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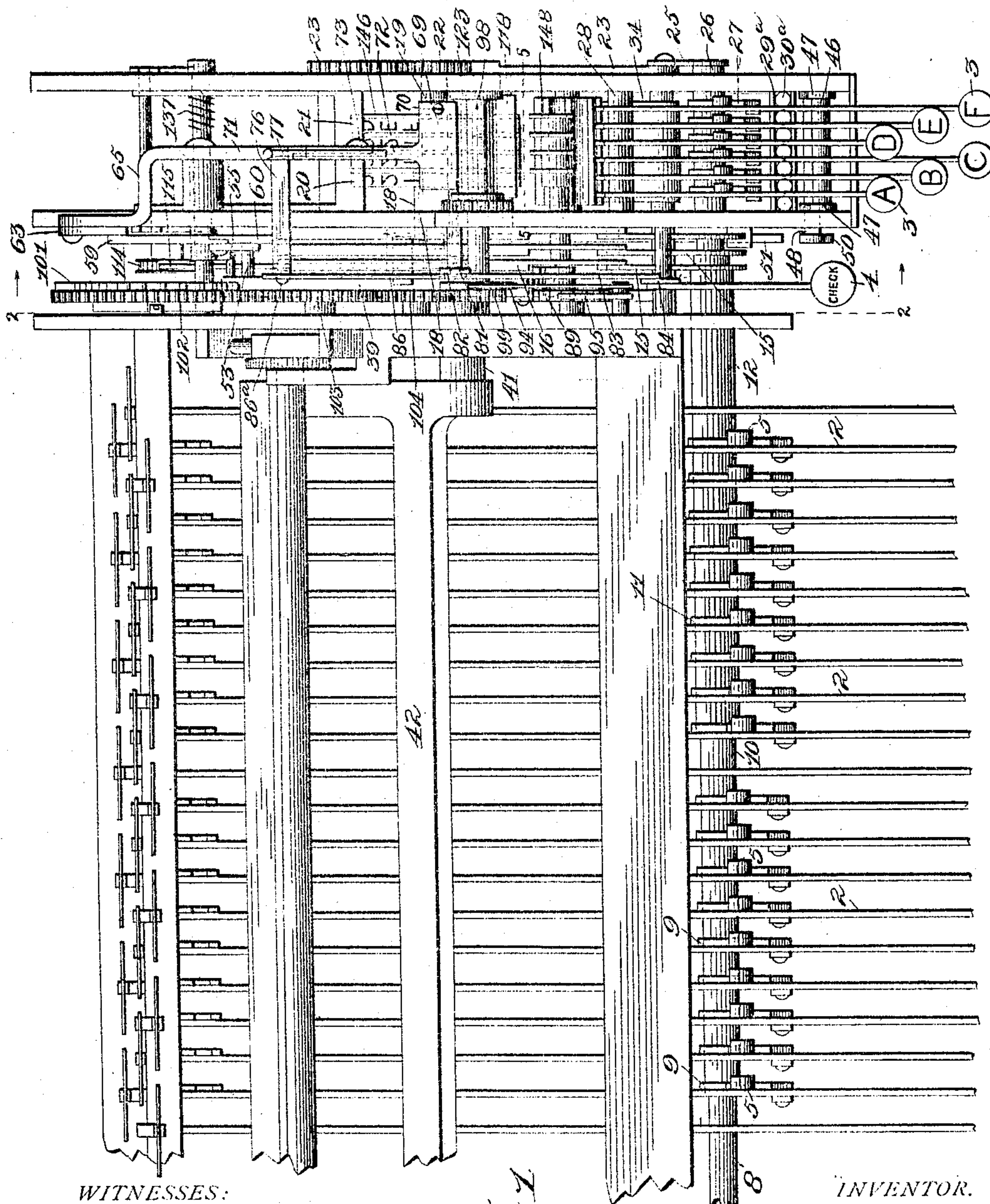
PATENTED OCT. 25, 1904.

F. J. NUTTING.
CASH REGISTER.

APPLICATION FILED JULY 11, 1898.

NO MODEL.

4 SHEETS—SHEET 1.



WITNESSES:

