

No. 675,395.

Patented June 4, 1901;

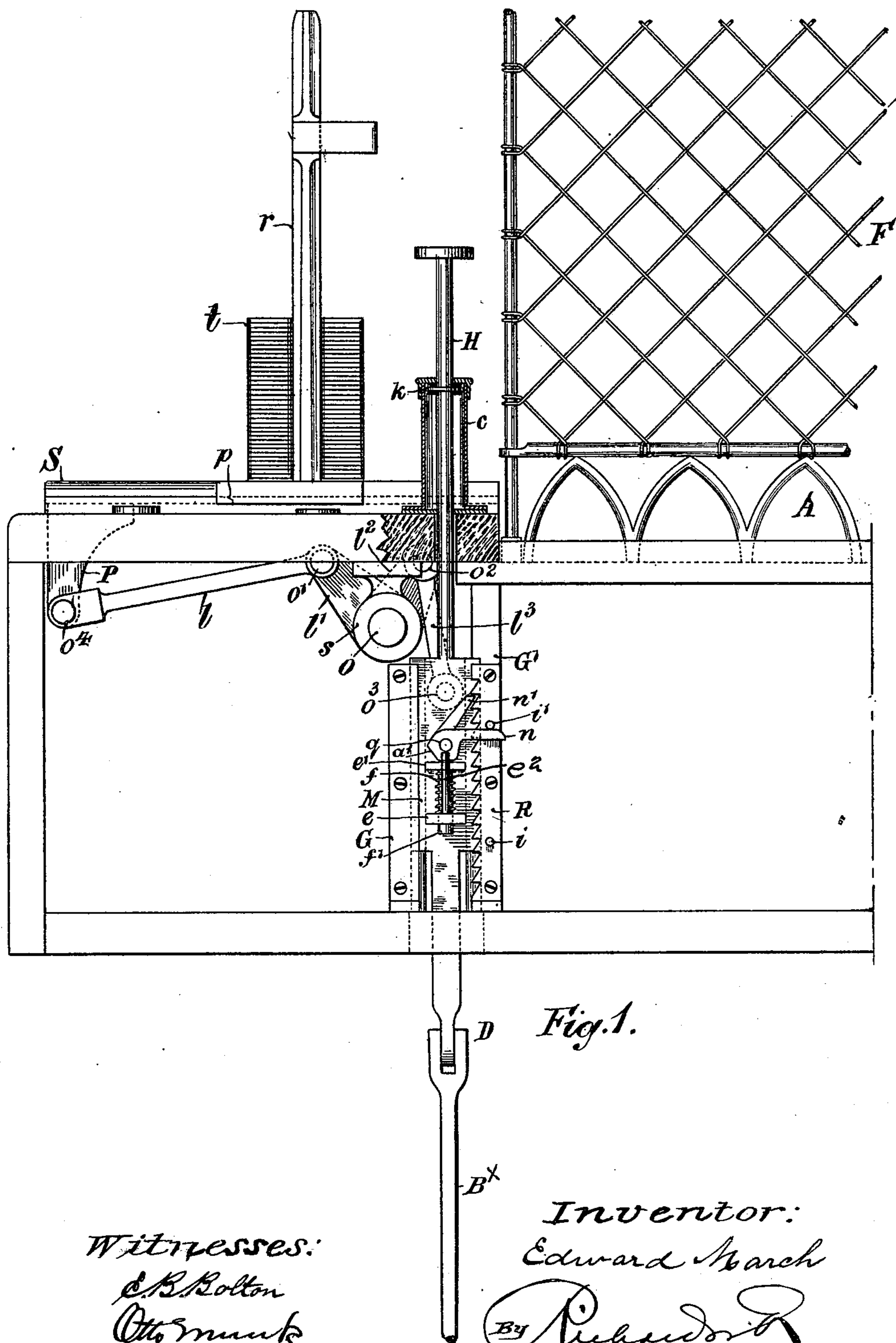
E. MARCH.

APPARATUS FOR ISSUING TICKETS OR CHECKS AT PUBLIC PAY WINDOWS.

(Application filed July 18, 1900.)

(No Model.)

