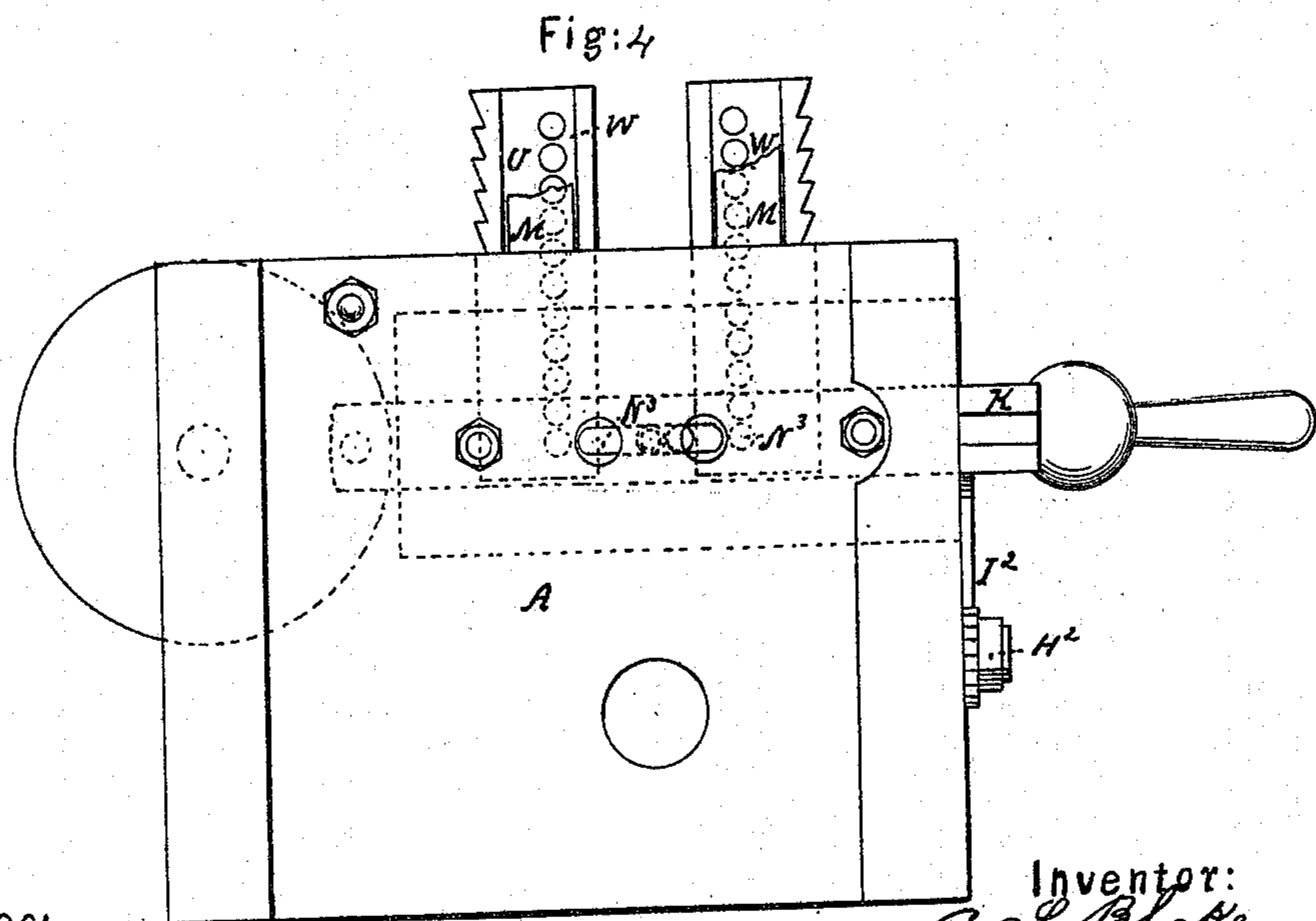
