

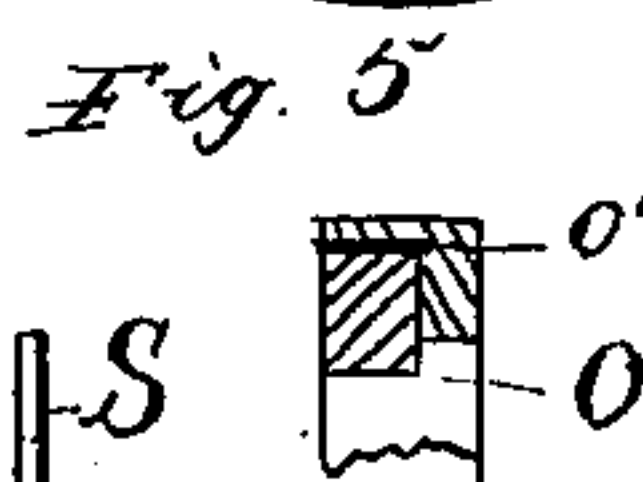
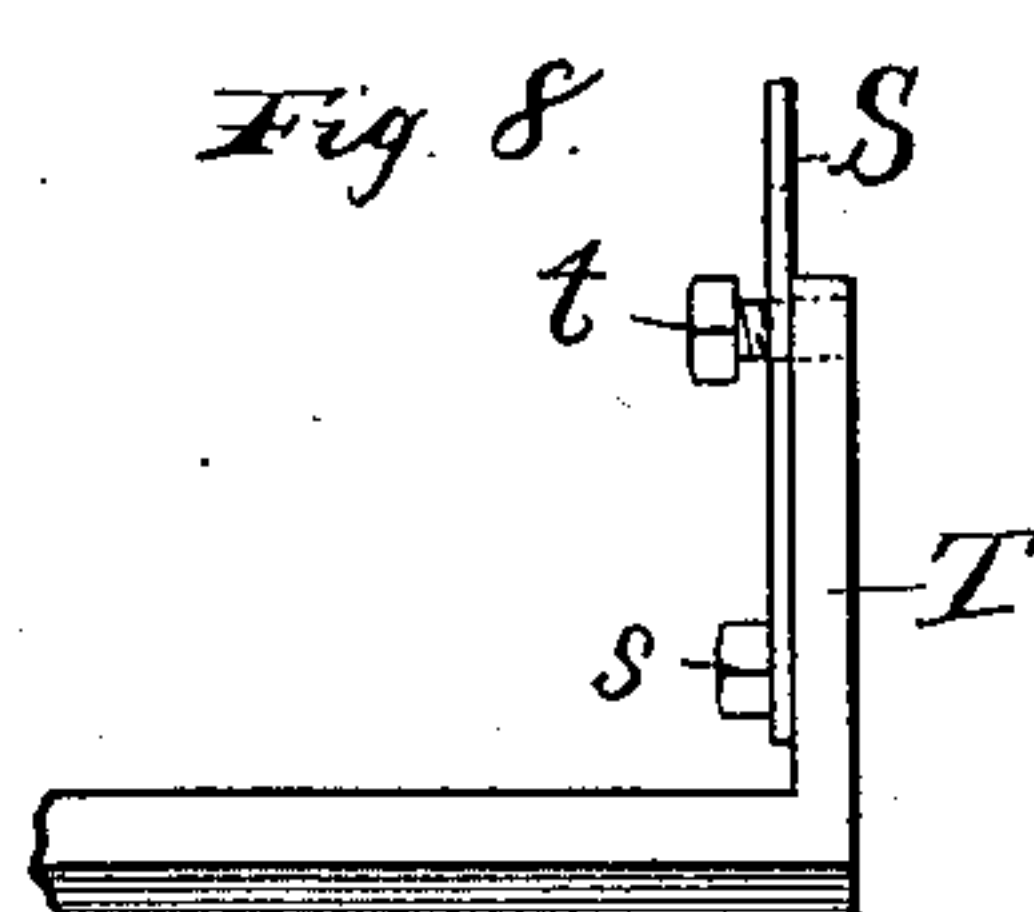
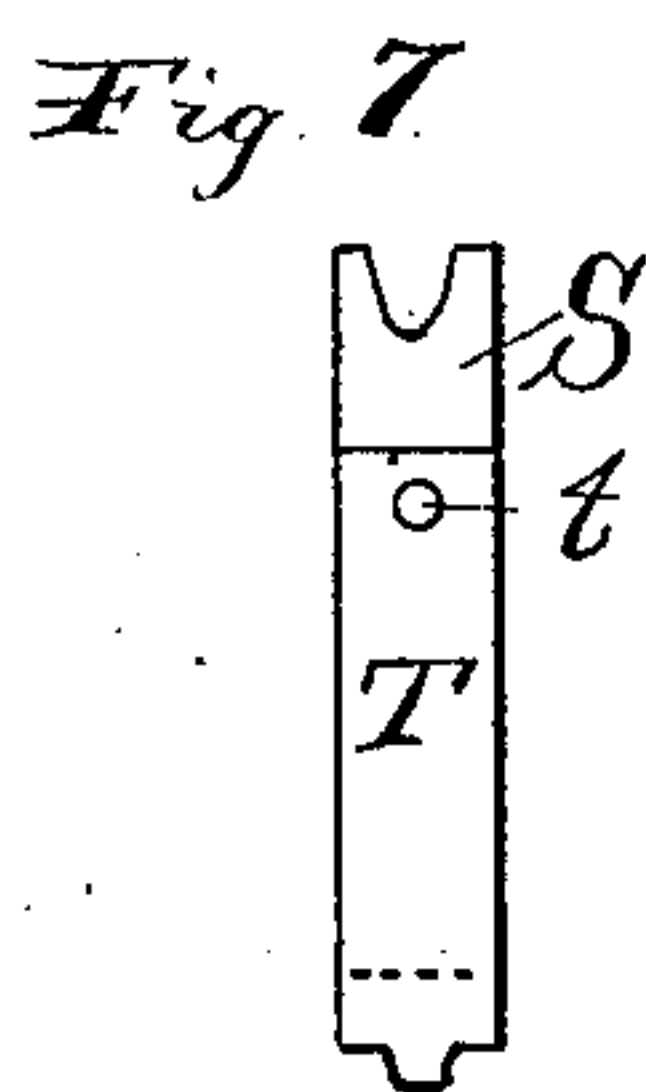
