

No. 773,055.

PATENTED OCT. 25, 1904.

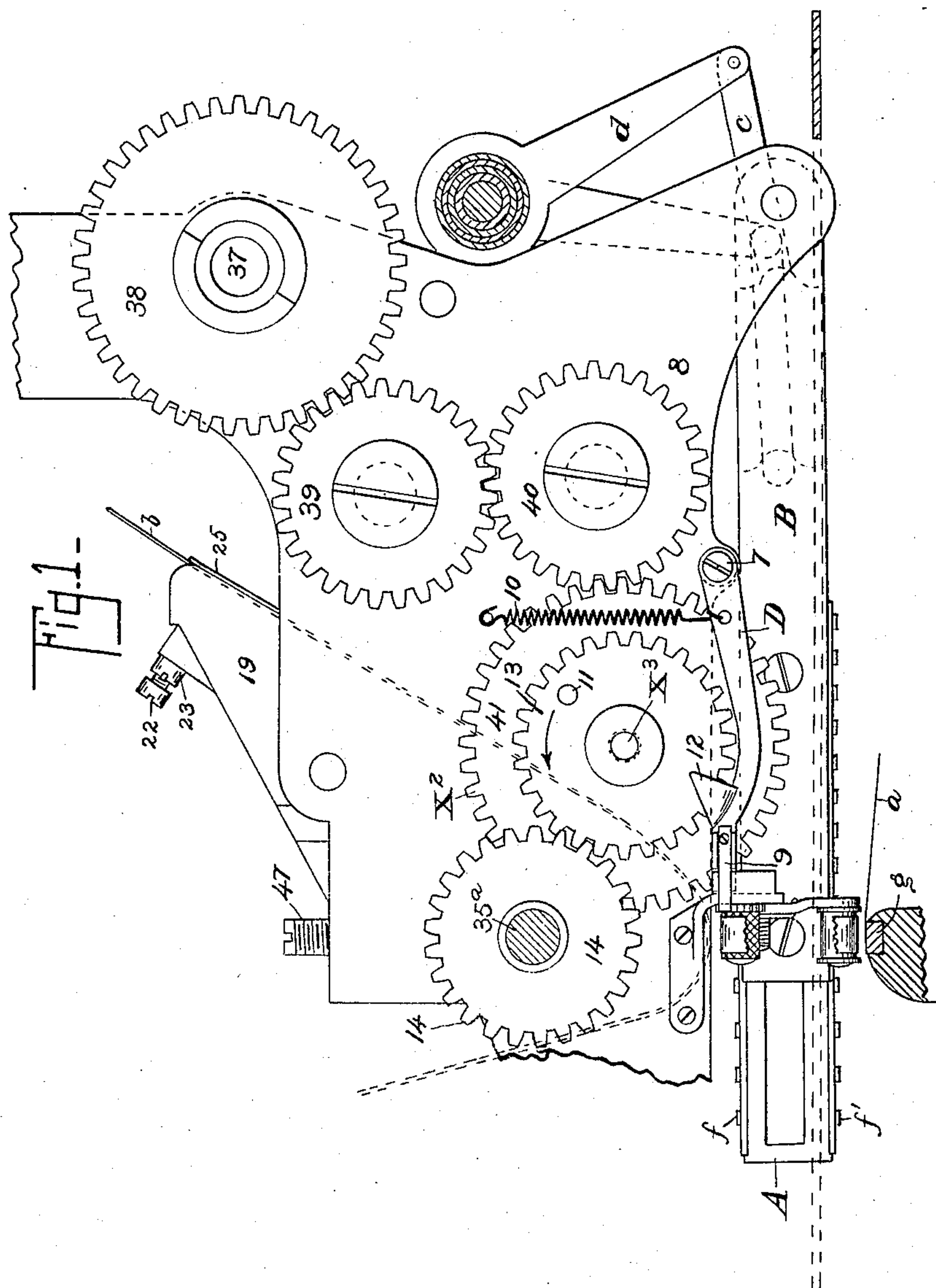
W. H. CLARK.

PRINTING MECHANISM FOR CASH REGISTERS.

APPLICATION FILED SEPT. 25, 1897.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES

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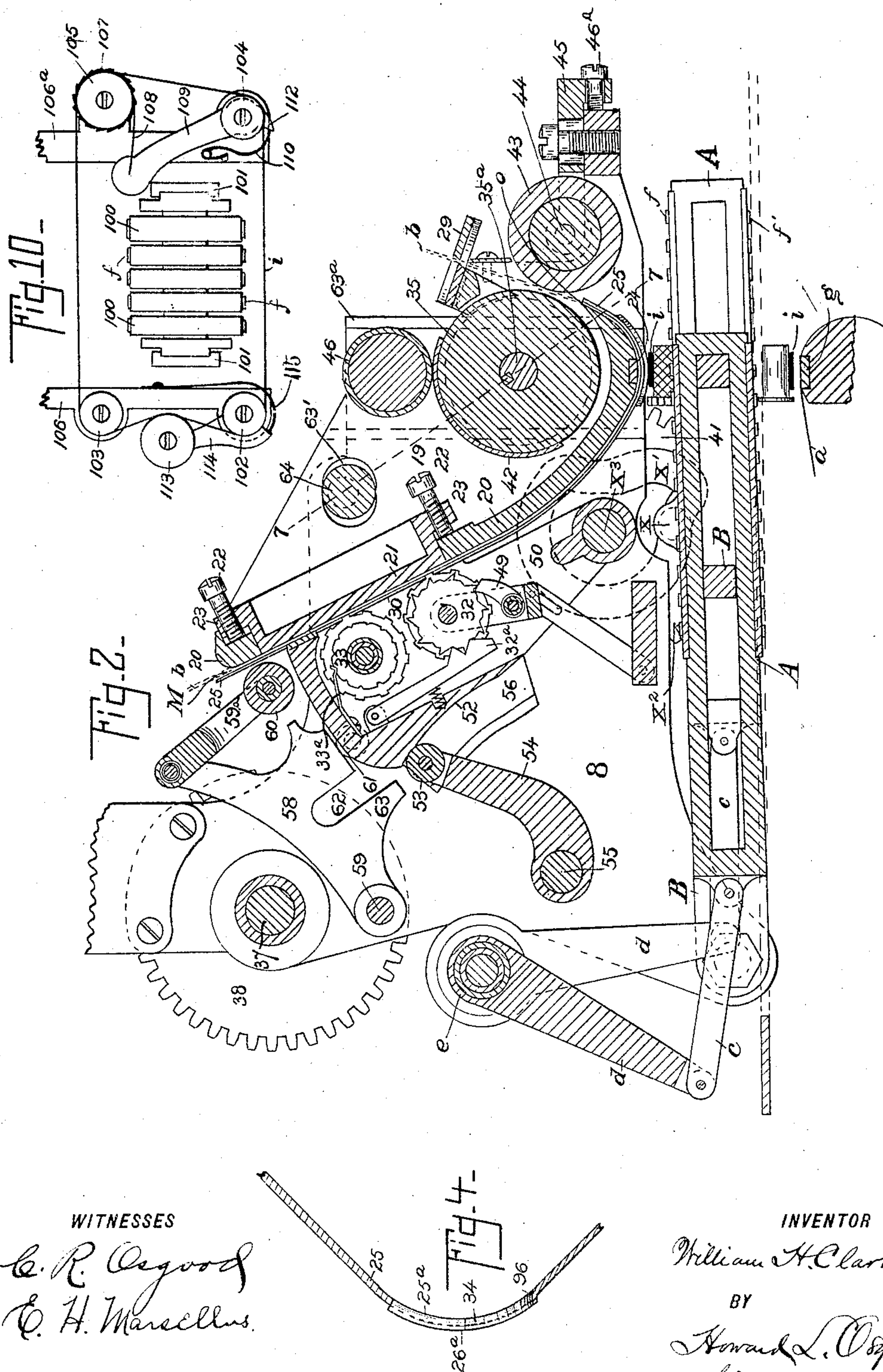
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3 SHEETS—SHEET 2.



