

(No Model.)

2 Sheets—Sheet 1.

J. A. COLEMAN.

FEEDING MECHANISM FOR NAIL BLANKS.

No. 506,206.

Patented Oct. 10, 1893.

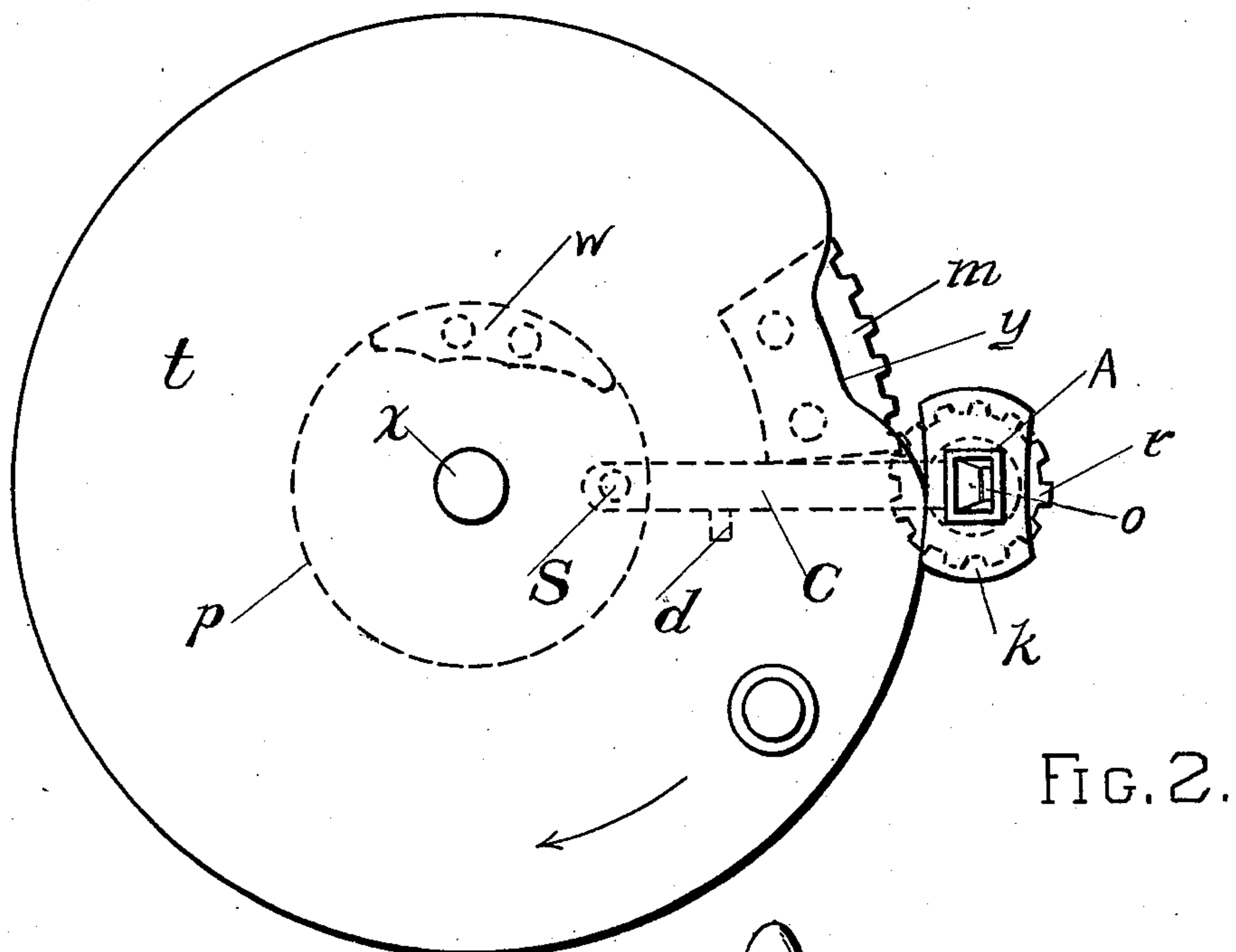


FIG. 2.