4 Sheets—Sheet 1



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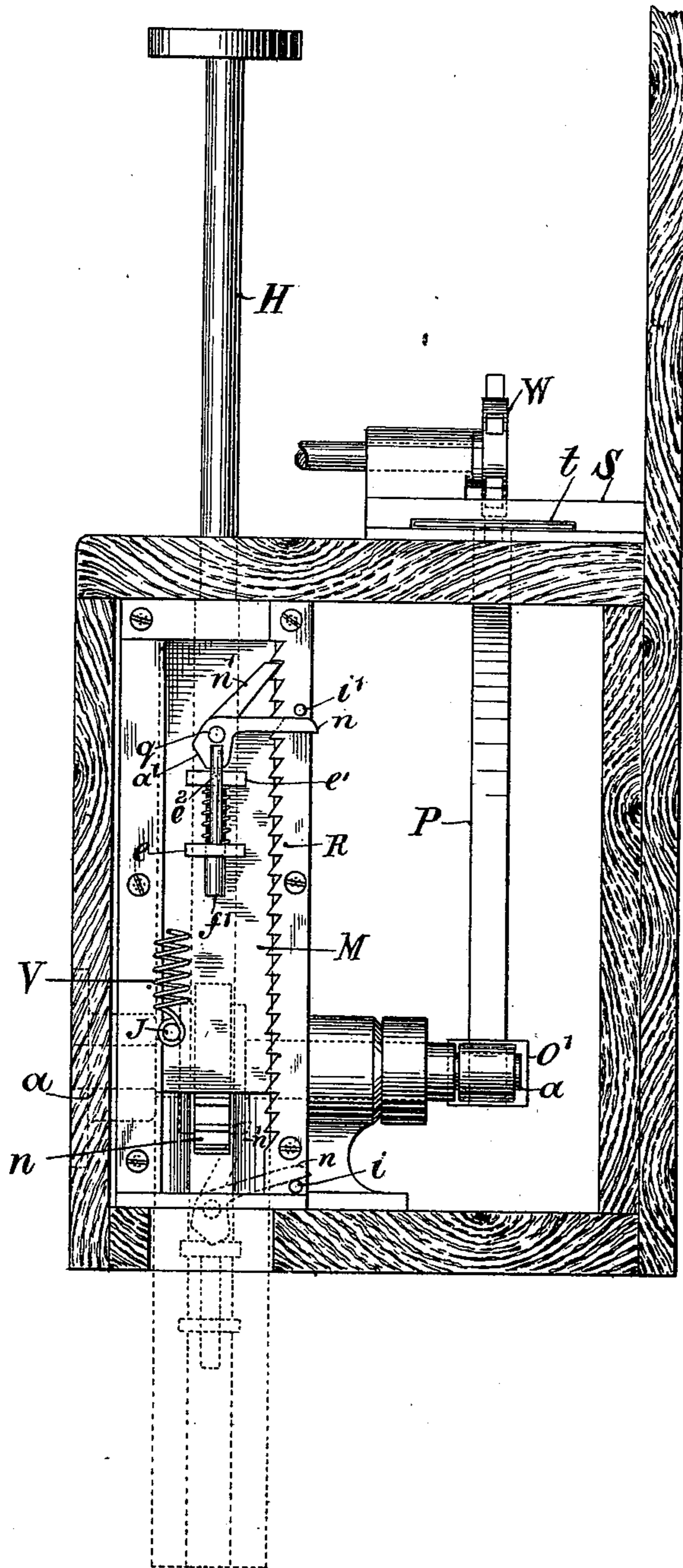


Fig. 4.

