be seen that it is only  
65 necessary to shift the end carriers, and hence no provision is made for moving the center carriers.

Below the center carriers is pivoted a lever F, one end of which is connected to the  
70 extended center carrier-arm at a point between the frame and operating-bar by a rod F', its opposite end being notched or serrated and adapted to receive a link or hook f, which forms an attaching medium for the  
75 lower end of a spring G, the upper end of which is secured to the central cross-piece B. The tendency of the spring is to draw the inner end of the lever F up and the outer end down, the result being that the operating-bar  
80 and attached carrier-arms are drawn down and held firmly at either extreme of their movement with no tendency to move in one direction or the other, as would be the case were a spring used, as in the patented structure before referred to. This effect is due, it  
85 will be seen, to the fact that the link F' is pivoted at its lower end at a point vertically intermediate of the extremes of the movement of the upper end. The power exerted by the  
90 spring may of course be regulated by shifting the point of attachment on the lever, as will be readily understood. The bell-crank lever or operating-lever H and the connecting-link h are similar to the ones formerly  
95 patented; but in order to overcome the tendency of the lever to distort the frame when power is applied thereto I provide a brace I, which extends from the pivot-bolt of the lever to the pivot-bolt of the central link on  
100 the opposite side, being almost directly in the line of the strain.

Instead of the round wire-holders located in the projections of the carriers, as before used, I now form square holes K in the projections of the carrier-arms, in the facing edges of each of which is cut a recess for the passage of the wire, and in these holes are fitted the square shanked and headed holders L. In the heads at a point corresponding to the center of each face of the square is formed a recess or slot *l* for the wire, each slot being of different size for the accommodation of wires of different size. Thus by removing the holder the wire may be readily inserted and then the holder replaced with the properly sized opening around the wire, or if one opening wears a new one may be turned into position. The holders are held in place by cotters M, passed through holes in the shank, as shown. Instead of a square shank, however, it is obvious that other irregular shapes may be employed, which will prevent the holders from rotating. By referring to Figs. 4 and 1 it will be seen that the upper carrier-arms and the link *h* are attached to one side of the operating-bar D, and thus the bar can be brought very close to the side pieces without coming into contact with the carriers or other parts, making the machine exceedingly compact and strong.

While we have in the present instance as well as in the former patent described specifically a machine having three pairs of wire-carriers, so as to make a three-strand fence, it is obvious that the number of pairs of wire-carriers may be increased or diminished without departing from the spirit of the invention.

In operating the fence-machine of this character, in which the individual strands are crossed and recrossed, provision has to be made for maintaining the tension of the wires and at the same time permit the wires to advance or be drawn toward the machine as they are taken up. This result has been accomplished in a more or less satisfactory manner by means of tension-bars, such as R, having friction-clamps S therein, through which the wires are drawn, the same tension on each of the pairs of strands being maintained by a common bolt; but great difficulty has been experienced in so regulating the tension that each strand will feed at the same rate. Thus the fence is liable to have the strands of different degrees of tightness, making the pickets loose and spoiling the regularity of the structure.

We propose to overcome the difficulty mentioned by clamping the wires rigidly together immediately in front of the tension-bars and

between the tension-post and the twisting mechanism by means of clamps T, which consist, simply, of a center block with a through-bolt and washers or nuts for clamping the wire. Thus it will be seen at a glance that one wire cannot feed faster than the other, and the tension on both must remain the same under all conditions, even though the friction at the tension-bar were entirely removed from one strand.

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

1. In a fence-machine, the combination, with the frame, carrier-arms mounted on opposite ends of centrally-pivoted links, and an operating-bar connected to one of each pair of carrier-arms, of a lever pivoted on the frame, a link connecting one end of said lever and one of the carrier arms or bars, and a spring engaging the opposite end of the lever, whereby the carriers are held at their extremes of movement, substantially as described.

2. In a fence-machine, the combination, with the frame, carrier-arms mounted on opposite ends of centrally-pivoted links, and an operating-bar connected to one of each pair of carrier-arms, of a lever pivoted on the frame, a link connecting one end of said lever and one of the carrier arms or bars, and a spring adjustably connected to the opposite end of said lever, whereby the power exerted by the same may be adjusted, substantially as described.

3. In a fence-machine, the combination, with the frame and pairs of carrier-arms mounted on opposite ends of centrally-pivoted links and having square holes therein, of the wire-holders having the slotted heads and square shanks fitting in said holes, said slots registering with corresponding slots in the carrier-arms, whereby different passages may be presented for the passage of the wire, substantially as described.

4. In a fence-machine, the combination, with the frame and pairs of carrier-arms mounted on opposite ends of centrally-pivoted links and having square holes therein with the recess at one side, of the wire-holders having the head with slots of different size therein and the square shanks for fitting in the holes and the cotters for holding the holder in place, substantially as described.

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