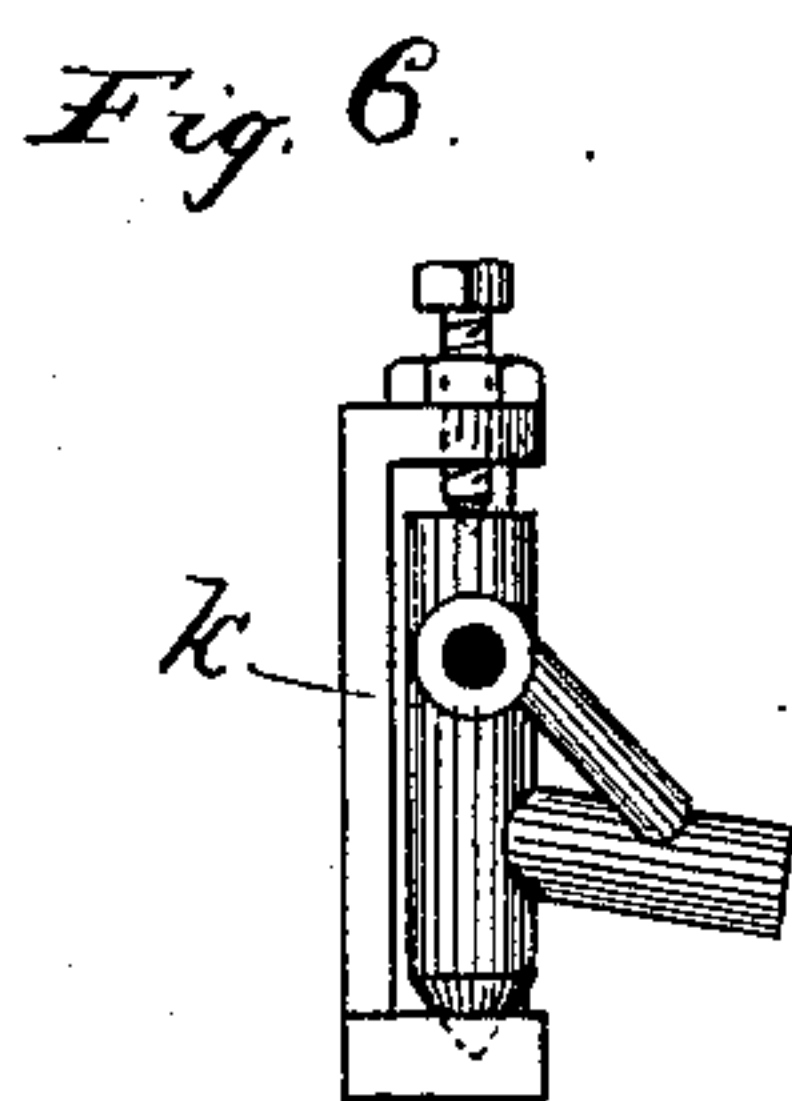
