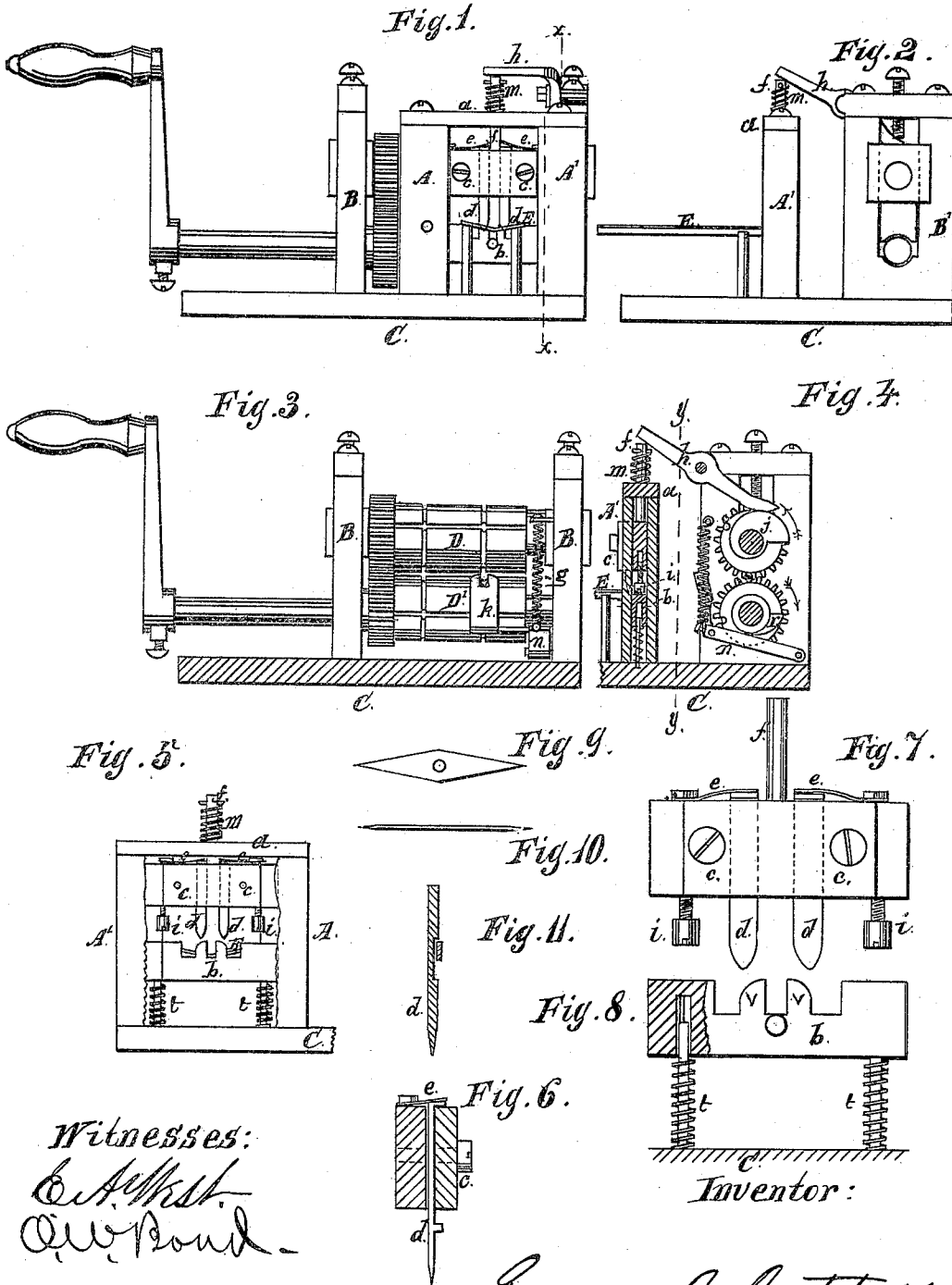


E. W. MITCHELL.

MACHINE FOR PRESSING BARBS ON WIRE.

No. 172,760.

Patented Jan. 25, 1876.



Witnesses:
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IMPROVEMENT IN MACHINES FOR PRESSING BARBS ON WIRES.

Specification forming part of Letters Patent No. 172,760, dated January 25, 1876; application filed June 4, 1875.

To all whom it may concern:

Be it known that I, EDWARD W. MITCHELL, of Chicago, Cook county, State of Illinois, have invented new and useful Improvements in Machines for Pressing Barbs on Wires, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation; Fig. 2, a side elevation; Fig. 3, a front elevation of the parts shown, and is taken on line *yy* of Fig. 4. Fig. 4 is taken on line *xx* of Fig. 1; Fig. 5, a rear view of the parts shown, and is taken on line *yy* of Fig. 4; Figs. 6, 7, 8, enlarged details; Fig. 11, a variation; Figs. 9 and 10 represent a barb.

The object of this invention is to construct a machine by the use of which barbs can be pressed upon a wire, and located at proper distances one from another, the wire, with barbs attached, to be used in making wire fence.