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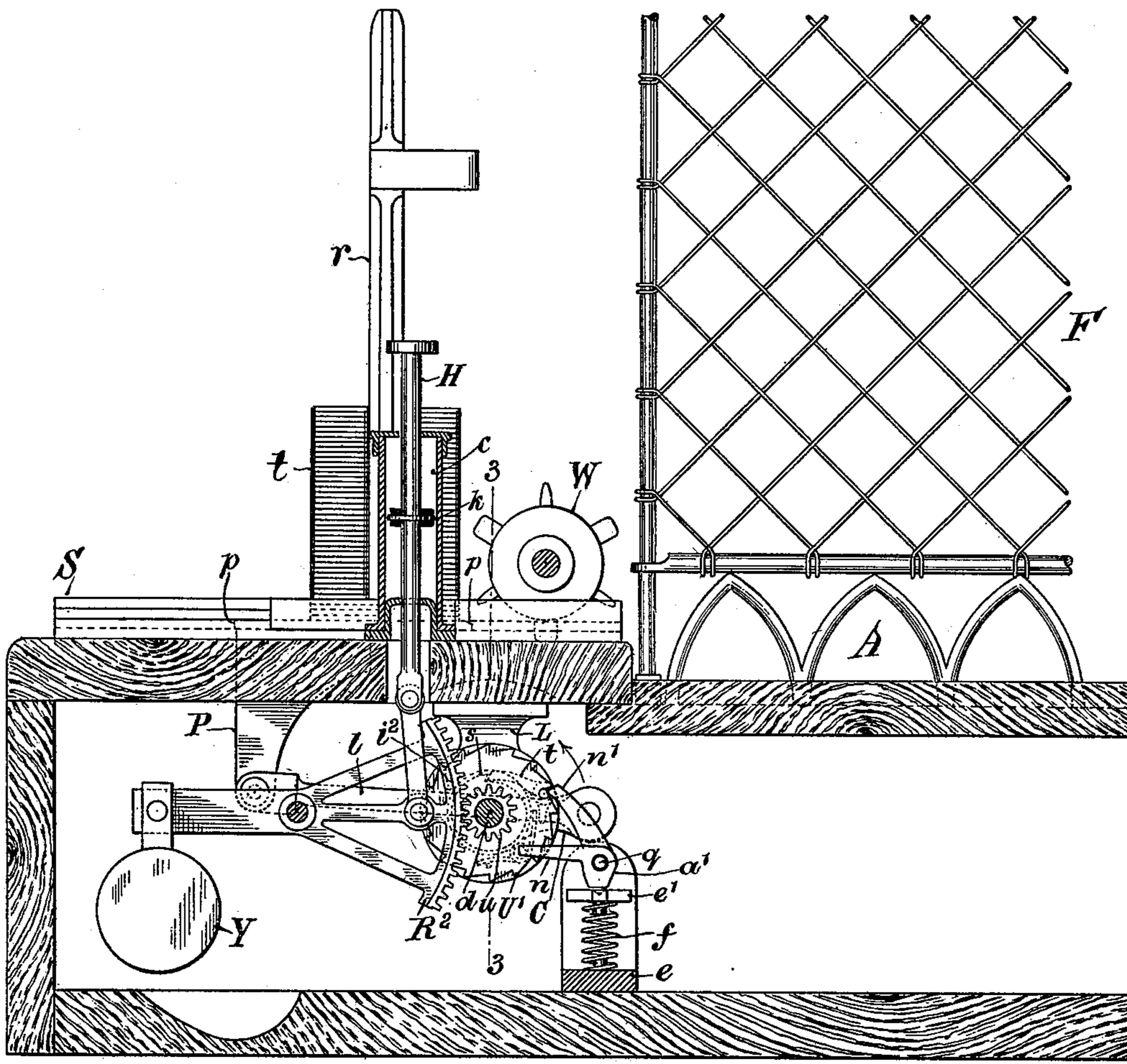


Fig. 5.

