

(No Model.)

2 Sheets—Sheet 1.

J. W. GRANDLE.
HAND NAILING IMPLEMENT.

No. 592,286.

Patented Oct. 26, 1897.

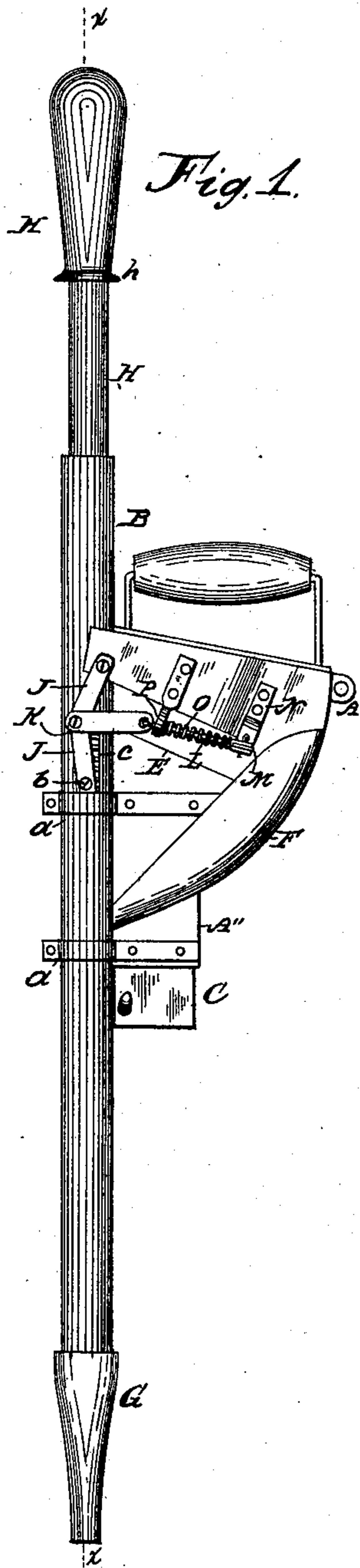


Fig. 1.

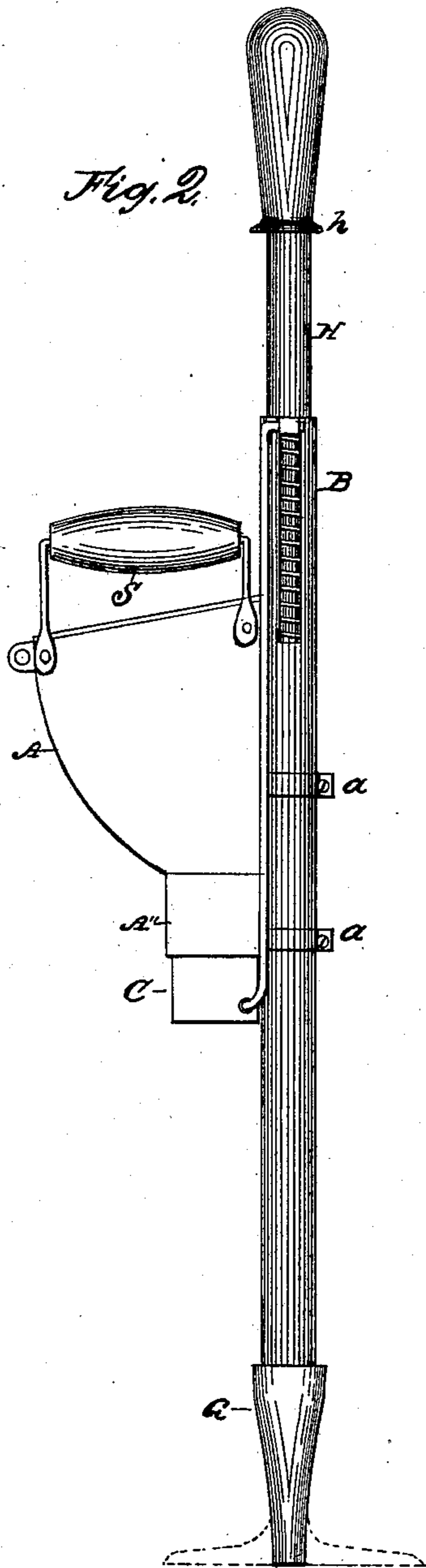


Fig. 2.