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Jm F. Muzzey

Page 1

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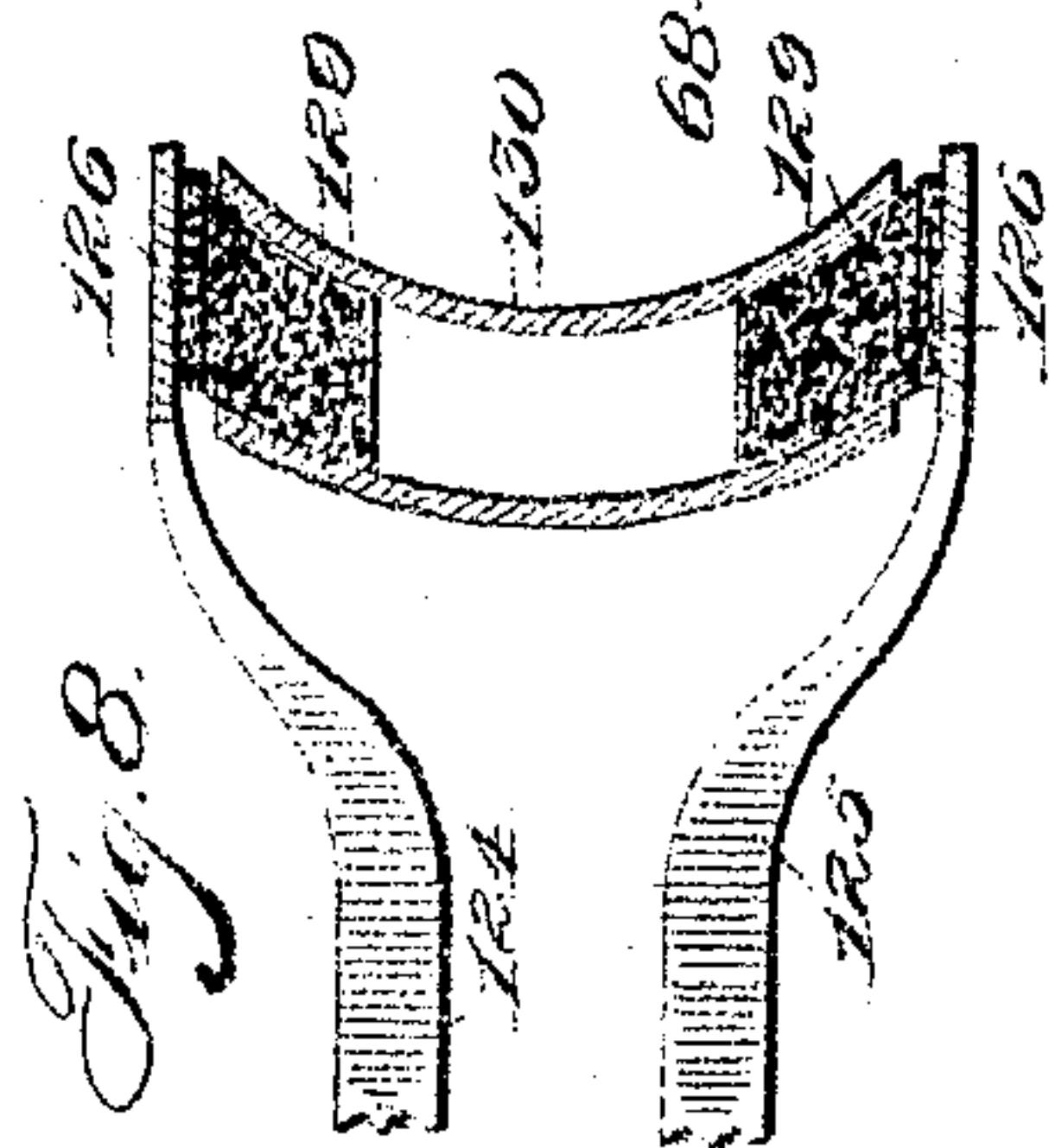
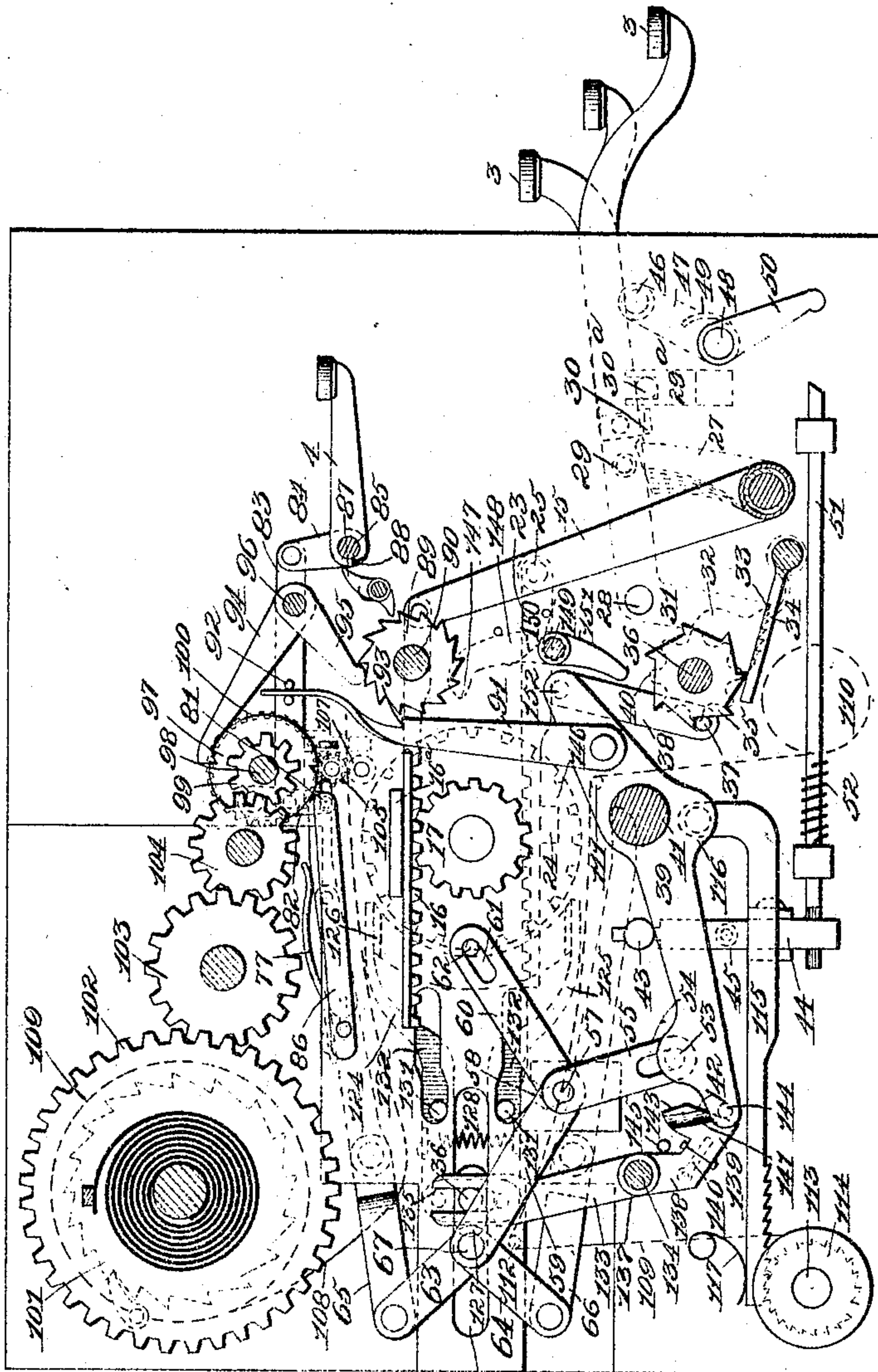
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4 SHEETS—SHEET 2.

Fig. 2.



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Fig. 8.

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4 SHEETS—SHEET 3.