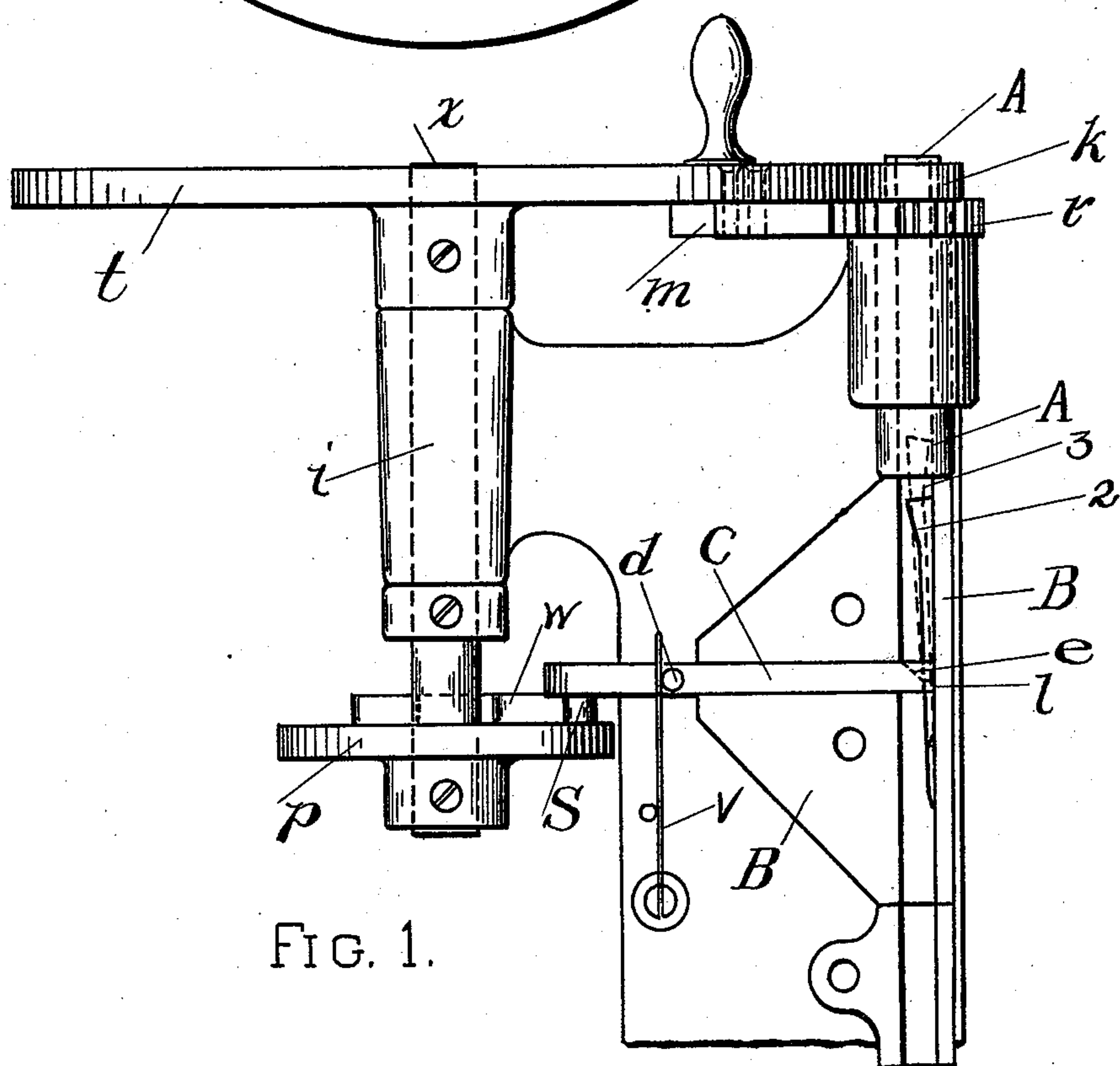


FIG. 1.