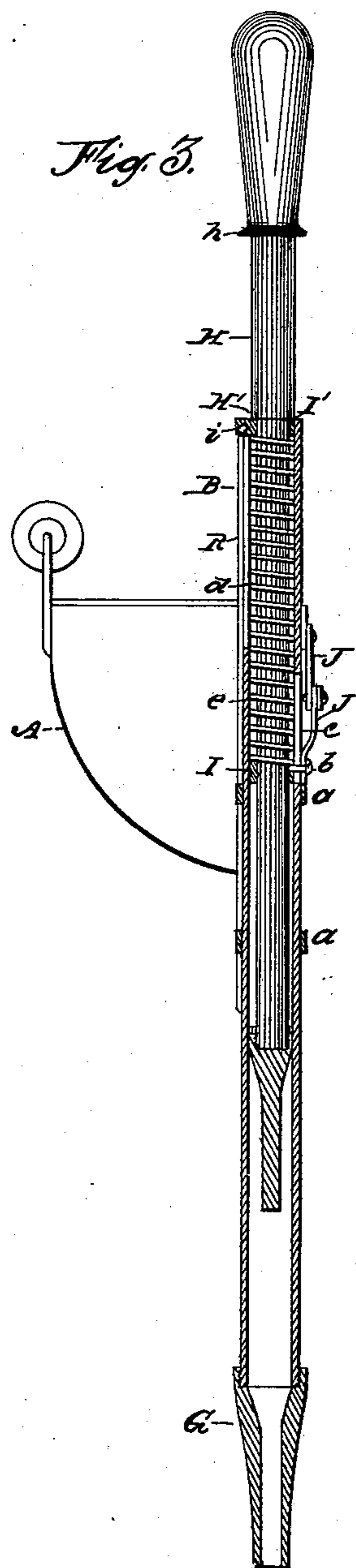


Fig. 3.

Attest.

J. P. Groat.
G. J. Kubicek

Inventor
James W. Grandle
By J. M. S. Johns
Atty.

