

923,142.

E. COLWELL, JR.
COIN CONTROLLED TYPE WRITER.
APPLICATION FILED FEB. 14, 1908.

Patented June 1, 1909.

3 SHEETS—SHEET 1.

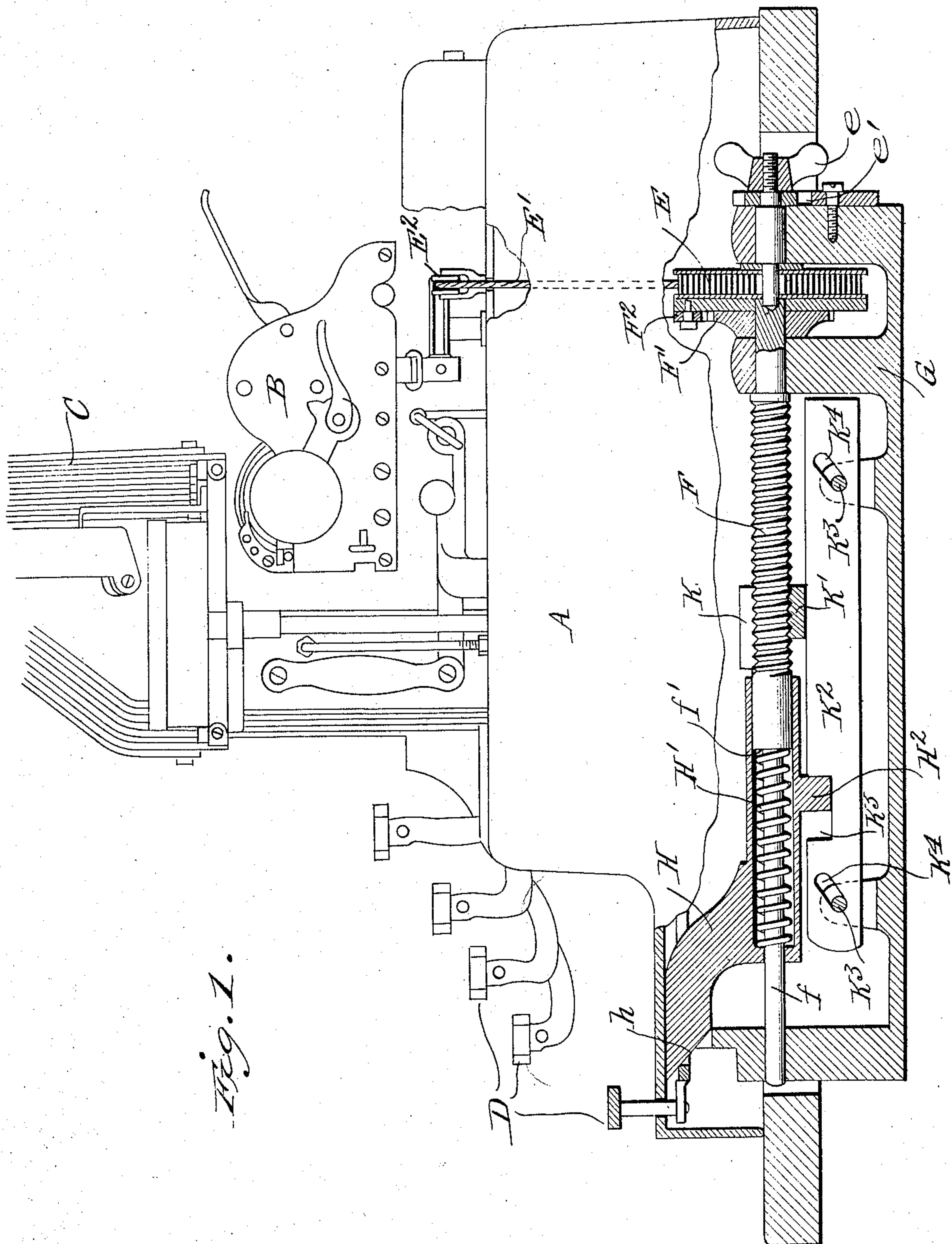


Fig. 1.

