

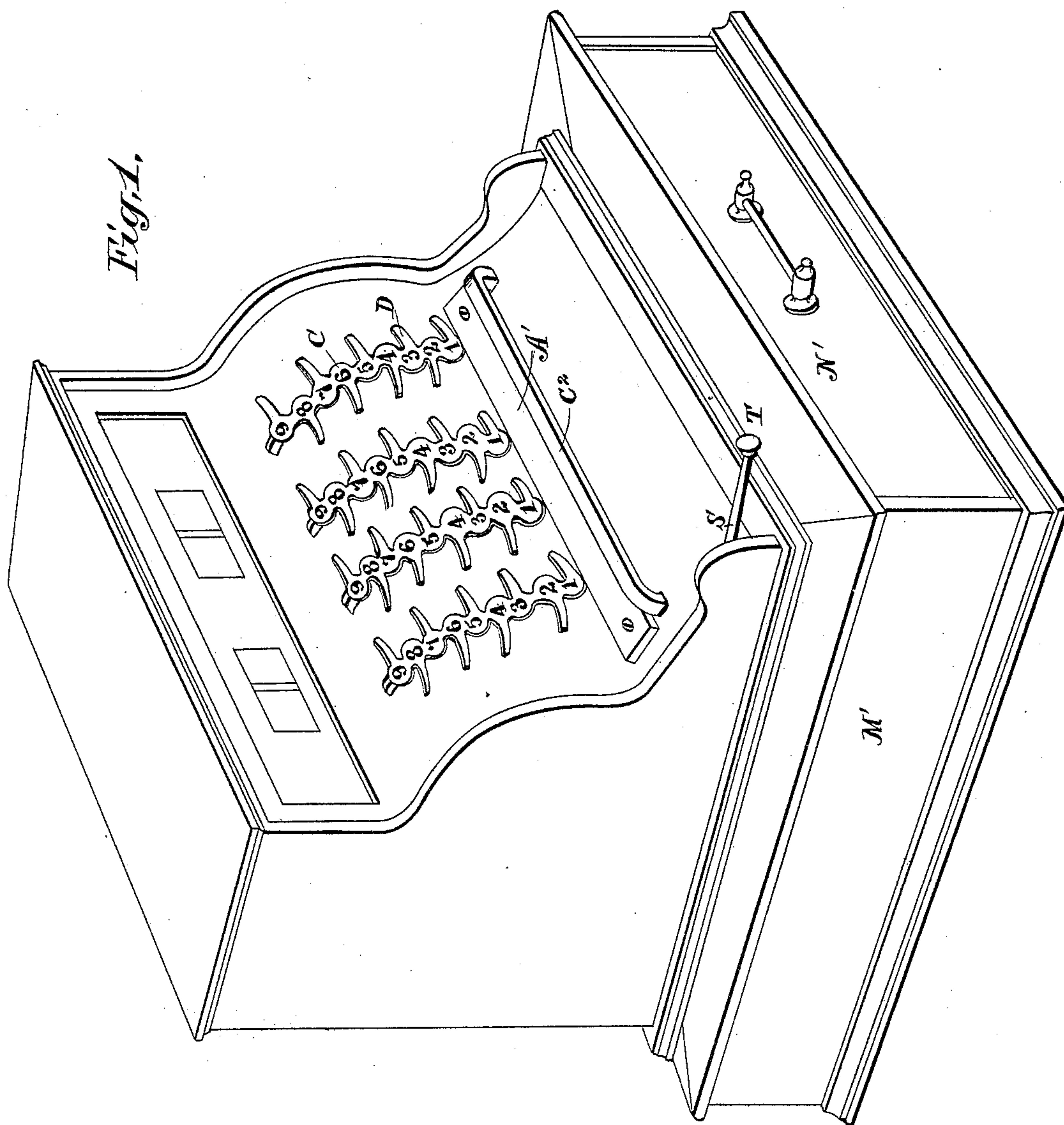
(No Model.)

5 Sheets—Sheet 1.

W. E. BROOKE.
CASH REGISTER AND INDICATOR.

No. 523,102.

Patented July 17, 1894.