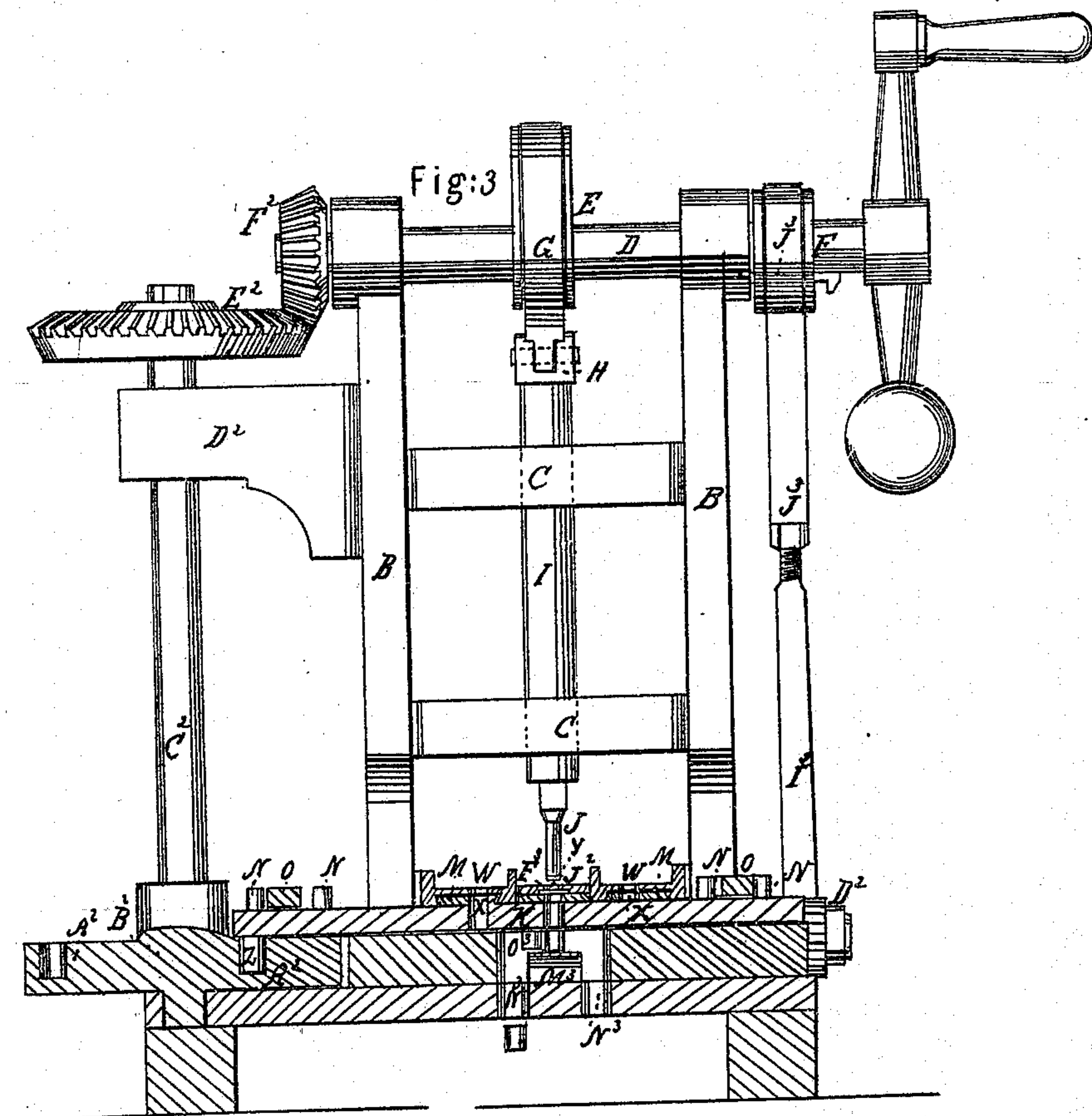


