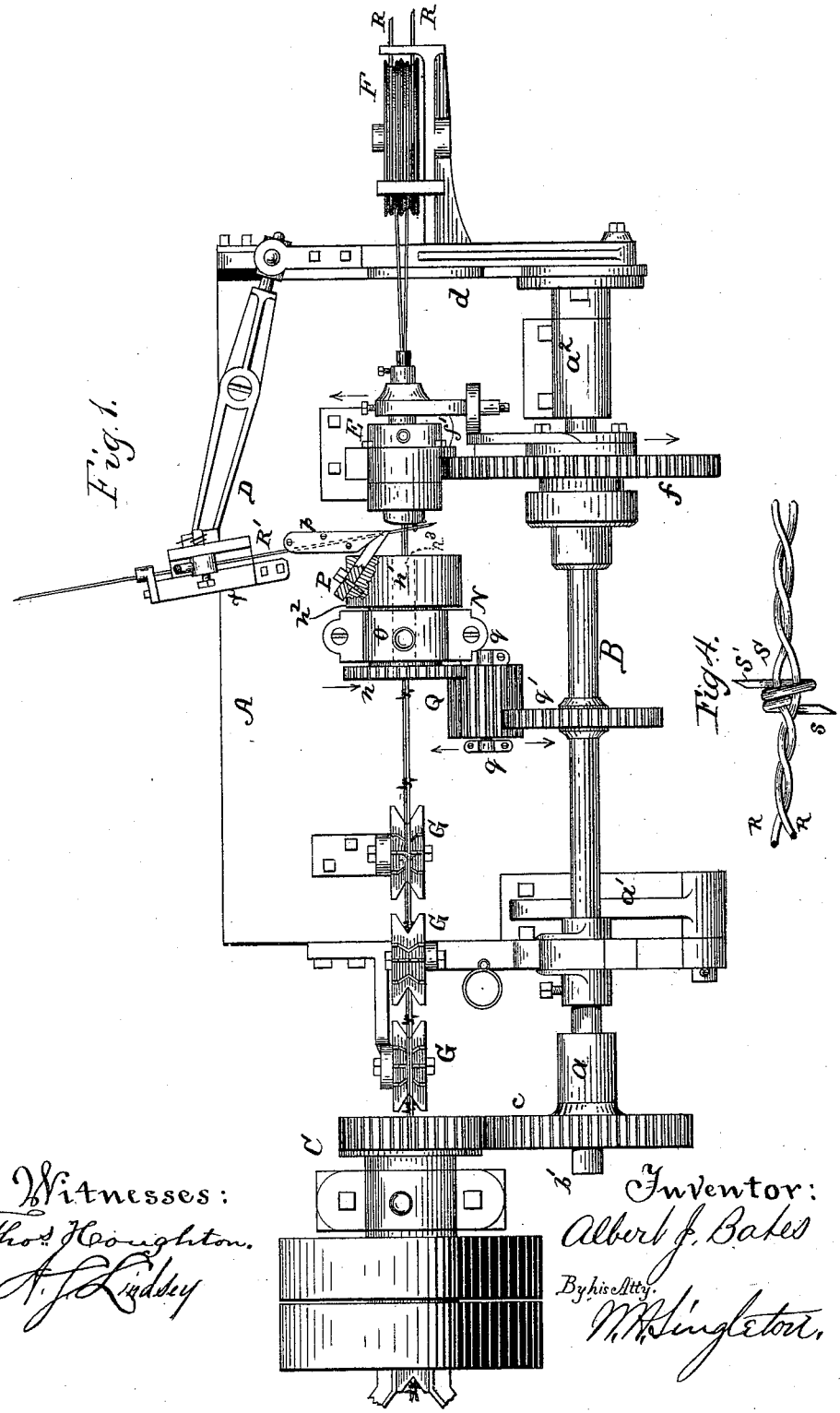
(No Model.) 2 Sheets—Sheet 1.

A. J. BATES.

BARB WIRE MACHINE.

No. 406,190. Patented July 2, 1889.



Witnesses:
Thos. Houghton.
A. J. Lindsey

Inventor:
Albert J. Bates
By his Atty.
W. W. Singleton.

(No Model.) 2 Sheets—Sheet 2.