Witnesses,
S. H. Brinard,
N. W. Hople

Inventor,
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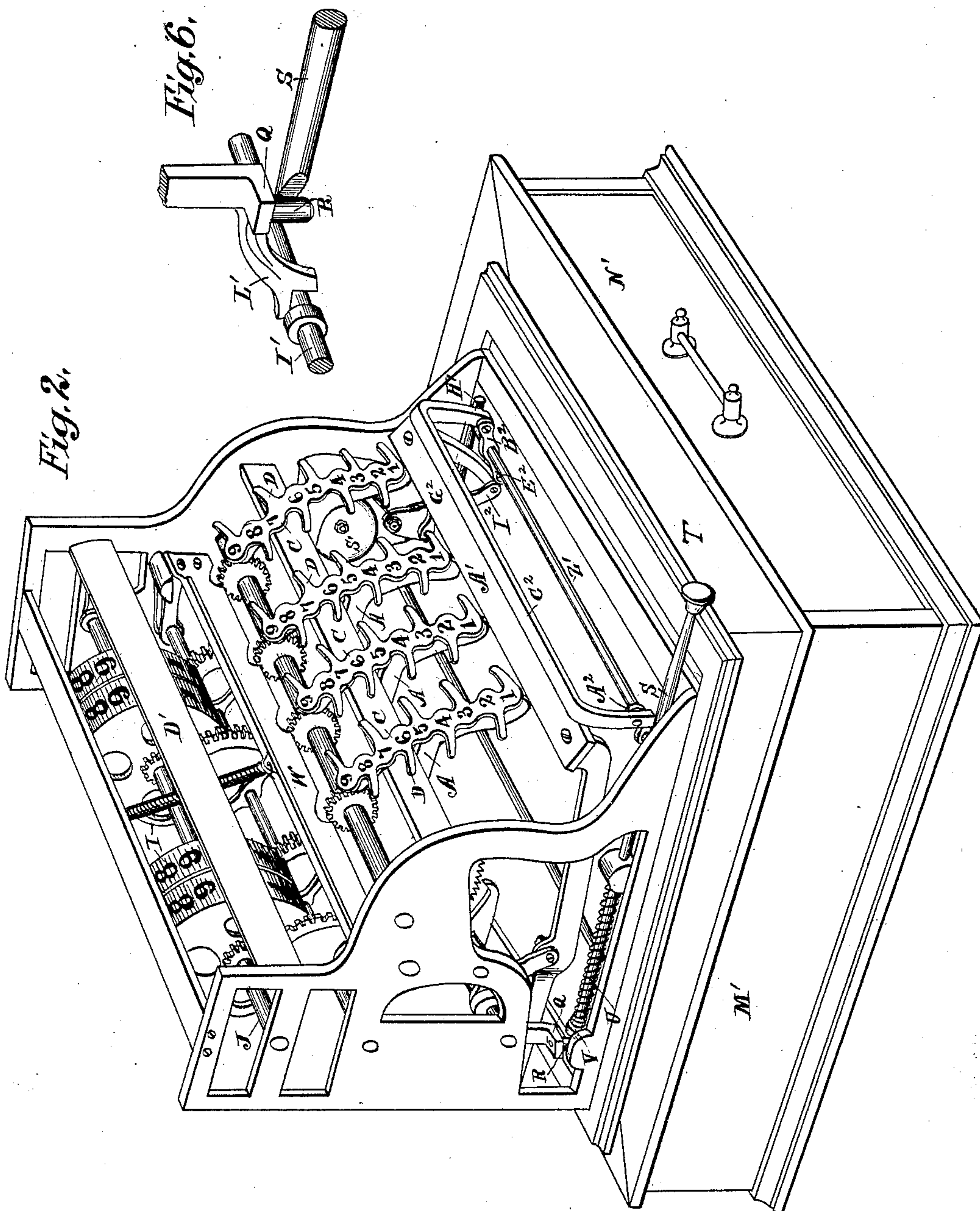
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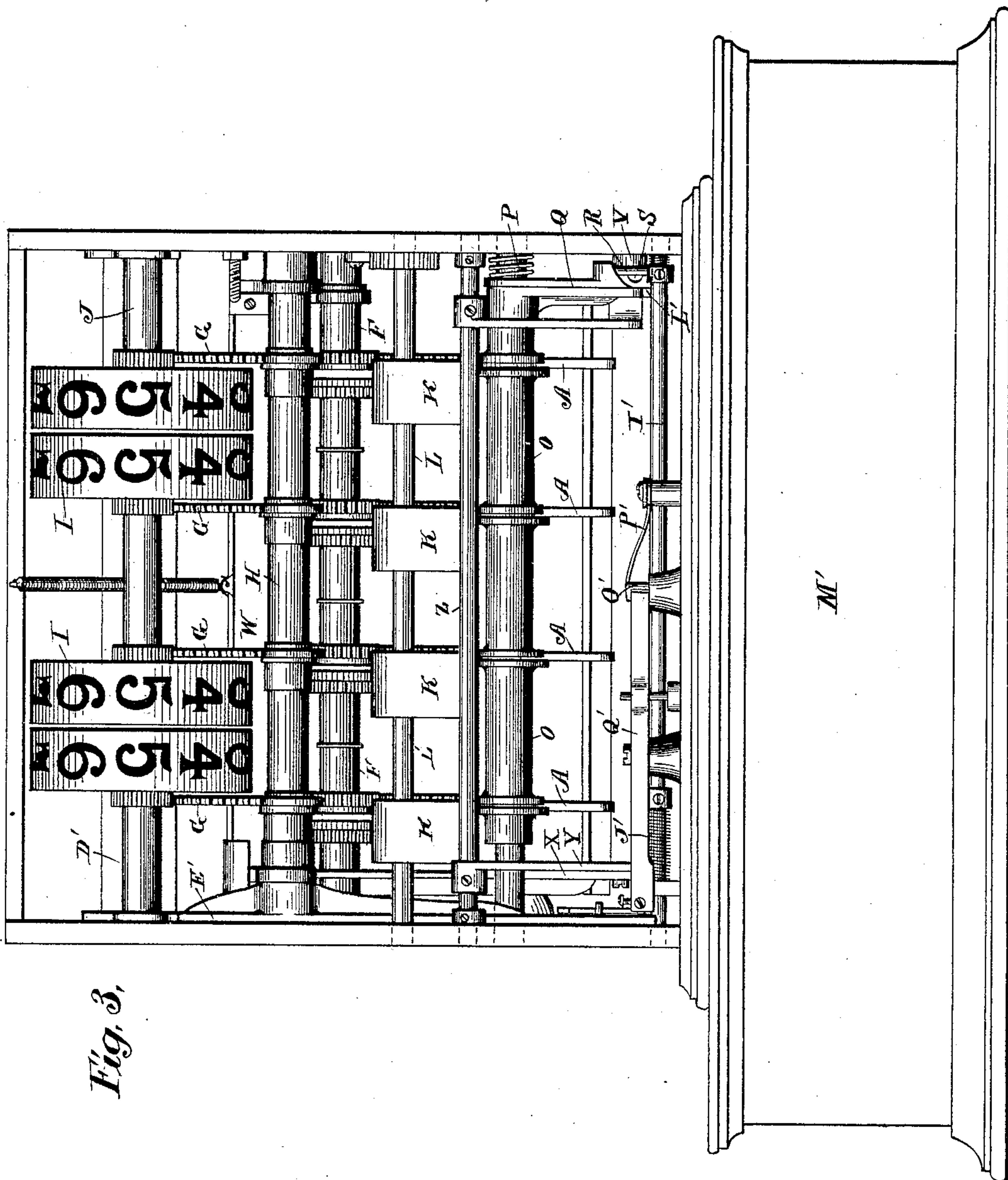


