(No Model.) 2 Sheets—Sheet 1.

A. KNOWLTON.

NAILING MACHINE.

No. 257,227. Patented May 2, 1882.

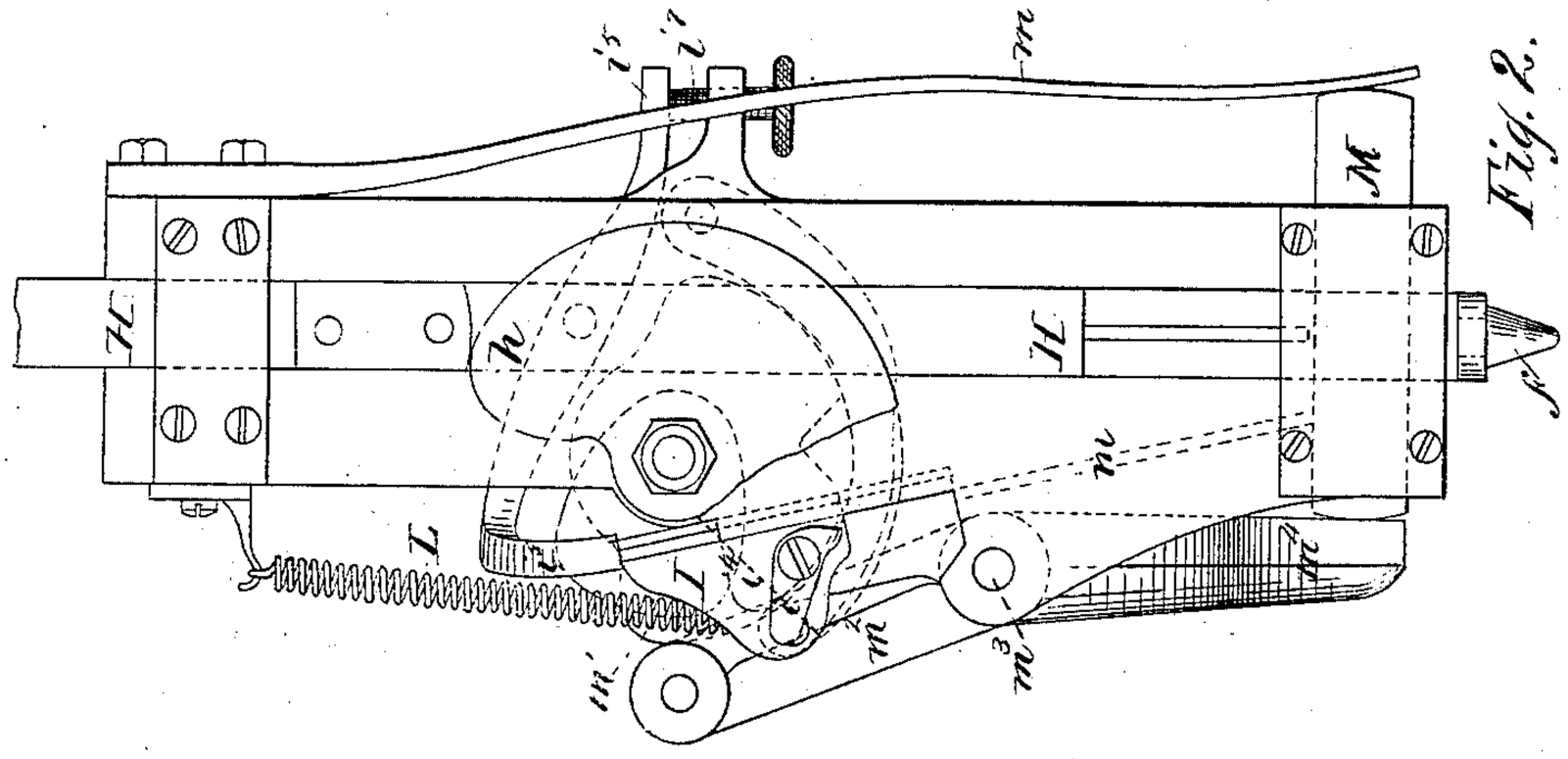

Fig. 2.

