D. C. STOVER.

Wire-Barbing Machines

No. 196,313. Patented Oct. 23, 1877.

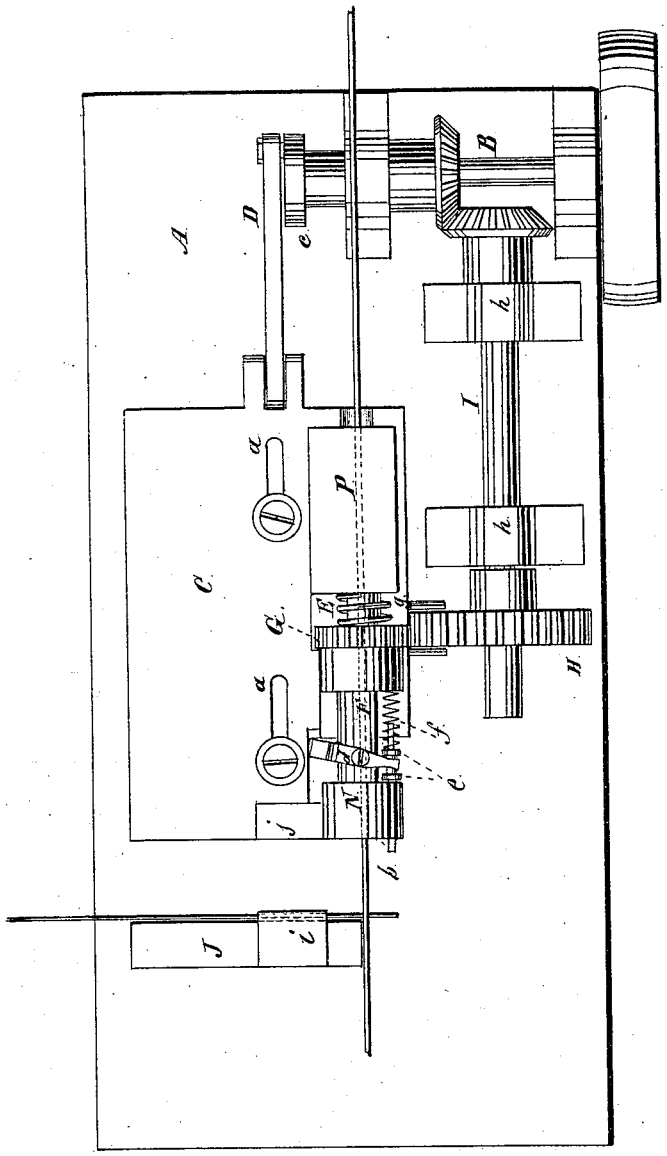

Fig. 1.

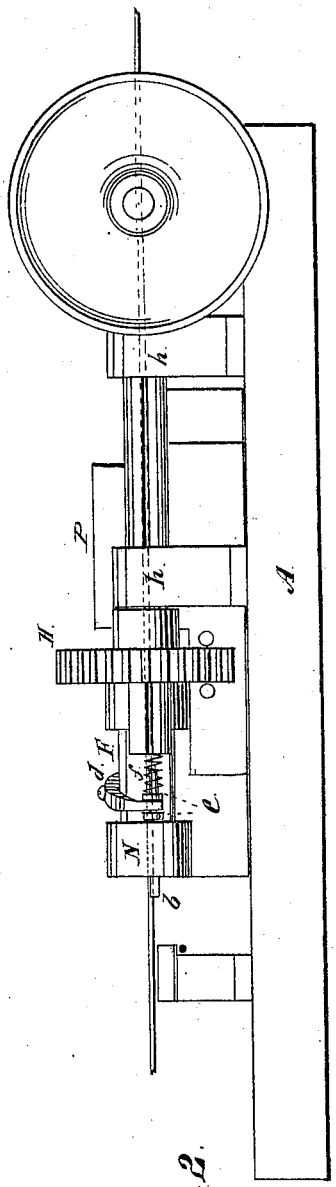

Fig. 2.

Witnesses:

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IMPROVEMENT IN WIRE-BARBING MACHINES.

Specification forming part of Letters Patent No. **196,313**, dated October 23, 1877; application filed July 28, 1877.

To all whom it may concern:

Be it known that I, DANIEL C. STOVER, of Freeport, Stephenson county, State of Illinois, have invented new and useful Improvements in Machines for Wrapping Barbs on Fence-Wire, of which the following is a full description, reference being had to the accompanying drawing, in which—

Figure 1 is a plan view. Fig. 2 is a side elevation.

This invention relates to machines for wrapping wire barbs on fence-wire, and is an improvement on a machine for which Letters Patent of the United States were issued to H. W. Putnam, February 15, 1876. In such machine the movement of the main wire is not continuous, but this wire remains stationary while the barb is being wrapped thereon, and the wrapping devices must be stopped after the completion of each barb to allow the main wire to be advanced the required distance before receiving another barb.

The object of this invention is to so construct the machine that the movement of the main wire can be continuous, the barb being wrapped thereon while it is in motion.

It consists, chiefly, in giving the rotating shaft which carries the wrapping pin or lug a reciprocating motion with its spindle, in addition to the slight reciprocating movement which such shaft in the Putnam machine has on its spindle, this shaft and its spindle being so constructed and connected with the machine that after a barb has been wrapped onto the main wire they will recede with all the wrapping devices, and then advance with such devices, the operation of wrapping being performed while the main wire is in motion, the forward movement of the shaft and spindle being in unison with the movement of the main wire.