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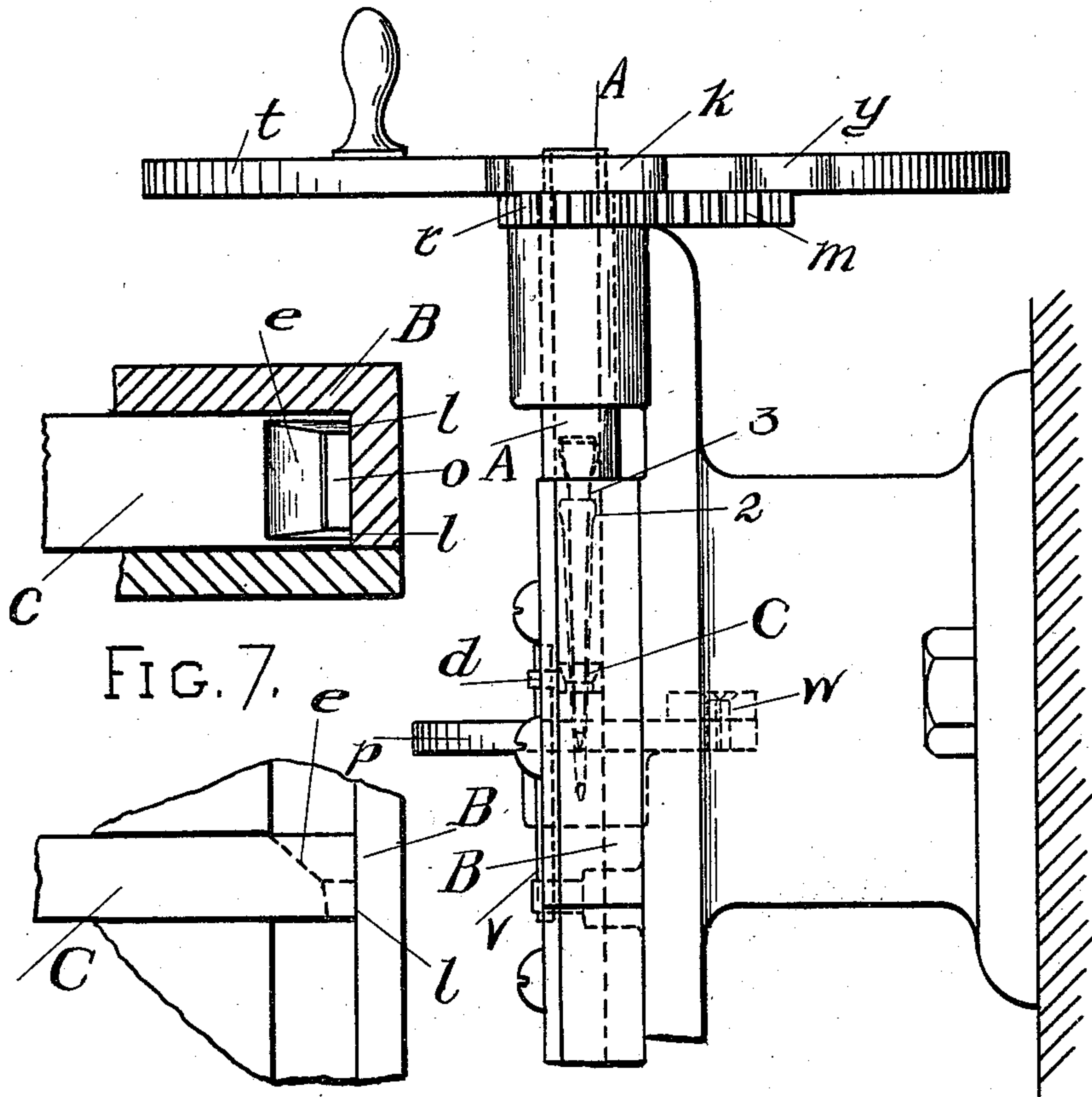


FIG. 8.

FIG. 3.