WITNESSES

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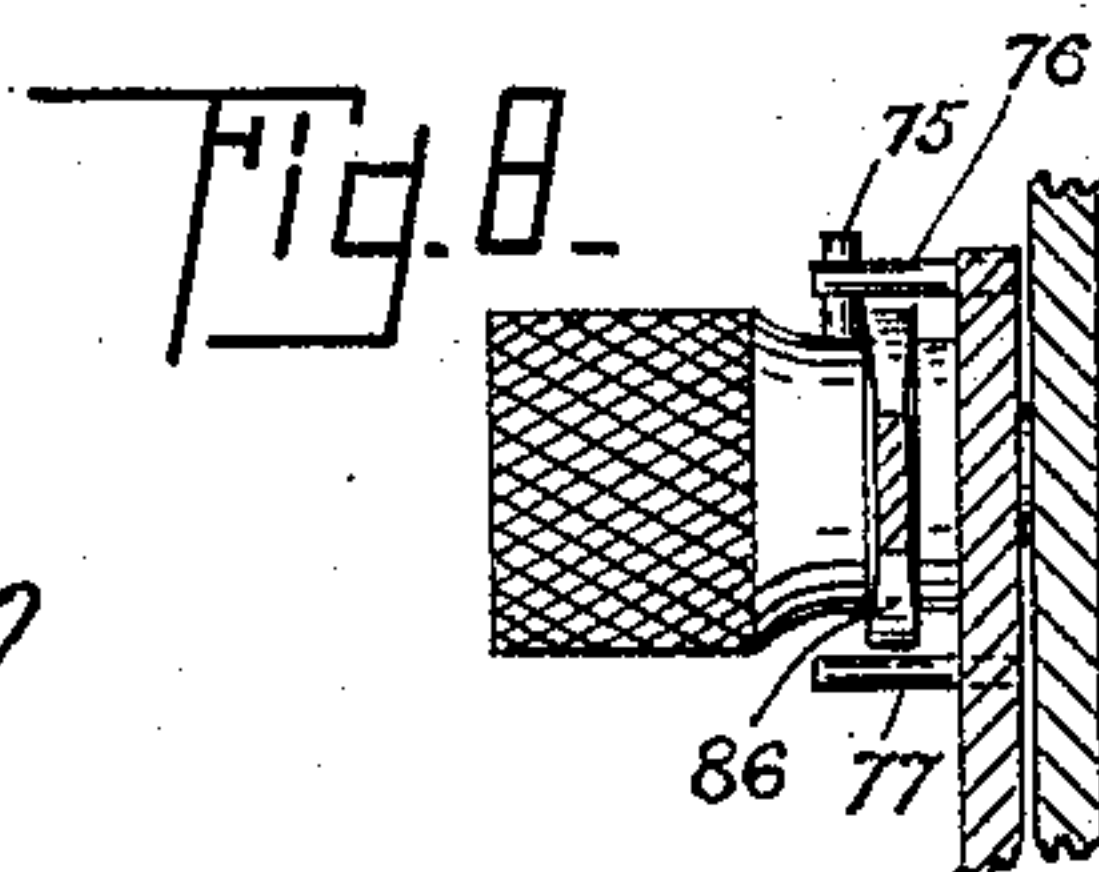
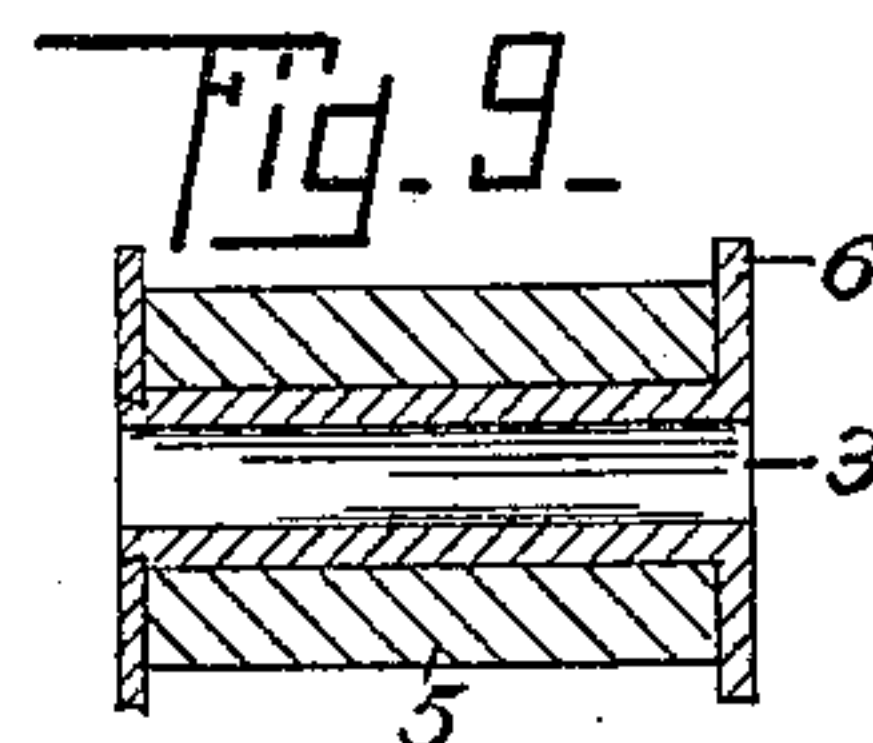
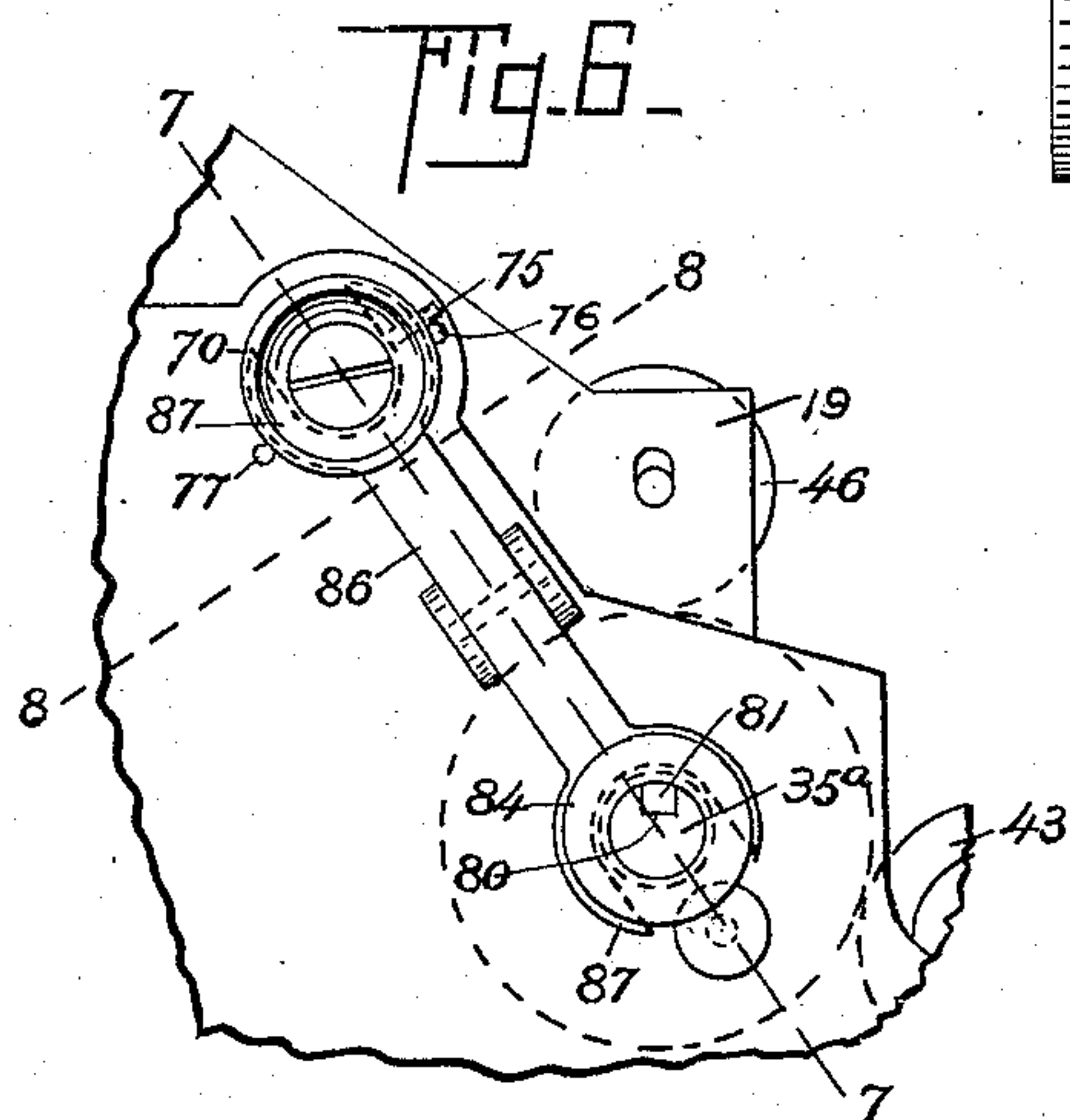