A.S. Blake. Sheet 2-3 Sizers

Mach. for Lining Percuss^g Cans.
N^o 67253. Patented Jul. 30. 1867



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A.S. Blake. Sheet 1 of 5 sheets.

Mach. for Lining Percussⁿ Caps
N^o 67253. Patented Jul. 30. 1867.

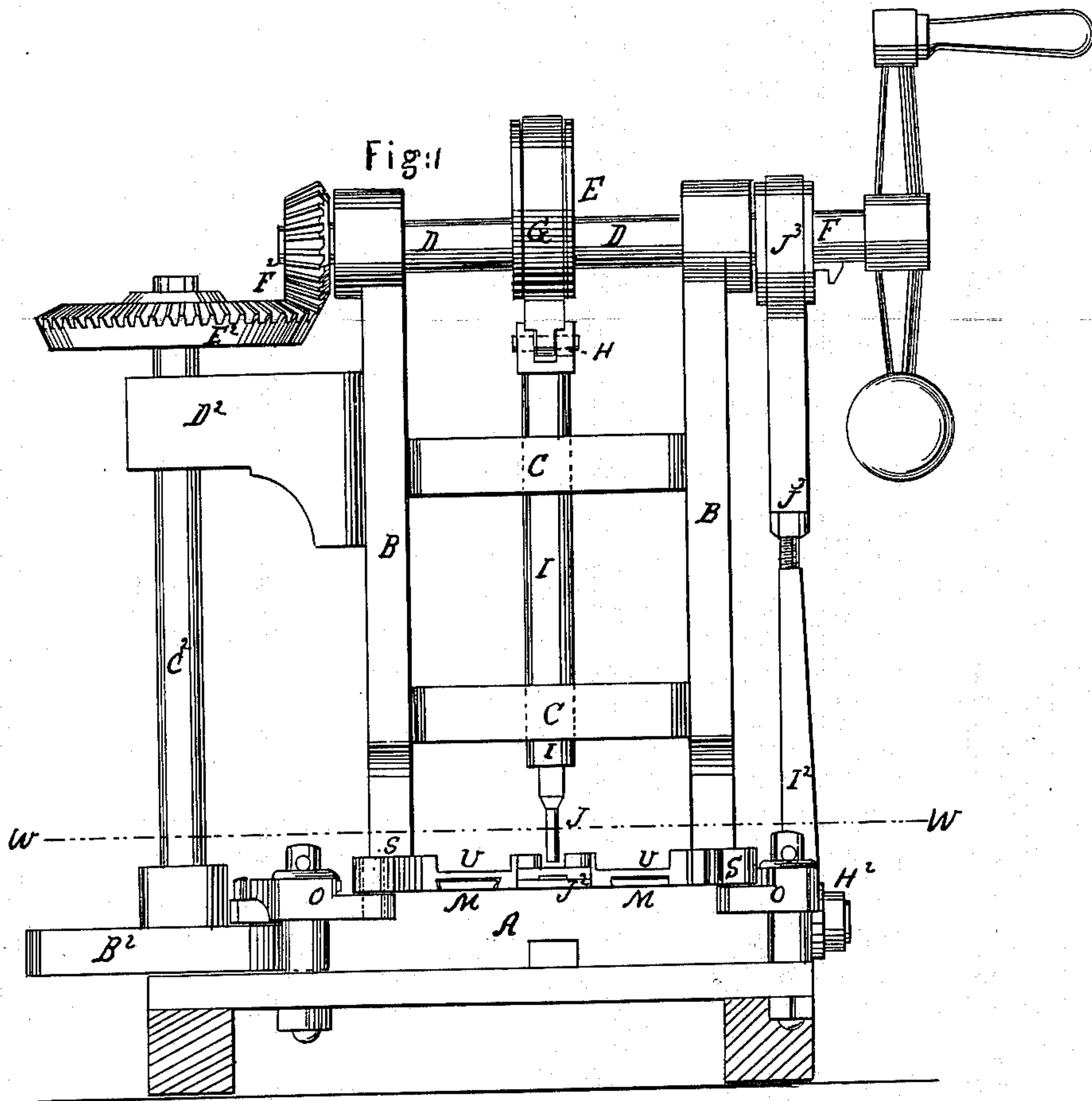
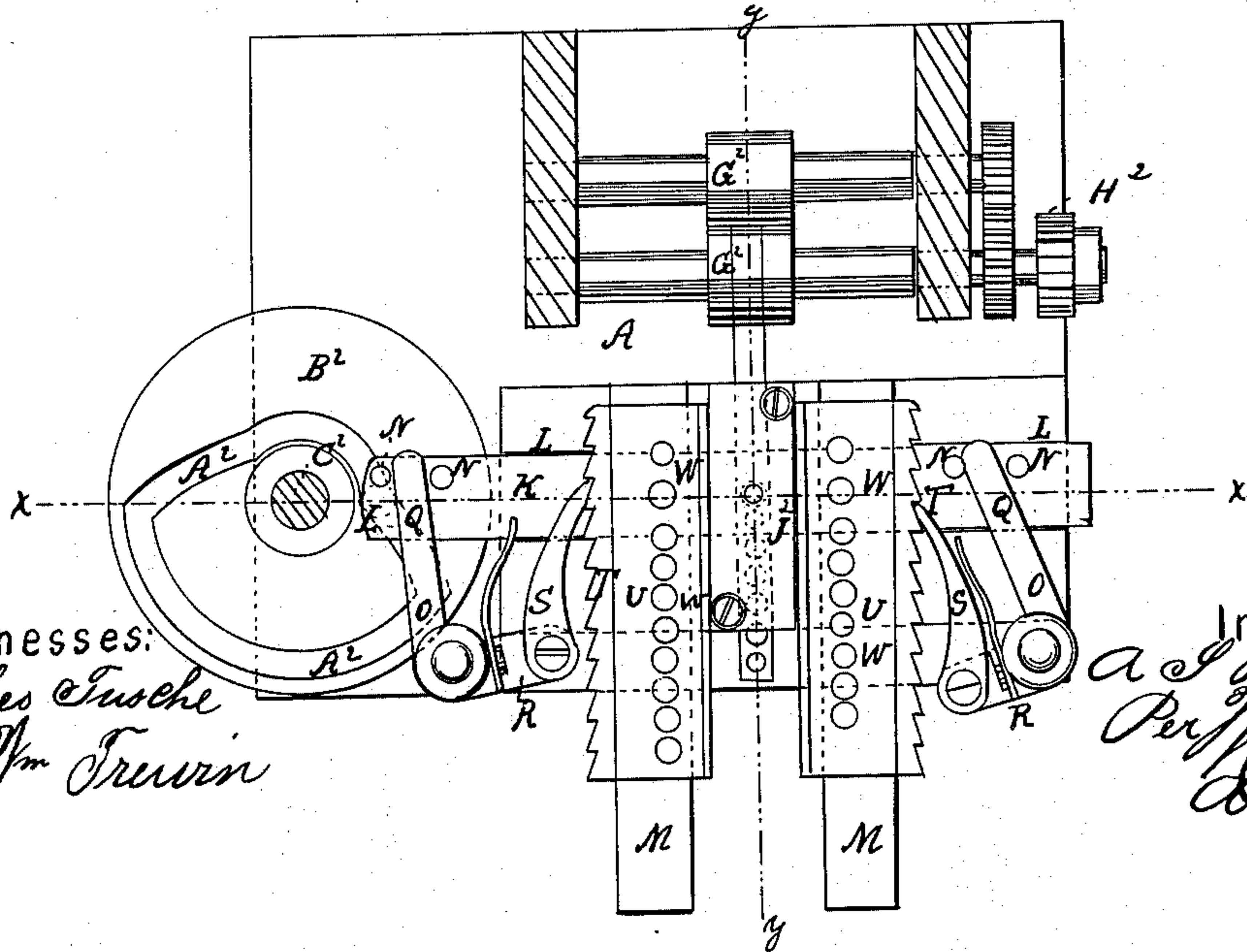