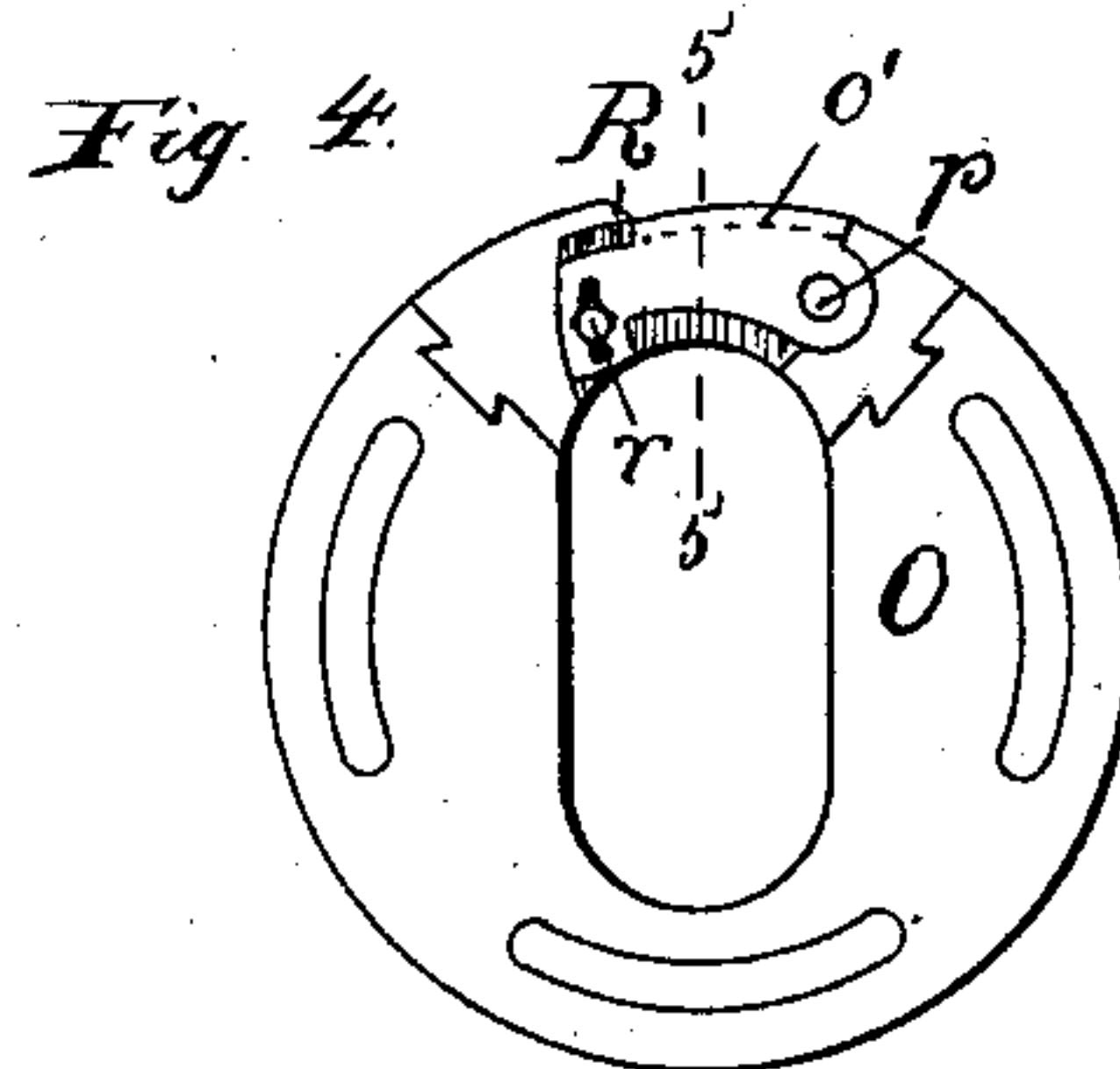
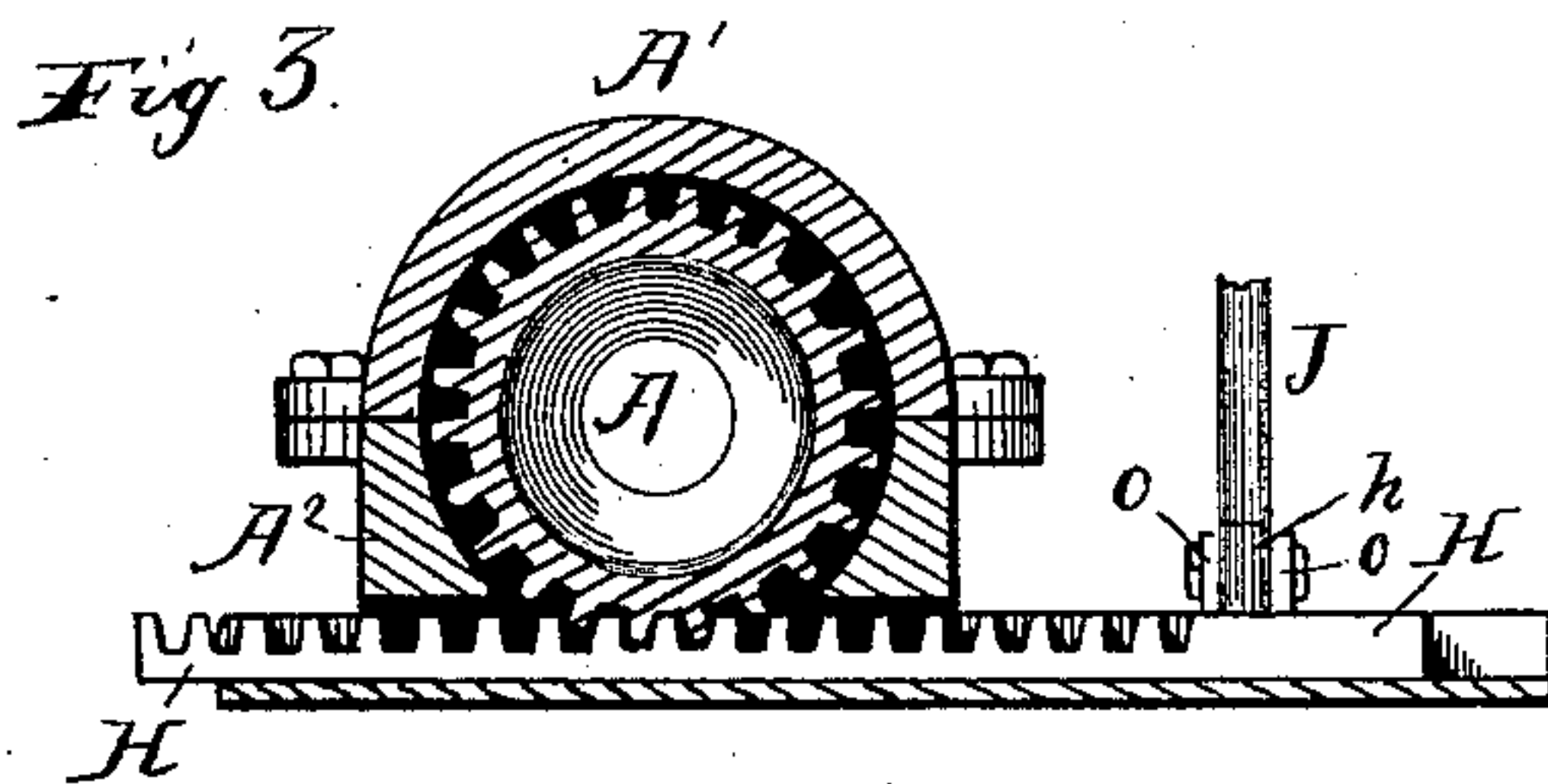