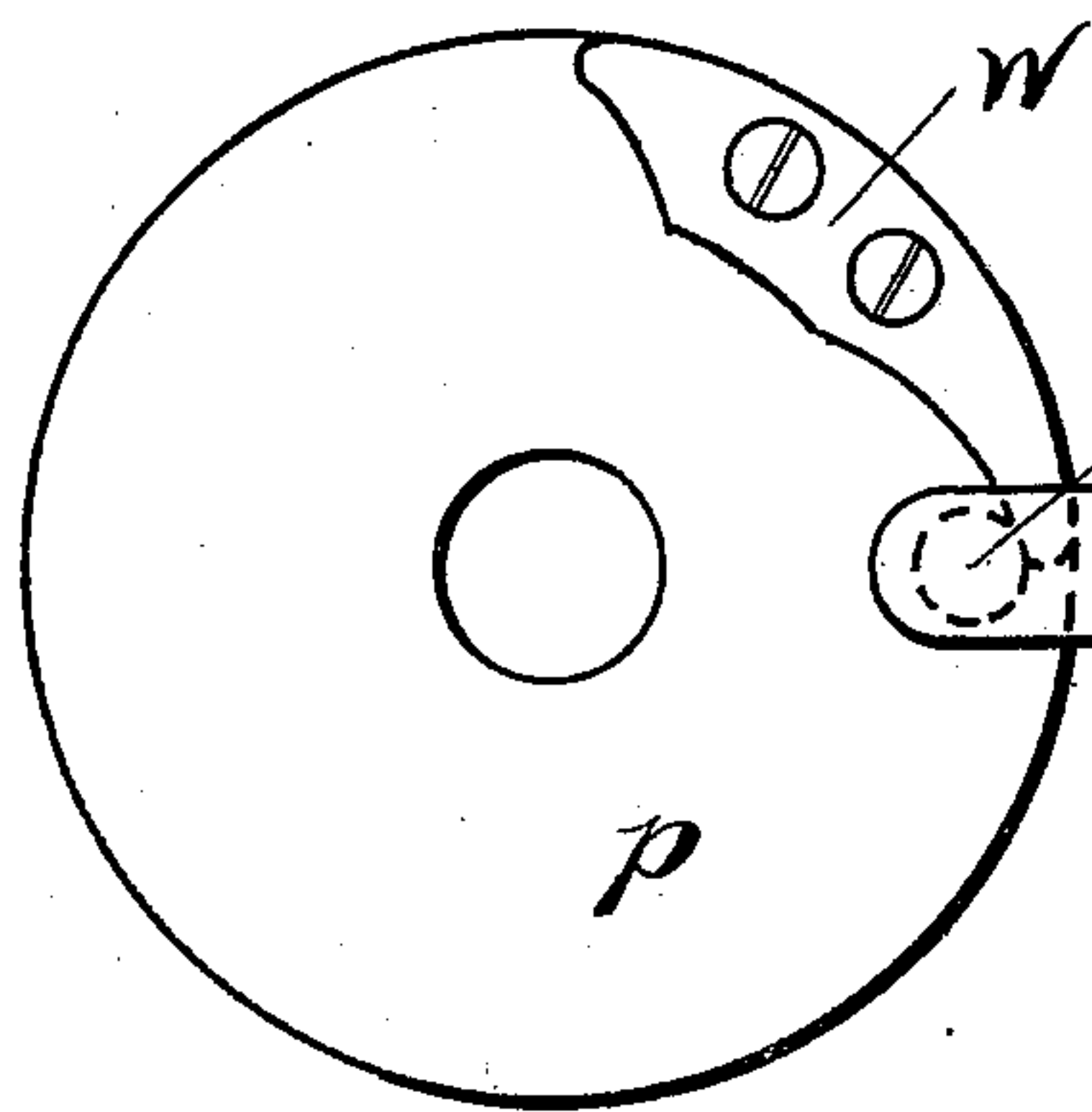


FIG. 4.