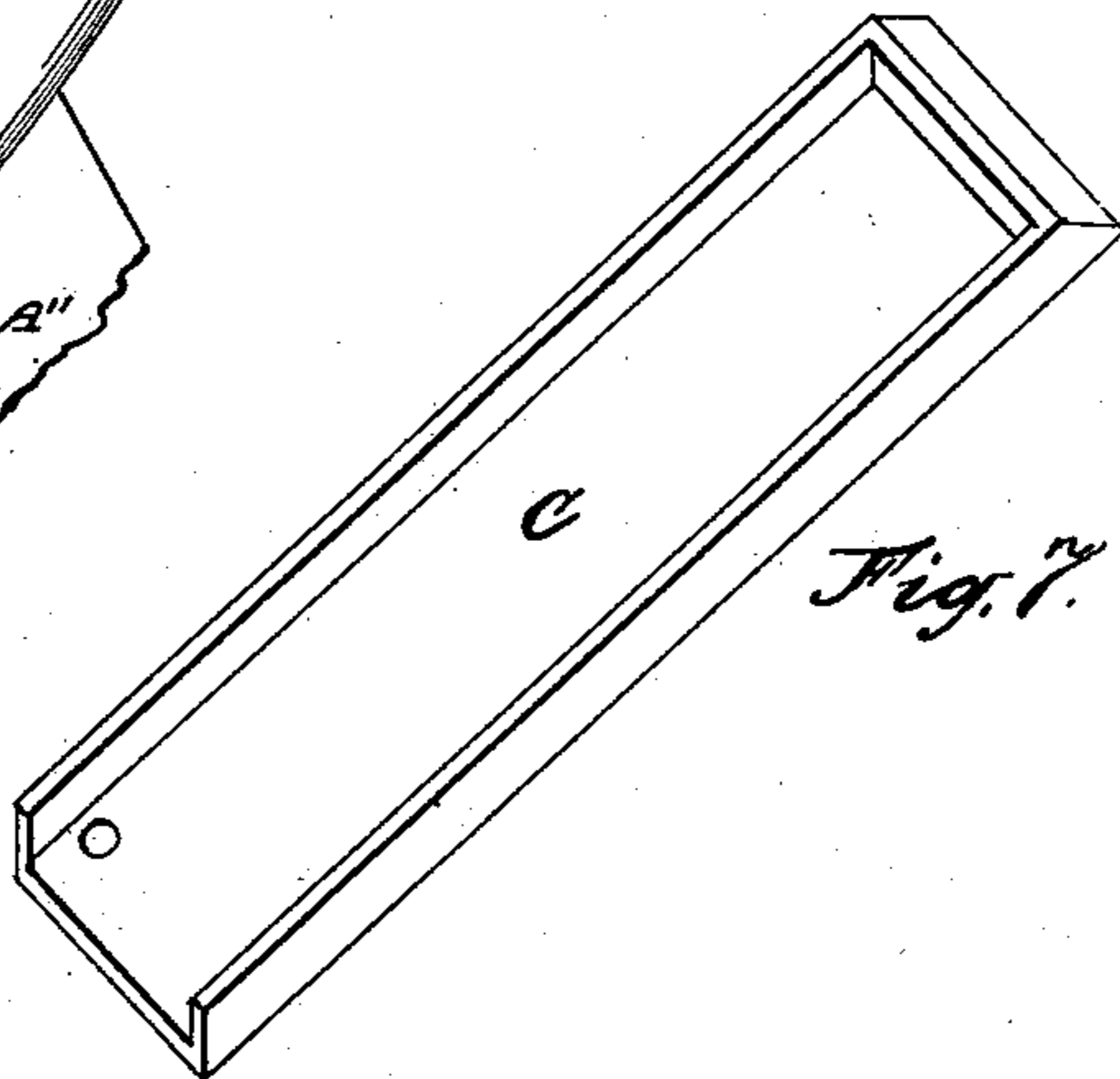