Witnesses

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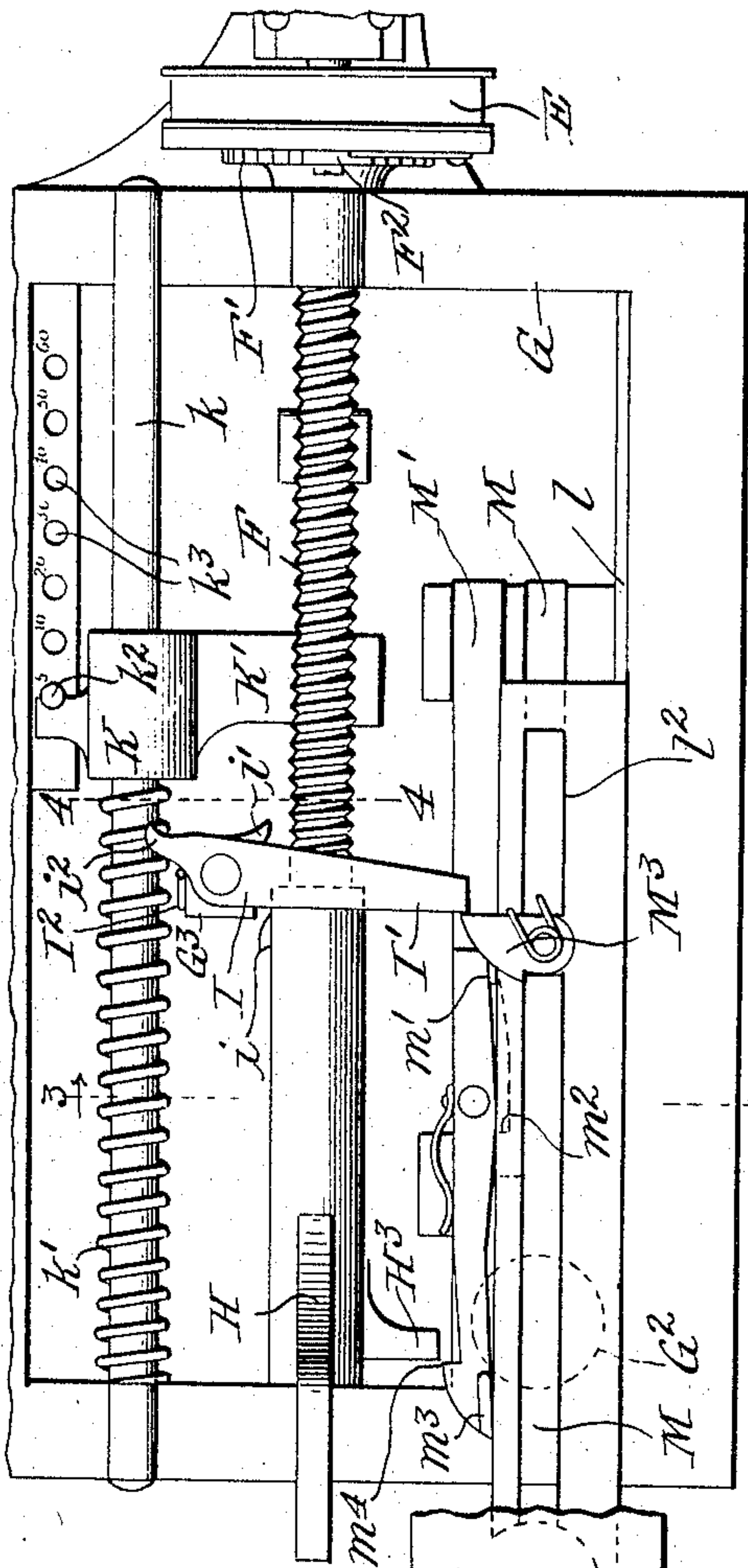


Fig. 2.

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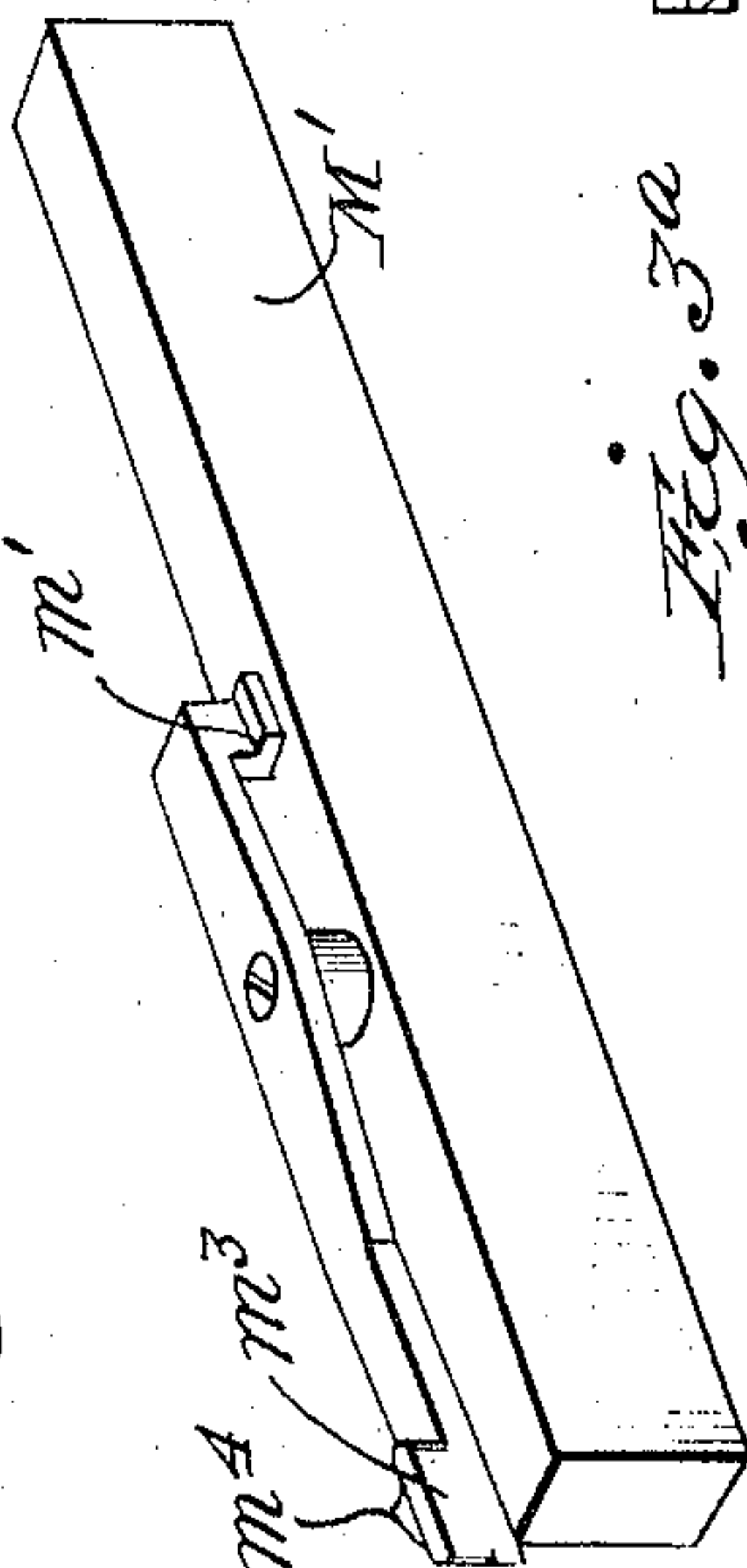


Fig. 4.