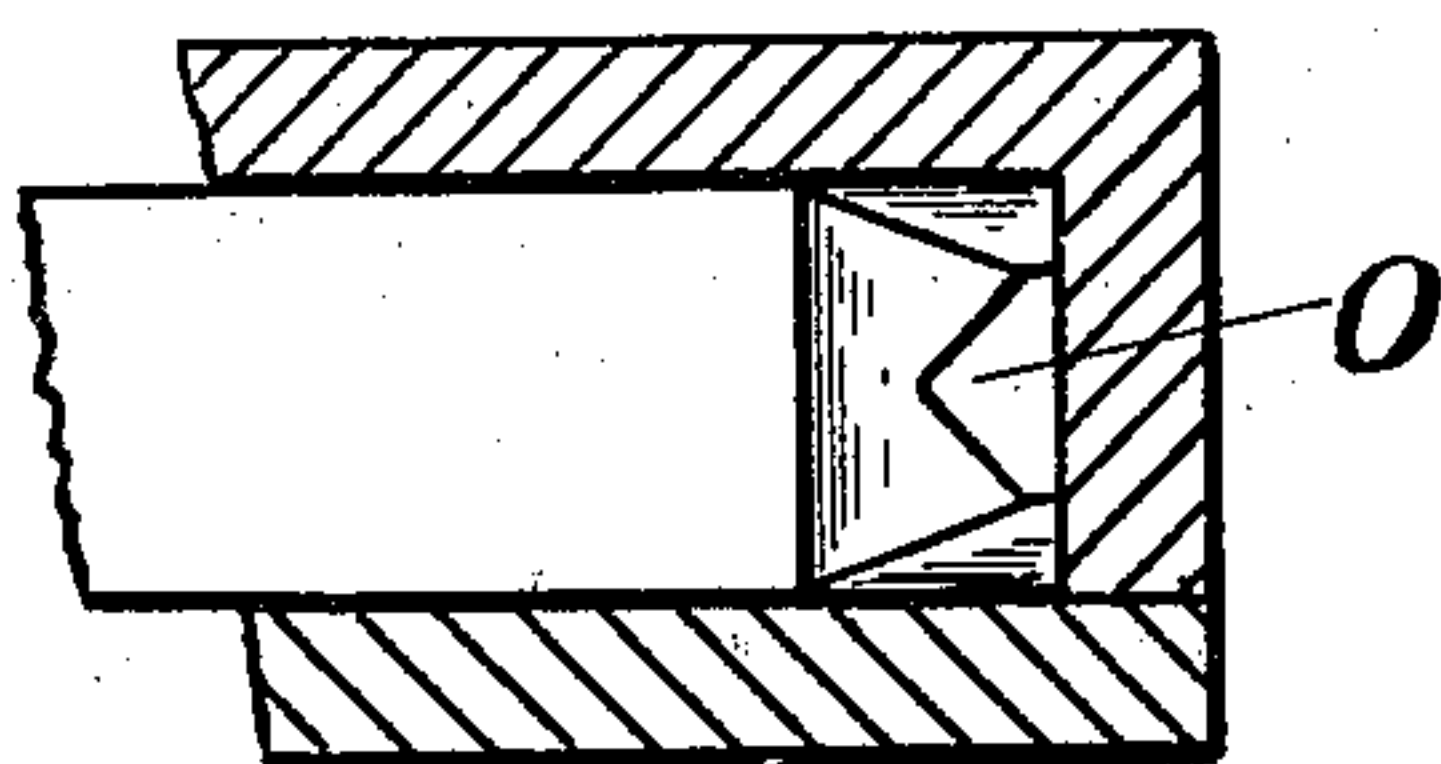


FIG. 9.