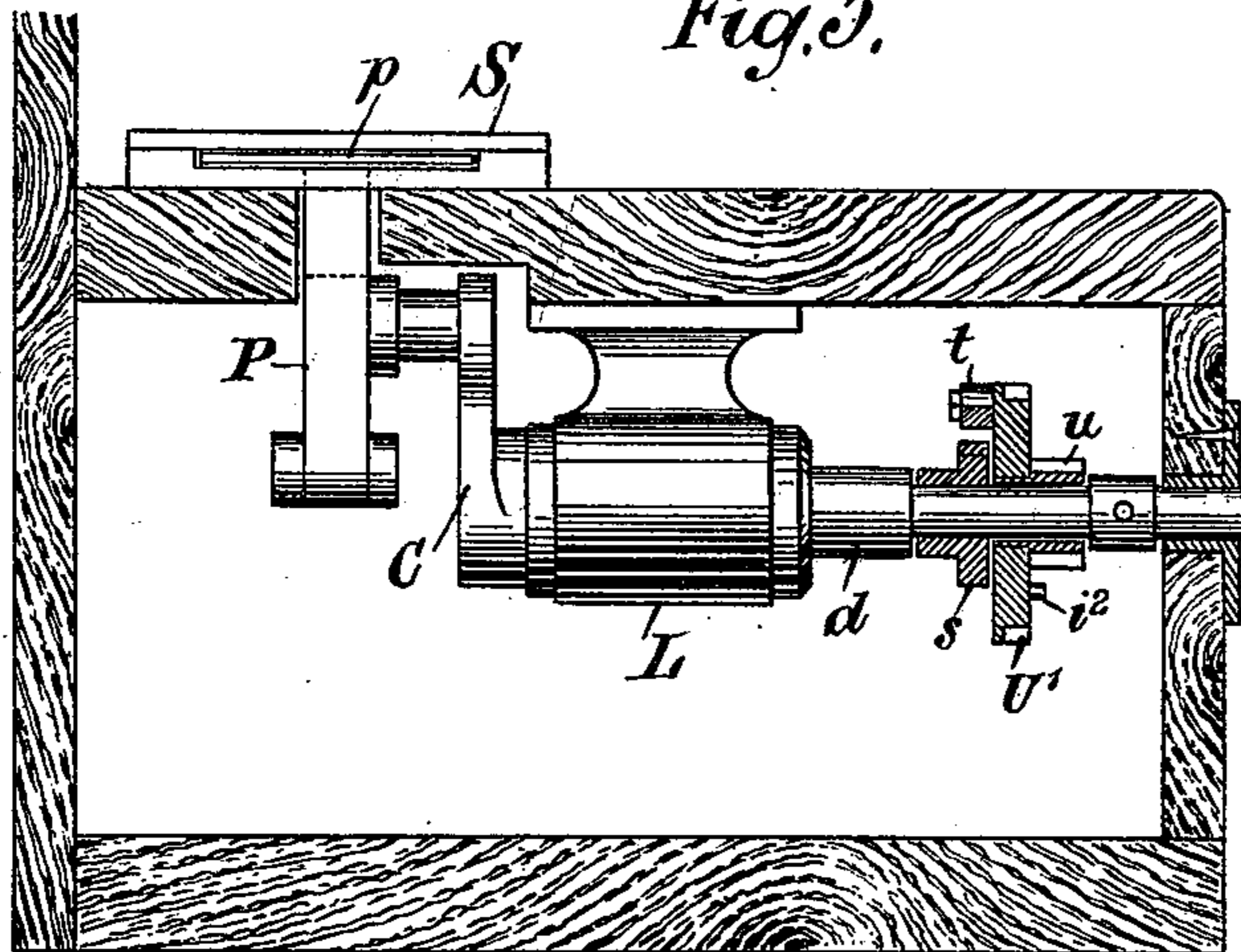


Fig. 6.

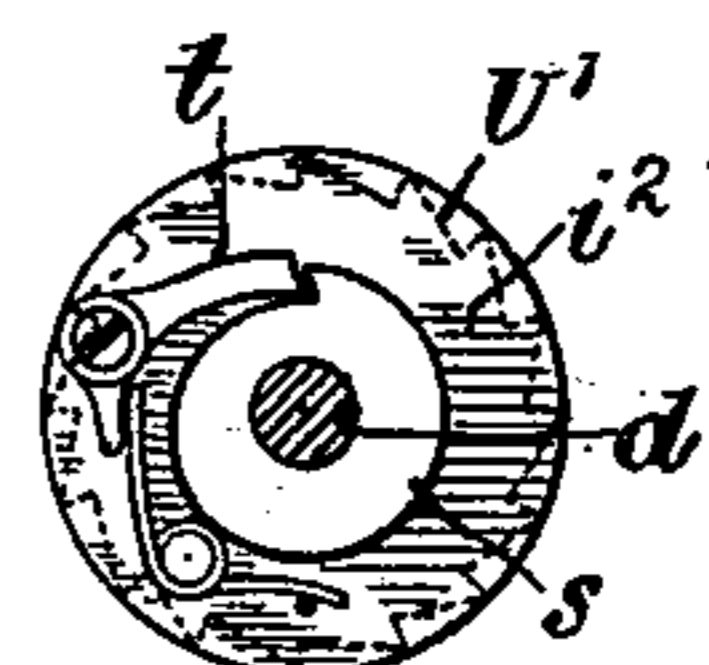


Fig. 7.