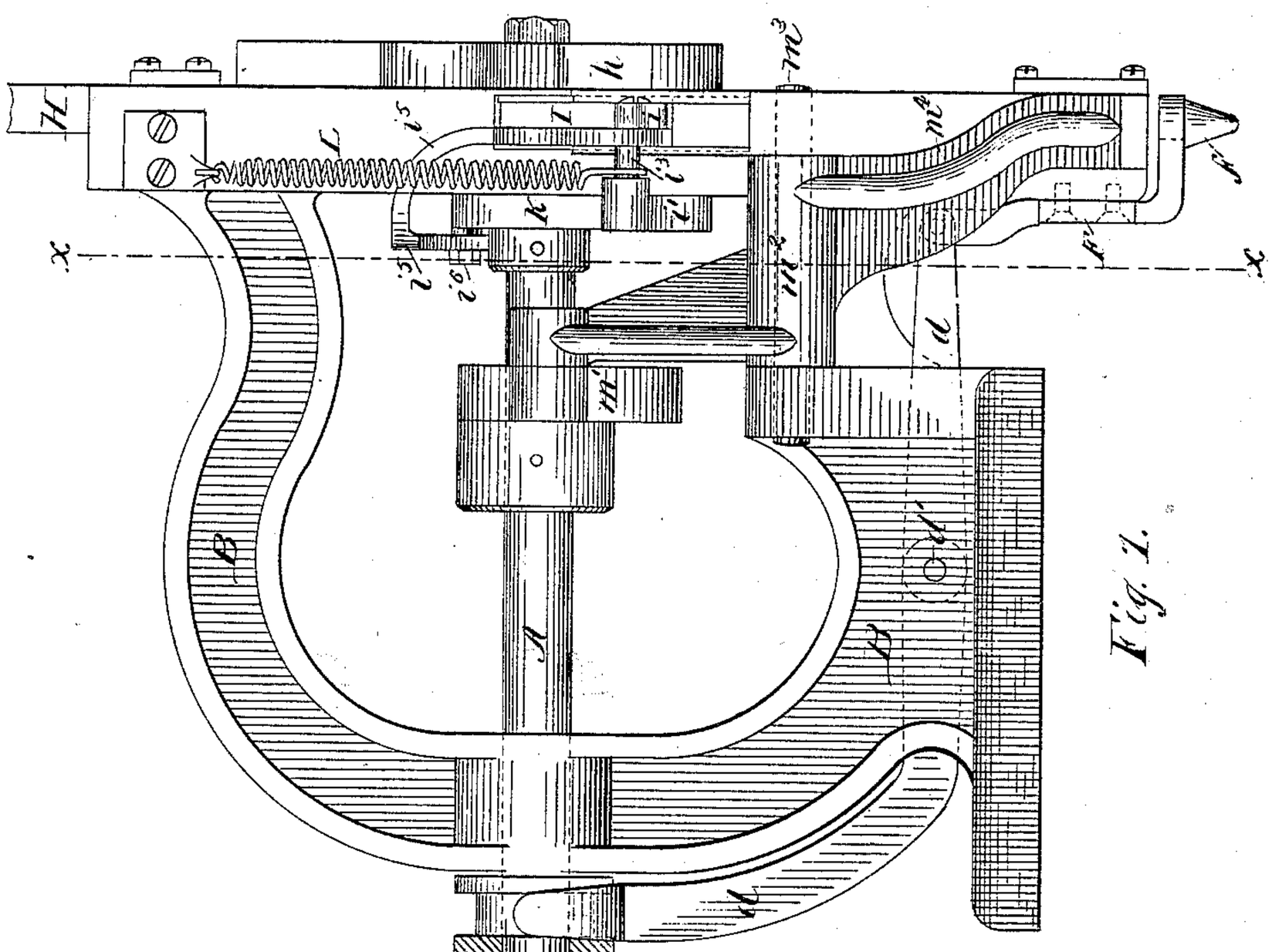

Fig. 1.

Witnesses:
Wm. Littell
John R. Snow.

Inventor:
Albion Knowlton
by J. Edwin Duncan
his Atty.

(No Model.)

2 Sheets—Sheet 2.

A. KNOWLTON.

NAILING MACHINE.

No. 257,227. Patented May 2, 1882.