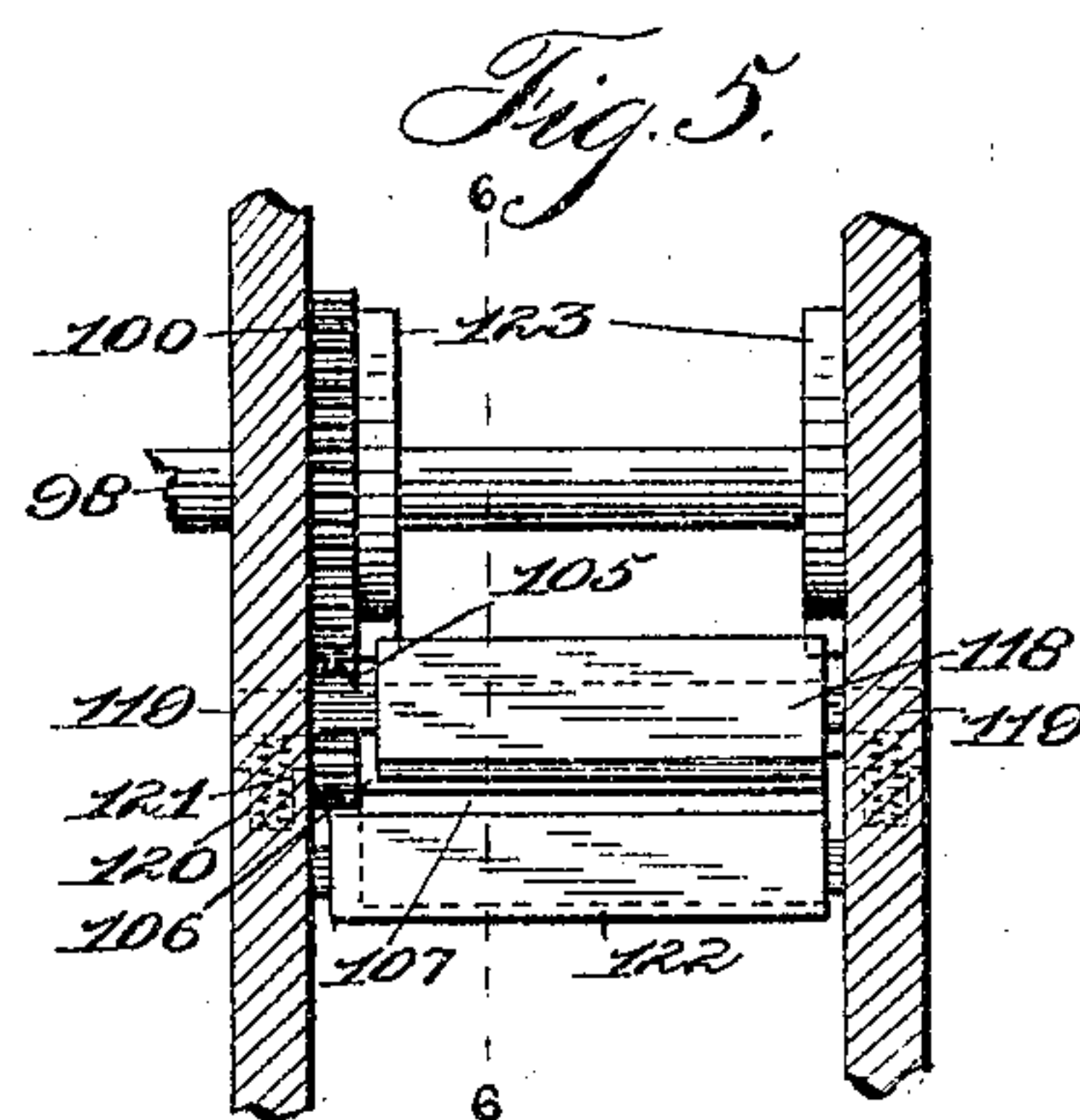
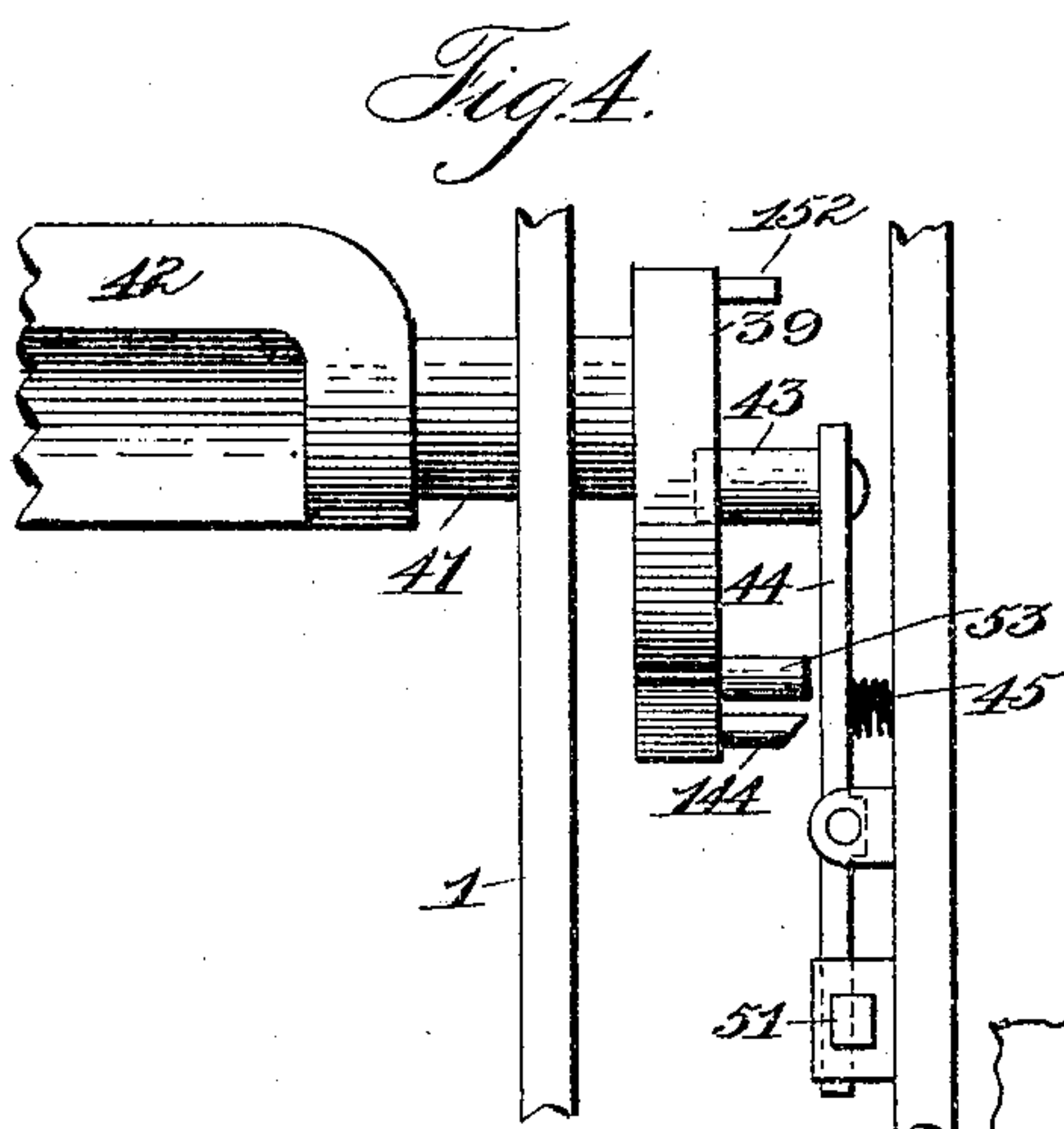
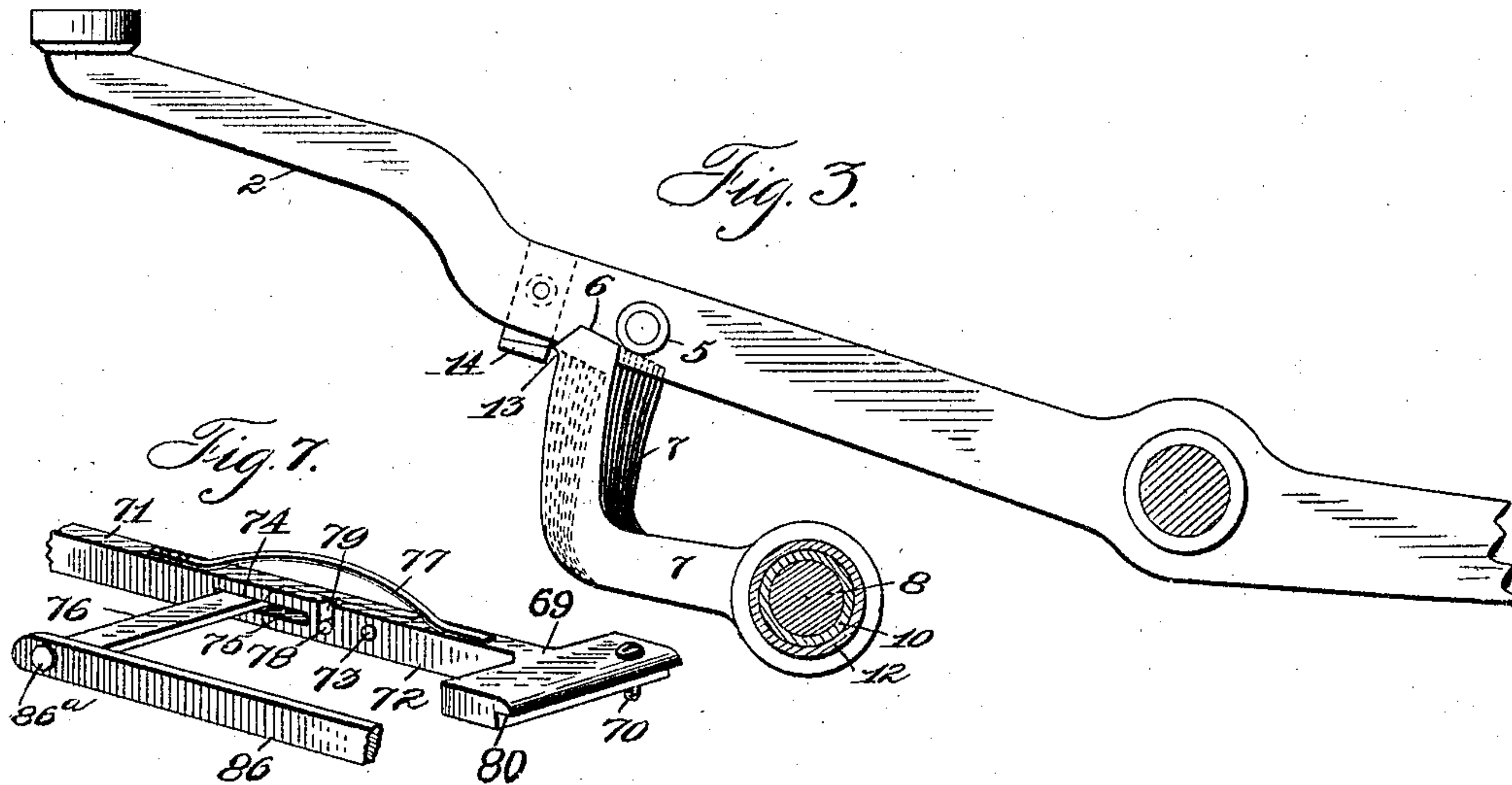
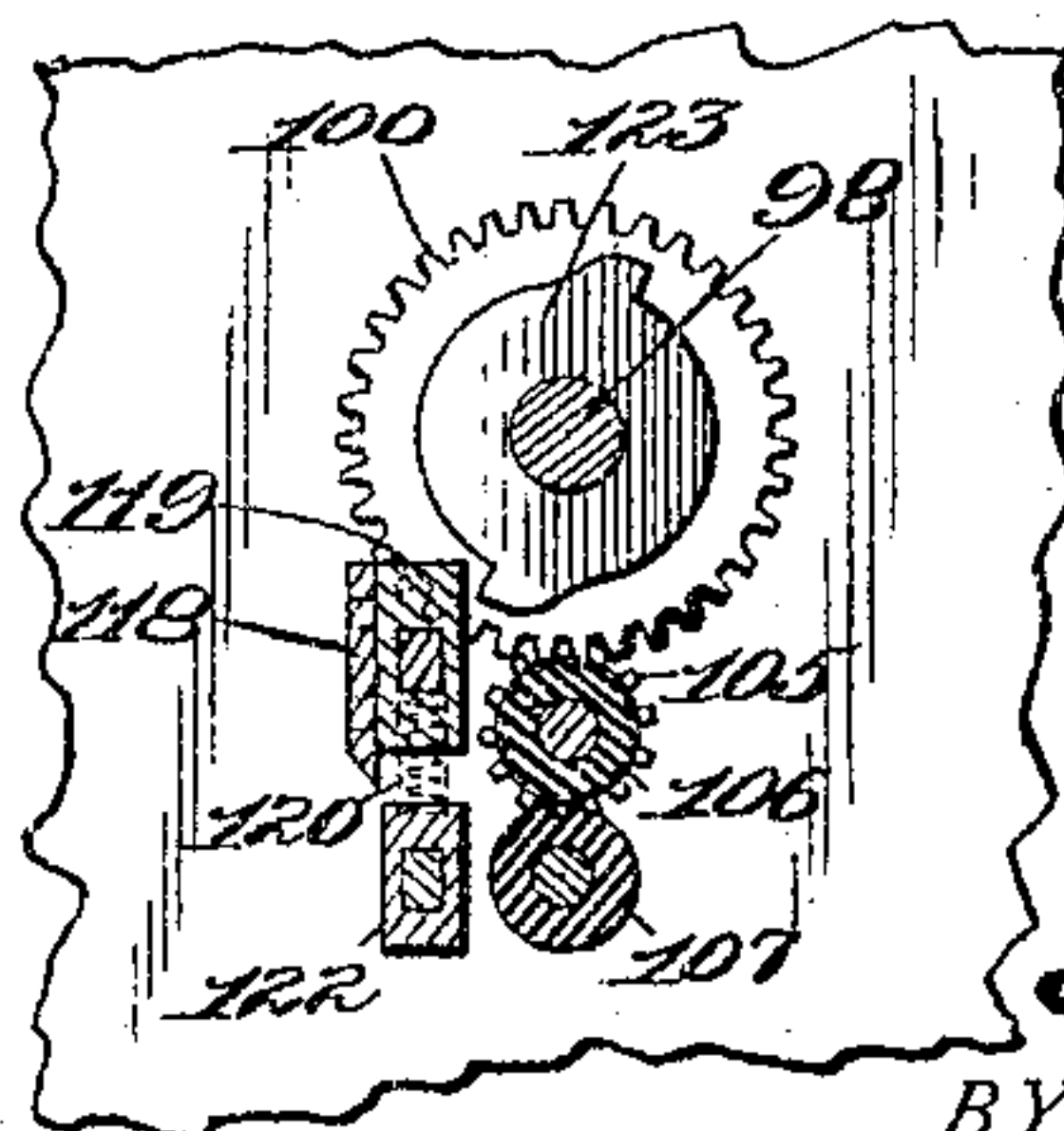