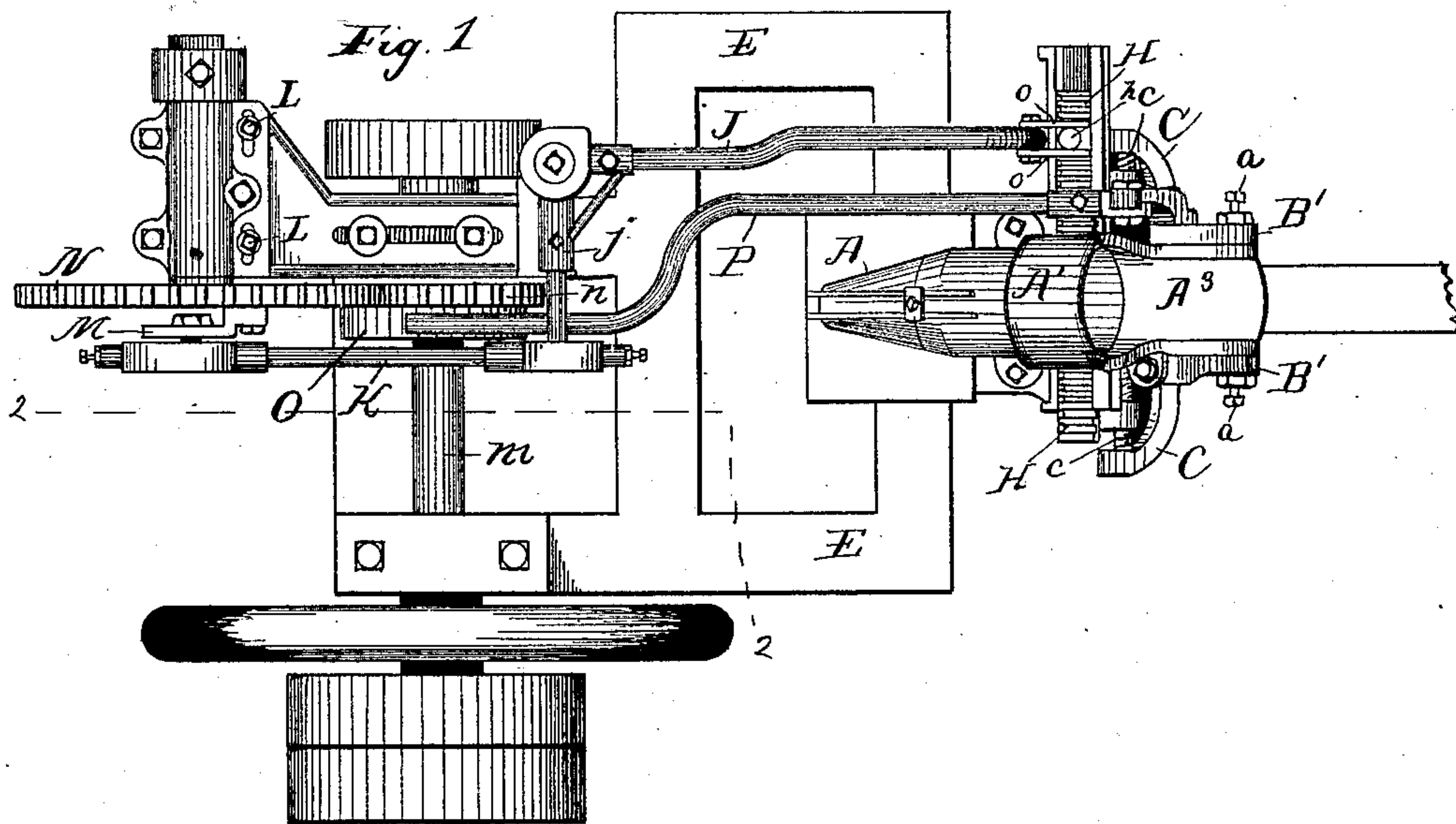
(No Model.)