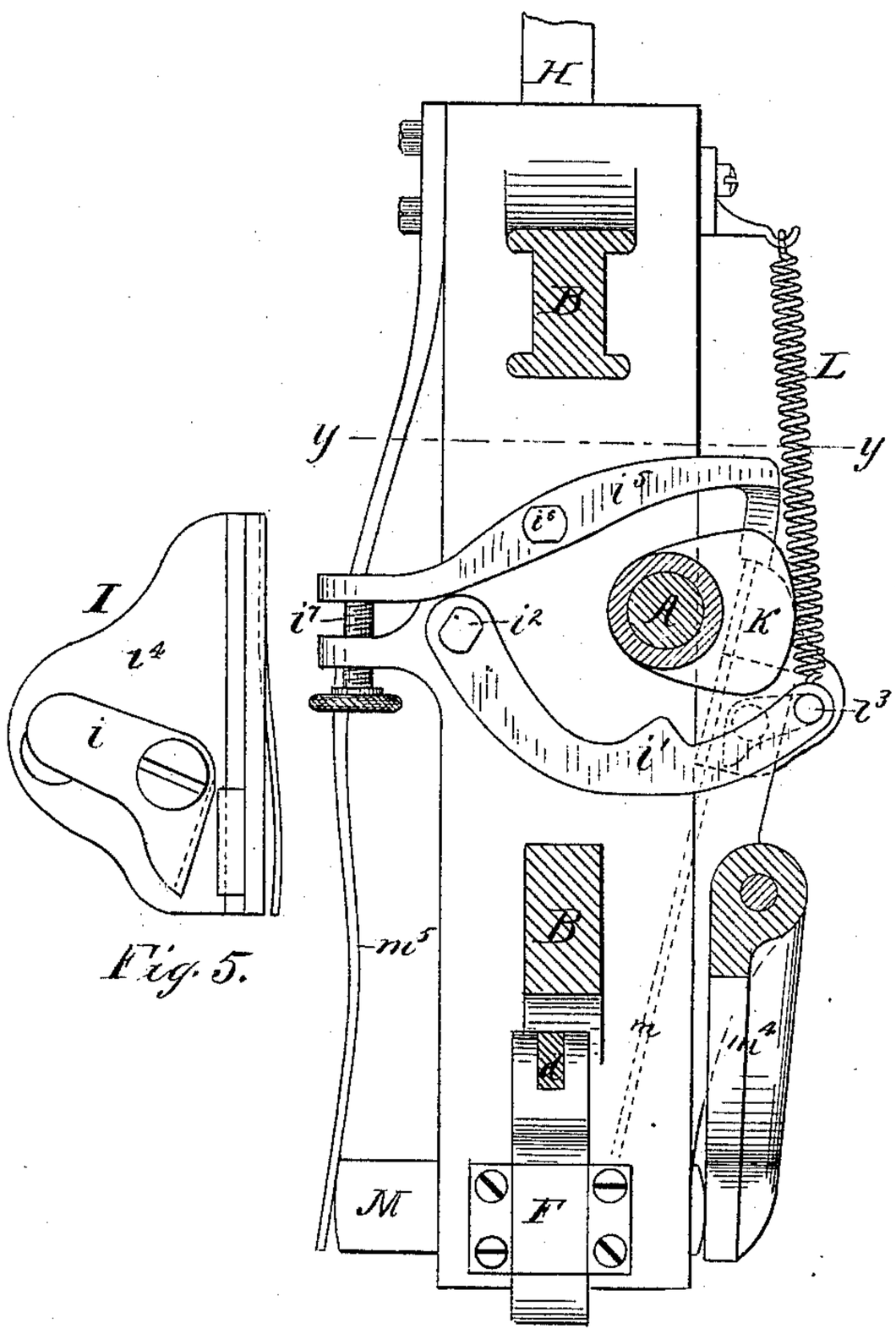

Fig. 3.

Fig. 5.

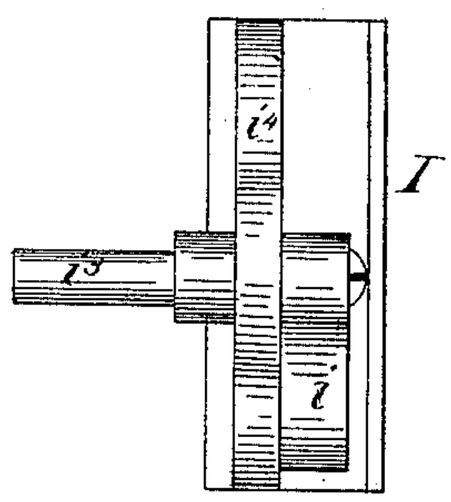

Fig. 6.

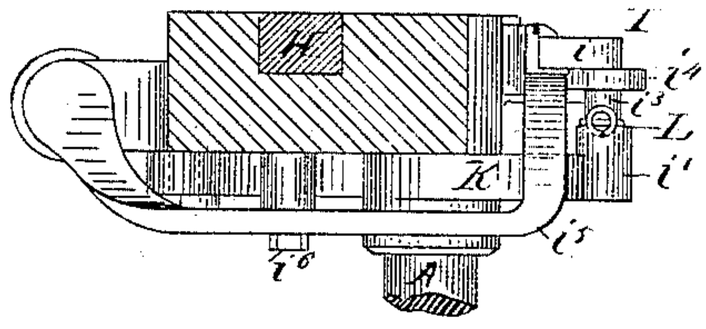

Fig. 4.

Witnesses:
D. W. Gitld
John R. Snow

Inventor:
Albion Knowlton
by J. R. Maynadier
his Atty.

UNITED STATES PATENT OFFICE.

ALBION KNOWLTON, OF BOSTON, MASSACHUSETTS.

NAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 257,227, dated May 2, 1882.