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UNITED STATES PATENT OFFICE.

EDWARD MARCH, OF LONDON, ENGLAND.

APPARATUS FOR ISSUING TICKETS OR CHECKS AT PUBLIC PAY-WINDOWS.

SPECIFICATION forming part of Letters Patent No. 675,395, dated June 4, 1901.

Application filed July 18, 1900. Serial No. 24,079. (No model.)

To all whom it may concern:

Be it known that I, EDWARD MARCH, residing at 39 Burton Crescent, London, England, have invented certain new and useful Improvements in Apparatus for Issuing Tickets or Checks at Public Pay-Windows; 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.

My invention relates to certain improvements in apparatus for registering and issuing tickets or checks at public pay-windows in which the tickets or checks are fed forward from a pile by means of the reciprocating action of a suitably-actuated plate or platen running, preferably, on a slotted frame or bed.

One of the main objects of my invention is to enable the tickets or checks to be delivered by a simple downward impulse or movement imparted to a vertically-moving rod or push, one such impulse being imparted to it for the delivery of each of the checks instead of employing the ordinary rotary movement of a handle affixed to a horizontal axle, as is employed in existing forms of apparatus.

A further object of the present improvements is to provide a mechanism which shall facilitate the operation of delivering the checks and satisfactorily obviate the possibility of the checks becoming jammed, which under certain circumstances in the existing forms of apparatus occasionally occurs. Such jamming is caused by and can and does occur only when a backward movement of the sliding plate or platen which serves to feed forward the checks or tickets occurs before it has completed its normal path and delivered a ticket. When such a backward movement takes place, the lowest ticket in the pile remains half delivered, and there occurs in consequence a tendency for the next uppermost ticket not to register with the slot from which it issues, but to have a tendency to tip downward toward the movable plate or platen the then bottom ticket into an inclined position over the edge of the then partly-issued one, with the result that the edge of the then next lowest ticket will bar the way of the platen or slide in moving forward, which will on its next forward travel immediately strike the rear end of the then inclined ticket, forcing

or jamming it up against the side wall of the frame wherein the pile of tickets are stacked, thereby putting the machine out of action. To prevent the possibility of this occurring, it is necessary to provide special means whereby the said movable platen or plate is not drawn back until it has traveled the whole of its course and fully delivered the ticket. The means whereby this is accomplished forms the subject of the present invention. The said means may with advantage be incorporated with the platen or slide or independently therewith and connected thereto by links or levers.

In order that my invention may be the more fully understood, I refer to the accompanying sheets of drawings, in which—

Figure 1 represents a back view and partial section of a ticket-issuing machine to which one form of my invention is applied. Fig. 2 shows a similar machine to which is applied a variation of my invention. Fig. 3 is a plan section through line 1 1 of Fig. 2. Fig. 4 is a sectional side elevation through the line 2 2 in Fig. 2. Fig. 5 is a sectional rear elevation of a machine to which another form of my invention is applied. Fig. 6 is a sectional side elevation through the line 3 3 in Fig. 5. Fig. 7 is a detail view of a loose disk with operating-catch and fixed snail shown in section in Fig. 6.

The machine shown in Fig. 1 possesses certain features of general arrangement in common with a machine for issuing and registering checks already known and in use. I have also shown the other modifications of my invention specially depicted in Figs. 2 and 5 as applied to a practically identical machine. I will therefore first describe the general arrangement of this machine and will then point out the special devices constituting the subject of my present invention, which when applied to the type of machine in question enable the improvements above referred to to be obtained.