Fig. 3.

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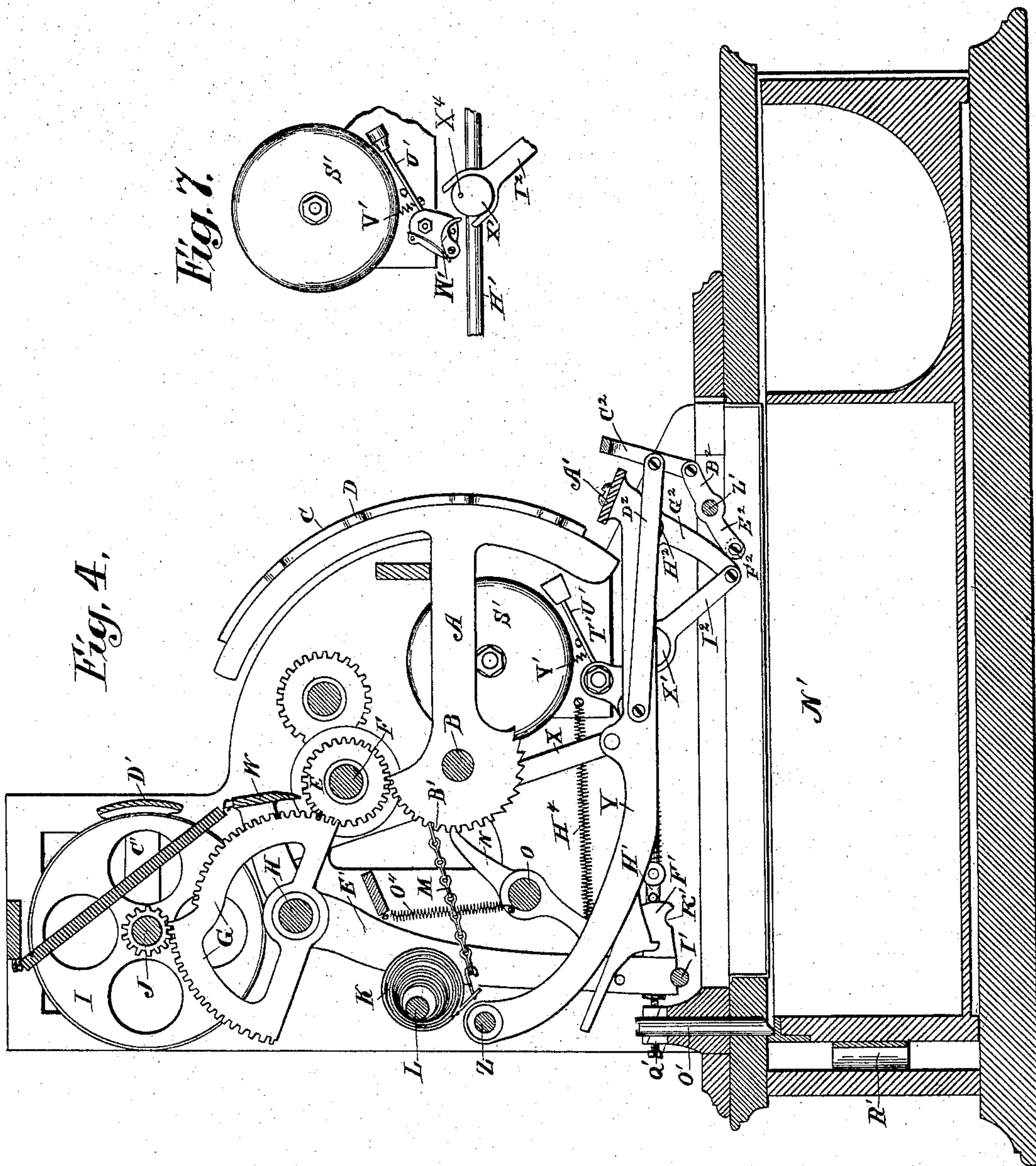
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