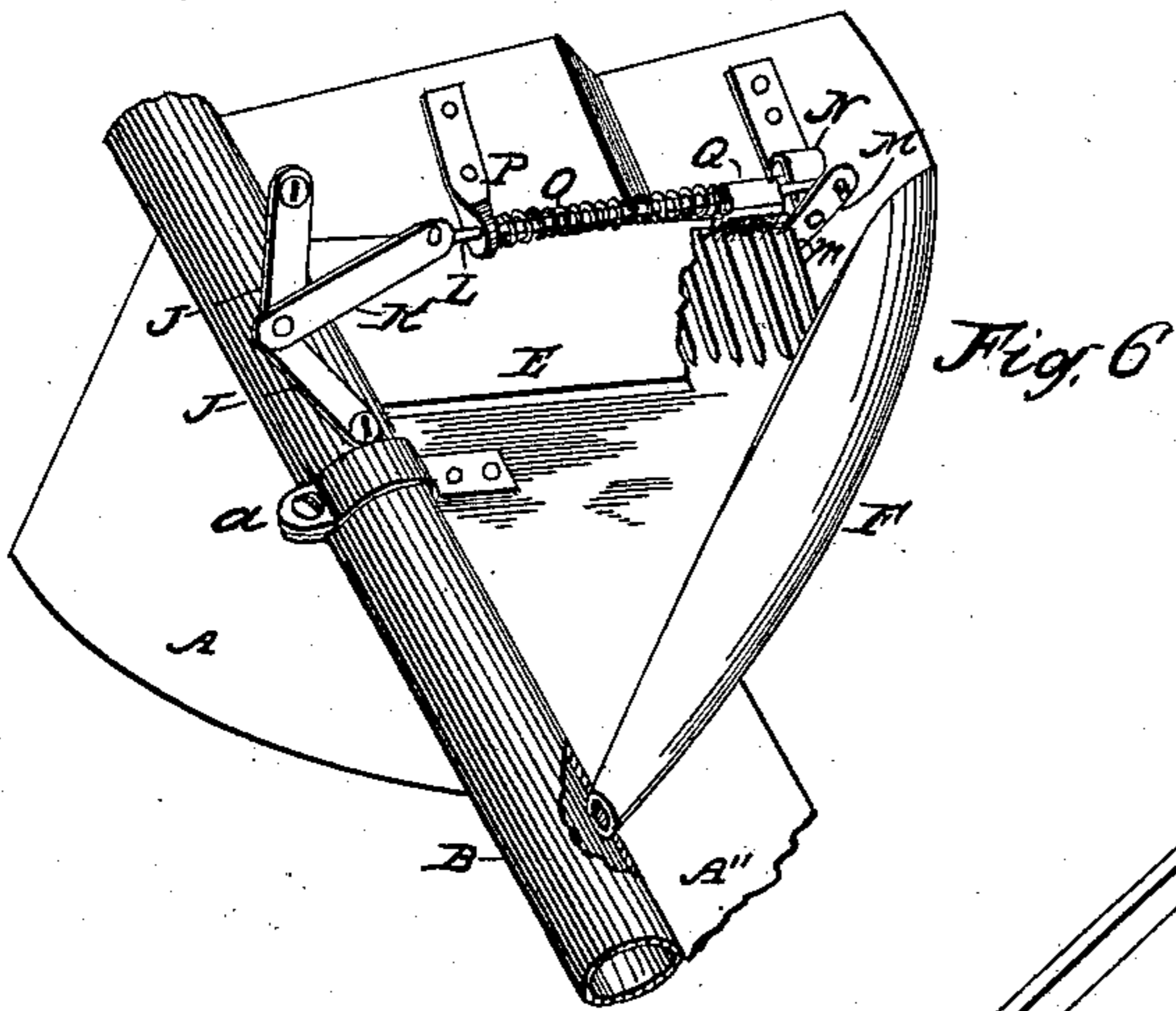
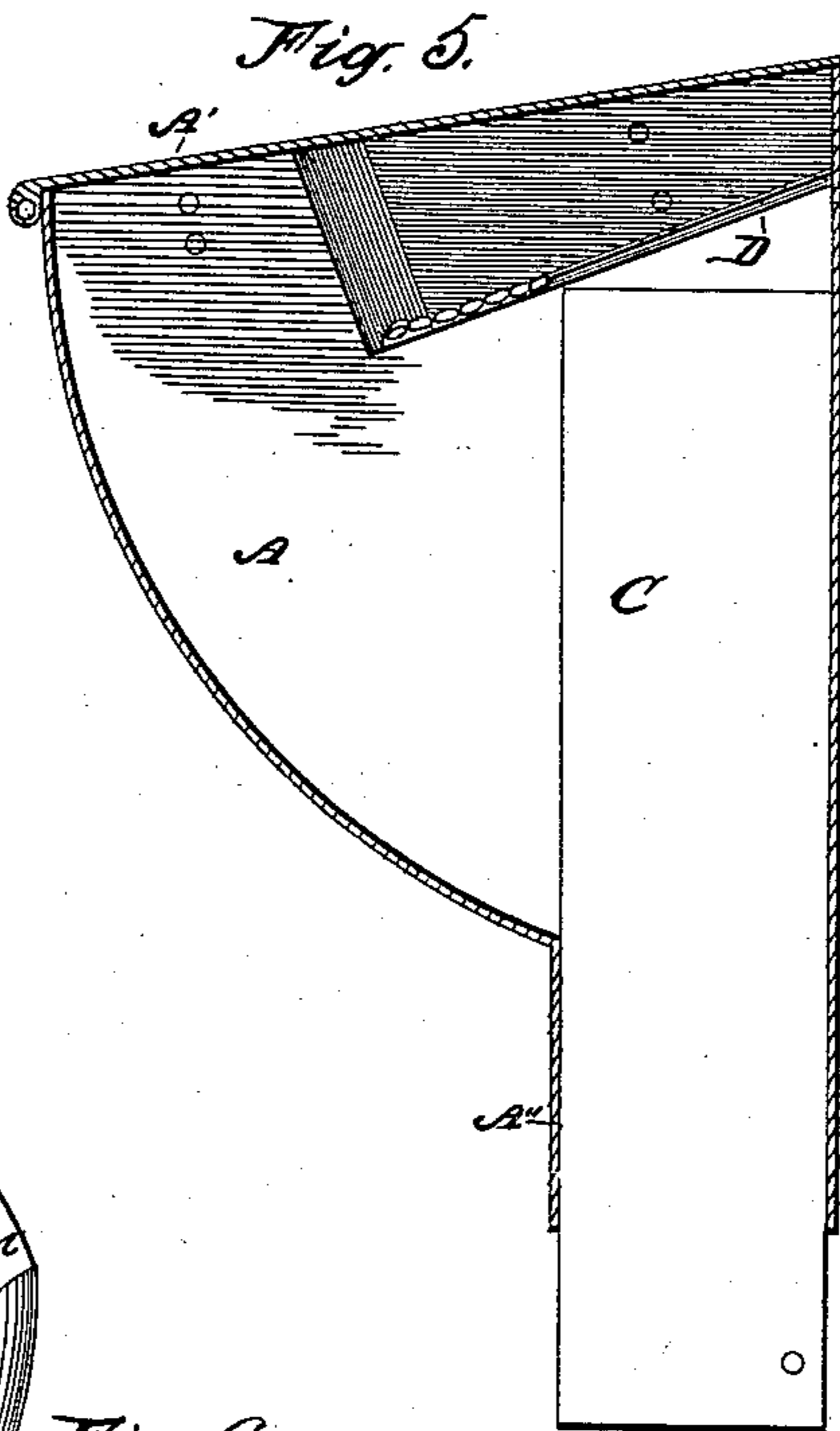