A. J. BATES.

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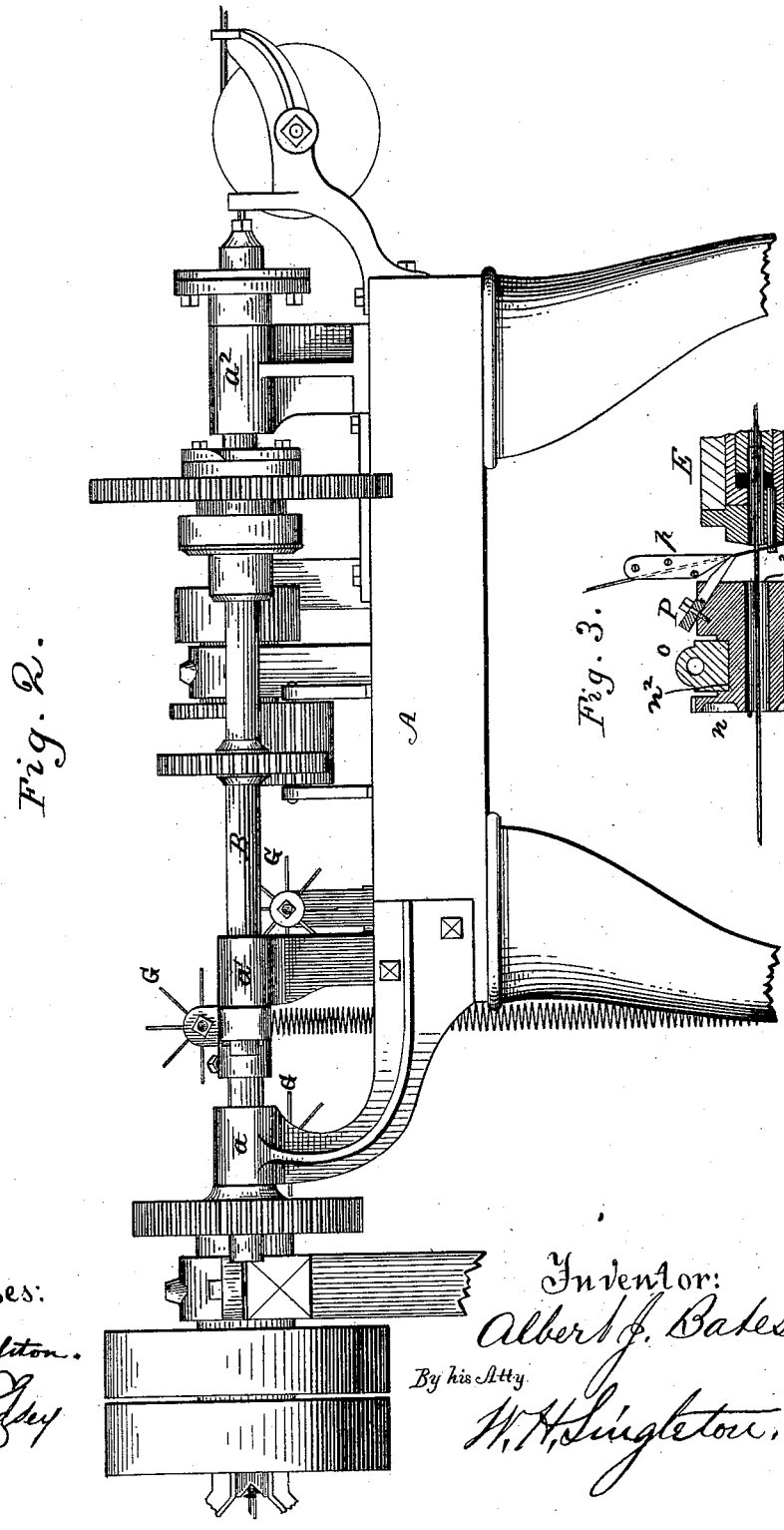

Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

ALBERT J. BATES, OF JOLIET, ILLINOIS.

BARB-WIRE MACHINE.

SPECIFICATION forming part of Letters Patent No. 406,190, dated July 2, 1889.

Application filed July 27, 1888. Serial No. 281,162. (No model.)

To all whom it may concern:

Be it known that I, ALBERT J. BATES, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Barb-Wire Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 and figures of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a plan view of the machine. Fig. 2 is a side view. Fig. 3 is a longitudinal horizontal section through the two coilers. Fig. 4 is the barb made by the machine.

This invention relates to improvements in barb-wire machines, more especially to the coilers which wrap the barbing-wire about the main strand-wires.