It further consists in so connecting the wrapping-pin that it has a reciprocating movement independent of the shaft, so that it can be automatically drawn back and put out of operation after the completion of each barb, to permit the barbs to pass freely.

In the drawings, A represents a table, or the bed of the machine. B is the main driving-shaft. C is a sliding head. As shown, it is provided with slots *a a*, through which pins pass, which are secured to the bed A, serving as guides for the sliding head. D is a pitman-rod, connected at one end with the head C, and pivoted at the other end upon the outside of the wheel, which is fixed on the end of the shaft B.

Instead of this pitman-rod and wheel *b*, a cam could be used, located on B, and arranged to run in contact with a projection on or extension of the head C, for the purpose of advancing the head, which, in such case, could be made to recede by means of a spring or other suitable device.

E is a spindle, permanently secured upon the head C beneath the block P. F is a shaft on the spindle E, on which it has a slight reciprocating movement independent of such movement with the spindle and head C.

b is a wrapping pin or lug, which passes through a head, N, on the shaft F, and has a reciprocating movement therein. *d* is a curved lever pivoted to the shaft F. One end of *d* is connected loosely with the pin *b*, being located, as shown, between two collars or projections, *e*, on the inner end of the pin. The other end of the lever is arranged to engage at intervals with one edge of a cam or some projection on the head C, for the purpose of withdrawing the pin *b*. *f* is a coil-spring, which throws the pin out again when the lever *d* leaves the said recess or projection. *g* is another coil-spring around the spindle, so arranged as to hold the shaft F out as far as it can go on the spindle E, except when it is forced back during the winding of a barb on the main wire.

G is a cog-wheel on the shaft F, which engages with another cog-wheel, H, on the shaft I, which is supported in bearings *h*. This shaft I is driven by a bevel-wheel on B, which engages with another bevel-wheel on the end of I. As shown, the wheel H slides on its shaft I in unison with the movement of the sliding head C, which is accomplished by means of pins in the side of the head, one on each side of H, thus carrying it back and forth on I as C recedes or advances. This wheel H might be made long and secured permanently to the shaft I, in which case the cog-wheel G could slide in the cogs on H, producing the same result. When the wheel H is

narrow, as shown, it must slide on I as the shaft F reciprocates, so that G will be always engaged with H.

J is a stationary block on A. *i* is a cutting-blade secured to J. *j* is another cutting-blade secured to the sliding head C. These cutters are not parallel with the bed A, but stand at an angle thereto.

The main wire passes through the spindle E and shaft F, and the barb-wire passes at right angles thereto between the head C and block J, and between the cutters *i j*.

It will be necessary to provide a plate located a little distance from the head N on the shaft F, between which plate and head N the barb-wire passes. This plate is to be secured in a suitable manner, at one end, to the end of the sliding head C, and the other end should be curved, so as to give a backward spiral motion to the barb-wire as the first coil is formed on the main wire. This plate is also to be constructed so that the completed barbs can pass it.

I have not represented this plate, as it is not my invention, such a plate being shown in the said Putnam patent, the only difference being that my plate must be connected with the sliding head C, so as to move with it.

The operation of the machine is as follows: The main wire is to be fed forward continuously in any suitable manner, and the barb-wire is to be fed to the machine in the usual way. Suppose the parts to be in the position represented in Fig. 1. The main wire being fed continuously at a uniform speed, at the same time the head C, and the wrapping devices connected therewith, will be gradually advanced as the shaft B rotates by the pitman, or by the action of a cam, as before described. At the same time the shaft F will be in rotation, and the barb-wire, being in position, will be wound upon the main wire by means of the shaft F and pin *b*, the main wire and shaft F advancing at the same speed. During this operation the shaft F will be forced back on the spindle E by the formation of the coils of the barb on the main wire, and the free end of the lever *d* will come in contact with some suitable fixture on the head C, drawing the pin *b* back into the head N on F, releasing the barb-wire from the pin; and at the time of the completion of the barb the cutters will sever the barb-wire, and the main wire with the completed barb will pass along; the spring *g* will throw the shaft F forward to its first position; the free end of the lever *d* will be released from the fixture with which it was in contact, and the spring *f* will throw out the pin *b*; the head C, and all parts connected therewith, will be carried back to their first position, and a second operation will commence like that described. The wheel G should make about six revolutions while H revolves once.

A second reciprocating shaft, F, might be used in the machine with the other wrapping devices, being located on the other side of the wheel H, and on the head C, extended to the other side of the machine, or on another head operated simultaneously with C, in which case two wires could be barbed at the same time.

My reciprocating pin might be used with a main wire moving at intervals.

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

1. In a machine for wrapping barbs on a wire, a spindle, E, and a shaft, F, located on the spindle, and provided with a wrapping pin or lug, *b*, the spindle and shaft having a reciprocating movement together, the forward movement of such spindle and shaft being in unison with the movement of the main wire, substantially as and for the purposes set forth.

2. In a machine for wrapping barbs on wire, the pin or lug *b*, having a reciprocating movement in the head N on the shaft F, substantially as and for the purposes specified.

3. In a machine for barbing wire, the reciprocating head C, carrying the spindle E, and shaft F, for the purpose of giving such shaft a reciprocating movement, substantially as and for the purpose specified.

4. The shaft F, mounted on the spindle E, having a sliding movement on the spindle, in addition to its reciprocating movement with the spindle, in combination with the reciprocating pin *b*, substantially as and for the purposes set forth.

5. The combination of lever *d*, pivoted on shaft F, and connected at one end to the reciprocating pin *b*, with the reciprocating head C, carrying a device for operating the lever, for the purpose of drawing back the pin at intervals, substantially as set forth.

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Witnesses:
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