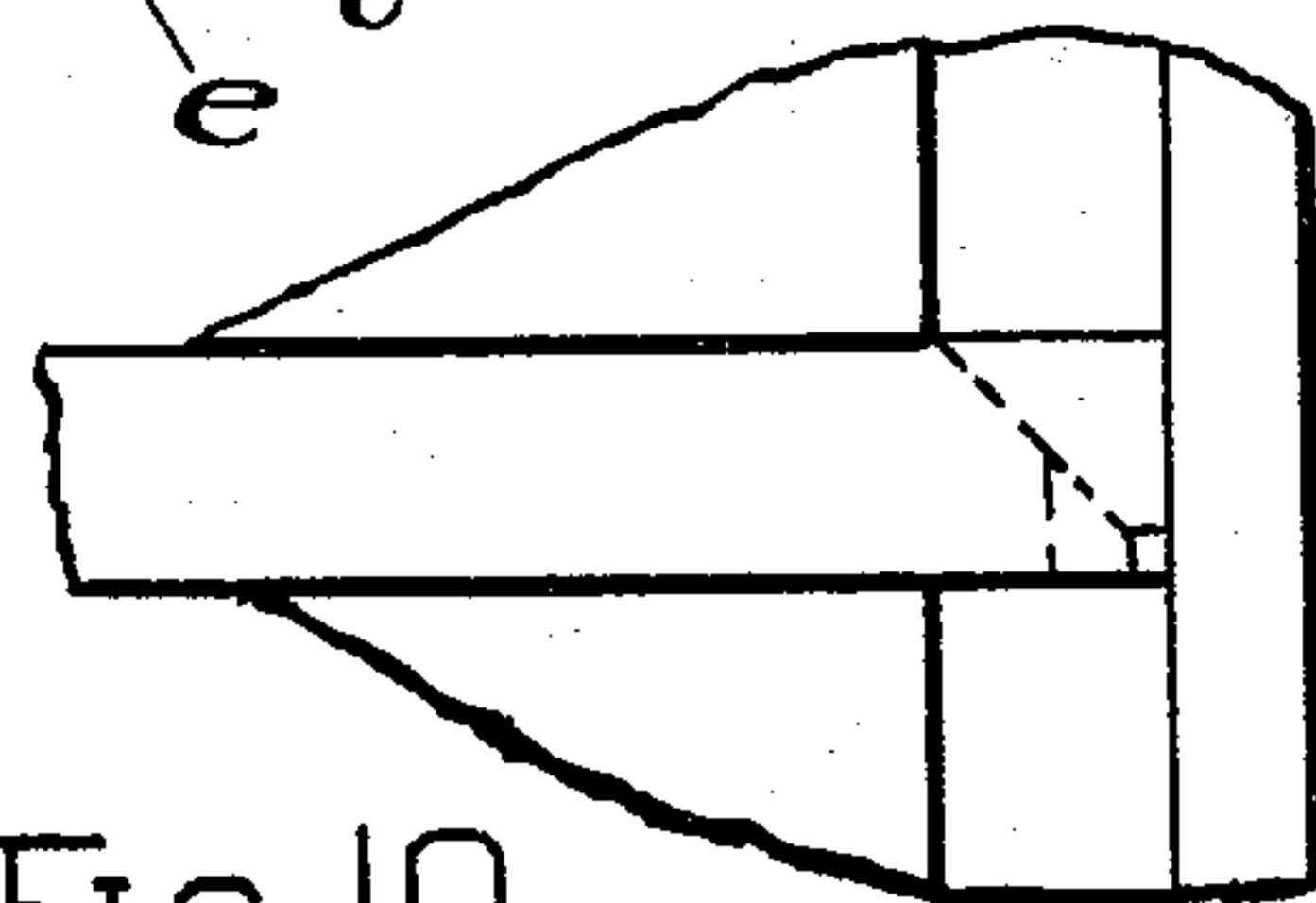


FIG. 10.

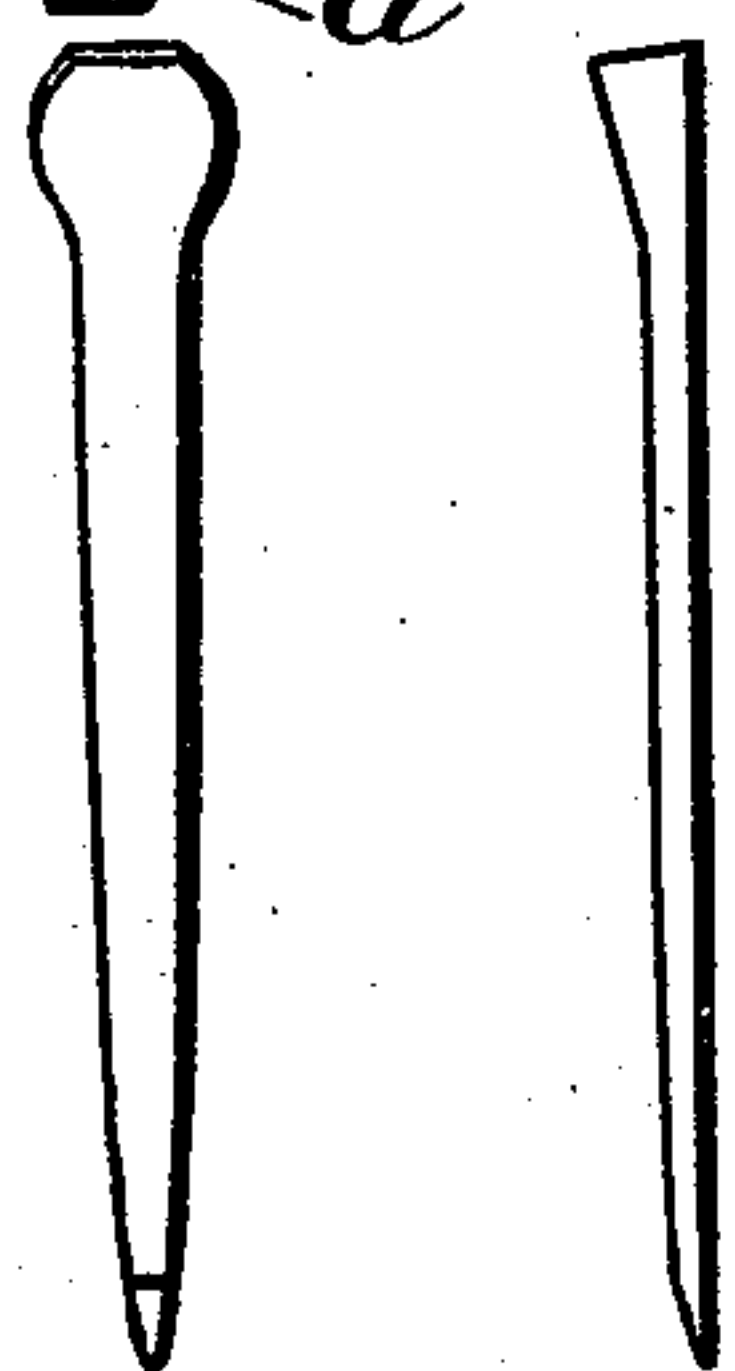


FIG. 5. FIG. 6.