Fig: 2



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A. S. Blake. Sheet 3. of 5 Sheets.

Mach. for Lining Percussⁿ Caps.

N^o 67253.

Patented Jul. 30. 1867.

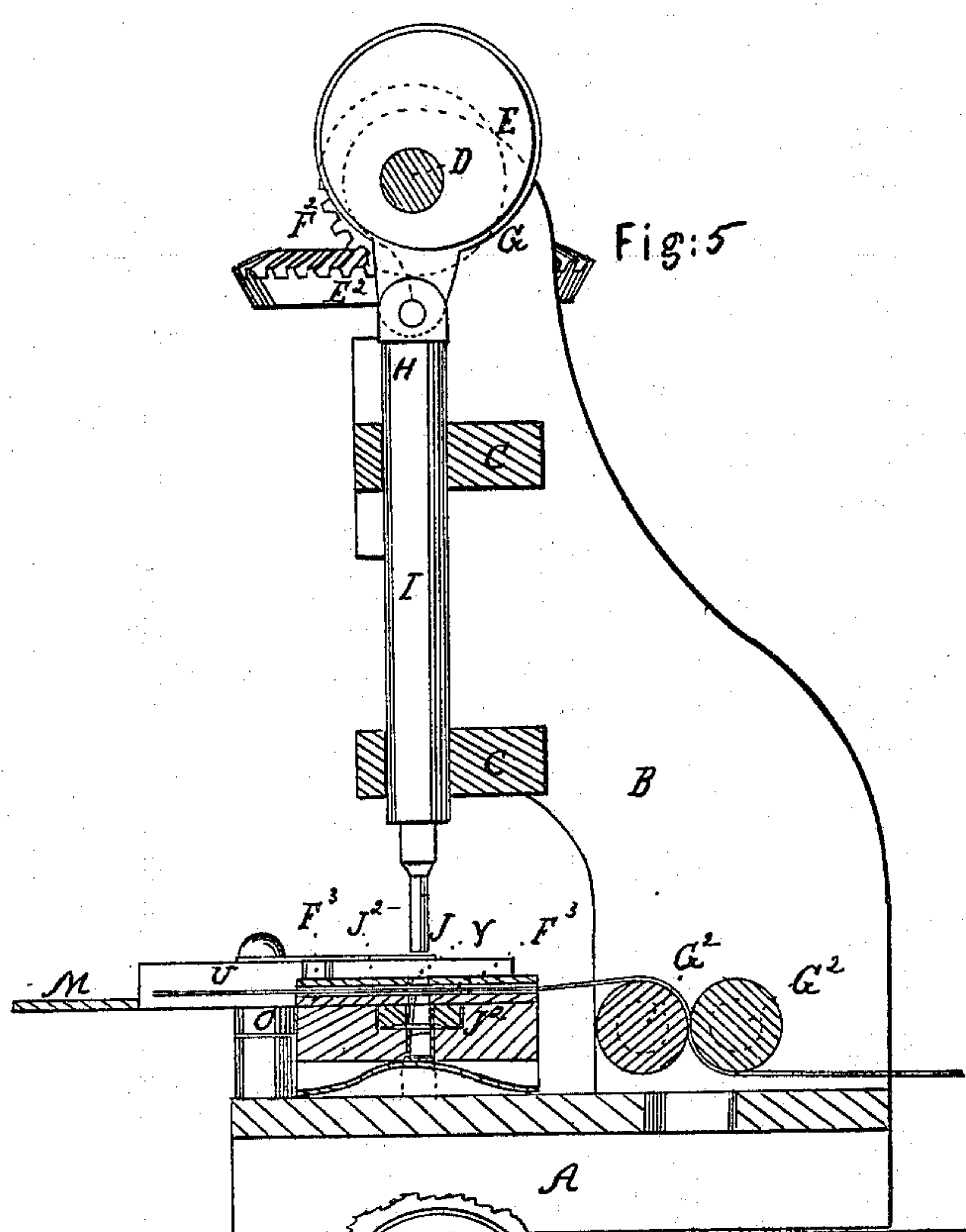


Fig: 5

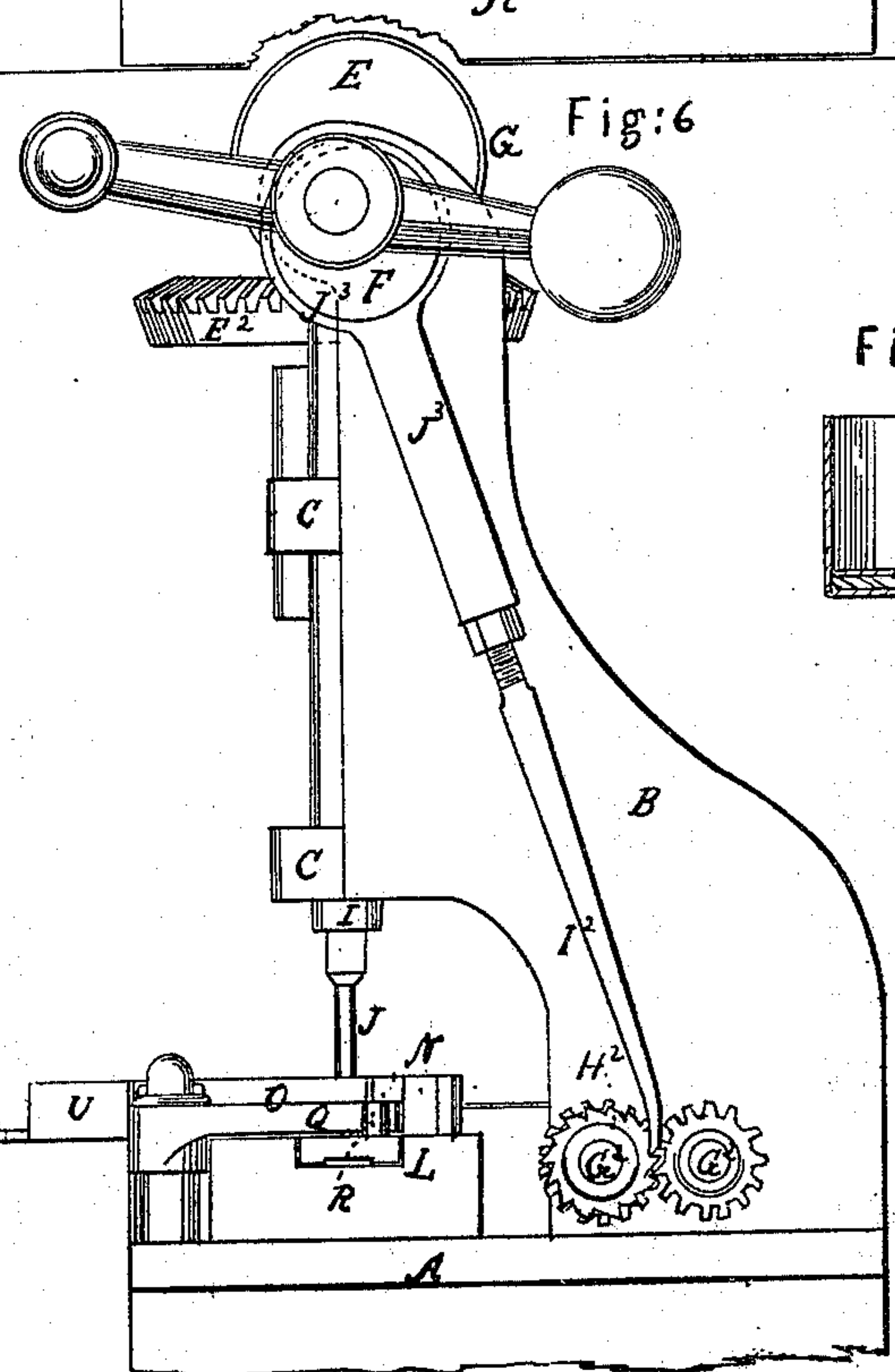


Fig: 6

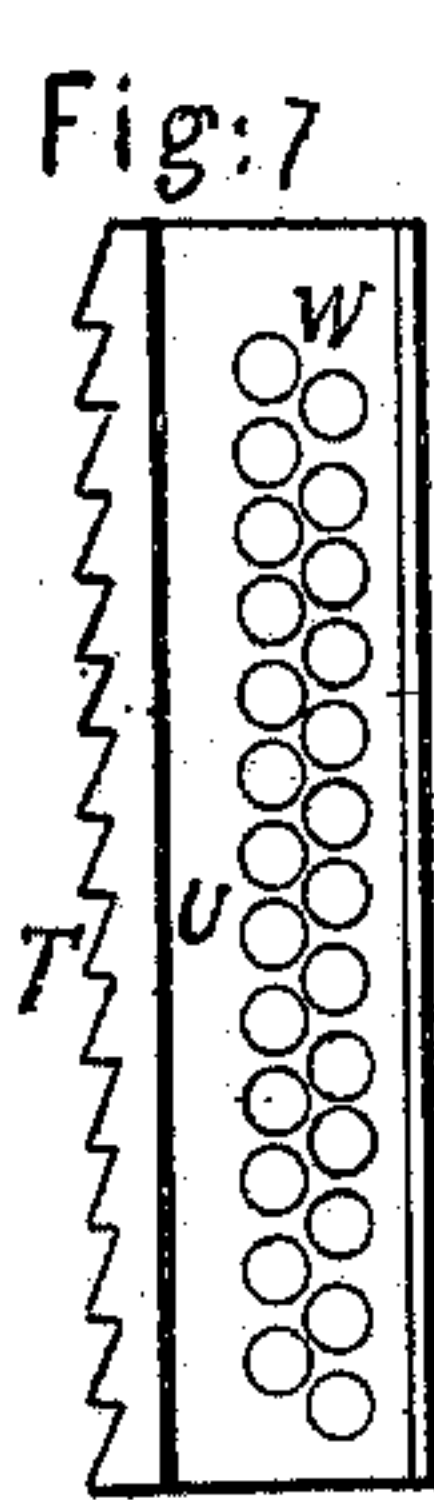


Fig: 7

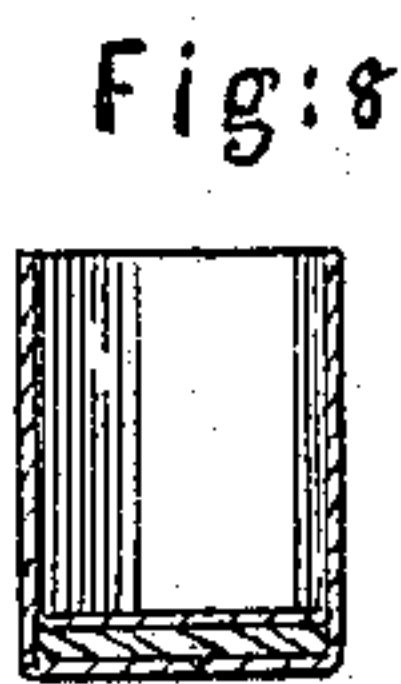


Fig: 8

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United States Patent Office.

AMOS S. BLAKE, OF WATERBURY, CONNECTICUT.

Letters Patent No. 67,253, dated July 30, 1867.

IMPROVEMENT IN MACHINE FOR LINING PERCUSSION-CAPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, AMOS S. BLAKE, of Waterbury, in the county of New Haven, and State of Connecticut, have invented a new and improved "Machine for Lining Percussion-Caps;" and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

In the machine embraced in the present invention, the caps in regular order and succession, one after another, are taken under the punch and die by a slide arranged to move forward and backward across the plane of movement of the said punch and die, when, having been there deposited, the punch is moved down through the die, punching therein, from the strip of tin-foil fed along and through it with an intermittent rectilinear motion, the lining to the cap, which, by the continued downward movement to the punch, is carried by it down and upon an elastic or yielding bed, whereon the punch enters the cap, compressing and fixing the lining therein, when the punch, being then withdrawn from the die, the slide carrying caps thereto is moved, throwing off, by a stud or pin from the said bed whereon the cap was lined, that cap, while at the same time it carries forward to the punch another cap, to be operated upon by it and lined, as before, and so on, as long as motion is imparted to the machine.