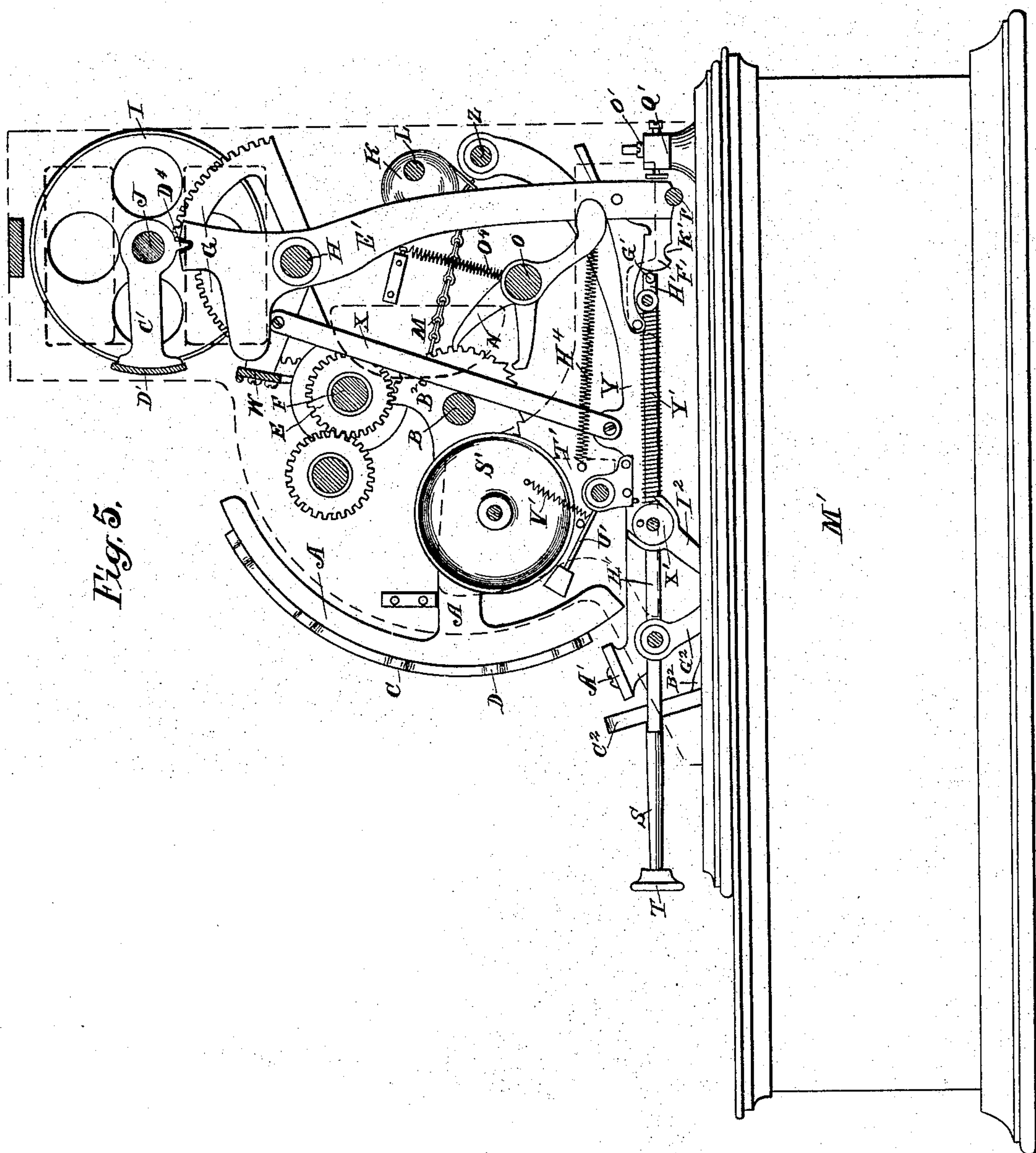
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UNITED STATES PATENT OFFICE.