Fig. 6.



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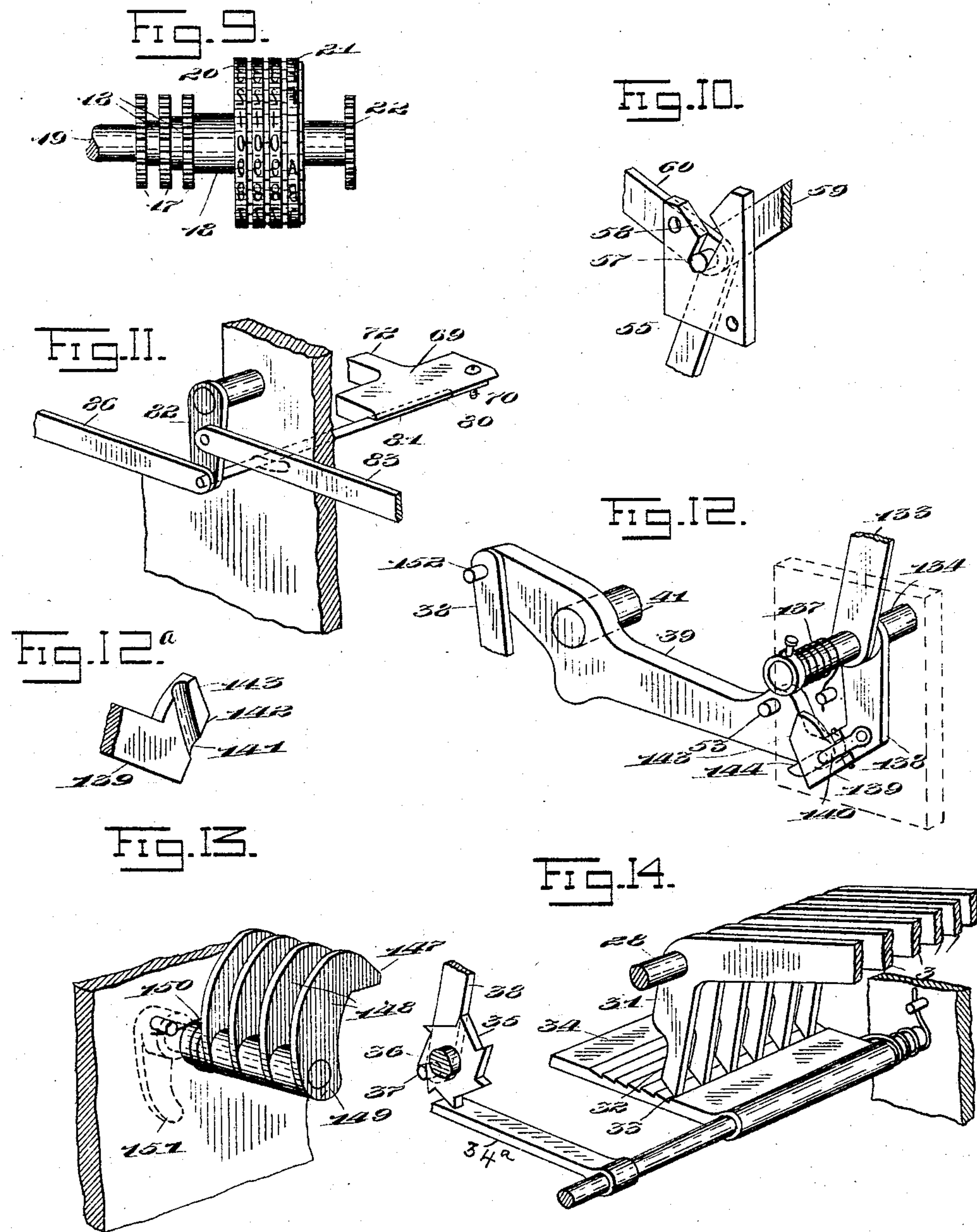
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4 SHEETS—SHEET 4.



Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK J. NUTTING, OF DAYTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 773,094, dated October 25, 1904.

Application filed July 11, 1898. Serial No. 685,661. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. NUTTING, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which I declare the following to be a full, clear, and exact description.

This invention relates to improvements in cash-registers, and has more particular relation to improvements in the class of machine designed to register and indicate and print a record of the amounts of the transactions.

The invention is an improvement on the type of machine patented to Thomas Carney, No. 497,860, dated May 23, 1893, and attention is therefore called to said patent.

One of the several objects of the invention is to provide improved means for printing a record of the transactions by the operation of the keys alone.

Another object is to provide improved means in the class of machine mentioned for printing a special character in connection with the amounts for identifying the respective transactions.

In the accompanying drawings, forming part of this specification, Figure 1 represents a top plan view, partly broken away, of the devices embodying my invention applied to a machine of the class specified. Fig. 2 represents a vertical transverse section through said devices, taken on the line 2 2 of Fig. 1. Fig. 3 represents an enlarged detail side elevation, partly broken away, of one of the operating-keys and the cam-levers. Fig. 4 represents an enlarged detail front elevation of a portion of the key-coupler and the devices connecting it with my improved printing mechanism. Fig. 5 represents an enlarged detail front elevation, partly in section, of the devices for operating the check-knife. Fig. 6 represents a central vertical section through the same on the line 6 6 of Fig. 5. Fig. 7 represents an enlarged detail perspective view of the jointed platen-carrying lever. Fig. 8 represents an enlarged detail central vertical

section through the ink-receptacle, felts, and inking-arms. Fig. 9 represents a detail top plan view, partly broken away, of the nested sleeves carrying the printing-wheels and pinions. Fig. 10 represents a detail perspective view of one pair of toggle-levers, the pin carried by the same, and the slotted plate in which said pin works. Fig. 11 represents a detail perspective view of the upper platen, the rod for supporting the same, and the devices supporting said rod. Fig. 12 represents an enlarged detail perspective view of the pivoted operating-foot, its spring, and coacting parts. Fig. 12^a represents a detail perspective view of the pivoted operating-foot. Fig. 13 represents an enlarged detail perspective view of the shaft carrying the printing-wheel-aligning pawls; and Fig. 14 represents a detail perspective view of the rear ends of the special keys, the hinged rack-plate engaging the same, and coacting parts.

As many of the parts illustrated in connection with my present invention are fully described and covered by the aforesaid patent, I will refer to the same for a detail description of said parts.

Referring to the said drawings, 1 represents the main frame; 2 2, the main operating-keys; 3 3, the special keys, and 4 the check-key. The said keys 2 2 and the indicating and registering mechanisms connected thereto are substantially the same as described in the above-mentioned patent, and I will therefore not go into a detail description of the same. One exception to the above statement is the attachment of an antifriction-roller 5 to the side of each of said keys. Each of these rollers of the left-hand bank of keys is adapted to contact with the upper inclined edge 6 of one of a series of cam-arms 7, rigidly mounted on a transverse rock-shaft 8. The lengths of the respective cam edges 6 differ, so that the antifriction-rollers of the different keys will have longer or shorter operating-surfaces to roll over, according to the denominations they represent, and will thus rock the shaft 8 to a greater or less extent and move

the printing-wheel connected thereto accordingly to an equal extent, as hereinafter more fully described. The keys of the middle bank operate on cam-arms 9, similar to the arms 7 and mounted on a sleeve 10, which is loose upon the shaft 8. The keys of the remaining bank operate on cam-arms 11, similar to the arms 7 and 9 and mounted on a sleeve 12, which is loose upon the sleeve 10. Each of the said cam-arms is formed on its front edge with a cam-nose 13, which is adapted to be engaged by one of a series of angular pendent arms 14, mounted on the keys 22. When one of said keys is depressed, its roller 5 forces its respective cam-arm downward and continues this movement until the roller which has meantime been passing along the cam edge 6 reaches the end of the same, when the movement of said arm ceases, the roller passing down in front of said arm. Meanwhile the arm 14 passes downward to the rear of its cam-lever 7, whereby any overthrow of the latter is prevented, as the key and arm must move together in both directions. Upon the upward stroke of the key the arm 14 engages the nose 13, and thus cams the cam-arm upward and forward into its normal position ready for the next stroke.

Each of the sleeves 10 and 12, as well as the shaft 8, is provided at one end with a lever-arm 15, which supports one end of one of a series of inverted pivoted operating-racks 16. Each of these racks is held down to mesh with its respective pinion by a bar 16^a, mounted on the frame and located directly above said rack. These racks mesh, respectively, with pinions 17, mounted upon nested sleeves 18, which are journaled upon each other and upon a transverse shaft 19, mounted in the frame. Each of said sleeves 18 carries a numbered or printing wheel 20, corresponding to its respective key-bank and adapted to be operated to bring the proper number into printing position by any one of the keys. It will be seen from the foregoing that when any one of the keys of either of the banks is operated its corresponding printing-wheel is moved so as to bring the type corresponding to its denomination into printing position and then returned to its original position. The pause between the reverse movements of the printing-wheels is of sufficient duration to admit of an impression of the type in printing position being taken by means of devices hereinafter more fully described. The said rotatable shaft 19 is provided with a numbered or printing wheel 21, containing designating-types for different characters of transactions, and is adapted to be operated by a pinion 22, fast thereon and meshing with a rack-bar 23. This bar is held up into mesh with the under side of the pinion by a laterally-projecting bar 24, mounted on the frame, and is pivotally connected at one end with a lever-arm 25. This arm is in turn rigidly

mounted upon a short transverse rock-shaft 26, suitably journaled in the frame and provided with a plurality of cam-arms 27, similar to the cam-arms of the main key-banks.