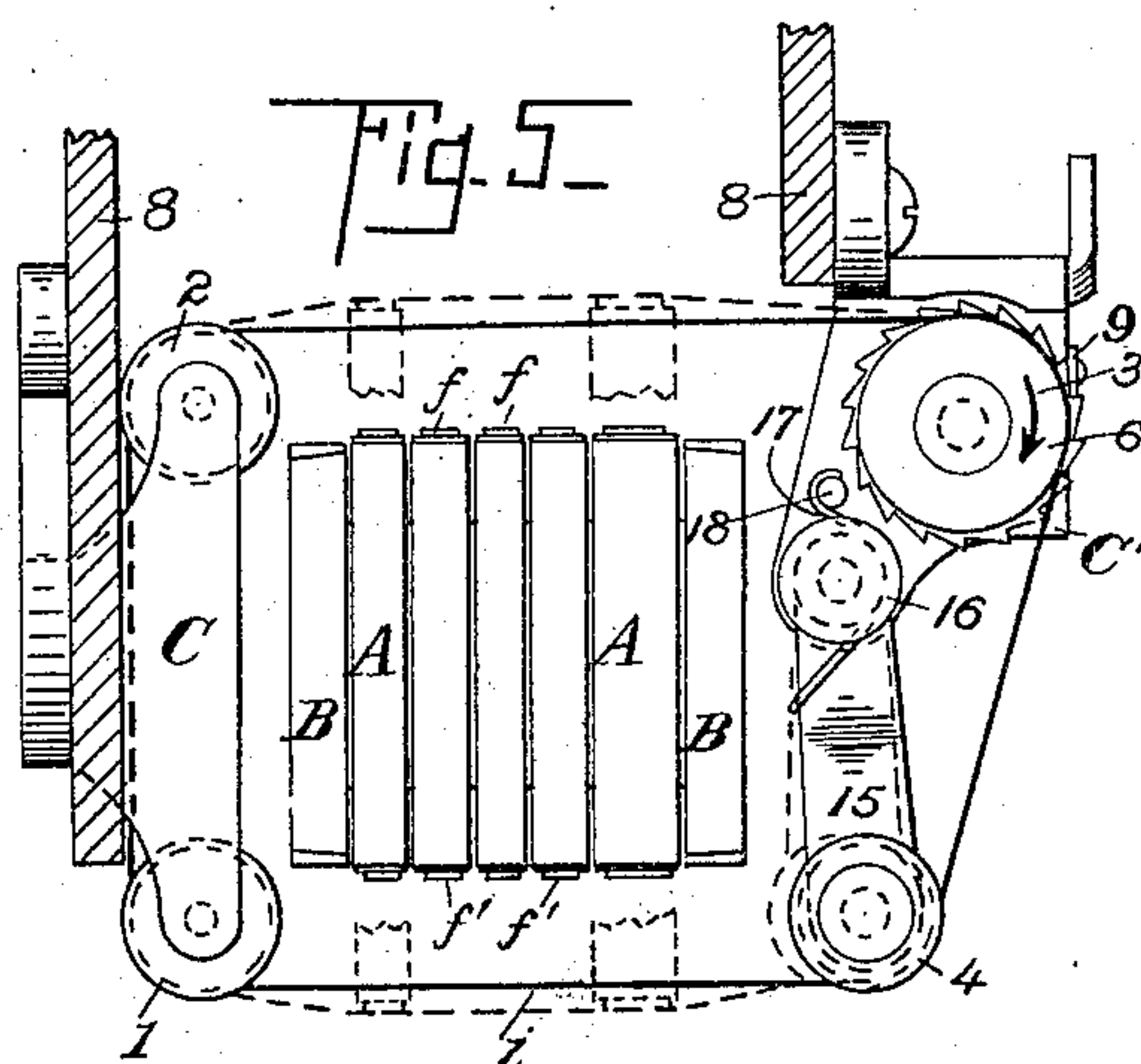
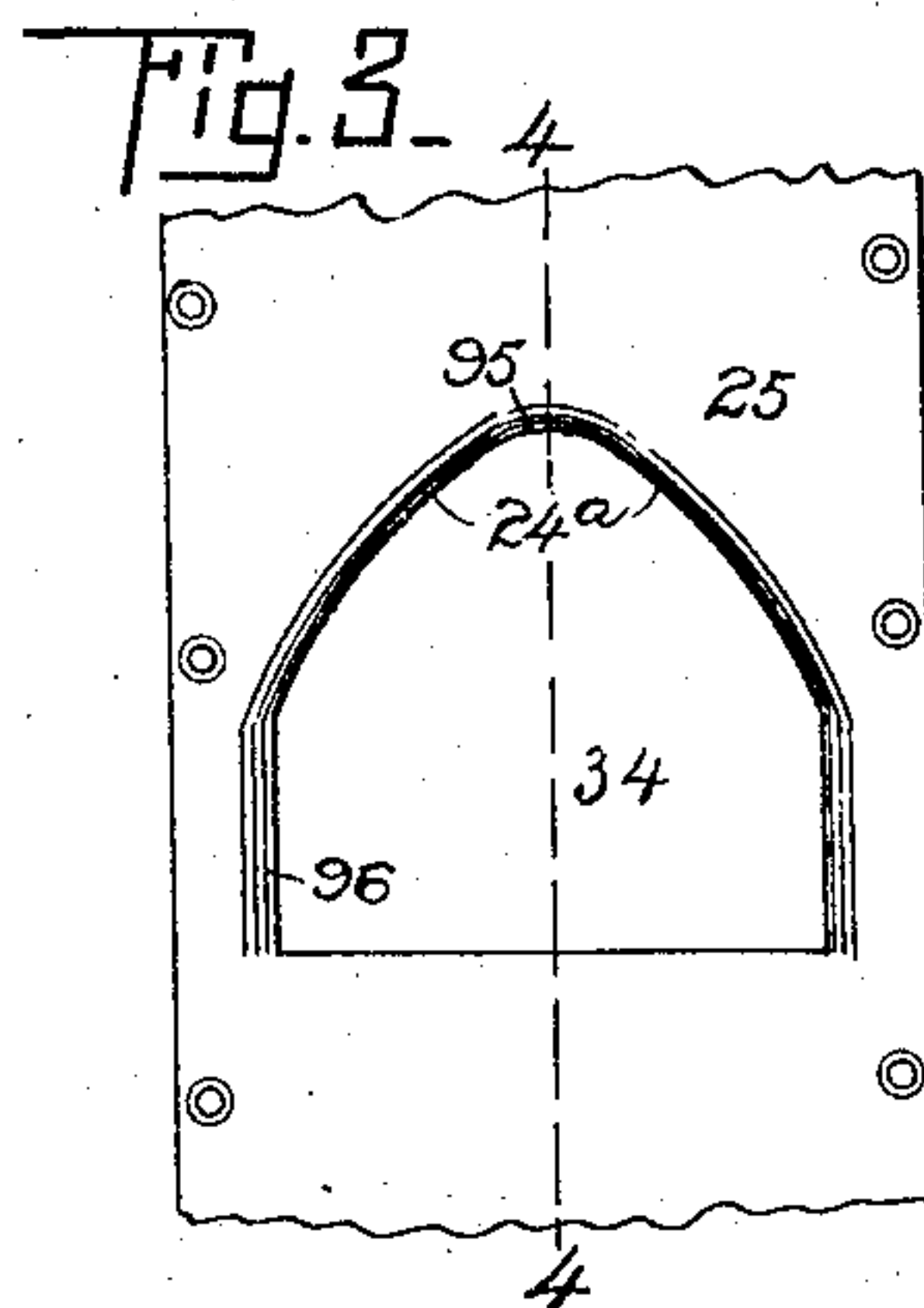
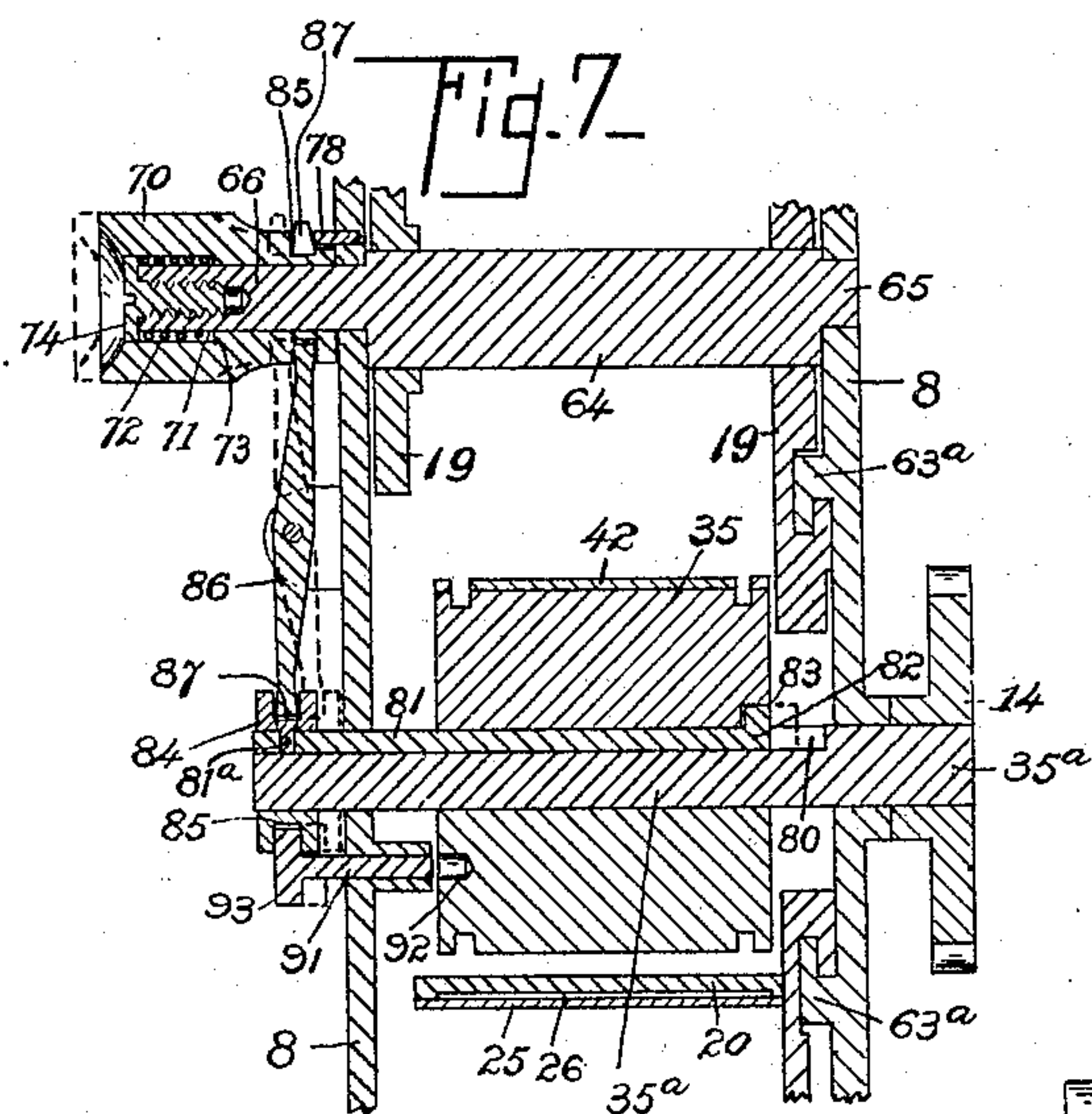
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APPLICATION FILED SEPT. 25, 1897.

NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM H. CLARK, OF ROCHESTER, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PRINTING MECHANISM FOR CASH-REGISTERS.

SPECIFICATION forming part of Letters Patent No. 773,055, dated October 25, 1904.

Application filed September 25, 1897. Serial No. 653,063. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CLARK, a citizen of the United States, and a resident of the city of Rochester, in the county of Monroe, in the State of New York, have invented certain new and useful Improvements in Printing Mechanism for Cash-Registers, of which the following is a specification.

This invention relates to certain new and useful improvements in printing mechanism for cash-registers; and it consists, substantially, in such features of construction, arrangement, and combinations of parts as will hereinafter be more particularly described.

The invention has reference more particularly to that class of printing mechanisms in which the depression or other manipulation of a key serves through intermediate devices to bring a movable type-carrier to a position for printing a character corresponding to the character or value represented by the key. Printing mechanisms of this kind in cash-registers commonly employ both a record-strip and a check-strip upon which the designating characters are printed, and they also commonly or often embody separate printing and marking devices for printing upon the check-strip both the month of the year and the day of the month, as well as the consecutive number of the check. With these several mechanisms or devices suitable means are employed for guiding and feeding both the record and check strips.

The object of the present invention is to simplify and improve the efficiency of the inking devices both for the main or indicator type-bars and for the dating and consecutive-numbering mechanisms for the check-strip; and the invention also has for its object to provide means for preventing or obviating any buckling or crimping of the check-strip at the time of insertion of the same within the guide therefor.

The invention has for its further object to provide means for throwing the check-printing mechanisms out of operation at will, as well as to temporarily cut off the intermittent

feed of the check-strip to said printing mechanisms.

These and other objects are accomplished by means substantially as shown in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of a complete printing attachment for cash-registers having my improvements embodied therein. Fig. 2 is a central vertical longitudinal section thereof. Fig. 3 is a detail view of the means or device for preventing the check-strip from crimping or buckling when the end of the strip is first inserted in the machine. Fig. 4 is a longitudinal sectional view of said means or device on the line 4 4 of Fig. 3. Fig. 5 is a front elevation of the inking mechanism for the type-bars which are operated to print upon both the record and check strips. Fig. 6 is a side view in detail of the mechanism throwing the check-printing mechanisms out of operation and at the same time cutting off the intermittent feed of the check-strip until the parts are again restored to their positions. Fig. 7 is a sectional view on the line 7 7 of Fig. 6. Fig. 8 is a detail view, partly in section, on the line 8 8 of Fig. 6 of the clutch mechanism shown in Figs. 6 and 7. Fig. 9 is a sectional view in detail of the inking-pad for the ribbon, and Fig. 10 is a detailed view of a modification of the feed and inking devices for the printing-ribbon.

In the accompanying drawings, A represents a series of type-bars which are guided in a frame B and which are moved forward longitudinally, so as to bring the type for printing the proper indicating character or numeral in position to print it both upon the record-strip *a* and upon the check-strip *b*. Each bar is actuated by a link *c*, connecting the rear end of the bar with an arm *d*, carried by a sleeve *e*, and which sleeve is in connection with the operating-keys or setting mechanism (not shown) of the cash-register, so that when any key is manipulated or the key and setting mechanisms are operated the sleeve will be turned in a direction to cause the in-

intermediate connections described to move the type-bar forward, and then after the proper printing operation has been effected, in the manner hereinafter explained, the bar is re-
 5 turned to its first or initial position.