Between two vertical uprights *r*, secured at the sides of the slotted frame or bed *S*, (of which only one is shown in Fig. 1,) are arranged a pile of the tickets *t* to be delivered in front of or outside the lower arched apertures *A* of the trellised-wire pay-window *F*. The tickets *t* are channeled at the sides to enable

them to be held by the uprights r . The movable plate or platen p reciprocates in the slot of the frame S and coming in contact with the lowest of the tickets t delivers it in front of
 5 or outside the apertures A , causing at the same time a partial revolution of the cam-wheel W , which is connected with and operates a suitable dial or other recorder in the ordinary manner. The platen p is connected,
 10 by means of the rigid projection P , with the system of levers $l' l^2 l^3$. These levers are pivoted at o in the standard s , secured to the bottom of the slide-bed S , and at $o' o^2 o^3$, Fig. 1. Depressing the rod H by hand, as is ob-
 15 vious from inspection of the system of levers $l' l^3$, causes a forward movement of the projection P , and in consequence of the platen p . The return of the system to its original position is effected by the upward pressure of a
 20 spring similar to the spring V (shown in Fig. 2) and similarly attached, but not shown in Fig. 1. A rod B^x , attached to the lower extremity of the rod H by means of the shackle D , enables the operation of the rod H by hand
 25 to be dispensed with and the necessary movements of the machine to be effected by the foot of the attendant, thus leaving both hands of the attendant free. The cylinder c and the rubber-covered piston k serve to deaden noise
 30 and vibration. To prevent the rod H being raised before it has been sufficiently depressed to cause the platen p to fully deliver one of the tickets, whereby the platen would be retired toward its original position and the
 35 danger of jamming, as described above, would ensue, I have devised the following novel combination of parts: To the bottom of the rod H is secured the slide M , which moves vertically between the guides $G G'$. Forming
 40 part of the guide G' is the rack R . A catch with two arms $n n'$ is pivoted at q in the slide M . It is held normally in the position shown in Fig. 1 by the spring f , which, abutting on the fixed plate e and inclosing the rod f' ,
 45 presses up against its flattened under portion the movable plate e' . The guide-rod e^2 serves to hold the plate e' in position. Owing to the shape of the teeth in the rack R the arm n' can slide over them during the down-
 50 ward movement of the rod H and the corresponding forward movement of the platen p , but engaging with the under surface of each of the said teeth effectively prevents the rod H rising when released, and in consequence
 55 the platen p from being retired toward its original position. When, however, the downward movement of H , and in consequence, of M has been carried so far that the arm n comes in contact with the pin i , which it does
 60 when the platen p has delivered the check fully, the arm n is raised, throwing the arm n' back clear of the teeth, in which position it is held by the plate e' pressing on a second flattened surface a' of the catch. The slide
 65 M and the rod H are then and thus only enabled to rise, which they do until the arm n comes into contact with the upper pin i' , which

depresses it into its original position, causing the arm n' to reengage with the teeth of the rack R and arresting further upward move- 70
 ment. The platen p consequently can only be retired when the full stroke of H has been completed—that is to say, when a check has been fully and completely issued.

Figs. 2, 3, and 4 display another form of 75
 my apparatus, in which the same principle is carried out in a practical form but slightly different from the foregoing. The general arrangements of the machine—that is to say, the known portions—are the same as in Fig. 80
 1 and are described by the same letters of reference. In this variation of my invention the rod H terminates in two racks, one of which, to the right, R , is identical in structure and function with R in Fig. 1 and is merely 85
 shown in a plane at right angles thereto. The other rack, R' , engages with a toothed wheel n , mounted, by means of ball or roller clutch of the ordinary type K , on the shaft or axle a . The lever l is pivoted in P at O and 90
 at O' to a crank (shown in dotted lines in Fig. 2) keyed to the shaft a and visible in Fig. 4 in end view, so that when the latter revolves the lever l acts as a connecting-rod and draws P , and with it the platen p , toward the right 95
 of the figure. The pawl or detent B , depressed by the spring b , serves to insure the ratchet-wheel U (which is fast to the shaft a) revolving only in the direction of the hands of the clock. The action of the machine is as 100
 follows: When the rod H is depressed, the wheel n is revolved clockwise, the clutch K locking it to the shaft a . This latter and the ratchet-wheel U revolve with it. The result is to draw P , and in consequence p , to the 105
 right and to effect the delivery of a ticket. When H is liberated, the clutch K releases, and though B holds the ratchet-wheel U fast, and consequently P and p , the rod H would be enabled to rise in obedience to the action 110
 of the spring V , attached to the projecting rod J , but for the interactions of the rack R and the catch n' . This prevents the return of the rod H to its normal position before its full stroke has been completed. When this 115
 has occurred, however, then, as in the case of the form of my apparatus shown in Fig. 1 and described in reference thereto, the catch n , Fig. 4, engages with the pin i . This throws the catch n' out of engagement with the rack 120
 R , and all the parts of the apparatus are free to return to their original positions.