WILLIAM E. BROOKE, OF TRENTON, NEW JERSEY, ASSIGNOR TO THE
NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 523,102, dated July 17, 1894.

Application filed January 8, 1894. Serial No. 496,157. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. BROOKE, a citizen of the United States, residing at Trenton, in the county of Mercer and State of New Jersey, have invented a certain new and useful Improvement in Cash Registers and Indicators, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to improvements on machines manufactured under Letters Patent of the United States, Nos. 420,554 and 420,555 to Fuller and Griswold, and now upon the market, and consists in novel means for releasing the drawer, sounding the alarm and exposing the indicators, whereby the operation of the machine is simplified and improved.

In the accompanying drawings Figure 1 is a perspective view of the machine within its casing; Fig. 2 a corresponding view without the casing and with the registering wheels and some other parts of the mechanism removed; Fig. 3 a rear elevation of the machine with the casing removed; Fig. 4 a vertical section through the middle of the machine looking toward the right; Fig. 5 an end elevation of the right hand end of the machine, with the side frame in dotted lines to expose the parts beyond; Fig. 6 an enlarged detail view of the releasing devices; and Fig. 7 a detail view of the gong-sounding devices.

The same letters of reference are used to indicate identical parts in all the figures.

The operating devices of the machine consist of levers A, loosely hung upon the horizontal rod B extending across the middle portion of the machine, Fig. 4. These levers project at their front ends through vertical slots in the front plate of the casing, Fig. 1, and have secured to them curved plates C each bearing a series of numbers, and in this instance the nine digits, and having projecting from its opposite sides in alternating order an equal number of finger-pieces D. The rear ends of the levers, about the rod B, are widened into circular plates each of which has gear teeth cut upon one part of its periphery, thereby forming a segmental gear B'. By means of intermediate pinions E loose upon a rod F and meshing with seg-

ments B', and gear toothed plates G hung upon a rod H, the levers A are geared to the indicator wheels I which are loose upon a rod J. Each of these wheels bears a series of indicating numbers representing the nine digits and a naught, and the adjustment of the parts is such that when the front end of any one of the levers is pulled downward until the finger-piece opposite one of its numbers reaches a given point the indicator geared to such lever will be turned until its corresponding number is brought to the reading opening or window in the casing.

The operating levers are yieldingly held in their upper and normal position, and returned thereto after being pulled downward and released, by coiled springs K secured to and wound around a fixed rod L at the rear of the machine and connected at their free ends by chains M to the rear ends of the levers A above their pivotal rod B.

For the purpose of temporarily holding the levers in any position to which they may be moved, to cause the indicating numbers to remain temporarily in view, there is provided a series of holding pawls N carried by a rod O loosely mounted at its opposite ends in the side frames of the machine and capable of slight endwise movement. The pawls are spaced upon the rod by their extended hubs N⁴, Fig. 3, and independent movement of them longitudinally upon the rod prevented, while springs O⁴ connected to their hubs, Figs. 4 and 5, yieldingly hold them engaged with the gear-toothed segments B' upon the ends of the operating lever A. While so engaged they permit the levers to be rocked downward, but prevent return upward movement of them, so that when the front end of any lever is pulled downward and released from the hand of the operator its co-operating pawl will hold it in the position to which it has been moved. When the rod O is slid to the left, by means to be described, the pawls are carried out of engagement with the segments and the levers released and returned to normal position by the springs K before referred to, thereby resetting the operated indicators to zero. A spring P coiled around the rod O at its left hand end and confined between a collar thereon and the side frame of the machine yield-

ingly holds the rod in and returns to its normal right hand position. Fast upon and depending from the rod near its left hand end is an arm Q carrying upon a vertical pivot
 5 an anti-friction sleeve R Fig. 6 adapted to co-operate with the beveled rear end of the sliding rod S mounted in guides upon the side frame and projecting at its front end through the front plates of the casing and provided
 10 with a push button T, Figs. 1 and 2. The rear end of the rod S is beveled off upon its left hand side and arranged to engage an anti-friction sleeve upon the arm Q when the rod S is pushed rearward, and thereby force the
 15 rod O to the left and disengage the pawls N from the lever segments, releasing the latter and permitting the return of them and the indicators to initial position as before described. A spring U coiled around the rod
 20 S between its rear guideway and a block V fast thereon and sliding upon the edge of the frame yieldingly holds the rod in and returns it to normal position.

For the purpose of arresting the operated
 25 levers and indicators, and preventing excess of movement of them under quick or violent operation of the levers, there is provided a locking bar W hung by side arms at its opposite ends upon the rod H and overlying the
 30 pinions E. Depending from the supporting side arms of this bar are two links X whose lower ends are pivoted to the side arms of a pressure frame consisting of two arms Y hung at their rear ends upon a rod Z at the rear of
 35 the machine and rigidly connected at their forward ends by a pressure bar A' extending across the machine immediately in front of the operating levers, Fig. 1. When the bar A is depressed the locking bar W is thrown
 40 downward into engagement with the pinions E, thereby locking said pinions and the parts geared to them from further movement.