2 Sheets—Sheet 1.

J. C. GOULD.
NAIL PLATE FEEDER.

No. 367,389.

Patented Aug. 2, 1887.



Witnesses:
Lew. E. Curtis.
H. Munday,

Inventor:
John C. Gould.

By Munday Curtis & Mowcock
his Attorneys:

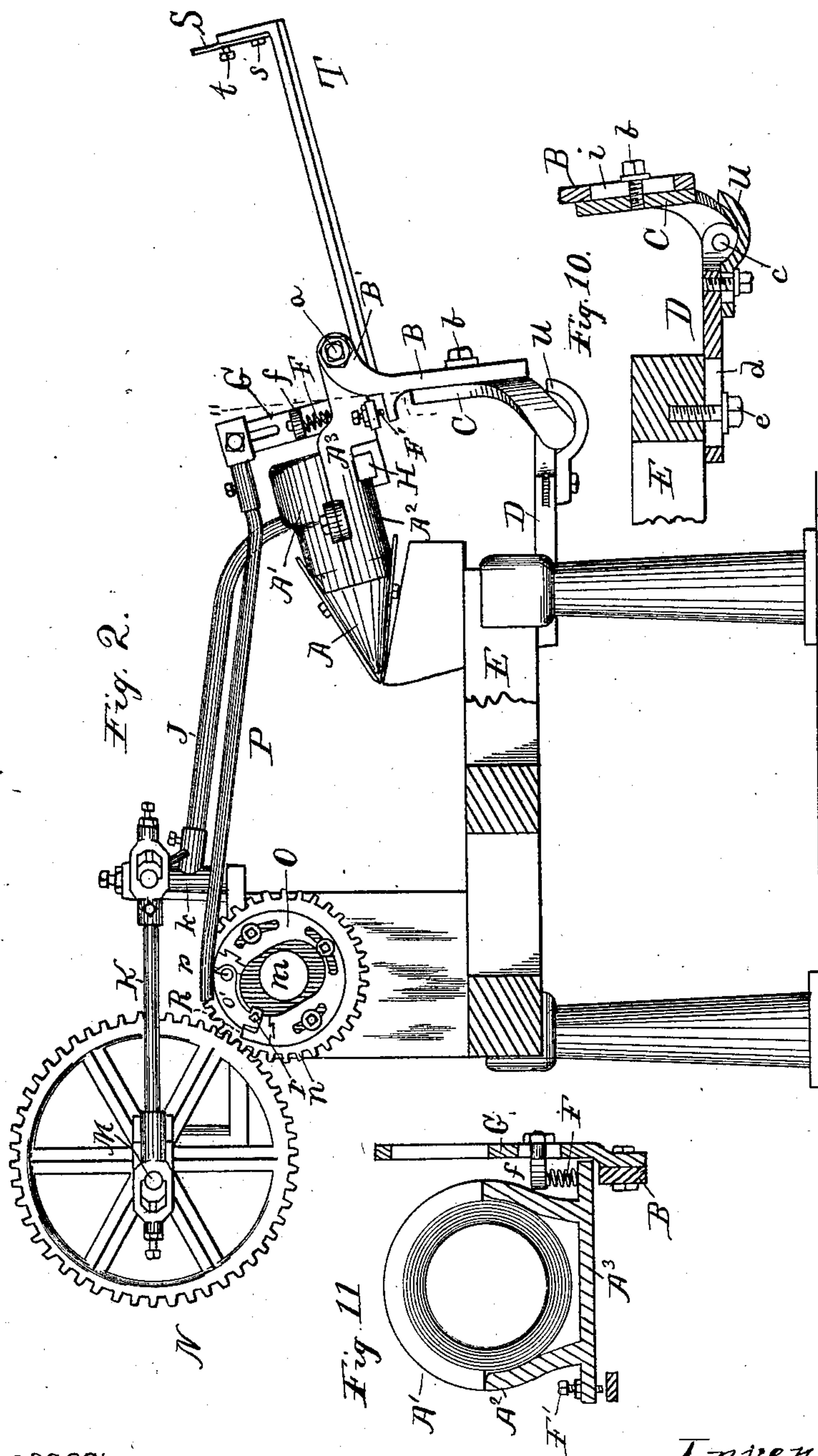
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UNITED STATES PATENT OFFICE.

JOHN C. GOULD, OF CHICAGO, ILLINOIS.

NAIL-PLATE FEEDER.

SPECIFICATION forming part of Letters Patent No. 367,389, dated August 2, 1887.

Application filed February 4, 1886. Serial No. 190,750. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. GOULD, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Nail-Plate Feeders, of which the following is a specification.

This invention is designed to simplify the mechanism of this class of machines, and to render them more easily adjustable than heretofore.

The nature of the improvement is fully set forth below, and fully pointed out in the claims.

In the drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a plan view of my invention. Fig. 2 is a partial side elevation and partial vertical section of the same, the sectional part being taken upon the line 2 2 of Fig. 1. Fig. 3 is a section through the barrel. Fig. 4 is a view of the cam for oscillating the barrel to and from the knives. Fig. 5 is a section of said cam on line 5 5 of Fig. 4. Fig. 6 is a detail elevation of the pivotal post of the lever, whereby the barrel-turning rack is operated. Fig. 7 is an end elevation of the support for upholding the outer end of the nail-plate rod, and Fig. 8 is a side elevation of the same. Fig. 9 is a face view of the crank from which the barrel-actuating rack receives its motion. Fig. 10 is a central longitudinal vertical section through the bracket upon which the barrel-supports are pivoted and oscillated. Fig. 11 is a section on the line 11 11 of Fig. 2.