In my Patent No. 596,359, dated December 28, 1897, I have shown a complete cash-register having the above-described devices and also certain other devices contained
 10 in the present application and hereinafter referred to, and for a more detailed description of certain of these mechanisms reference may be had to said patent.

In order to perform the printing of the de-
 15 sired indicating characters or numerals upon both the record and check strips, the type-bar after being moved forward is rocked first against one of said strips and then against the other, and as this rocking movement can be
 20 effected in many different ways I have not deemed it necessary to illustrate fully any special means therefor, except to show in Fig. 2 a pin x extending from the side frame B into a cam-groove x' upon a rotary cam-plate on the inner side of the gear-wheel x^2 .
 25 (Shown in Fig. 1.) The shaft x^3 which bears this cam-plate extends across the machine, so as to bear another like cam-plate for engaging a pin similar to the pin x upon the oppo-
 30 site side of the frame B. Each bar A is provided on its upper and lower face with type f and f' , corresponding in number and value to the numbers and values represented by the operating-keys, (not shown,) and as the bar
 35 is operated successively, for instance, to print from "1" to "9" it is evident that said bar must be moved forward each time to an extent corresponding to the spaces between the num-
 40 bers or characters printed. These movements are all produced by devices (not shown) which are controlled by different keys. In connection with the type on the lower faces of the type-bars a record-strip platen g is employed, which is common to all the bars,
 45 and over this platen the record-strip a is fed intermittently by any suitable devices.

I employ a suitable inking device for the type, such as is shown in Fig. 5. Said mechanism comprises a frame C, on which are sup-
 50 ported two guide-rollers 1 2 for the printing-ribbon i , and an additional frame C', supporting a similar guide-roller 3 and another guide-roller 4. The printing-ribbon passes around the four guide-rollers. For all the
 55 purposes of a mere guide for the printing-ribbon the guide-roller 4 could be stationary; but in the present instance it is movable for the purpose hereinafter explained. One of these guide-rollers—for instance, the guide-
 60 roller 3—is provided with a peripheral pad 5, Fig. 9, of felt or other absorbent material, which is loaded with ink, whereby ink is supplied to the printing-ribbon i as the said ribbon passes over the said pad. When the type-
 65 bars are operated to swing down upon the

platen g , the printing-ribbon is carried down upon the platen with the bar, and in this way the printing is effected upon the record-strip, and when said bars are carried upward to print upon the check-strip, as hereinafter de-
 70 scribed, the printing-ribbon is in like manner carried with the bars to print against the platen for the check-strip.

It is desirable to feed the printing-ribbon so as to present fresh surfaces thereof to the
 75 type on the bars. Thus carried by and moving with the roller 3 is a ratchet-wheel 6, and whenever said ratchet-wheel is turned in the direction of the arrow, Fig. 5, it is evident that the printing-ribbon is moving correspond-
 80 ingly, and at the same time the ribbon receives ink from the pad 5. In order to turn the roller 3 intermittently for feeding the ribbon, I employ a pawl or lever D, Fig. 1, pivoted at 7 to the side frame 8 of the mechan-
 85 ism, and this pivoted pawl or lever is provided at its forward or free end with a thin steel or other suitable spring tooth 9, which normally rests against the straight edge of one of the teeth of the ratchet-wheel, and
 90 whenever the pawl or lever is carried downward to a sufficient limited extent the ratchet-wheel 6 is carried around, say, the distance of one of its teeth, and in this way the de-
 95 sired feeding movement is imparted to the printing-ribbon. To restore the pawl or lever D to position so as to cause its tooth 9 to engage the next succeeding tooth of the ratchet-wheel 6, I employ a spring 10, fas-
 100 tened at one end to the lever and at its other end to the side frame 8. The thin steel or spring tooth 9 springs outwardly or transversely to the movement of the lever D in passing over a tooth of the ratchet-wheel 6 in order to engage with the next tooth thereof.
 105 The said pawl or lever is operated or carried downward by any suitable means—as, for instance, by a pin 11, carried by one of the operating-gears of the machine, and which is carried around and brought into engagement
 110 with a beveled cam or projection 12 upon the forward end of the lever D. This particular gear is designated at 13, and it is in gear with another wheel, 14, (shown in Figs. 1 and 7,) for operating the combined feed and printing
 115 roller for the check-strip, to be hereinafter described.

In order to keep the ribbon i taut and also to permit it to be carried against the record and check platens and still be taut, I employ
 120 a suitable tension device. As herein shown, this tension device comprises a swinging arm 15, pivoted on the frame C' and carrying at its lower end the roller 4, hereinbefore referred to. At its upper end the said arm is
 125 provided with a small drum 16, around which is passed a coiled spring 17, the upper end of which is fastened to a stud or pin 18 on the frame C' and the lower end of which extends diagonally across the arm and is bent or turned
 130

inward to bear against the inner edge of the arm. As thus arranged, the spring tends to carry the arm outward, as shown in the full-line position in Fig. 5, and whenever the printing-ribbon is carried against either of the platens the said arm 15 is carried inward, as shown in the dotted-line position of the parts. At all times a tension is thus exerted upon the ribbon to prevent it from becoming loose on its rollers, and inasmuch as the roller 4 is revoluble a perfect and free feed of the ribbon may take place, as above explained.

A modification of the feed and tension devices for the printing-ribbon is shown in Fig. 10. In this modification the movable type-bars 100 are carried by a frame 101, which is rocked by any suitable means to carry the said bars first against one platen and then against the other, and the guide-rollers 102, 103, 104, and 105 for the printing-ribbon are supported on suitable frame-pieces 106 and 106^a, arranged at the end of the machine. One of said rollers—say the roller 105—is provided at the end adjacent to the frame-piece 106^a with a ratchet-wheel 107, the teeth of which are engaged by a flat spring 108, carried by an arm or pawl 109, pivoted on an axis parallel to the axis of the ratchet-wheel—say upon the axis or spindle of the lower roller 104. The upper end of said arm or pawl 109 extends over and normally rests upon the upper edge of one of the side pieces of the frame 101, and a spring 110, secured to the frame-piece 106^a, presses at its lower end against a lug or shoulder 112 on the pawl 109 in such manner as to restore the pawl to position after it is raised by the movement of the frame 101. The tension device in this instance comprises a roller 113 between the rollers 102 and 103 and carried by an arm 114, a spring 115, acting on the arm 114, which holds the roller 113 against the inking-ribbon with a yielding tension. The tension-roller in this form of the device is an inking-roller similar to the roller 3 of the mechanism hereinbefore described; but it is obvious that any of the other rollers could be supplied with an ink-pad for this purpose. Now as the type-bar frame is rocked up and down the arm or pawl 109 is raised and lowered, and thus the roller 105 is rotated intermittently and the ribbon is fed along step by step.

The mechanisms for printing indicating characters or numerals on the check-strip similar to those printed on the record-strip and for printing the dates and the consecutive numbering on the check-strip are set within the printer-frame 8 and consists of another frame 19, which latter frame supports a platen-frame 20, that is provided with a platen 21 common to both the dating and the consecutive-numbering devices or mechanisms. This platen 21 is adjustable as to position by means of the set-screws 22 passing through lugs 23 on the platen and bearing on the platen-frame.

The platen-frame 20 occupies an inclined position within the machine and at its lower end is curved or rounded on its under surface and is provided with a check-platen 24, that occupies a position above the type-bars and in line with the record-platen *g*. Beneath the said platen-frame 20 and conforming to the general shape of the under side of said frame is a thin guide-plate 25, arranged to leave a space for the passage of the check-strip *b*, and the said check-strip passes out from between the platen-frame and the guide-plate at *o* and is fed along and carried upward by means of devices hereinafter described to a knife or cutter 29, which automatically severs or cuts each check from the strip. This knife or cutter is of a known form and need not be further described, the operation of the same being set forth in my patent hereinbefore referred to. The guide-plate 25 is provided at 30 with a suitable opening for the passage of the type on the consecutive-numbering and dating mechanisms, indicated, respectively, at 32 and 33, and the guide-plate is also provided with a similar opening 34 (see Figs. 3 and 4) for the passage of the type on the upper surface of the type-bars.