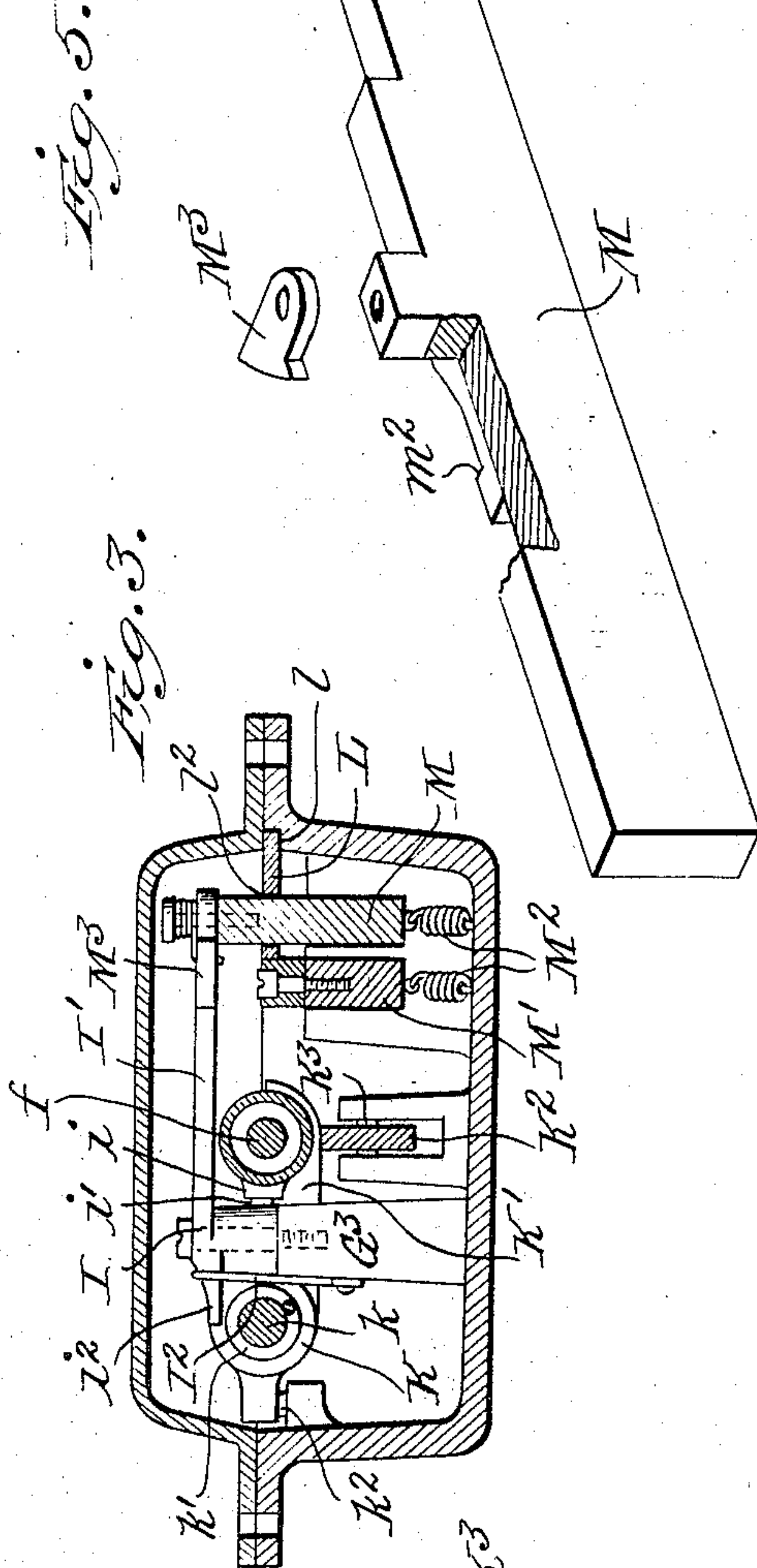


Fig. 3.