In said drawings, A represents the ordinary barrel of this class of machines. It is inclosed by and finds a bearing in a cylinder consisting of two separable halves, A' and A². The latter of these is provided with a rearward extension, A³, which is pivoted upon screws *a* in the arms B' of the standard B, adjustably secured by the bolt *b* upon the saddle C, pivoted upon the points of horizontal screws *c* in the lateral extensions of the bracket D. This bracket I secure to the under side of the table E by a bolt, *e*, passing through an elongated slot, *d*, in the bracket, such attachment permitting the shifting of the bracket longitudinally, so as to bring the nose of the barrel toward or from the knives, as desired. It will

be noticed, also, that the bolt *b* passes through an open slot, *i*, which permits the standard to be raised and lowered, thereby enabling the giving of a greater or less inclination to the barrel.

To keep the barrel, which is pivoted in effect upon screws *a* at its rear end, down to its work, as its gravity may not always be sufficient, I provide a spring, F, the upper end of which is held by an adjustable projection, *f*, upon the arm G, rising from the side of the standard B. The screw F' limits the depression of the barrel, and permits adjustment in that regard.

The rotating movements of the barrel are imparted to it by a sliding rack, H, traveling in a runway provided in the part A².

I am aware that the barrel has heretofore been rotated by means of a reciprocating rack in engagement with a gear-segment on said barrel, and therefore do not propose to claim, broadly, that method of driving the barrel; but in all machines known to me wherein the barrel is so driven the reciprocating rack moves on a bearing unconnected with the inclosing-cylinder in which the barrel has its pivotal bearing. My improvement obviates the disadvantage of this disconnection of bearings by making the bearing-surface for said reciprocating rack in and integral with the cylinder, whereby the barrel-gear and its driving-rack cannot separate nor get out of proper engagement.

The sliding rack H is reciprocated by the elbow-lever J *j*, which receives motion through the pitman K and crank M from the gear N, actuated by the smaller gear, *n*, on the driving-shaft *m*. The elbow-lever arms are held in the pivotal post *k*, and the joints between the said arm *j* and pitman K and between pitman K and crank M should of course be such as will permit the compound movements of the parts. The rack H carries an upwardly-extending pin, *h*, which is received between wings *o*, carried on the end of the arm J. The wings *o* and the pin *h* form a free joint, allowing much liberty of movement to the racks, and thus no interference is caused with the vibratory movement to and from the knives.

The bolts L, by which the box in which the arbor of gear N revolves is held to the ma-

chine, pass through elongated slots in said box, so that said gear and its crank can be changed in position to accommodate the requirements of different machines.

5 O represents a cam secured to the gear *n* and operating the lever P, by which the barrel is oscillated to and from the knives. This lever P rides upon the cam, and at the other end is secured in the upright arm G, the attachment to the latter being adjustable. The
10 cam is provided with a segment, *o'*, pivoted at one end on pivot *p*, and adjustably held at its other end by the screw *r*. By adjusting this segment the extent of throw communicated to the lever P as it rides up the incline
15 R of the cam is regulated.

The cam O is provided with an abrupt shoulder or incline, R. This incline is so located as to come in contact with rod P and
20 give it a somewhat quick upward impulse at the start of the lifting or upward action of the cam, thereby communicating to the barrel a quick motion at the initial end of its backward movement. In this initial motion the barrel,
25 being pivoted as described, is at liberty to move back in a substantially straight line until contact between the set-screw F' and the standard B takes place, when its motion is changed to a curvilinear one. The initial straight move-
30 ment thus caused takes place during the time the knives are operating on the plate. I avail myself of this feature in order that I may dispense with the pushing-grippers which I have heretofore employed to feed the nail-plate, in-
35 asmuch as the knives will hold the plate stationary while they are cutting it, and consequently, if the backward movement is quick and timed to take place during the cutting, the plate will be drawn out of the barrel the
40 width of a nail-blank, and so be ready for the next cut. This permits me to substitute for the gripping-feeders a simple forked support, S, in which the nail-plate rod may lie. Such support may consist of a vertical plate se-
45 cured to the upright end of the bracket T by bolts *s* and *t*, and may be rigid; but I prefer that it should be made of spring metal and that the upper bolt, *t*, be set out, as shown, so that the plate S may yield in the direction in
50 which the rod moves when the knob at the rear end of the nail-plate nipper-rod comes in contact therewith. This contact always occurs when the nail-plate is presented for the last cut. It results from this construction that as
55 soon as the last nail has been severed the plate S will spring back to its normal position and draw the rod with it, so that the latter is prevented from being pulled into the knives and injured thereby.