The devices for intermittently feeding the check-strip forward are constructed and arranged as follows: The printer-frame 20 carries a roller 35, which is driven by a gear-wheel 14, which latter is driven from the main shaft 37 by the train of gears 38, 39, 40, 41, and 13, so as to revolve with the main shaft throughout its rotation. The roller 35 has a raised portion 42 on less than half its periphery, which raised portion may or may not be a printing-plate, such as an electrotpe. Fastened to the printer-frame, adjacent to the end of the curved end of the platen-frame 20, is a roller 43, freely revoluble in bearings 44 parallel to the axis of the roller 35 and set in a frame 45 adjustable with reference to the said roller 35, both for proximity and for parallelism, by means of suitable set-screws or bolts 46^a. The roller 43 guides the paper check-strip *b* close to the roller 35, so that when the raised portion 42 revolves past the nearest portion of the roller 43 the check-strip will be fed forward, and if the raised portion 42 is a printing-plate the back of the check-strip receives an impression therefrom. The roller 43 is sometimes positively driven from the gear-wheel 14. In the printer-frame is journaled an inking-roller 46 for inking the raised printing-plate 42. Adjusting-screws 47 serve to regulate the position of the inking-roller 46 with reference to said plate 42.

The consecutive-numbering and dating mechanisms 32 and 33 are each of well-known form, the one having type-wheels to print the month and the number of the day of the month, and the other having type-wheels to print numbers in consecutive order upon the check-strip. Operating in connection with the

wheels of these mechanisms are spring-pawls 32^a and 33^a for preventing any backward turning of the wheels. The consecutive-numbering device is provided with a pawl 49, engaging a notched wheel to carry the printing-wheel forward the extent of one type or number at each operation of the machine. The said numbering and dating mechanisms can be carried against the check-strip in many different ways. As herein shown, these mechanisms are supported within a vibrating or swinging frame 50, which is pivoted upon the shaft x^3 . This swinging frame is provided on its under side with a suitable cam-surface 52, which is engaged by a friction-roller 53, carried on the end of a rocking arm 54, that is rocked by a shaft 55 in any suitable manner. The said friction-roller 53 moves in a guide 56, carried by the swinging frame, and the movement of the arm 54 is sufficient to lower the frame away from the platen 21 and to raise the frame again and carry the numbering and dating mechanisms against said platen with sufficient force to make an imprint on the check-strip. Each time the frame is swung the numbering mechanism is changed in consecutive order. As a means for inking the type of the numbering and dating mechanisms I can use different forms of mechanism; but I show a device consisting of a swinging plate 58, pivoted at 59 to the printer-frame and carrying at its upper end an arm 59^a, on the end of which is supported an inking-roller 60. The swinging frame 50 carries a friction-roller 61, and the swinging plate 58 is slotted or notched at 62, so that when the frame is carried outward to a point to bring the roller 61 before the notch the said roller enters the notch, and the continued outward movement of the swinging frame causes the roller to bear against the extension 63 of the swinging plate, and the plate is thus carried down with sufficient force to cause the inking-roller 60 to pass rapidly over the type of the numbering and dating mechanisms. As the swinging plate is carried down the friction-roller 61 passes up into the notch 62, and then by the continued operation of the machine the swinging frame is carried upward against the platen 21, and the swinging plate 58 is thus carried upward at the same time, so as to allow the lower edge thereof to rest again upon the friction-roller.

From the foregoing it will be understood that the main operating-shaft 37 receives its motion by means of suitable connections from the motor mechanism of the cash-register, and the mechanisms herein shown are so geared or connected with each other as to operate in the proper order or sequence each time any one of the keys of the register is operated to indicate a sale or other transaction and said motor mechanism is actuated—that is to say, whenever any one of the keys of the register is operated the particular type-

bar for that particular key is moved forward to an extent corresponding to the value or character of the key, so as to bring the type into a position before the check-strip or record-strip platens to print a number or character corresponding to that of the key. As soon as it is thus moved the bar is swung first down against the record-platen and then up against the check-platen by means operated by said motor mechanism, and in this way the same character is printed on both the record and check strips. In proper unison the numbering and dating mechanisms are carried against the platen 21, and the check-strip is also fed forward the length of one check, whereupon the check is severed from the strip by the knife or cutter, and the parts are restored to their original positions. Usually when the motor of a cash-register is operated a cash-drawer is opened at the same time. Now it often becomes necessary to open the cash-drawer for other purposes than for the ordinary transactions—as, for instance, to pay out money from the drawer and the like—and while it is necessary to have a record kept thereof it is neither necessary nor desirable that these transactions be printed on the check-strip, and so, also, when only a single operator has access to the machine and at times for other reasons a check becomes unnecessary. Therefore in order to prevent the check-strip from being fed at such times I provide means whereby the check-printing mechanisms are thrown out of operation at will. For this purpose the platen-frame 20 is movable vertically in the printer-frame in suitable guides 63^a. Passing through slots 63' in the platen-frame is an eccentric shaft 64, which has its bearings at 65 in the printer-frame and is extended at 66 for a purpose to be described. Now by turning the said shaft 64 in its bearings the eccentric portion thereof bears against the sides of the slots 63', and thus raises the platen-frame 20, and thereby raises the platens 21 and 24 high enough to be carried out of the range of movement of the check-printing mechanisms. In this way no printing of the check-strip can take place; but because the record-printing mechanism is undisturbed a proper record of each transaction will be printed upon the record-strip.

As a means for manipulating the eccentric shaft 64 I provide on the extended end 66 of the said shaft a movable knob or handle 70, bored out for a part of its length to fit the extension and having the diameter of its bore increased at 71 for the reception of a spring 72, which exerts a pressure between a shoulder 73 and the inner side of the head of a screw 74, that is screwed into the end of the extension and which screw may be adjusted to regulate the tension of said spring. The said knob or handle is provided with a pin 75, which when the knob is turned strikes stop-pins 76 and 77, projecting from the side of the

printer-frame, and which latter pins limit the movement of the said knob or handle 70. Normally the knob or handle is forced inward by its spring and is prevented from being turned in either direction by means of a pin 78 on the frame entering a notch in the shank of the knob, and in order to elevate or raise the platen-frame it is first necessary to pull the knob outward and then turn the same until it engages the proper stop-pin. It will thus be seen that by turning the eccentric shaft in one direction the platen-frame is lowered to carry the check-platens into operative relation with the several printing mechanisms for the check-strip and by turning said shaft in the other direction the platen-frame and its platens are moved away from the printing position.

In order to throw the feed devices for the check-strip out of operation, as well as to prevent the strip from receiving impressions from the raised plate 42 on the roller 35, I employ suitable mechanism which, as herein shown, is made to operate simultaneously with the outward movement of the knob or handle already described.