The special keys 3 are journaled upon a transverse shaft 28 and are each provided with an antifriction-roller 29 and a pendent angular arm 30, similar to the rollers 5 and arms 14 and bearing the same relation to the arms 27 as said rollers and arms do to their respective cam-arms. The said special keys represent any desired character or designating device, but are preferably made to represent different letters, as shown, so that the different clerks may each have a designating-letter, which is printed on the check and the detail-strip upon the proper key being depressed. Each of the printing-wheels is formed with duplicate sets of printing characters, each set extending about one-half of its periphery. By this structure the same characters are in printing position both at the tops and the bottoms of the wheels, and corresponding impressions may thus be taken both at the tops and the bottoms. In order to prevent two of the special keys being depressed at one time, I mount a vertically-slotted grooved block or bar 29^a directly under said keys and provide the same with a plurality of balls 30^a, which are free to roll within said groove. When one of the keys is depressed, it passes between two of the balls, and thus forces all of the balls into contact at all other points and holds them so until it is again permitted to ascend. It has also been found desirable to lock any one of the keys 3 against any reverse movement after it has started a stroke and before it has reached the end of said stroke, and to accomplish this result each of said keys is provided with a pendent arm 31, reduced, as at 32, and formed with a lower knife-edge end 33. The said knife-edge ends of all of said arms engage rack-teeth formed on an arc in a pivoted spring-pressed plate 34, which acts as a stop for said arms when in its normal position, but is disengaged from the same at the end of the key-stroke to permit the key to return. This disengagement is effected by the teeth of a ratchet-wheel 35, which strike an arm 34^a, fast to the rock-shaft upon which the plate is mounted, and thus rock said shaft and force the plate downward against the tension of its spring, so that the rack-teeth are moved free of the knife-edges 33. The teeth of the plate 34 are formed on an arc struck from the shaft 28, and the lower ends of the arms 31 normally rest between two teeth, so that when a key is operated its arm 31 strikes a tooth and forces the plate 34 downward. The plate moves upward after the arm passes each tooth, and thus prevents the return of the arm until it has made its full stroke. The said wheel 35 is rigidly mounted upon a transverse rotatable shaft 36 and is adapted to be moved a distance equal to one tooth

upon each operation of any one of the keys by a pin 37, mounted on a pivoted arm 38, which in turn is mounted upon a pivoted operating-lever 39. The shaft 36 is further provided with a plurality of toothed wheels 40, arranged thereon in proximity to the respective arms 31, so that their teeth will first strike the latter to raise the keys and then pass into alinement with the reduced portions 32 to permit of the keys being again depressed without interference. The operating-lever 39 is rigidly mounted upon the protruding journal end 41 of the key-coupling frame 42 of the machine, so that it is moved every time one of the keys of the main key-banks is depressed. The said operating-lever 39 is normally locked against movement by a stud 43, extending across the upper edge of the same and mounted upon a pivoted lever 44, which is normally forced forward by a coil-spring 45. When one of the keys 3 is depressed, it strikes a transverse bar 46 and depresses the same, thus operating an arm 47, carrying said bar and rigidly mounted upon a rock-shaft 48. This shaft is held in its normal position by a spring 49 and is provided with an arm 50, which is adapted to contact with the forward end of a slidable rod 51, having a wedge-shaped end contacting with the lever 44. The rod 51 is held normally in a retracted position by a coil-spring 52, which surrounds and is connected to the same and bears with one end against one of the guiding-blocks through which said rod passes.

It will be observed from the above that when one of the keys 3 is depressed the rod 51 is moved longitudinally, thus causing its wedge end to force the lower end of the lever 44 over and withdraw the stud 43 from over the lever 39 to leave the latter free to be operated through its connection with the key-coupler 42. A laterally-projecting stud 53 is mounted near one end of said lever 39 and projects into an elongated slot 54, formed in one end of a link 55, the opposite end of which is pivotally attached to a toggle connection. The pivot-pin 57 of said toggle projects into an angular slot 58, formed in a portion of the frame, so that the arm 59 of said toggle may first move forward, then be retracted, and finally move forward again. The arm 60 of said toggle is formed with an elongated slot 61, through which projects a pin 62, mounted upon the frame, so that said arm 60 may first move rearward and then turn on said pin upon being forced upward, but without moving any farther rearward. The continued upward movement of the pin 57 and toggle-arms will give the arm 59 a final forward movement.

The end of the toggle-arm 59 is pivotally connected to an auxiliary toggle, the respective arms 63 and 64 of which are in turn pivotally connected to the ends of pivoted platen or printing levers 65 and 66. In order to cause a true movement of the toggle-arms 63 and 64,

the pivot-pin 67, connecting the same with the arm 59, is extended, so as to project into a guiding-slot 68, formed in a portion of the frame. From the above it will be seen that the levers 65 and 66 are first moved forward, then retracted, and again moved forward as the toggle-arms 63 and 64 open and close by the reciprocating movement of the arm 59. Each of the levers 65 and 66 is provided at its forward end with a platen 69 of sufficient width to cover the width of all of the type-wheels, so that when said levers are operated an impression will be taken both at the tops and bottoms of the wheels. Each of the platens is provided at one side, out of alinement with the type-wheels, with an adjustable screw 70 for operating the respective ink-levers, as hereinafter more fully described. The said lever 65 is formed of two overlapping arms 71 and 72, pivoted together, as at 73, and formed, respectively, with corresponding slots 74 and 75, in which a slidable locking-bar 76 is adapted to operate to lock the two portions of the lever together, or vice versa. The said arm 71 is provided with a bow-spring 77, the free end of which engages the upper edge of the arm 72, and thus holds the two arms normally in alinement, said alinement being further assured by a pin 78, mounted on the arm 71, entering a notch 79, formed in the arm 72. The forward end of the arm 72 is notched, as at 80, and is adapted to catch over a transverse rod 81, so as to be held in an elevated position when it is not desired to print a check. This rod 81 is adapted to be moved back and forth at will to lock or unlock the arm 72 by a pivoted arm 82, upon which it is mounted and which is in turn pivotally connected to an operating link-bar 83. A lever-arm 84, fast upon a transverse rock-shaft 85, is pivotally connected to the bar 83, so as to move the latter back and forth when said shaft is rocked by the check-key 4, which is fast thereon. The extended end of the rod 81 also supports one end of a link-rod 86, in which is journaled one end of the slidable locking-bar 76.

It will be seen from the above description that when the end of the lever 65 is held up by the rod 81 the joint between the two parts of the same is free to turn, so as to render the lever inoperative. When the rod 81 is moved out of the notch 80 to release the platen, the bar 76 is simultaneously moved forward, and thus locks the two parts of the lever together, so that they act as a rigid lever and force the platen downward upon the printing-wheels. When the said key 4 is depressed, it is locked in such position by a pivoted compound pawl 87, which catches in a notch 88, formed therein. This pawl is operated to release the key by a ratchet-wheel 89, mounted upon a transverse shaft 90 and adapted to be rotated by a lever 91, pivotally connected at its lower end to the lever 39. Said lever 91

is guided in its reciprocations by two pins 92, mounted upon the bar 83, and is provided with a shoulder 93, which is adapted to engage the teeth of the wheel 89. It will be seen by reference to the drawings that the reciprocations of the lever 91 do not effect the ratchet-wheel 89 unless the key 4 is depressed so as to throw the shoulder 93 into mesh with the teeth of said wheel. The said wheel 89 is operated upon the upstroke of the main keys and is adapted to release the paper-feeding mechanism through the medium of two pawl-arms 94 and 95, mounted upon a short shaft 96 and forming, in effect, a bell-crank lever. The arm 95 is engaged and operated by the teeth of the ratchet-wheel 89, and thus lifts the pawl 94 out of engagement with a notched locking-wheel 97 and permits the latter to rotate one-half revolution, when said pawl 94 again engages one of the notches of said wheel and brings it to a standstill. This wheel 97 is rigidly mounted upon a shaft 98, which also carries a pinion 99 and a gear-wheel 100. The pinion 99 receives motion from a spring-motor 101 through intermediate gears 102, 103, and 104, while the gear-wheel 100 meshes with a pinion 105, fast upon the shaft of a check-feeding roller 106. A companion roller 107 is mounted below the roller 106 in such manner that the peripheries of said rollers will contact, and thus feed the check-strip 108, which is wound upon a supply-roller 109, forward between them.