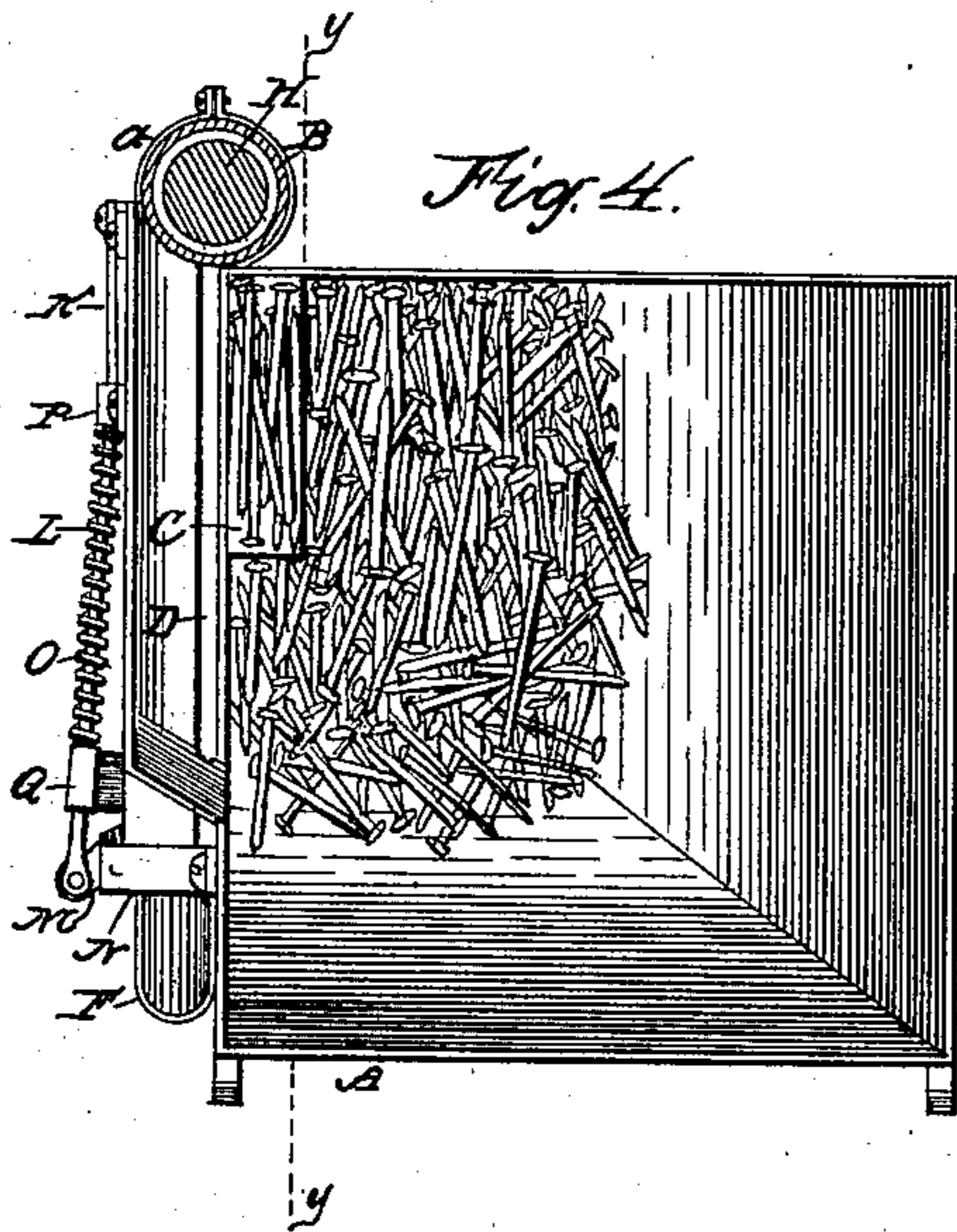
(No Model.)