Having thus in general terms stated the general and principal features of the machine embraced by the present invention, I will now proceed to describe the same in detail, reference being had to the accompanying plates of drawings, in

Plate 1, of which Figure 1 is an elevation of the front side of the machine, and

Figure 2 a transverse horizontal section, taken in the plane of the line *w w*, fig. 1.

In Plate 2, Figure 3, a transverse vertical section, taken in the plane of the line *x x*, fig. 2, Plate 1, and

Figure 4 a plan view of the under side of the bed or foundation-plate to the machine.

In Plate 3, Figure 6, an elevation of one end of the machine.

Figure 5, a vertical section from the front to the rear side of the machine, taken in the plane of the line *y y*, fig. 2, Plate 1.

Figure 7, a plan view of another form of plate for carrying caps to slide, to be carried by it to the punch and die.

Figure 8, a central section through a cap on an enlarged scale.

Similar letters of reference indicate like parts.

A, in the drawings, represents the bed-piece or foundation-plate of the machine, to which are secured two parallel uprights B, connected together at suitable points of their heights by horizontal cross-bars or braces C. D, the driving-shaft of the machine, hung and arranged to turn in suitable bearings of the upper end of the uprights B, across from one to the other of which it extends in a horizontal plane. E and F, two eccentric wheels secured to shaft D, one, E, between its two bearings, and the