Working in a longitudinal groove 80 in the shaft or axle 35^a of the roller 35 is a spline or key 81, which at one end has a lug or bit 82 fitting in a recess or cavity 83 in the end of the roller 35, and said key bears at the other end a peripherally-grooved block 84, fastened to the key by a pin 81^a. The block 84 thus slides on the shaft when the key is moved. Formed in the hollow spindle or neck of the knob or handle 70 is also a circumferential groove 85, which when the knob is in its inward position occupies a position nearer to the side of the frame than does the groove 85 in the block 84. Pivoted to the side of the frame, between the knob and the block 84, is a clutch-arm 86, which has at each end a fork 87 entering the grooves of the knob and of the block, respectively. Thus normally said arm at its upper end is inclined toward the frame and at its lower end away from said frame. By this construction and arrangement whenever the knob or handle 70 is drawn outward against the tension of the spring 72 the clutch-arm is caused to move to the dotted-line position, Fig. 7, and the lug or bit 82 of the spline or key 81 is moved out of engagement with the roller 35. When this is done, the said roller ceases to revolve, while its shaft and gear-wheel 14 continue to be operated each time the printing mechanisms are operated. It is obvious that if said shaft and gear were not so permitted to operate there would be a breakage in some part of the motor devices. The parts are held in their locked position by the inner end of the knob 70 bearing against the outer end of the pin 78 in an obvious manner. The roller 35 when disconnected from its shaft is caught and held by means of a sliding bolt 91, working through

the side of the printer-frame 8 and entering a socket 92 in the adjacent side of the roller. This bolt has a head 93 entering the groove 85 in the block 84, and the bolt is operated by the clutch-arm, the lower end of which is forked to fit within the groove of the block 84. It will thus be seen that simultaneously with the raising of the platen-frame the roller 35 is disconnected, and consequently there is no feed of the check-strip, because the plate 42 on said roller is not brought around to bear upon the strip. Likewise and for the same reason no impression can be received on said strip from said plate. It will also be seen that when all of the mechanisms are in full operation no impediments or interruptions are encountered. When the roller 35 is engaged by the bolt 91, it is held with the plate 42 in proper rotative position to resume again its functions when the roller is disengaged by the bolt 91 and is reengaged by the movable spline or key.

The guide-plate 25 for the check-strip is shown as extending entirely around the under side of the platen-frame from the point of entrance *m* of said check-strip to the point of egress *o* thereof, and at a point beneath the check-strip platen said guide-plate is provided with an opening 34 to permit the type on the type-bar to pass through the plate to effect the printing of the check-strip against said platen. With a paper-strip guide as thus constructed the strip when inserted is liable to buckle or crimp up when it reaches the opening. When the end of the strip reaches the opening, it may drop or curl downward of its own weight, and the edges or corners thereof may be caught by the edges of the opening, so as to render it difficult to force the strip through the guide. To obviate this difficulty, I construct the opening 34 with sides, which comprise a salient angle 24^a, extending in the direction followed by the strip in the guide. The said opening can be of various contours, and so, also, can the angle 24^a, and I have shown the apex of the angle to be intersected by a short curve 95, although the said angle could be sharp or practically V-shaped at the intersection of the sides or may substantially be oval in contour. The edges of the opening 24 are rounded off or beveled, as shown at 96, so as to offer no sharp angles or corners to the check-strip, and if the end of the check drops or turns down into the opening a continued forcing in of the strip will cause the edges of the strip to ride or glance along the edges of the opening until the intersecting curve 95 of the converging sides of the opening is reached. Then the portion of the strip thus encountered will immediately straighten out and permit the free passage of the strip through its guide. The edges of said opening may be beveled for these purposes, or they may be turned down from the main body of the

material forming the guide-plate. I have shown the latter construction in the drawings Figs. 2, 3, and 4, in which the edge of the opening 24 is turned down at 25^a, leaving a flange 26^a. This opening is equally effective with a flat guide as with a curved guide, since very often the strip is torn or crumpled and likely to catch.

It is obvious that the mechanisms herein set forth may be varied in construction and arrangement without departing from my invention, and hence I do not intend to limit the scope hereof to any greater extent than the state of the art requires.

What I claim is—

1. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar and out of contact with either, and adapted to be carried against the platens by the type-bar.

2. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, and means for inking said ribbon.

3. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a continuous printing-ribbon passing between each of said platens and the type-bar, and means for feeding the ribbon intermittently.

4. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a continuous printing-ribbon passing between each of said platens and the type-bar, means for feeding the ribbon intermittently, and means for inking the ribbon.

5. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first

against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said ribbon one of which is an inking-roller, and means for operating said ribbon.

6. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said ribbon one of which is an inking-roller, and means operating one of the rollers to impart an intermittent feed to the said ribbon.

7. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said ribbon one of which is an inking-roller, a ratchet-wheel carried by one of the rollers, and a pawl engaging said wheel and operated by a movable part of the printing mechanism.

8. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, a guide for said ribbon, and a yielding tension device for the ribbon.

9. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, a guide for said ribbon, means for inking the ribbon, and a yielding tension device for the ribbon.

10. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a print-

ing-ribbon passing between each of said platens and the type-bar, a guide for said ribbon, means for feeding the ribbon intermittently, and a yielding tension device for the ribbon.

5 11. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-
10 bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, a guide for said ribbon,
15 means for feeding the ribbon intermittently, means for inking the ribbon, and a yielding tension device for the ribbon.

12. In a printing mechanism for cash-registers, a check-strip platen, a record-strip
20 platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters
25 upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said ribbon one of which is a yielding roller, and means for inking the ribbon.

30 13. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-
35 bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said
40 ribbon one of which is a yielding roller and another an inking-roller, and means for feeding said ribbon across the rollers intermittently.

14. In a printing mechanism for cash-reg-
45 isters, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against
50 the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, stationary guide-rollers for said ribbon, a yielding guide-roller for the
55 ribbon, and means normally swinging the latter against said ribbon to exert a tension thereon, an inking-roller, and means for feeding the ribbon across the rollers intermittently.

60 15. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a sliding type-bar between said two platens having corresponding type upon its opposite surfaces, means for rocking said type-
65 bar first against one platen and then against

the other for printing the same characters upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said ribbon, a swinging arm bearing one of said
70 rollers, guiding devices for pressing the arm against the ribbon, and means for feeding said ribbon across the rollers intermittently.

16. In a printing mechanism for cash-registers, a check-strip platen, a record-strip
75 platen, a sliding type-bar between said two platens having corresponding type upon its opposite surfaces, means for rocking said type-bar first against one platen and then against the other for printing the same characters
80 upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said ribbon, a swinging arm carrying one of said
85 rollers, yielding devices for pressing the arm against the ribbon, means for feeding the ribbon intermittently, and means for inking the ribbon.

17. In a printing mechanism for cash-registers, a check-strip platen, a record-strip
90 platen, a sliding type-bar between said two platens having corresponding type upon its opposite surfaces, means for rocking said type-bar first against one platen and then against the other for printing the same characters
95 upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said ribbon, a swinging arm carrying one of said
100 rollers, yielding devices pressing the arm against the ribbon, means for feeding the ribbon, and an inking-pad for the ribbon carried by one of the guide-rollers.

18. In a printing mechanism for cash-registers, a check-strip platen, a record-strip
105 platen, a sliding type-bar between said two platens having corresponding type upon its opposite surfaces, means for rocking said type-bar first against one platen and then against the other for printing the same characters
110 upon a check-strip and a record-strip, a printing-ribbon passing between each of said platens and the type-bar, guide-rollers for said ribbon, one of which is an inking-roller, a swinging arm carrying one of said rollers,
115 yielding devices pressing the roller against the ribbon, a ratchet-wheel carried by one of the rollers, and a pawl to move the ratchet intermittently.

19. The combination with an operating
120 mechanism, of a type-carrier, a feeding-roller for moving a check-strip, a knife for cutting the strip and devices for throwing the roller out of operative connection with the operating mechanism and simultaneously locking it
125 against movement.

20. The combination with an operating mechanism a type-carrier, a feeding-roller
for feeding a check-strip, a knife for cutting the strip, devices independent of the operat-
130

ing mechanism for throwing the roller out of connection with the operating mechanism and simultaneously locking it against accidental movement.

5 21. The combination with an operating mechanism, a type-carrier, a feeding-roller for a check-strip, a knife for cutting said strip, devices for throwing the roller out of connection with the operating mechanism and simultane-
10 ously locking it and a thumb-knob for operating said devices independently of the regular movement of the machine.

22. The combination with an operating mechanism, a type-carrier, a rotary shaft con-
15 nected to the operating mechanism, a strip-feeding roller mounted on said shaft, means for coupling the roller to the shaft and devices for operating said coupling means and simultaneously locking the roller.