Application filed January 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALBION KNOWLTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Nailing-Machines, of which the following is a specification.

My invention relates to improvements in nailing-machines in which the wire to form the nails is intermittently fed and cut off into proper lengths. My objects are to provide a device for feeding the wire which will act without slipping and insure the same length of wire being fed at each stroke, and to afford facilities for adjusting the stroke of this wire-feeding device, so as to adapt it to nails of different lengths.

My invention consists in nipping the wire between a nipper on one arm of a lever and the slide on which this lever is mounted, and which slide is intermittently reciprocated by suitable mechanism, which is adapted to have its motion regulated to feed the proper length of wire to form nails of different length, as hereinafter more fully described.

In the accompanying drawings which illustrate the upper part of a nailing-machine with my improvements attached in the best way known to me, Figure 1 is a side elevation. Fig. 2 is an end or front elevation. Fig. 3 is a section on line *x x* of Fig. 1. Fig. 4 is a section on line *y y* of Fig. 3, showing a plan view of the wire-feeding device. Fig. 5 is a side view of the slide and nipper-lever. Fig. 6 is an end view of the same.

The shaft A is mounted in boxes in the frame B, and is provided with a loose pulley, C, from which it receives motion when the clutch D is thrown out by the lever *d*, which is pivoted at *d'* to the frame B and attached at its end to a slide, F, which carries the throat *f*, through which the nail is driven.

The hammer H is mounted in slides in the usual way, and is thrown down by the usual spring (not shown) and lifted by the cam *h*.

The wire-feeding mechanism consists of the slide I, mounted in ways and having pivoted to it the lever *i*, one arm of which carries a nipper that nips the wire when the other arm is acted on by the lever *i'*, pivoted to the frame at i^2, and intermittently depressed by the cam K. When the cam K releases the lever *i'*, it, together with the slide I and lever *i*, is drawn up by the spring L. This spring L is attached to the projecting pin i^3, attached to one arm of the grip-lever *i*, and extending through a slot in the bracket i^4 on the slide I and through a slot in the end of the lever *i*, so that the motion of the lever *i'* is communicated to the projecting pin i^3, and through it operates the nipping-lever *i*, between which and the slide I the wire from the coil passes. The upward movement of the slide I, which determines the length of wire that shall be nipped, is regulated by the stop-lever i^5, pivoted to the frame at i^6, and adjustable by the screw i^7, attached to the frame and bearing against the end of the stop-lever i^5. By turning the screw i^7 the stop can be raised or lowered to admit the upward stroke of the slide and nipper to any desired extent. A set-screw retains the screw i^7 in its proper position. The wire is fed through the guideway *m* to the cutting-off slide M, which is actuated at the proper times by the cam *m'*, which acts on one arm of the rock-shaft m^2, which rocks on the shaft m^3. The other arm, m^4, of the rock-shaft m^2 moves the cutting-off slide M in one direction and the spring m^5 operates it in the other direction. The throat *f*, through which the nail is driven, is mounted on a slide, F, which reciprocates in ways attached to the frame. When the material to be nailed is pressed against the throat it causes the throat *f* to rise and move up the slide F, which actuates the lever *d*, that throws the clutch D against the pulley C and causes the shaft to revolve.

The operation is as follows: The drawings show the hammer raised after having just driven a nail, and it will remain in this position until released by the revolution of its cam. While the hammer is held up by its cam the cam K is brought, by the revolution of the shaft, in contact with the projection on the lever *i'*, depressing it and causing it to press on the projecting pin of the nipper-lever to overcome the spring L, which pulls up on the same projecting pin, and to cause the nipper to nip the wire against the slide to feed it down through the wire-guideway *m* into the cut-off slide M, which has been released by the arm m^4 of the rock-shaft m^2 by the movement of the cam *m'*, which acts on the other arm of the rock-shaft m^2, and has been forced back by the

spring m^5, so as to bring its wireway directly under the wireway *m*. Just before the hammer drops the cam *m'* acts on the rock-shaft and pushes the slide M out to cut off the wire and bring the piece cut off under the hammer and over the throat *f*, through which it is driven by the descent of the hammer, and against which the material to be nailed is pressed, and which, being raised, causes the clutch to engage with the loose pulley to revolve the shaft, as before described. It will be readily seen that the mechanism operates only when the throat is pressed up so as to cause the lever *d* to hold the clutch D against the pulley.

What I claim as my invention is—

The combination of intermittently-reciprocating wire-nipper, the slide to which the nipper is pivoted, the cam-actuated lever, the spring to retract the nipper-slide, and the actuating-lever and the adjustable stop to limit the upward stroke of the nipper, substantially as and for the purposes specified.

ALBION KNOWLTON.

Witnesses:
WILLIAM A. COPELAND,
JOHN R. SNOW.