other, F, outside of the same, and at one end of the shaft. G, a strap placed loosely upon eccentric E. To this strap G, by its under side, is pivoted or swivelled the upper end H of the stock or spindle I, carrying at its lower end the punching-tool J; this stock I moving in a vertical plane in and through the cross-plates or braces C to the uprights B, with its punch projecting below its lower brace C. The punch may be secured in any proper manner within the stock I. J² the die-block of the machine, secured to upper side of bed-piece A, in suitable position for the punch to pass up and down through the same as, by the turning of the shaft, to the eccentric of which it is hung, as was described, it moves up and down in a vertical plane. K, a slide, arranged within a suitable groove or way, L, of the bed-piece, to move in a plane at right angles across the length of the die-block J², and below its upper surface, passing also under two strap-plates or bars M, having dove-tailed edges, and secured to bed-piece in planes parallel to the length of the die-block, and at equal distances therefrom upon each side. N, pins or studs, secured on upper side of slide K, two at each end. O, right-angular arms, hung to upright pins or centres P of bed-piece A so as to freely swing thereon, which arms, by their longer portions or branches Q, rest upon the slide K, one at each end thereof, with their outer ends engaged with the pins N of such slide, but, by their shorter portions or branches R, carrying spring-pawls S, that are hung so as to swing thereon, and at their ends or points to engage with the ratchet-teeth T, formed along one of the edges to plates U, arranged to move and slide upon the strap-