In operating the register the finger is placed upon the finger-piece of the proper lever opposite the number it is desired to indicate
 45 and the lever is pulled downward until the finger of the operator strikes the pressure bar A' and is arrested thereby. This will cause the indicator to be turned until the number
 50 corresponding to the finger-piece is brought to the sight opening and the locking bar W to be thrown downward into engagement with the pinions E as before explained. A coiled spring secured at its upper end to the frame-
 55 work and connected at its lower end to the bar W yieldingly holds the latter in and returns it to its normal position. The bar A' is capable of only very slight movement, as it will be arrested by the casing of the machine as soon
 60 as it has been depressed a short distance.

Hung by side arms C' upon the rod J is a screen plate D' extending across the indicator wheels I at the line of the sight opening. When this plate is thrown upward, above the
 65 sight opening, the indicators are exposed to view, and when it is lowered in the rear of said opening the indicators are hidden. The

hub of the right hand side arm C' which surrounds the rod J, is provided upon its under side with a lug D¹ which fits in a notch in the
 70 upper end of the lever E' hung upon the rod H. When the lower end of this lever is thrown rearward and its upper end forward the side arms C' will be rocked upon the rod J and the screen plate D' thrown upward to expose
 75 the indicators. The lever extends at its lower end and to the bottom of the frame-work and is provided with a forwardly extending plate F'. The front end of this plate stands in the path of a stud or pin G' projecting laterally
 80 from a backwardly and forwardly movable rod H' mounted in guideways upon the side frame. When this rod is pushed rearward the pin G' engages the plate F' and rocks the lever and throws up the screen plate to ex-
 85 pose the indicators. A coiled spring H¹ connected at its forward end to the frame-work and at its rear end to the lever E' near its lower end yieldingly holds the latter in its normal position. The lower edge of the lever and its
 90 plate F' fit in a groove or notch in an endwise movable rod I' loosely mounted in its opposite ends in the side frames. A coiled spring J' surrounding the left hand end of the rod between a collar thereon and the side frame
 95 of the machine presses the rod toward the right. The lower edge of the plate F' is provided near its forward end with a notch K' and when the lower end of the lever is moved rearward until this notch is brought opposite
 100 the rod I' the latter is thrown to the right by its spring J', the rounded upper half of the rod fitting in the notch and holding the lever in its rearward position, with the screen plate D' elevated and the indicators exposed to
 105 view. The parts will remain in this position until the rod I' is slid to the left again and its notch brought beneath the plate F', whereupon the spring H¹ will throw the lower end of the lever forward to normal position again,
 110 the lower edge of the plate F' traveling in the notch in the rod and holding the latter from return movement to the right under the stress of its spring J' as before explained. The means for sliding the rod I' to the right to
 115 thus release the lever E' and drop the screen plate to hide the indicators consists of a rearward extension L' of the arm Q', Figs. 3 and 6, fast upon and depending from the rod O as heretofore described. When this rod is slid
 120 to the left by pushing the rod S the extension L' of the arm Q' will engage the collar of the rod I' and carry the latter to the left also, with the result above stated.

The frame-work of the machine rests upon
 12 the usual base M' provided with a drawer compartment containing the money drawer N'. This drawer when closed is locked by a vertically sliding bolt O' mounted in a suitable
 13 guideway in the lower rear cross piece of the frame-work and pressed downward by a flat spring P', Fig. 3. A lever Q' pivoted upon a vertical pivot has a beveled end engaging a notch in the side of the bolt O', Fig. 4. When

the right hand end of this lever is moved rearward and its left end forward the bolt O' will be lifted and the drawer released, whereupon the drawer will be thrown open by a suitable spring R' placed behind it. The right hand end of the lever Q' stands in the path of the rear end of the rod H' , so that when the latter is slid rearward to its limit of movement the lever will be rocked and the drawer released.