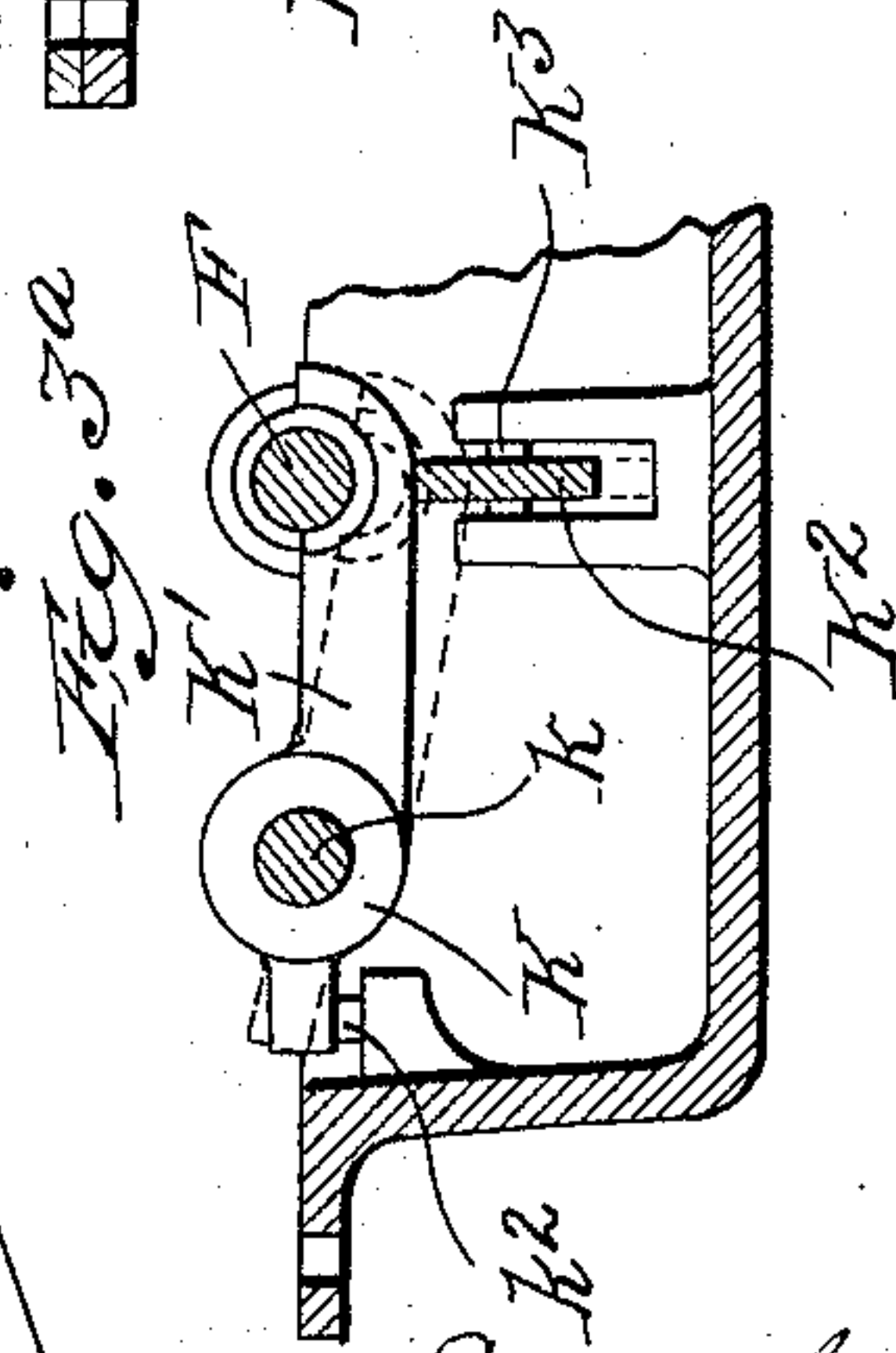


Fig. 3a.

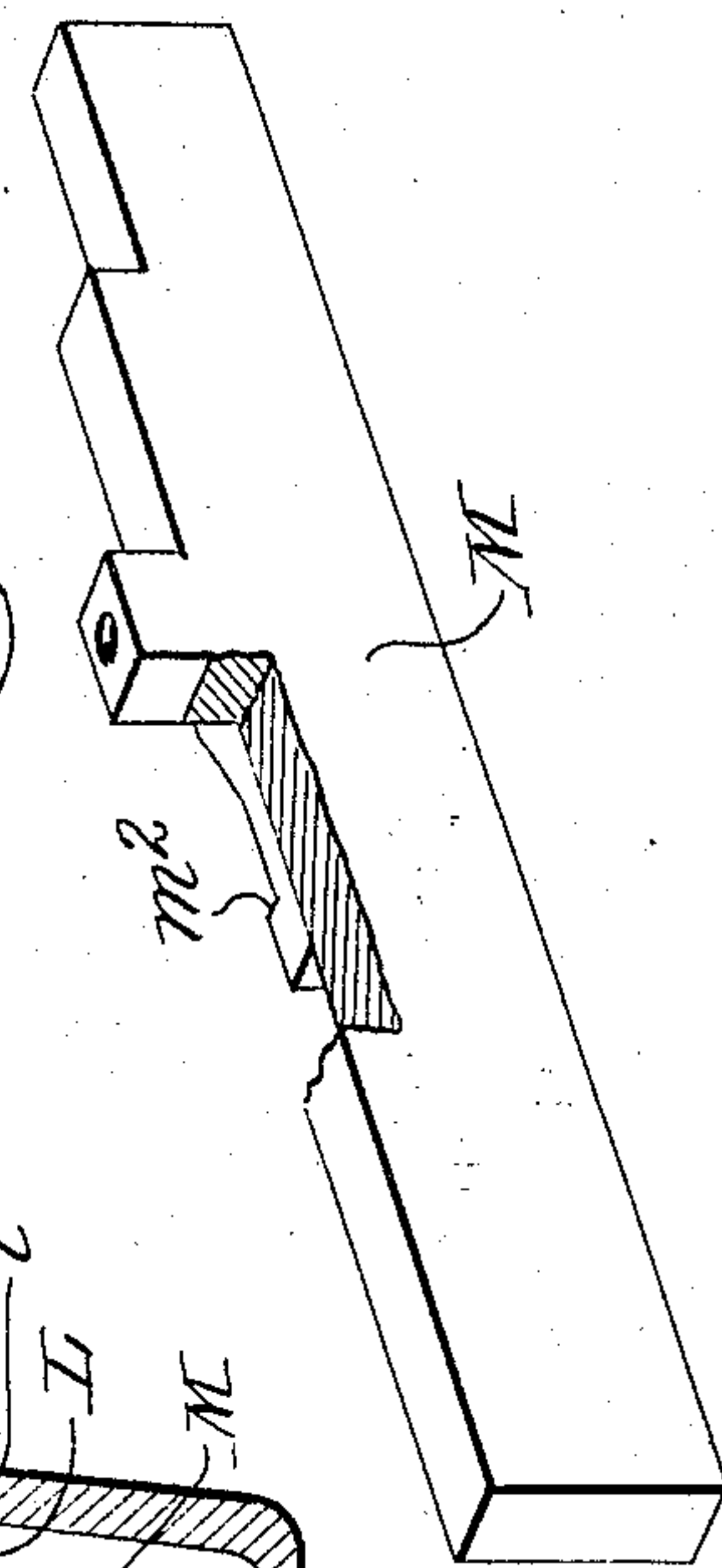


Fig. 5.