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JOHN A. COLEMAN, OF PROVIDENCE, RHODE ISLAND.

FEEDING MECHANISM FOR NAIL-BLANKS.

SPECIFICATION forming part of Letters Patent No. 506,206, dated October 10, 1893.

Application filed December 9, 1892. Serial No. 454,561. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. COLEMAN, of the city of Providence, in the county of Providence and State of Rhode Island, have made a new and useful improvement for feeding certain special-shaped articles to other mechanisms which are required to present the articles always in one way for a subsequent operation—as, for instance, horseshoe-nail blanks which are to be pointed in a pointing-machine, where the point must always be upon a predetermined face of the blank, and hence that face of every nail-blank must always be presented toward the pointing mechanism, of which the following is a specification.

Taking a horse-shoe nail as a good illustration of an article capable of treatment by my invention, it is well known that the bevels of the point and of the head are commonly made upon the same face of a nail. On that account it has hitherto been impossible to practically feed such nail-blanks automatically to the pointing-machines, as the blanks, when picked from a mass by any known mechanical method are as liable to come wrong face, with relation to the head, as right face, to the pointing mechanism. Hence such nail-blanks have up to this time been fed to pointing-machines by slow and laborious hand-processes. I have devised a means for automatically overcoming this difficulty by which nail-blanks or other articles whether fed to my mechanism wrong face to, or right face to, will always be presented by it with their proper faces to the mechanism for the succeeding pointing or other operation.

Figure 1 is a vertical front elevation, with the cap of the stationary tube B, removed. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical side view of the same. Fig. 4 is a top plan view of the stop and its cam detached. Fig. 5 is a front view of a horseshoe nail to be operated on. Fig. 6 is a side view of the same showing the bevels of the head and point. Fig. 7 is an enlarged top plan view of the stop for such form of horseshoe nail as is shown in Figs. 5 and 6. Fig. 8 is a side elevation of the same stop and a portion of the tube, with the cap removed. Fig. 9 is an enlarged top plan view of a stop suitable for a nail of a different cross sec-

tion. Fig. 10 is a side elevation of the same stop and a portion of its tube, with the cap removed.

The primary means by which the purpose of this invention is accomplished, is a tube in two sections with rectangular bore into which articles are fed one at a time, and having a movable stop to arrest them until they can be operated upon, as hereinafter described, after which they are released by the withdrawal of the stop, and permitted to descend in the proper position to the mechanism for the succeeding operation. The sectional tube and stop are so arranged and operated that the articles which are right face to on passing into the tube, remain in that position; while those which enter wrong face to will be reversed and made to assume the right position for the operation which is to follow. The means by which this is done is as follows: The tube having the rectangular bore is divided into two sections, the top one A, Fig. 1, rotary, and the bottom section B, stationary. The top section A is mounted in bearings, and is organized to make a partial revolution after an article has been introduced, and arrested in its descent by the stop C in the stationary tube-section B. The stop C in the stationary section B is organized to close the tube to arrest the article and hold it until the top tube section has turned, and then retreat and release the article. The top face *e* of this stop is inclined to the axis of the tube, with its lower edge *l* resting against one wall of the tube when in position to close it. This incline is intended to force the ends of the articles always to the same point by its lower edge, when they enter the tube one face to, and to a different point when they enter it the other face to. In this edge a slot *o*, Figs. 2, 8, 9, is cut of a configuration depending upon the form of the nail to be operated upon. For a horse-shoe nail blank of the form shown in Figs. 5 and 6 having a straight back, and a head projecting from its opposite face, a simple slot or space *o* between the lower end of the stop and the side of the tube would suffice to allow the nail shank to drop partially through. When the blank 2, Fig. 1, enters with its straight back against the straight wall of the tube it will drop downward a considerable distance through the