In the annexed drawings, the letter A indicates a suitable table or frame for supporting the mechanism. In bearings a a^2 at one side of the frame A is supported the main driving-shaft B, lengthwise of the machine. At one end b' this shaft has the gear-wheel c, driven by the twister C, and driving at the other end the pitman d for operating the barb-feeding mechanism D. This shaft B also has the gear-wheel f, which intermeshes with gear-wheel f' of the coiler-head E.

At the front of the machine are the guide-rolls F, and at the rear in front of the twister are the butterfly take-up wheels G. The parts thus generally stated are constructed and arranged as shown and described in my United States Patent No. 357,653, granted February 15, 1887, and reference is made to this patent for full particulars of those parts of the machine herein contained which are old, only so much being detailed as is necessary for a clear understanding of the present invention.

Secured to the table A, in longitudinal line with and in rear of the coiler-head E, is a box or bearing o, in which is placed another coiler N. This coiler has at one end the gear-wheel n and at the other the head n', with the neck n^2 between, the last being in the bearing o, the head n' in front of the bearing and the gear-wheel n in the rear. Passing lengthwise through this coiler N is a central bore n^3. Fastened to the head n' at one side is a cutter P. Placed in the path of the barbing-wire is the usual stationary cutter p, and the relation of the parts is such that at the proper time the two cutters P p come together, the former crossing the path of the barbing-wire, as will be hereinafter explained. Between the coiler N and the shaft B is placed in bearings q q the toothed cylinder Q, one end of which engages the gear-wheel n, and the other end a gear-wheel q' upon the shaft B.

In operation the strand-wires R R are fed, as usual, over the wheels F and through the coiler E. They then pass through the bore n^3 of the coiler N, around the butterfly-wheels, and to the twister. The barbing-wire R′, passing from the stationary guide r, is fed in between the two coilers E and N above the cutter P and the pin b of the coiler E. When power is applied, the coiler-head E operates precisely as described in the patent referred to, and the end of the barb, caught by the pin b, is turned about the strand-wire, as shown in said patent, except as herein pointed out. At the same time, through the wheels q' and n and the cylinder Q, the coiler N is also turned, but in a direction reverse to that of the coiler E. As the coiler N is turned, the cutter P, catching the barbing-wire R′ against the stationary cutter p, severs the wire, and the coiler continuing to turn, the cutter P carries the severed end around the strand-wires in the opposite direction to that in which the other end is being carried by the pin b.

The barb to be made by this machine is shown in Fig. 4. Here R R are the strand-wires and S the barb. One end s is turned about one strand-wire and projects across the other. The other end s' is turned about the same strand-wire, then about both strand-wires, and projects in the direction opposite to that of the end s. To produce this result, one end s is simply given a single turn, while the end s' is given two turns. The end s is turned by the coiler N, and the end s' by the coiler E. The trains of gearing for these coilers are therefore arranged so as to be turned

to produce this result. As the barb is formed between the two coilers, the bore n^3 must be large enough to allow the strands with the barbs on them to pass.

Having described my invention, what I claim is—

1. In a barb-wire machine, the combination of two reversely-rotatable coilers placed in the same longitudinal line, one of said coilers having a cutter with a barbing-wire guide, and a cutter placed to one side of said coilers, the guide and lathe-cutter being both stationary, whereby, when the barbing-wire is fed to the coilers, a piece is first cut from the wire and then turned about the main strands in reverse direction, as set forth.

2. In a barb-wire machine, the combination of the coiler E, the coiler N, carrying the cutter P, and the stationary cutter p, as set forth.

3. In a barb-wire machine, the combination of the table A, the bearing o, the coiler N, consisting of the neck n^2, the gear-wheel n, and the head n', and having the cutter P, the stationary cutter p, and the coiler E, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT J. BATES.

Witnesses:
THOS. H. HUTCHINS,
WM. O. BATES.

Correction in Letters Patent No. 406,190.

It is hereby certified that in Letters Patent No. 406,190, granted July 2, 1889, upon the application of Albert J. Bates, of Joliet, Illinois, for an improvement in "Barb-Wire Machines," an error appears in the printed specification requiring the following correction, viz: In line 12, page 2, the word "lathe-cutter" should read *latter cutter;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 6th day of August, A. D. 1889.

[SEAL.]

CYRUS BUSSEY,
Assistant Secretary of the Interior.

Countersigned:

C. E. MITCHELL,
Commissioner of Patents.