The machine is adapted to be used with two wires, the barbs being pressed upon one so as to hold them in place, while the two wires are twisted by a subsequent process.

In the drawings, Figs. 9 and 10 represent a barb which can be applied to a wire by using my machine.

A *A'* are two posts, with a cross-bar, *a*, at the top. These posts are grooved on the inside to receive the heads *b c*. Upon *b* there are two projections, *v v*, (they are lettered only in Fig. 8,) between which the wire passes, upon which the barbs are placed. Beneath each end of *b* there is a spring, *t*. In the head *c* are two cut-offs, *d d*. They are rather sharp-pointed; are so located as to descend a little way in front of the projections, leaving a space between *v* and *d d* equal to the thickness of the barb. *d d* are so formed and fixed in the head *c* that they have a slight vertical movement, so that if one hits a barb it can yield a little. I consider this construction desirable. The form of *d* is shown in Fig. 6, showing the side. *ee* are two springs, which rest, at their free ends, upon *d d*. *f* is a rod, secured to *c* and passing through *a*. *m* is a spring around *f*, held at the top by a pin through *f*. *h* is a lever, resting,

at one end, on the top of *f*. It is pivoted upon a pin and operated by a cam. There is a screw, *i*, in the under side of *c*, at each end. The head of each screw comes in contact with *b*, and by means of them the head *c* can be adjusted relatively to *b*, which is necessary, as the points of *d d* wear away. *f* moves up and down freely in *a*. *C* is the bed of the machine. *D D'* are two rollers, having suitable gear-wheels attached, by means of which, with other common devices, they are rotated. Each roller has, as shown, two grooves around it, designed to receive the two wires to be twisted, and each also has one or more longitudinal grooves, so arranged that the groove or grooves in one roller will be in the same relative position as those in the other, as the rollers revolve. *j* is a cam on *D*, which operates the lever *h*. *k* is a notched bar pivoted at its lower end to the lever *n*, which is operated by a cam, *r*, on the roller *D'*. *g* is a spring to raise the lever and bar or arm *k* when the cam *r* leaves the lever. *E* is a shelf, on which a number of barbs strung upon a wire rest as they pass to the machine. Its surface, in form, is the reverse of that of the edge of a barb.

In use, a large number of barbs are to be strung upon a wire, close together. The end of the wire is to be passed between the projections *v v* into the notch in the top of *k*, and between the rollers *D D'*, and then the operation can commence.

As the wire upon which the barbs are strung is drawn along, which is to be done in any suitable manner, the rollers are to be rotated. The passage of the barbs will be at first arrested by the projections *v v*, but as *D D'* revolve the head *c* will be forced down by the lever *h* and cam *j*, carrying down *d d*, which will pass between the barbs, leaving a single one behind them. At the same time the head *b* will be forced down, the heads of the screws coming in contact with it, and the projections *v v* will pass below the barb, leaving it free to move along with the wire until it comes in contact with *k*, which will arrest its passage; but, as the rollers continue to rotate, the cam *r* will come in contact with the lever *n*, and *k* will be

forced down, leaving the barb again free to pass along with the wire, and, being drawn into the longitudinal grooves in $D D'$, it will be compressed upon the wire, the rollers $D D'$ being properly adjusted. When the cam j leaves the lever k the spring m will return the head c to its first position. The springs under b will carry it up, and the operation will be repeated. The arm k will also be returned by the spring g when the cam r leaves the lever n .

A second wire can be passed through a hole in A , and between the rollers, and, by suitable devices, be twisted with the wire carrying the barbs.

The arm k holds each barb until the grooves are brought to the right position to receive it, so that they will be at equal distances apart.

The rollers may be about four inches long. Their diameter determines the distance between the several barbs. As shown, only one barb passes with each revolution of the rollers, but, by increasing their diameter, each roller may have two or more longitudinal grooves, additional cams being provided to operate the levers.

It is not necessary to have the longitudinal grooves in the rollers $D D'$ extend the whole length thereof.

Instead of placing the cams upon the rollers, a cam-shaft may be located so as to be revolved with the rollers, upon which shaft both cams may be placed. This construction will

require a proper arrangement of the levers, and perhaps additional levers to operate c and k ; but the necessary changes can be easily made by any mechanic of ordinary skill.

The projections $v v$ may be made detachable and adjustable.

In Fig. 1, the cut-offs are shown down, in which position a barb is supposed to be behind them. In Figs. 5 and 6 these cut-offs are up, and the barbs are supposed to be arrested by coming in contact with $v v$.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The head c , provided with cut-offs $d d$, in combination with the head b , provided with projections $v v$, constructed and operating substantially as and for the purposes specified.
2. The head b , with its projections $v v$, and the head c with its cut-offs $d d$, in combination with the rollers $D D'$ and arm k , constructed and operating substantially as and for the purposes specified.
3. In a machine for pressing barbs on a wire, the rollers $D D'$, each having one or more longitudinal grooves or recesses, in combination with the notched arm k , substantially as and for the purposes specified.

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Witnesses:

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