2 Sheets—Sheet 2.

J. W. GRANDLE.
HAND NAILING IMPLEMENT.

No. 592,286.

Patented Oct. 26, 1897.



Attest.
J. F. Groat.
H. J. Kubicek

Inventor.
James W. Grandle
By J. M. St. John.
Atty.

UNITED STATES PATENT OFFICE.

JAMES W. GRANDLE, OF NEAR MARION, IOWA.

HAND NAILING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 592,286, dated October 26, 1897.

Application filed December 9, 1896. Serial No. 615,048. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. GRANDLE, a citizen of the United States, residing near Marion, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Hand Nailing Implements; and I do hereby 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.

This invention relates to apparatus for feeding and driving nails, the device being more particularly adapted for shingling and the like operations where a portable hand instrument is required.

The invention consists in the construction, combination, and arrangement of parts, as hereinafter fully set forth and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1, Sheet 1, is a side elevation of a nailer embodying my invention. Fig. 2 is a view from the opposite side. Fig. 3 is a sectional view in the plane of the line $x x$. Fig. 4, Sheet 2, is a plan view with the lid of the nail-hopper removed and the plunger and tube in section. Fig. 5 is a sectional view of the hopper in the plane of the line $y y$. Fig. 6 is an external view of the hopper in perspective, showing the nail-delivery apparatus. Fig. 7 is a perspective view of the nail-feed slide as seen from the inner side.

Similar letters of reference indicate corresponding parts.