The alarm gong S' of the machine is in this instance secured upon a separate plate T' fastened upon the side frame of the machine and sounded by a striker U' pivoted upon said plate and pulled toward the gong by a coiled spring V' . The lower end of the striker arm has pivoted to it a trip W' ; Fig. 7, which depends into the path of a stud X^4 projecting from a block or collar X' fast upon the rod H' . Whenever the rod is pushed rearward the stud X^4 engages the trip W' and rocks the striker upon its pivot, and when the stud clears the trip the spring V' throws the striker against the gong. In the return forward movement of the rod the stud flips the trip up and passes freely by it.

A spring Y' coiled around the rod H' between its rear guideway and the block X' yielding holds the rod in and returns it to its normal position.

Having now described the indicator screen, the drawer mechanism and the alarm mechanism, and the manner in which they are all operated by the backwardly and forwardly movable rod H' , I will next describe the means for operating said rod to cause it to perform its several duties.

Pivoted to the front ends of arms $A^2 B^2$ fast upon a rock shaft Z' journaled at its opposite ends in the side frames of the machine are the downwardly bent opposite ends of a pressure bar C^2 which extends across the entire series of operating levers immediately in front of the pressure bar A' . A link D^2 pivoted at its rear end to the right hand side arm Y of the bar A' and at its front end to the end of the bar C^2 sustains the latter in vertical position but permits it to vibrate up and down. Fast upon the rock shaft Z' is a rearwardly extending arm E^2 , in this instance integral with the arm B^2 , the two forming a lever having the shaft Z' as a fulcrum, Fig. 4. The arm E^2 carries at its rear end a roller F^2 which bears against the under side of an arm G^2 which is hung at its forward end to the frame-work at H^2 . To the rear end of the arm G^2 is pivoted the lower forward end of an arm I^2 whose upper rear end is forked and embraces the block X' on the rod H' . The arms $G^2 I^2$ form a downwardly bent toggle and when the pressure bar C^2 is depressed and the roller on the arm E^2 caused to lift the arm G^2 and straighten the toggle the rod H' will be pressed rearward, against the stress

of the spring Y' , to shift the screen plate, unlock the drawer and sound the gong. When pressure on the bar C^2 is removed the spring Y' throws the rod H' forward to normal position and lifts the bar C^2 .

In operating the machine the several levers will be successively pulled downward the proper distance to indicate the desired amounts, and with the completion of the stroke of the last one the operator will depress the bar F^2 and expose the indicators, open the drawer and sound the alarm. Inasmuch as the bar F^2 extends across the entire machine, in close proximity to the operating levers, the operator can depress the bar, to accomplish these results, by the same movement which pulls down the last operating lever, and thus the opening of the drawer and other operations be made practically automatic, or incidental to the setting of the operating levers, instead of requiring a separate operation of an independent device.

This application is subordinate to another application filed simultaneously with it and bearing Serial No. 496,156, in which a different means for transmitting the movement of the pressure bar to the sliding rod is shown and described, and the new mode of operation broadly claimed.

Having fully described my invention, I claim—

1. In a cash register and indicator such as described, the combination, with the indicators, and the operating levers each provided with the series of numbers and finger-pieces, of the reciprocating rod H' and connections for actuating the screen plate, drawer-lock or other part of the machine, the pressure bar C^2 extending across the front of the series of levers, the toggle $G^2 I^2$ for actuating the rod H' , and connections between the bar C^2 and toggle for straightening the latter for the purpose described.

2. In a cash register and indicator such as described, the combination, with the indicators, and the operating levers each provided with the series of numbers and finger-pieces, of the reciprocating rod H' and connections for actuating the screen plate, drawer-lock or other part of the machine, the pressure bar C^2 extending across the front of the series of levers, the rock shaft Z' , the forwardly projecting arms $A^2 B^2$ fast thereon, the pressure bar C^2 supported by said arms, the toggle $G^2 I^2$ for actuating the rod H' , and the rearwardly projecting arm E^2 fast upon the shaft Z' and carrying the roller F^2 engaging the arm G^2 , substantially as and for the purpose described.

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