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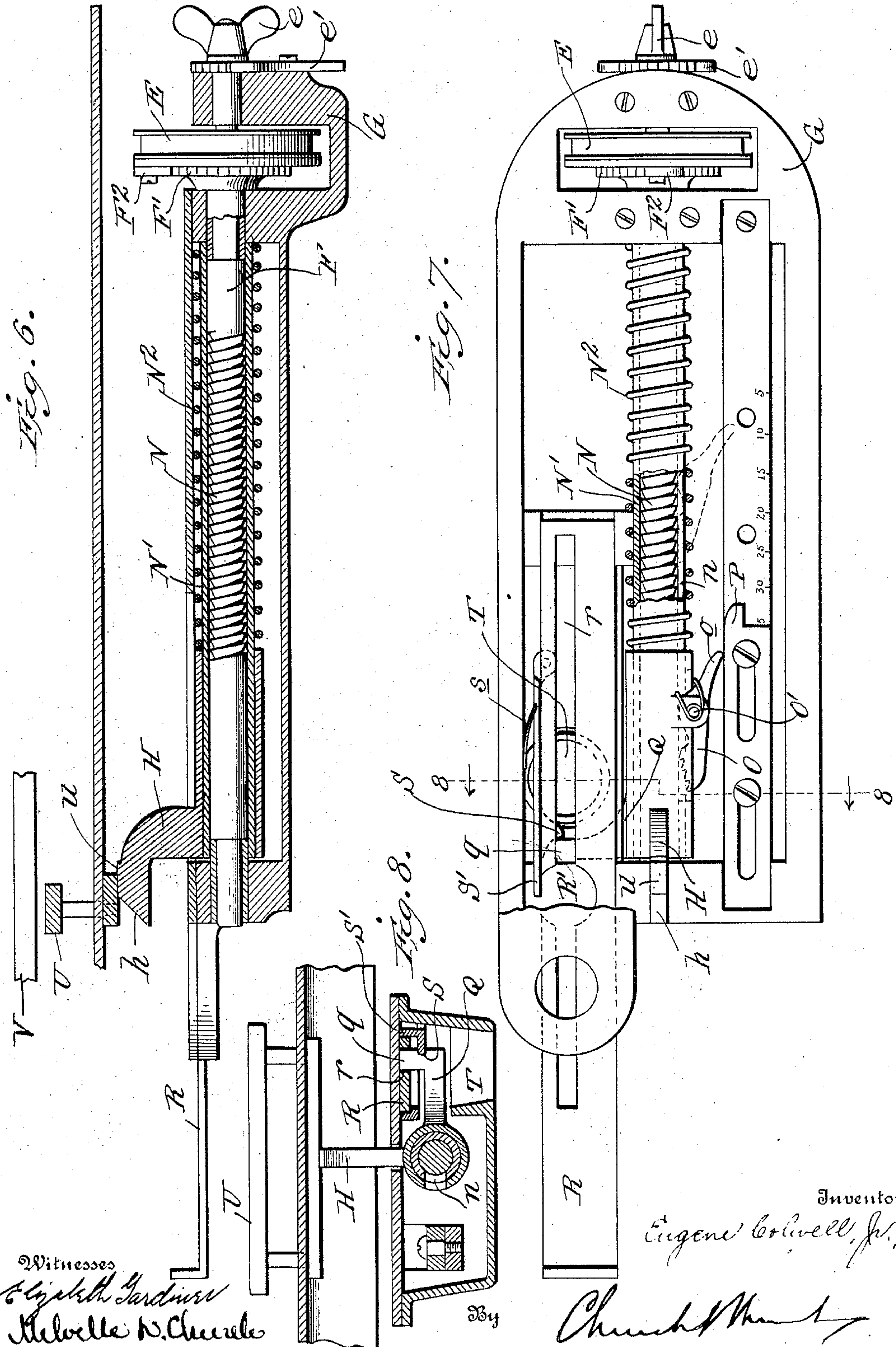
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UNITED STATES PATENT OFFICE.

EUGENE COLWELL, JR., OF GREENSBORO, NORTH CAROLINA.

COIN-CONTROLLED TYPE-WRITER.

No. 923,142.

Specification of Letters Patent.

Patented June 1, 1909.

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To all whom it may concern:

Be it known that I, EUGENE COLWELL, Jr., a citizen of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented certain new and useful Improvements in Coin-Controlled Type-Writers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

The object of the present invention is to provide a typewriter which may be used only upon the prepayment of a coin of predetermined value, to which ends the invention consists, broadly stated, in providing a typewriting mechanism, with a lock which will normally hold the printing mechanism of the typewriter against operation, but which lock may be released through the medium of a coin controlled or actuated device, the resetting of the lock being dependent upon the operation of the printing mechanism, whereby the machine will be again locked against operation after a letter or other document of predetermined length has been written.

The invention further consists in a novel combination and arrangement of the parts whereby the resetting mechanism for the locking device and feeding mechanism for the paper are connected through a common driver, and whereby it is possible to substitute the driver of the present invention for the driver of an ordinary typewriter in converting a machine from an ordinary machine into what may be termed a coin-controlled.