It will be observed from the above that the course of the strip 108 is directly above the printing-rollers, so that when the lever 65 is operated said strip is forced into contact with the types and receives an impression therefrom. The lower or record strip 109 passes from a supply-roller 110 upward over a transverse bar 111, thence under the printing-wheels and over another transverse bar 112 down to the winding-roller 113. This latter roller is provided with a flanged ratchet-wheel 114, which is operated by a rack-bar 115, pivoted to a pendent nose 116 of the lever 39 and held down into engagement with the ratchet-wheel by a spring 117, mounted upon the frame. By this means every oscillation of the lever 39 will feed the record-strip forward, so that it will be ready to receive the impression of the next transaction. As the check-strip 108 is fed forward from the rollers 105 and 107 it is severed by a knife 118, mounted upon a slide 119, the opposite ends of which are mounted in slots 120, formed in the frame and normally held in an elevated position by coil-springs 121, mounted under the same in said slots. The said knife is adapted to operate in connection with a stationary block or plate 122, mounted below the same, and is depressed by two spaced cams 123, mounted on the shaft 98.

Having now fully described the printing and feeding mechanisms and their connections with the several keys, I will pass on to

the devices for inking the types both at the tops and bottoms of the wheels before each impression. These devices comprise primarily two spring-arms 124 and 125, respectively, each of which is provided at one end with an inking pad or felt 126 and is pivotally connected at its opposite end to a sliding block 127, mounted in the slot 68. The said arms 124 and 125 are connected by a coil-spring 128, so that their felts 126 normally lie in contact with supply-felts 129, mounted in the opposite ends of an ink-receptacle 130, secured upon the frame. Each of the inking-arms is further provided with a laterally-projecting stud 131, which extends into one of two slots 132, formed in the frame and of such shape as to cause the said arms to be spread as they are forced forward to pass above and below the printing-wheels. As the felts 126 reach positions in proximity to the types in the printing positions the arms 65 and 66 are operated, as before described, but only have sufficient movement to cause the screws 70 to contact with the inking-arms to force the felts into contact with the types. The said arms 65 and 66 then move back again because of the formation of the slot 58, as aforesaid, and the ink-pads are withdrawn, so that when said arms again move forward the paper strips are forced into contact with the inked types. The operation of the inking-arms is effected through the medium of a lever 133, mounted upon a rock-shaft 134 and formed in its upper end with an elongated slot 135, into which projects a pin 136, mounted on the block 127. A coil-spring 137 is mounted upon the shaft 134 and connected thereto and to a portion of the frame, so that any movement of said shaft will put the spring under tension. An angular arm 138 is rigidly secured to the shaft 134 and is provided with a foot 139, pivotally connected thereto and normally held in alinement therewith by a flat spring 140, mounted on said arm 138, so that its free end bears against the side of said foot. The said foot is formed in one side with a groove 141 of gradually-decreasing depth toward its lower end and has its forward edge formed, as shown, with two inclined portions 142 and 143, respectively. The forward end of the lever 39 is provided with a laterally-projecting pin 144, which normally contacts with the edge 142. When the lever 39 is operated, the pin 144 moves up the edge 142, thus forcing the foot forward and rocking the shaft 134 to move the lever 133, and thereby cause the movement of the arms 124 and 125. When the pin passes from the edge 142 to the edge 143, the spring 137 returns the shaft 134, and thus retracts the arms 124 and 125. The reverse movement of the shaft 134 is limited by a stop-pin 145, mounted on the main frame and adapted to bring the foot 139 to rest in such a position that the pin 144 will pass down the groove 141, and thus force the foot

to one side against the tension of its spring and permit said pin to assume its normal position in front of the edge 142.

By the above-described means the inking-felts 126 are first moved forward, so that they may be forced into contact with the types by the levers 65 and 66, and are then withdrawn rapidly, so as to leave the types clear to give an impression upon the next operation of the printing-levers.

As the printing-wheels are liable to be so moved as to leave their types slightly out of the correct printing positions, it is necessary to provide alining means, and for this purpose each of said printing-wheels is furnished with a toothed alining-wheel 146, secured rigidly to one side of the same. Each of said wheels is so located as to be engaged by the nose 147 of one of a series of alining-arms 148, rigidly secured at intervals upon a rock-shaft 149. This shaft is connected to the frame by a spring 150, so as to normally hold the noses 147 out of engagement with the wheels 146, and is further provided with an arm 151. This arm is operated to rock the shaft and cause the noses to engage the teeth of the wheels 146 by a laterally-projecting pin 152, mounted on the lever 39. By the above-described means the alining of the printing-wheels takes place after the same have been adjusted to the proper printing positions.

It is obvious from the construction and relation of the parts as I have described them that instead of utilizing the graduated movement of the cam-arms to actuate the printing-wheels this graduated movement could be adapted to actuate the registering-wheels of the counter, and therefore the broad principle of my invention is not limited to use in connection with printing-wheels or printing devices of any kind, for it is a simple matter to transmit the graduated movement of the cam-arms to actuate the registering or numbered wheels of the counter, and in a similar manner the movement could be utilized to actuate the so-called "roller-indicators" of machines, for example, like those shown in the patent to J. H. Patterson, No. 383,006, dated May 15, 1888, or like those shown in the patent to J. Pfeifer, No. 560,924, dated May 26, 1896. It is evident, too, that the position of the cam-arms relatively to the shaft upon which the keys are fulcrumed may be changed at will without departing from the spirit of my invention. For example, the cam-arms might be located to the rear of the fulcrum-shaft of the keys instead of in front thereof, as shown in Fig. 3 of the drawings.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cash-register, the combination with a plurality of keys, of a plurality of pivoted operating-arms having operating edges of dif-

ferent lengths, and also provided with projecting noses, projections mounted on the keys and engaging said edges, and arms mounted on the keys and adapted to engage said noses.

2. In a cash-register the combination with a plurality of keys, a plurality of cam-arms, having projecting cam-noses, projections on the keys engaging said cam-arms to move them in one direction and arms mounted on the keys and adapted to engage the cam-noses to move the cam-arms in the opposite direction.

3. In a cash-register, the combination with a plurality of main operating-keys, of a pivoted operating-lever arranged to be operated by said keys, a locking device for said lever, a plurality of special keys, and means connecting the locking device and the special keys whereby said device is unlocked upon the depression of any one of said special keys.

4. In a cash-register the combination with a plurality of keys, of a printing mechanism, two pivoted printing-levers, separate toggle-links pivoted together and to the respective printing-levers and means for alining the toggle-links when the keys are operated and thus imparting movement to the printing-levers.