20 23. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-
25 bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, devices for feeding a check-strip across the check-strip platen, and means for carrying the check-strip
30 platen beyond the throw of the type-bar and for stopping the motion of said feed devices, both simultaneously at will.

24. In a printing mechanism for cash-registers, a check-strip platen, a record-strip
35 platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon
40 a check-strip and a record-strip, devices for feeding a check-strip across the check-strip platen, means for throwing said feed devices out of operation, and means for locking said devices.

45 25. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-
50 bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, feed devices for the check-strip comprising two rollers, means for throwing one of said rollers out of
55 operation at will, and means for locking said roller in this position.

26. In a printing mechanism for cash-registers, a check-strip platen, a record-strip
60 platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, feed devices
65 for the check-strip comprising two rollers one

of which is provided with a printing-plate, means for throwing the latter roller out of operation, and means for locking said roller in this position.

27. In a printing mechanism for cash-reg- 70
isters, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-
75 bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, means for carrying the check-strip platen beyond the throw of the type-bar, devices for feeding a
80 check-strip comprising two rollers one of which is provided with a printing-plate, means for throwing the latter roller out of operation, and means for locking the said roller in this position.

28. In a printing mechanism for cash-reg- 85
isters, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-
90 bar first against one platen and then against the other for printing the same characters upon a record-strip and a check-strip, a swinging frame supporting consecutive numbering and dating mechanisms, a movable frame sup-
95 porting said check-strip platen besides a check-strip guide and an additional platen for said numbering and dating mechanisms and means for carrying said movable frame be-
100 yond the throw both of the type-bar and of the swinging frame.

29. In a printing mechanism for cash-reg-
isters, a check-strip platen, a record-strip
105 platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-
110 bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a swinging frame supporting consecutive numbering and dating mechanisms, a movable frame sup-
115 porting said check-strip platen besides a check-strip guide and an additional platen for said numbering and dating mechanism, means for automatically inking the type of these mech-
120 anisms on the lowering of the swinging frame, and means for carrying said movable frame beyond the throw both of the type-bar and the swinging frame.

30. In a printing mechanism for cash-reg-
isters, a check-strip platen, a record-strip
120 platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-
125 bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a swinging frame supporting consecutive numbering and dating mechanisms, and having a friction-
130 roller, and an inking device for said mechanisms comprising a swinging plate carrying an

inking-roller and normally resting on said friction-roller, said plate having an extension engaged by the roller on the lowering of the frame and having a notch receiving said roller.

31. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, a swinging frame supporting consecutive numbering and dating mechanisms, and having a friction-roller, a notched swinging plate carrying an inking-roller and engaged by said friction-roller, a movable frame supporting said check-strip platen besides a check-strip guide and an additional platen for said numbering and dating mechanisms, and means for carrying the movable frame beyond the throw both of the type-bar and the swinging frame.

32. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a record-strip and a check-strip, a swinging frame supporting consecutive numbering and dating mechanisms, a movable frame supporting said check-strip platen besides a check-strip guide and an additional platen for said numbering and dating mechanisms, feed-rollers for the check-strip, means for carrying said movable frame beyond the throw both of the type-bar and swinging frame, and means for disconnecting one of the feed-rollers from its driving mechanism.

33. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, means for carrying the check-strip platen beyond the throw of the type-bar, feed devices for the check-strip including a roller held to operation by a key or spline, means for moving the key into and out of engagement with said roller, and a locking device for said roller operated by said key.

34. In a printing mechanism for cash-registers, a check-strip platen, a type-carrier set in a swinging frame movable to and from said platen and an inking device comprising a swinging plate carrying an inking-roller and normally resting upon said swinging frame, said plate having an extension and a notch, and means on said swinging frame engaging said extension and entering said notch for operating said swinging plate.

35. In a check-strip-printing mechanism, in combination with printing mechanism for printing upon said check-strip, a continuous platen-frame supporting one or more platens, and a check-strip guide extending the whole length of said platen-frame and having openings for the passage therethrough of the printing mechanisms to print on a check-strip between said guide and said platen-frame.

36. In a check-strip-printing mechanism, a strip-guide having an opening provided with sides which comprise a salient angle extending in the direction followed by the strip in the guide.

37. In a check-strip-printing mechanism, a strip-guide having an opening provided with sides which are rounded off and which comprise a salient angle extending in the direction followed by the strip in the guide.

38. In a check-strip-printing mechanism, a strip-guide having an opening provided with sides which are flanged and which comprise a salient angle extending in the direction followed by the strip in the guide.

39. In a check-strip-printing mechanism, a strip-guide extending from the point of ingress to the point of egress of a strip, and having an opening provided with sides which comprise a salient angle extending in the direction followed by the strips in the guide.

40. In a cash-register, the combination with a printing mechanism, of a movable frame carrying a platen, an eccentric shaft for adjusting said frame, a check-feeding roller, a clutch for throwing said roller into and out of operative condition, and means connecting the eccentric shaft and clutch whereby they are operated simultaneously.

41. In a cash-register, the combination with a printing mechanism, of a movable frame carrying a platen, an eccentric for moving said frame, a shaft, a check-feeding roller, mounted thereon, a movable spline for connecting said roller to said shaft and means connecting said spline and said eccentric whereby they move simultaneously.

42. In a printing mechanism for cash-registers, the combination with a printing mechanism, of a movable frame carrying a platen, a check-feeding device on said platen, means for adjusting the frame to move the platen out of cooperative relation with the printing mechanism, and a clutch for throwing the feeding-roller into and out of operative condition arranged to be actuated by said means.

43. In a printing mechanism for cash-registers, the combination with a movable frame carrying a platen, of a movable frame carrying printing devices, a movable inking device, a projection mounted on the printer-frame and arranged to positively actuate the printing device, and means for adjusting the platen-frame to move the platen out of cooperative relation with the printing device.

44. In a printing mechanism for cash-regis-

ters, the combination with a movable frame carrying a platen, of a movable frame carrying printing devices, inking devices means carried by the printer-frame for positively moving the inking devices to cause them to ink the type and means for adjusting the movable platen-frame to move said platen out of coöperative relation with the printing device.

45. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite sides means for rocking said type-bar first against one platen and then against the other for printing the same characters upon a check-strip and a record-strip, means for feeding a check across the check-platen, and devices for throwing out said feeding means at will.

46. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces means for rocking said type-bar first against one platen and then against the other, a movable frame supporting an auxiliary printing device, and a movable platen-frame supporting the check-strip platen and a platen which coöperates with the auxiliary printing device so that when said platen-frame is adjusted the platens are moved out of the paths of the respective types.

47. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens having corresponding type upon its opposite faces, means for rocking the type-bar to bring the same into contact with the platens and means for moving one of said platens out of the path of the type-bar.

48. In a cash-register, the combination with a series of printing-bars mounted in a movable frame whereby they may be moved against a suitable platen, an inking-ribbon

mounted in proximity to said bars, a feeding-roller for said ribbon and a pawl for operating said roller arranged to be engaged and actuated by the movable frame.

49. In a cash-register, the combination with a series of type-bars mounted in a movable frame, of an endless inking-ribbon passing about said bars, a feeding-roller for said ribbon, a pivoted arm engaging the movable frame so as to be operated thereby, and a pawl carried by said arm and adapted to operate the feeding-roller.

50. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a type-bar arranged to be moved into contact with both of said platens, check-feeding devices, and means for carrying the check-strip platen beyond the throw of the type-bar and simultaneously stopping the movement of the check-feeding devices.

51. In a cash-register, the combination with a printing mechanism, of a check-feeding roller, a clutch for throwing said roller into and out of operative condition, a locking device for said roller, means connecting the clutch and locking device and a knob for operating the clutch.

52. In a printing mechanism for cash-registers, a check-strip platen, a record-strip platen, a movable type-bar between said two platens, means for rocking said bar first against one platen and then against the other, a swinging frame supporting printing devices, a movable frame supporting the check-strip platen and an additional platen for the printing devices and means for carrying the movable frame beyond the throw of the type-bar and the swinging frame.

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Witnesses:

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