The nails are contained in a hopper A, attached to a tubular stock B in some suitable manner, as by clips $a a$. The hopper is closed by a suitable lid A'. In practice this hopper is made with two plane vertical sides, and in the angle where they meet is mounted a slide C, adapted to move from the bottom to near the top of the hopper in a guide A''. Near the upper edge of the hopper on the plane side adjacent the wider face of the feed-slide C is an offset with an inclined ledge at the bottom thereof. This is provided with a longitudinal slot D slightly wider than the body of the nails, but narrower than the head. Into this slot the nails fall as they slide from the inclined upper end of the feed-slide when at the upper limit of

its movement. Such nails as do not fall into the slot, or work their way therein, are shaken back into the hopper in the operation of the nailer. The nails hang in a row in the slot, as shown in Fig. 6. An apron E may be placed outside of them to assist in keeping them in a regular row, though this is not indispensable. Below this row of suspended nails is placed a chute F, its mouth at the upper end adapted to catch the lower nail of the row as it is detached and falls. The lower end of the chute is contracted and enters a hole in the side of the tubular stock B, so that the nails are delivered to the inside of said stock singly and point downward. The stock is provided with a suitable foot-piece G. This may be flared at the bottom, as indicated by the dotted lines in Fig. 2, so that the shock of the plunger in driving the nails does not tend to drive the foot into the shingle or board and mar or split it. The foot has a contracted hole through it a little larger than the head of the nail.

A plunger H plays up and down in the stock. This has a head large enough to give sufficient weight to the plunger as a driver. At the lower end of the plunger is a driver of hardened steel, adapted to pass to the bottom of the foot. The upper end of this driver forms a shoulder, which on the upstroke engages a collar I, adapted to play a limited distance in the stock. It connects by a screw b with one arm of a toggle-lever J J, the screw passing through a slot c in the stock. The other end of the toggle is pivoted to the side of the hopper. To the middle of the toggle is connected a link K, coupled to a connecting-rod L, which at the other end connects with a finger M, pivoted to a suitable bracket N, attached to the hopper. This finger has a notch m at the inner end of it, and is adapted to catch one nail at a time and push it out of the slot D as it is swung by the movement of the rod L. When in normal position, it acts as a stop for the row of nails. A coil-spring O, abutting against the bearing P, and a suitable shoulder on the rod holds the finger in normal position. This shoulder may be the head of a small brush Q, which, moving back and forth over the nails at the lower end of the row, tends to keep them free and in proper

position to be caught by the releasing-finger one by one.

A shoulder H' near the upper end of the plunger engages a collar I' , which slips freely
5 in the stock. This collar has an outwardly-projecting lug i , to which is connected a rod R , the lower end of which connects with the lower end of the feed-slide. A slot d permits the collar to move up and down. Between
10 the collars c and d is a coil-spring e to hold the plunger in normal position.

A handle S , for one hand of the operator, is provided at some convenient point, as attached to one side of the hopper.

15 The operation of the device will now be understood. The operator first lifts the plunger to the upper limit of its stroke. This carries up the collar c , and in so doing the notch at the inner end of the finger M engages a nail
20 and carries it, with the movement of the finger, out of the slot and drops it into the chute F , whence it slides by its own gravity to the bottom of the stock. The same movement carries up one or more nails on the feed-slide
25 and deposits them in position to fall into the slot therefor. A downward thrust of the plunger drives home the nail, the downward

movement of the plunger being limited by a shoulder h at the bottom of the head thereof.

As both hands of the operator are required, 30 this nailer is intended for use where many nails are to be driven in material already placed therefor, as in shingling, the nailing down of rough flooring, or the like. The operator follows up other workmen who place 35 the material, and in this manner the nailing is done with great rapidity.

Having thus described my invention, I claim—

In a nailer, the combination with a nail-hop- 40 per and feed-slide, substantially as described, of a tubular stock, a collar playing up and down therein, and connecting with the feed-slide, a collar connecting with mechanism 45 adapted to separate a single nail from a row thereof, a spring between said collars, and a plunger adapted to move them alternately a limited distance in the stock, as described.

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

JAMES W. GRANDLE.

Witnesses:

J. F. GROAT,

J. M. ST. JOHN.