In Figs. 5 and 6 is displayed a third form of my apparatus, in which a weight Y , suitably suspended, is employed to return the 125
 parts to their original positions. The vertical rack R takes the form of a quadrant R^2 , and the rack R' takes the form of a ratchet-wheel U' , the two pins i and i' for effecting the release and engagement of the lever-arms 130
 n and n' being replaced by the single pin i^2 . The shaft d turns in a hanging bearing L and actuates the platen p by means of the crank C and the lever or arm P , as in the forms of

the apparatus previously described. The ratchet-wheel U' , which is rigidly connected to the cog-wheel u , turns loose on the axle d . The snail s is rigidly affixed to the latter. Its pawl t is pivoted near the periphery of the ratchet-wheel U' . The action of the apparatus is as follows: When the handle H is depressed, the quadrant R^2 , which is connected with it, as shown, by means of a suitable pivoted link, is depressed likewise, causing the ratchet-wheel U' to revolve in a direction reverse to that of the hands of a watch. The pawl t , engaging with the snail s , as shown in Fig. 7, drives it, and in consequence the shaft d . This imparts a forward movement to the crank C , and in consequence to the platen p . When these combined movements have continued until the platen p has fully delivered a ticket and been returned to its original position—that is to say, when the wheel U' has made a complete revolution—the pin i^2 has by that time come in contact with the under surface of the lever arm or detent n , raising it and throwing the catch n' out of contact with the ratchet-wheel U' . The ratchet-wheel U' is then free to revolve in the reverse direction, which it does under the influence of the weight Y , which raises the quadrant R^2 , and with it the handle H , to its original position, whereupon the pin i^2 comes again in contact with the lever-arm n , depressing it and causing the catch n' to reengage with the ratchet-wheel U' . An alternative method of constructing this form of my apparatus consists in keying the ratchet-wheel U' and the pinions n to the shaft and omitting the snail and pawl. In this case the wheel U' makes only half a revolution in delivering a check and is therefore furnished with a second pin similar to and arranged one hundred and eighty degrees from i^2 . This is to act upon the lever-arm n and to free the apparatus and enable the parts to resume their original and normal position when the platen has delivered a ticket and before it commences to return to its first position. Another alternative method of construction

is that the platen or slide may be prolonged to be operated directly by the hand. In this construction it will be therefore clearly seen that the fixed rack with its pins may be placed on the guides in which the platen or plate reciprocates for delivering or issuing the tickets and the double arm or bell-crank lever pivoted thereon, together with the spring-pressed plate, for holding the said lever in contact with the fixed rack until the platen has made a complete stroke or issued a ticket, locking it in any intermediate position, but holding it out of contact on a complete stroke or complete issue of a ticket and enabling the platen to be returned to its original position by the influence of a spring or weight ready for the delivery of another ticket or check.

I claim—

1. In combination with the ticket-slide, an operating-handle, driving connections between said handle and slide, and full-stroke mechanism comprising a toothed part, a pawl to engage the same having flattened surfaces in connection therewith, one of said parts having movement with the driving connections, an arm connected with the pawl, a pin to strike said arm to control the pawl and means for holding the pawl either in or out of engagement consisting of the spring-pressed plate engaging the said flattened surfaces in connection with the pawl, substantially as described.

2. In combination, the ticket-slide, a slide M , a fixed rack adjacent thereto, connections between said slide M and the ticket-slide, a handle for operating the slide M and a full-stroke pawl carried by the slide M and engaging the rack with means for controlling the position of the pawl, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

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Witnesses:

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WALTER J. SKERTEN.