The invention further consists in certain novel details of construction which will be hereinafter described and pointed out particularly in the appended claims.

Referring to the accompanying drawings; Figure 1 is a side elevation partly broken away, and partly in section, of a coin-controlled typewriter embodying the present invention, the details of the typewriter machine being omitted and the salient features shown in outline. Fig. 2 is a top plan view partly broken away of the locking mechanism and means whereby it may be released through the medium of a suitable coin. Fig. 3 is a vertical section on the line 3—3, of Fig. 2, and Fig. 3^a is a sectional detail on the line 4—4 of Fig. 2. Figs. 4 and 5 are detail perspective views of slide bars adapted to be

operated by the coin. Fig. 6 is a sectional elevation through a modified arrangement of the locking mechanism. Fig. 7 is a top plan view partly broken away, and Fig. 8 is a vertical section on the line 8—8, Fig. 7.

Like characters of reference indicate the same parts in all the figures.

For illustrating the present invention, I have shown in outline elevation and partly in section a well known type of typewriter now on the market, and commercially known as the "Oliver" typewriter.

The letter A indicates the usual base casting of the machine, B the paper carriage, C the type bars, and D the key-board, which includes the usual space key at the front. Specific description of the details of these several parts is deemed unnecessary in view of their well known construction and operation.

In order to adapt the machine for use in the combination forming the present invention, the ordinary driver or spring barrel for advancing the paper carriage and paper, is moved down to a position centrally of and at the bottom of the base casting A. This spring barrel and spring are indicated in Fig. 1 at E, and the flexible connection E' passing up to the carriage is extended over an idler pulley or pulleys E² of any suitable description. The spring barrel and springs are of the usual construction, that is to say, a key e and pawl and ratchet wheel e' are provided for regulating the tension of the spring, but in accordance with the present invention the said spring and spring barrel are mounted in alinement with a worm or screw shaft F, and the connection between the spring barrel and worm or screw shaft is formed by a ratchet wheel F' on the shaft and a pawl F² on the drum, the arrangement being such that the usual reciprocatory or oscillatory movements of the drum or driver will operate to rotate the screw shaft in one direction only, and it is preferred that the rotation of the screw shaft shall occur as the paper and carriage are advanced step by step during the printing operation. The screw shaft and spring barrel or driver may be conveniently mounted in a casting or inclosing frame G, adapted to be located immediately beneath and partly within the usual base casting A of the typewriter.

The screw shaft 1, as before stated, is operated in accord with the movements of the paper carriage during the printing oper-

ation and is the means whereby the locking mechanism is restored to its normal or locking position. It is obvious that by making the engagement between the screw shaft and the controlling devices so that the shaft will have to be advanced a greater or less distance before the lock becomes effective, it is practicable to permit the machine to be operated for printing a long or short letter. The screw thus constitutes a convenient form of slow motion device, which in the particular embodiment illustrated, will make approximately only a single revolution for each reciprocation of the paper feeding mechanism, and as a consequence the number of turns of the thread will determine the number of lines which might be written before the lock becomes effective to arrest the printing mechanism.

While many arrangements for a lock and for a coin controlled mechanism to reciprocate the lock will at once suggest themselves to those skilled in the art, I prefer to employ a sliding lock shown at H in the accompanying drawings and having an incline h , which incline, when the lock is advanced to the position shown in Fig. 1, is adapted to engage and depress the space key or the levers on which the space key is mounted, this depression of the space key, as is well understood, operating to effectually lock or prevent the operation of the printing mechanism. As shown, the lock is mounted to slide on the forward end f of the screw shaft F, and it is adapted to be advanced into locking position by a spiral spring H', preferably confined within the body of the lock around the reduced end f of the shaft and in position to be compressed between the front wall of the lock and a shoulder f' formed by reducing the diameter of the shaft itself.

By reference to Figs. 2 and 3 it will be seen that the lock H is, in this form of the invention, provided with a shoulder or tooth i , with which a dog i' on a lever or dog carrier I is adapted to engage when the lock is retracted, and whereby the lock will be held in its retracted or unlocked position. The dog carrier I is provided with a nose or projection i^2 lying in the path of a sleeve or tripping device K, mounted to slide on a rod or guide k , the movement of the sleeve K toward the left in Fig. 2 operating to release the lock and permit it to advance to its locking position. The sleeve K is moved toward the right in Fig. 2 by a spring k' , and its movement is arrested by a pin k^2 , which may be placed in any one of the series of holes k^3 , dependent upon the amount of printed matter desired to be given for a coin of a certain value. An arm K', Figs. 2 and 3^a, forms a half-nut adapted to engage the underside of the screw shaft when elevated into operative position, and by reference to Fig. 1 it will be seen that this

arm or half-nut K' rests on the upper edge of a bar K². The bar is supported on pins K³ working in diagonal slots K⁴, and it is adapted to be moved in one direction or the other by a projection H² on the underside of the lock H. Thus when the lock is retracted, as shown in Fig. 1, the projection H² engaging the rear wall of the recess K⁵ in the bar moves the bar toward the rear, elevating the same and also elevating the half-nut into engagement with the screw. If the printing mechanism be now operated a sufficient number of times, the sleeve K will be advanced against the tension of the spring k' until it strikes the nose i^2 of the dog carrier I. Further operation of the machine releases the dog from engagement with the shoulder or tooth i on the lock, and the latter advances under the influence of its spring H' to lock the machine against further operation.