5. In a cash-register, the combination with a plurality of keys, of a printing mechanism adapted to be operated by the same, a printing-lever having a permanent joint, a special key, and means connecting said key and lever for rendering the joint of the latter either flexible or rigid at will.

6. In a cash-register, the combination with a plurality of keys, of a printing mechanism adapted to be operated by the same, feeding devices for a check-strip, an independent motor for actuating said devices and a release for said motor.

7. In a cash-register, the combination with a plurality of keys, of a printing mechanism connected thereto, a knife for cutting a check-strip, an independent motor for operating said knife independently of the regular operation of the machine, and a release device for said motor.

8. In a cash-register, the combination with a plurality of keys, of a printing mechanism, a printing-lever having a permanent joint, a spring for normally holding the respective portions of said lever in alinement, and a locking device for the joint of said lever adapted to be operated by a special key.

9. In a cash-register, the combination with a plurality of keys, of a printing mechanism, a printing-lever comprising two permanently-joined sections, devices for locking or unlocking the joint between said sections, means for locking one of said sections to the frame and a special key for operating said devices and means.

10. In a cash-register, the combination with a plurality of keys, of a printing mechanism, an inking device, a lever for operating said

device, a pivoted foot connected to said lever and devices connected to the keys and adapted to engage said foot when operated in one direction but force it to one side out of its path when operated in an opposite direction.

11. In a cash-register, the combination with a plurality of keys, of a printing mechanism, a spring-actuated feeding mechanism for a paper-supply, a latch for said latter mechanism, a ratchet-wheel adapted to operate said latch, means for operating said ratchet-wheel connected to the keys, and a special key for throwing said means into or out of engagement with the ratchet-wheel.

12. In a cash-register, the combination with a plurality of keys, of a printing mechanism, pivoted printing-levers, toggle-levers connected to the first-mentioned levers and adapted to move eccentrically to impart a double back-and-forth movement to the first-mentioned levers at each operation of the machine and means connecting the toggle-levers with the keys.

13. In a cash-register, the combination with a plurality of keys, of a printing mechanism, a slide, inking-arms carried by said slide, projections mounted on said arms and extending into suitable slots formed in a fixed portion of the frame for positively spreading or drawing said arms together, and means connecting the slide with the keys.

14. In a cash-register, the combination with a plurality of keys, of an operating-lever connected to the same, a pivoted catch-lever having a locking-stud engaging the operating-lever, a rod for operating said catch-lever, and special keys which are adapted to operate said rod.

15. In a cash-register, the combination with a plurality of keys, of an operating-lever adapted to be operated by the same, a plurality of printing-wheels, a plurality of alining-arms adapted to engage said printing-wheels, a rock-shaft carrying said arms, a trip on said shaft and a projection on the operating-lever adapted to strike said strip.

16. In a cash-register, the combination with a recording mechanism, of a series of keys, a series of operating-arms adapted to be engaged by said keys when the latter are moved in one direction and having operating edges of different lengths, and projections mounted on said keys and adapted to return said arms to their normal positions when the keys are moved in opposite directions.

17. In a cash-register, the combination with a plurality of keys, of a printing mechanism, devices for feeding and cutting a check-strip, an independent motor for actuating said latter mechanism and a release for said motor.

18. In a cash-register, the combination with a plurality of keys, of a printing mechanism, devices for feeding and cutting a check-strip, a spring-motor for actuating said latter mechanism,

means for releasing said motor by the operation of the machine.

19. In a cash-register, the combination with a series of keys each having a pendent projection, of a movable spring-pressed rack-plate so arranged as to be engaged by all of said pendent projections whereby the keys are locked in their adjusted positions.

20. In a cash-register, the combination with a plurality of keys, of a printing mechanism, devices for feeding and cutting a check-strip, an independent motor for actuating said devices independently of the regular operation of the machine, means for releasing said motor and devices for arresting said motor after a predetermined period of operation.

21. In a cash-register, the combination with a recording mechanism, of a series of keys each having a pendent projection, a pivoted spring-pressed rack-plate arranged to be engaged by all of said projections to lock the same in position, independent keys and means connected to the latter and arranged to rock the rack-plate to release the first-mentioned keys.

22. In a cash-register, the combination with a plurality of keys, of a plurality of arms having cam edges of different lengths, and projections mounted on the keys and arranged to engage opposite sides of said arms and force them positively backward and forward; the construction being such that the arms are locked against independent movement by the projections.

23. In a cash-register, the combination with a plurality of keys, of a printing mechanism, feeding means for a paper-supply, an independent motor device for said feeding means, a latch for said motor, a releasing device for said latch, and means connecting the releasing device to said keys.

24. In a cash-register, the combination with a plurality of keys, of a printing mechanism, feeding devices for a paper-supply, an independent motor for said feeding devices, a latch for said motor, means connected to the keys for tripping said latch, and a special key for throwing said means into and out of operative condition.

25. In a cash-register, the combination with an operating mechanism, a printing mechanism, a motor for operating a part of the printing mechanism independently of the regular operating mechanism, means for releasing the motor controlled by the operating mechanism, and a special key for throwing said means out of operative condition.

26. In a cash-register the combination with a series of amount-keys, of a key-coupler arranged to be operated thereby, a lever connected to said coupler, a series of special keys, a movable frame common to the special keys, a lock for the lever, and a cam-slide intermediate the special-key frame and the lock.

27. In a cash-register, the combination with an operating mechanism, of a printing mechanism including movable platen - carrying members, toggle - levers connected to said members, and means for causing the toggle-levers to impart a double back-and-forth movement to the platen-carrying members at each operation of the machine.

28. In a cash-register the combination with a series of amount-keys, of a printing mechanism connected to said keys, a series of special keys, a type-carrier controlled by the special keys, and means for locking the amount-keys until one of the special keys is operated.

29. In a cash-register the combination with a series of amount-keys, of a type-carrier controlled thereby, a series of special keys, a type-carrier controlled by said special keys, and means for preventing the operation of the amount-keys until one of the special keys is operated.

30. In a cash-register the combination with a series of amount-keys, of a type-carrier operated thereby, a series of special keys, a type-carrier operated by these latter keys, and means for preventing the setting of the amount type-carrier until the special type-carrier is first set.

31. In a cash-register the combination with a printing mechanism, a series of keys for operating the same, a series of special keys, a type-carrier for the special keys, and means for preventing the operation of the printing

mechanism until the type-carrier for the special keys has first been set.

32. In a cash-register the combination with a printing mechanism including amount type-carriers, of a series of amount-keys for controlling the printing mechanism and type-carriers, a series of special keys, a type-carrier for the same, and means for locking the amount-keys until one of the special keys has been operated.

33. In a cash-register the combination with a series of amount-keys, a type-carrier operated by said keys, a platen also operated by the keys, a series of special keys, a type-carrier for these latter keys, and means for compelling the operation of one of the special keys for recording which clerk makes the sale, before the amount-keys can be operated.

34. In a cash-register, the combination with a plurality of operating-keys, of a common member arranged to be actuated by any one of said keys, a locking device for said member, a series of special keys, and means connecting the locking device to the special keys whereby said device is operated upon the depression of any one of said special keys.

In testimony whereof I affix my signature in the presence of two witnesses.

FRED. J. NUTTING.

Witnesses:

ROBT. L. FENWICK,
ALVAN MACAULEY.