bars or plates M, hereinbefore referred to. The plates U are the holders and carriers for the percussion-caps; and for this purpose each has a series of apertures W along their length, from one end to the other, at equal and regular distances apart in each case, in which apertures the caps are to be placed. X, an aperture in each strap-plate or bar for the cap-carrier plates, which aperture, in each bar, is at a point in line with the series of apertures in the carrier-plate moving upon such bar, and in a straight line with each other and the centre hole of the die-block, holes Y being also made in the slide at two points of the same, and in a corresponding line with each other to that through the apertures in carrier-plate and die-block. Z, a pin or stud at one end of slide and upon its under side, which pin moves around and within a cam-groove or slot, A², made in the upper face of a horizontal circular disk or plate, B², secured to the lower end of an upright shaft, C², arranged to turn in suitable bearings of the bed-piece A, and bracket-arm D², secured to one of the uprights B. With the upper end of shaft C² the driving-shaft is connected, through bevel-gear wheels E² and F² suitably attached therefor. Through the die-block, in the direction of its length, and parallel to the line of movement of the cap-carrying plates, a way, F³, is made, through which, from one end of the die to the other, across its opening, is to pass a continuous strip or ribbon of tin-foil; and from thence to and between feed-rolls G², placed one along side of and parallel to the other, with the two in the same horizontal plane, and turning in suitable bearings of the uprights B to the bed-piece A. These feed-rolls G² are geared together at one end, so as to revolve with the same speed; and to one of the rollers is attached a ratchet-gear wheel, H², with which engages one end of a pawl-lever, I², that is hung from the eccentric F of the driving-shaft, through a metal strap-band, J³, passing around the same. Below the opening in the die J² is secured a bent spring, M³, by each of its ends, forming a rest or bed for the cap as it is forced through the die by the downward movement of the punch in the same, N³ opening upon each side of spring M³ to allow the cap knocked from the spring M³ by a pin, O³, of the slide to escape from the machine.

In the operation of the machine herein just above described in detail, the carrying-plates are charged with the caps by placing them in their holes, when, turning the driving-shaft in the proper direction, such plates are alternately and intermittently moved forward or toward the slide, bringing their holes holding the caps in regular order and succession, but alternately, over or in line with the aperture in such slide, into which apertures the caps in such holes of the inner plates then drop or fall, and by it, as it is moved through the die with an intermittent forward and backward motion, carried thereto into proper position for the punch as it then descends to enter the cap, the punch as it descends punching the ribbon or strip of tin-foil fed or passing through the die with an intermittent rectilinear motion, and carrying the piece thus punched, or, in other words, the "blank," down into the cap, wherein, by the punch, it is then fixed against the inside end of the cap, producing the desired lining thereto to the fulminate, the cap resting upon the elastic spring-bed M³, which obviates all danger of its explosion by the punch. The punch then ascends, and, moving out of the die, the slide then moves, knocking or throwing off by its stud the cap just lined from the spring-bed, at the same time carrying forward another cap to the punch and die to be operated upon by the former and lined, and so on, as before, (the cap in this case being taken from the opposite carrier-plate to that from which in the former case it was taken.) The carrier-plates for the caps may be provided with more than one row of apertures to receive the caps; and, in other ways, may have their capacity for holding the caps increased to a greater or lesser extent. In conclusion, it may be here remarked that, with the carrier-plates for the caps to the slide, such plates can be charged with caps before being inserted in the machine, and as they pass out of operation can be recharged and replaced therein.

What I claim as new, and desire to secure by Letters Patent, is—

1. A slide for carrying the caps to the die and punch for being acted upon by the latter, when such slide is arranged to have an intermittent forward and backward motion as the punch moves up and down through the die, substantially as and for the purpose described.
2. In combination with the above, a plate or plates suitably constructed to receive the caps, and so arranged and operated with regard to the slide, for carrying them to the punch and die, as to feed and deliver the caps to the slide, substantially as described.

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Witnesses:

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