The lock is adapted to be retracted, or moved toward the right in Figs. 1 and 2, through the instrumentality of a coin which, in the preferred construction, is adapted to be placed in a slide or carrier L, Fig. 2, such slide or carrier being suitably mounted in slide ways l in the frame and provided with a coin recess or opening which is shown at l' in dotted lines, Fig. 2. The coin recess is open at one edge of the slide so that the edge of the coin will project beyond the edge of the slide. The slide is also slotted longitudinally, as shown at l^2 , for the reception of the upper portion of a slide bar M also mounted in the slide ways in the frame and adapted to have a movement parallel with the movement of the coin slide L. Mounted in guide ways to move in parallelism with the slide bar M is a second slide bar M', Fig. 4, and a pawl m' mounted on the slide bar M is adapted to engage a shoulder or projection m^2 on the bar M, but the engagement of the said pawl with the shoulder is dependent upon the previous setting or moving of the pawl by the projecting edge of the coin in the coin slide. To cause this pawl to be properly set or moved, its forward end is provided first with a flange m^3 normally lying in proximity to the edge of the coin slide and adapted to be moved laterally by the projecting coin, whereby its rear end will be thrown in position to engage the shoulder m^2 , and secondly the forward end of this pawl is provided with a hook or shoulder m^4 , which, when the pawl is moved or set by a coin advances into position to engage a projection or shoulder H³ on the lock H. With this arrangement of parts, a coin inserted through the dimensioned coin opening G in the walls of the coin slide guide and dropping into the coin recess l' , will first contact with the forward end of the slide bar M, moving the latter toward the rear, and if the coin be of the

proper size, its projecting edge will engage the flange m^3 of the pawl and move the latter into engagement with the lock and into position for its rear end m' to cooperate with the shoulder m^2 . Continued inward movement of the coin slide carries both the bars and the lock toward the rear, and the movement of the slide is made sufficient to insure the engagement of the dog with the tooth or shoulder on the lock. The slide may be left in its inner or rearmost position, together with the slide bars, although it is preferred to provide the slide bars with returning springs M^2 , as shown in Fig. 3.

To insure the return of the lock to its normal or locking position before a newly inserted coin becomes effective, the dog carrier or lever I is provided with a prolongation I' , which lies in front of a spring pressed pawl M^3 pivotally mounted on the slide bar M , thus the initial movement of the slide bar M moves the dog carrier sufficiently to release the lock in case the lock was not released during the previous operation of the machine. The return movement of the slide bar M is not interfered with by the pawl m^3 , inasmuch as the latter will yield and pass the prolongation I of the dog carrier as the bar returns to normal position.

The dog carrier is preferably held in operative position by a spring I^2 , best shown in Fig. 3, and as the most convenient arrangement the said dog carrier is pivotally mounted on the upper end of a post G^3 , while the dog i projects from one side of the hub of the carrier some distance below the ends or prolongations i^2 , I' , as will be readily understood by reference to said last mentioned figure of the drawing. When the slide reaches its inner position the coin drops through an opening G^2 shown in dotted lines.

In the modification illustrated in Figs. 6, 7 and 8 the threads on the screw shaft are in the form of ratchet threads N , whereby the screw is adapted to operate as a ratchet in one direction and as a screw shaft in the opposite direction. The screw shaft is surrounded by a sleeve N' , and the lock H slides on the sleeve and is adapted to be advanced into locking position by a spiral spring N^2 , surrounding the sleeve in rear of the lock. The sleeve is slotted longitudinally at one side, as shown at n in Fig. 6, for the passage of the end of a spring pressed dog O pivotally mounted on the body of the lock at O' . The nose of the dog is provided with teeth for cooperation with the threads of the screw shaft, but such teeth are adapted to slip over the thread as the lock is retracted or moved out of its locking position but engage such thread and hold the lock retracted until permitted to advance by the rotation of the screw. The rear end o of the dog O projects into position to strike an adjustable trip P carried by the frame or base

casting and to be disengaged thereby from cooperation with the screw. It is obvious that by adjusting the trip P to the proper point, the lock may be released from the control of the screw at any desired point, thereby providing for a long or short operation of the machine. In this modification it is preferred that the lock should be given a full movement in a direction to release the printing mechanism, each time a coin of proper dimension is inserted, and that the length of the operation of the machine shall be determined by adjusting the trip P so that the lock will be released when it has advanced a greater or less distance.

To retract the lock it is provided with a projecting arm Q , the end q of which passes up into a slot r in the coin slide R and in position to be engaged by a coin in the coin pocket or recess R' of the slide. In order to prevent the operation of retracting the lock by a coin of different denomination from that intended to be received by the machine, the lock is normally held in its advanced or locking position by a pivoted pawl S , which, under the influence of its spring s , passes in behind the projection q of the lock. The pawl, however, is provided with a prolongation or flange S' normally lying flat against the edge of the coin slide K and adapted to be elevated by the projecting edge of a coin in the coin pocket before the coin itself comes in contact with the arm q of the lock. With this arrangement a coin placed in the coin pocket R' will first elevate the safety pawl S or move the same laterally away from the projection q , and a continued movement of the slide will force the lock back the desired distance where it will be caught and held by the dog O engaging the ratchet spiral or screw thread. The coin itself will drop through the discharge opening at F in Figs. 7 and 8 when the coin slide itself may be moved to its innermost position to be out of the way during the operation of the machine.

As before indicated, the form of the parts of the lock which directly engage the printing mechanism is subject to many changes inasmuch as it is not essential that the space key itself be the portion of the printing mechanism to be held. Any of the parts which have to move in order to operate the printing mechanism may be locked and in the modified arrangement shown in Figs. 6, 7, and 8 I have shown the lock H as being adapted to elevate a frame U , and when said frame U is elevated a flat surface u of the lock cooperates with the lower bar of the frame so as to effectually hold the same against downward pressure. The frame U may, when elevated, extend up into such relation to any of the moving parts of the printing mechanism as will effectually prevent their movement in printing. For instance, as shown in Fig. 6, the frame U extends up beneath the

key levers indicated at V, and when in the position illustrated in this figure of the drawing, said key levers cannot be depressed sufficiently to cause the printing of the characters on the paper.