slot so as to clear the tube-section A; but if it enters the slot in the reversed position the projecting head and point of the blank impinging against the wall of the tube, and the
 5 opposite face of the shank against the stop, would cause the blank to assume an inclined position, and the distance the blank can drop through the slot will be far less as shown by dotted lines 3 Fig. 1, and so that its upper end
 10 remains in the tube-section A. In the latter position the blank will be reversed by the semi-rotation of the tube A which acts upon the nail-head like a wrench. The stop is flexibly adjusted by a spring so that it yields as
 15 the shank is turned between it and the wall of the tube, and allows the nail blank to be reversed. After the tube-section A has been turned, the stop C is withdrawn from the tube B by a cam W which is geared to the
 20 rotating mechanism, Figs. 1, 2, 3, 4, to release the blank, which then drops through the lower tube-section to be subsequently pointed or otherwise operated upon.

One convenient form of mechanism by
 25 which the rotative top tube A, and the arresting and releasing stop C in the lower tube B may be actuated is as follows: A vertical shaft x Figs. 1, 2, set in bearings i Fig. 1, has a circular plate t mounted upon it, with a
 30 segment of a gear m fastened to its underside, meshing into the pinion-gear r upon the rotative upper tube A. A concavity y is formed in the periphery of the circular plate over the segmental gear m , to afford space for the
 35 locking-block k to turn, which is mounted and fastened upon the rotative upper tube A above the pinion gear r . This locking-block k is so formed that when the tube has been semi-revolved by the segmental gear and pin-
 40 ion, the edge of the block lies against the periphery of the plate to lock the tube in position until the segment comes around to give another half revolution to the tube. Lower
 45 down upon the vertical shaft x is a plate p upon which is mounted a withdrawal cam w , the inner edge of which impinges against the stud S on the under side of the stop-bar C, to withdraw the stop to allow the nail to drop below. The stop-bar C is mounted in slides,
 50 and is forced into position in the stationary tube B by the spring v which impinges against the stud d . The tube end of the stop-bar is beveled, and has a cavity of proper shape at the bottom of the incline to receive a nail-
 55 shank or other article as already described.

In operation the vertical shaft would be continuously revolved by suitable power, and at each revolution the segmental gear upon its plate would engage with the pinion upon
 60 the upper tube, and give the tube a semi-revolution, the locking-block attached to the tube at the same time turning in the cavity upon the periphery of the plate, and its edge

afterward lying against the edge of the revolving-plate to lock and maintain the tube 65 in position for the reception of the next nail. The lower cam turning also with the shaft strikes the stop-bar later, and withdraws the stop momentarily to release the nail. The stop then flies back to its place in the lower 70 tube to arrest the succeeding nail. Nail blanks such as are shown in the drawings, Figs. 5, 6, one at a time are fed point downward, either rightly or wrongly faced, into the upper tube by any suitable means while 75 the upper tube is at rest. The blank drops to the inclined faced stop through which the blank if rightly faced, will slip far enough to be unaffected by the semi-revolution of the upper-tube, as shown by the full lines 2 80 Fig. 1, and when the stop is withdrawn it falls properly downward; but if dropped wrongly faced, it will not drop out of reach of the upper-tube as shown by the dotted lines 3 and as already explained, and the 85 upper-tube at its semi-rotation will act as a wrench upon its head and axially reverse the nail, placing it right face to, the flexible adjustment of the stop permitting this to be easily done. The stop then releases the nail 90 to also properly fall downward.

What I claim as new and of my invention is—

1. The combination of the upper revoluble tube-section A, the lower tube-section B, lo- 95 cated end to end with a coinciding bore extending through them and adapted to the article to be fed, and a yielding-stop C, arranged to enter the bore of the lower tube-section and arrest the article to be fed through 100 the tube, so that it shall extend upward into the revoluble tube-section when it descends in the wrong position, and so that it shall descend below the upper tube-section when it drops against the stop in the right posi- 105 tion, substantially as described.

2. The combination of the upper revoluble tube-section A, the lower tube-section B, lo- cated end to end with a coinciding bore ex- 110 tending through them and adapted to the article to be fed, a yielding-stop C, arranged to enter the bore of the lower tube-section and arrest the article to be fed through the tube, so that it shall extend upward into the revo- 115 luble tube-section when it descends in the wrong position, and so that it shall descend below the upper tube-section when it drops against the stop in the right position, and gearing mechanism arranged to rotate the upper tube-section, and withdraw the stop, 120 substantially as described.

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Witnesses:

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