L. M. WOODCOCK.

TOOLS FOR MAKING BARBED FENCE-RAILS.

No. 189,982. Patented April 24, 1877.

Fig. 1.

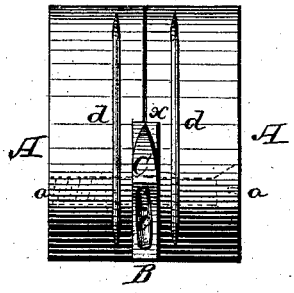


Fig. 2.

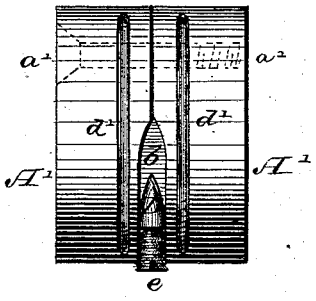


Fig. 3.

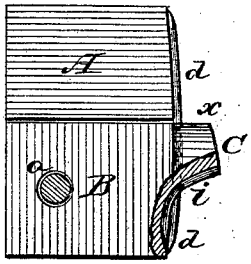


Fig. 4.

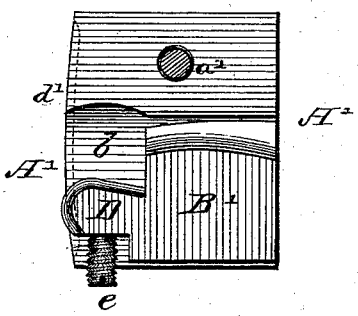


Fig. 5.

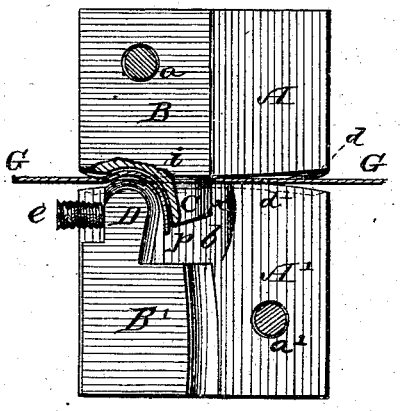
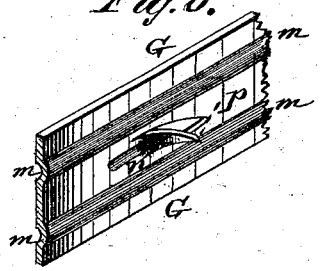


Fig. 6.



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UNITED STATES PATENT OFFICE.

LEONARD M. WOODCOCK, OF AUBURN, NEW YORK, ASSIGNOR TO EMPIRE WRINGER COMPANY, OF SAME PLACE.

IMPROVEMENT IN TOOLS FOR MAKING BARBED FENCE-RAILS.

Specification forming part of Letters Patent No. **189,982**, dated April 24, 1877; application filed March 24, 1877.

To all whom it may concern:

Be it known that I, LEONARD M. WOODCOCK, of Auburn, in the county of Cayuga and State of New York, have invented certain new and useful Improvements in Tools for Making Barbed Fences; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of dies for making flat barbed fence-rails of Bessemer steel or other sheet metal, as will be hereinafter more fully set forth.

In the annexed drawing, Figure 1 is a face view of the male die. Fig. 2 is a similar view of the female die. Figs. 3 and 4 are sections of the male and female dies, respectively. Fig. 5 is a section of the two dies with the fence-rail between them. Fig. 6 shows a part of the fence-rail as made by the dies.

The male die is formed of two parts, A A, placed side by side, and fastened by a screw, *a*, and in the adjacent sides of these two parts is formed a recess to receive a plate, B, formed with the projecting punch C, the screw *a* passing through said plate B to hold the same firmly between the two parts A A.

The female die is in like manner formed of two parts, A′ A′, fastened together by a screw, *a′*, and in these parts is also formed a recess to receive a plate, B′. This plate is formed with a lip, D, leaving an opening or recess, *b*, at one side thereof, as shown in Figs. 4 and 5.

In the face of the male die A A are formed two parallel raised beads, *d d*, and corresponding grooves *d′ d′* are formed in the face of the female die A′ A′, which, when brought together, form corrugations longitudinally in the fence-rail, one on each side of the barb.

The punch C is constructed with a sharp cutting-edge, *x*, so as to cut the V-shaped barb of the fence-rail, and at the same time bend the said barb down into the recess *b* of the female die.

The plate B′, with its lip D, is adjusted in the female die by a set-screw, *e*, and then held by screwing up the screw *a′*, that unites the two parts of said die. This lip D presses the barb thus cut and bent down into a groove, *i*, formed in the back of the punch C and adjacent edge of the plate B, so that thereby a longitudinal corrugation is formed in the bar and part of the fence-rail, this latter corrugation being made in the other side of the metal from those made by the dies *d d′*.

In Fig. 6 I have shown the metal fence-rail G with the parallel corrugations *m m*, the barb *p*, and the corrugation *n* therein.

These dies or tools may be inserted in or made parts of rotating rollers, or otherwise worked with a rotary motion; and they may also be used with a plunging perpendicular motion, or nearly perpendicular, in which case the face of the dies should be made flat instead of convex, as those shown in the drawing.

By means of these tools the metal fence-rail is formed with the barb of proper shape, strengthened by the corrugation therein, and with the parallel corrugations in the body of the rail.

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

1. The punch C, secured in and projecting from the face of the male die A A, in combination with the female die A′ A′ B′, having lip D, for cutting and bending the barb in a metal fence, substantially as and for the purpose set forth.

2. The plate B, with its lip D, arranged in the female die A′ A′, as described, in combination with the punch C, having the groove *i* in its back edge, for forming the longitudinal corrugations in the barb at the same time as the barb is cut and bent, substantially as herein set forth.

3. The combination of the male die A A,

formed with the beads *d d*, and provided with the punch C, having groove *i*, and the female die A′ A′, formed with the grooves *d′ d′* and recess *b*, and provided with the lip D, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LEONARD M. WOODCOCK.

Witnesses:
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