Having thus described the invention, what I claim as new is:

1. The combination with a typewriter printing mechanism embodying a paper feeding mechanism and key-board for manual manipulation, of a coin retracted lock for said printing mechanism, and mechanism advanced by the printing mechanism a predetermined distance at each operation for restoring the lock to locking position when a predetermined number of characters have been printed.

2. The combination with a typewriter printing mechanism embodying a paper feeding mechanism and key-board for manual manipulation, of a lock for the printing mechanism, a coin controlled mechanism for moving the lock in one direction, and mechanism advanced by the printing mechanism a predetermined distance at each operation for moving the lock in the opposite direction.

3. The combination with a typewriter printing mechanism embodying paper feeding mechanism, and a key-board for manual manipulation, of a lock for the printing mechanism, a coin controlled retracting mechanism for said lock, and connections between the lock and printing mechanism whereby the lock is advanced a predetermined distance by each operation of the printing mechanism and re-set to locking position when a letter of predetermined length has been written.

4. The combination with a typewriter printing mechanism embodying paper feeding mechanism and a key-board for manual manipulation, of a spring operated lock for the printing mechanism, a coin controlled retracting mechanism for the lock, means for holding the lock retracted, and connections between the holding mechanism and the printing mechanism for advancing the holding mechanism a predetermined distance at each operation of the printing mechanism and for releasing the lock when a letter of predetermined length has been written.

5. The combination with a typewriter printing mechanism embodying a paper feeding mechanism and key-board for manual manipulation, of a coin retracted lock for said printing mechanism, a spring for re-setting the lock into locking position, a releasing mechanism for the lock and a speed reducing gear between the releasing mechanism and printing mechanism whereby the lock is released after a letter of predetermined length has been written.

6. The combination with a typewriter printing mechanism embodying a paper feeding mechanism, spring for advancing the

paper feeding mechanism and key-board for manual manipulation controlling the amount of the paper feeding mechanism, of a lock for the printing mechanism, a coin controlled mechanism for moving the lock in one direction to release the printing mechanism, and a speed reducing gear intermediate the paper feeding mechanism and lock for controlling the movement of the lock in a direction to lock said printing mechanism against further operation.

7. The combination with a typewriter printing mechanism embodying a paper feeding mechanism and a key-board for manual manipulation, of a lock for the printing mechanism, a coin controlled mechanism for moving the lock in a direction to release the printing mechanism, and a screw connected with the printing mechanism, controlling the movement of the lock in the opposite direction.

8. The combination with a typewriter printing mechanism embodying a paper feeding mechanism and key-board for manual manipulation, of a spring-pressed lock for the printing mechanism, a screw connected with the printing mechanism, detachable connections intermediate the screw and lock whereby the lock will be released after a predetermined movement of the printing mechanism and coin-controlled means for retracting the lock against the tension of its spring.

9. In an apparatus such as described, the combination with the screw, the spring for rotating the screw in accord with the movement of the printing mechanism, and a spring operated lock for said printing mechanism, of a coin controlled retracting mechanism for the lock and advancing mechanism for the lock controlled by the screw.

10. In an apparatus such as described, the combination with the screw, means for rotating the screw in accord with the movement of the printing mechanism, and a spring operated lock for the printing mechanism, of a coin controlled retracting mechanism for the lock, and a trip controlled by the screw for retaining the lock retracted, whereby the lock will be released and moved to locking position when the screw has moved a predetermined distance.

11. In an apparatus such as described, the combination with the screw, reciprocatory driver therefor, and clutch connection between the screw and driver whereby the screw is rotated in one direction only, of a lock, a coin controlled retracting mechanism for the lock, and connections between the screw and lock for controlling the advance of the latter into locking position.

12. In an apparatus such as described, the combination with the screw, reciprocatory driver therefor, and clutch connection between the screw and driver whereby the screw is rotated in one direction only, of a

lock, a coin controlled retracting mechanism for the lock, a spring for advancing the lock, and a retaining dog for the lock controlled by the screw.

5 13. In an apparatus such as described, the combination with the screw, reciprocatory driver therefor, and clutch connection between the screw and driver whereby the screw is rotated in one direction only, of a
10 lock, a coin controlled retracting mechanism for the lock, a spring for advancing the lock, a retaining dog for the lock, controlling means for the dog adapted to engage the screw, and means for varying the engage-
15 ment of the dog controlling means with the screw.

14. In an apparatus, such as described, the combination with the screw, driver therefor and ratchet connection between the driver
20 and screw, whereby the latter is rotated in one direction only, of a sliding lock mounted on the screw, a spring for advancing the lock, a dog controlled by the screw for holding the lock retracted, a slide having a coin opening
25 therein and connections operated by the coin for retracting the lock.

15. In an apparatus such as described, the

combination with the screw driver therefor and ratchet connection between the driver and screw, whereby the latter is rotated in 30 one direction only, of a sliding lock mounted on the screw, a spring for advancing the lock, a dog controlled by the screw for holding the lock retracted, a slide having a coin opening therein, and a pawl operated by the coin and 35 controlling the operative engagement between the slide and lock.

16. In an apparatus such as described, the combination with the screw, driver and clutch connection between the screw and 40 driver of the lock, mounted to move in parallelism with the screw, a slide having a coin opening therein, a pawl actuated by the coin carried by the slide, connections whereby the movement of the slide and pawl is im- 45 parted to the lock to retract the same, and a retaining dog for the lock controlled by the screw to release the lock after a predetermined movement of the screw.

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