60 It will be noticed that the machine, as shown, permits a great variety of adjustment, so that it can be without change in construction fitted to any of the ordinary nail-cutting machines. This adjustment is particularly useful in the
65 case of standard B. It should also be noticed that the simple bolt attachment to the table of the barrel-support allows the parts to be

swung around said bolt, as well as adjusted longitudinally thereon, which is often an advantage. The barrel pivotally joined to the
70 standard, as shown, also possesses ability to yield and spring up out of the way of the knives when any extra strain comes upon it from below, and thus avoid the breakage which might otherwise occur.

75 When the barrel needs to be tipped back from the knives for any reason, my present construction allows it to be done very conveniently, it only being necessary to loosen the lever P from its socket attachment to arm
80 G to allow this to be done, the connection between the elbow-lever and the barrel-rack being such as to require no unfastening of those parts. The rest U upon the bracket D sup-
85 ports the parts, when thus tipped back, by contact with the saddle C.

The operation of the feeder will be fully understood from what has been already written. It will be noted that the shaft heretofore
90 placed under the machine and carrying power to the barrel-rotating segment has been moved from that place, so that there are no moving parts under the table of the machine, but are
95 all located above, leaving the space under the machine entirely unobstructed, while the segment is dispensed with.

The crank M, it will be seen, is so constructed that the crank-pin may be adjusted therein to or from the axis, and even within
100 the circumference of the shaft carrying the crank.

By suspending the barrel upon pivots at its rear end I obtain the benefit of its gravity in
105 keeping it down in position, and also throw the center of gravity of the parts carried by the standard B in front of the center of oscillation, the barrel outweighing the bracket T and the nipper-rod supports or grippers, where such are used. The barrel by this con-
110 struction also rises easily when extra strain comes upon it, thus avoiding what would otherwise result in breakage.

I claim—

1. In combination, the rotating plate-carrying barrel provided with a toothed gear, a re-
115 ciprocating rack in engagement therewith, a cylinder provided interiorly with a pivotal bearing for said barrel and beneath with a transverse guideway for said reciprocating rack, a detachable lever for reciprocating said
120 rack, and a vibrating standard, B, attached to said cylinder and pivoted on the frame, substantially as specified.

2. In a nail-plate feeder, the barrel and its cylinder, in combination with the sliding rack
125 working in said cylinder, and the rod J, connected to the rack by a free joint, essentially such as described, all being located above the table of the machine, substantially as specified.

3. In a nail-plate feeder, the combination of
130 the barrel, the barrel-cylinder, the rack, the elbow-lever, the pitman, and crank, all arranged and operating substantially as specified.

4. The combination, with the barrel and its

standard B, of the saddle C, bracket D, and bed E, the bracket being longitudinally adjustable upon the bed, substantially as specified.

5 5. The barrel and its supports pivoted upon the saddle C, in combination with the lever P for imparting oscillation and the elbow-lever for imparting rotation, the former being detachable and the latter separable without unfastening, substantially as specified.

10 6. In a nail-plate feeder, the barrel pivotally attached to its support B, in combination with such support and a spring, F, tending to keep the nose of the barrel down, substantially as specified.

15 7. In a nail-plate feeder, the barrel pivotally attached to its support B, in combination with such support and an adjusting-screw, F', substantially as specified.

20 8. In a nail-plate feeder, the pivotally-attached barrel, the support B, the spring F, and screw F', all combined and operating as set forth.

23 9. The cam O and the lever P, operated thereby, in combination with the standard B, the barrel, and the barrel-cylinder, the latter being pivotally held upon said standard, substantially as specified.

30 10. The cam O, having the adjustable segment σ' , in combination with the lever p , substantially as specified.

11. In a nail-plate feeder, the abruptly-act-

ing cam for oscillating the barrel, in combination with the barrel, substantially as specified.

12. In a nail-plate feeder, the barrel and a quickly-operating device for throwing it back 35 from the knives, in combination with the knives, the parts being timed so that the barrel will move back while the knives are cutting, substantially as specified.

13. In a nail-plate feeder in which the barrel 40 moves back during the cutting by the knives, the combination, with such barrel, of a yielding rod-support, substantially as specified.

14. The nail-plate feeder consisting of the 45 barrel, the abruptly-inclined cam, and lever P for oscillating the barrel, the rack and its actuating devices for turning the barrel, the pivoted standard for supporting the barrel, and the forked rod-support, all combined and op- 50 erating substantially as specified.

15. In a nail-plate feeder, the crank-bearing gear N, from which the rack is actuated, 55 mounted in an adjustable box, in combination with the rack and the mechanism carrying motion from the gear to the rack, substantially as specified.

JOHN C. GOULD.

Witnesses:

H. M. MUNDAY,
EDW. S. EVARTS.