

No. 703,188.

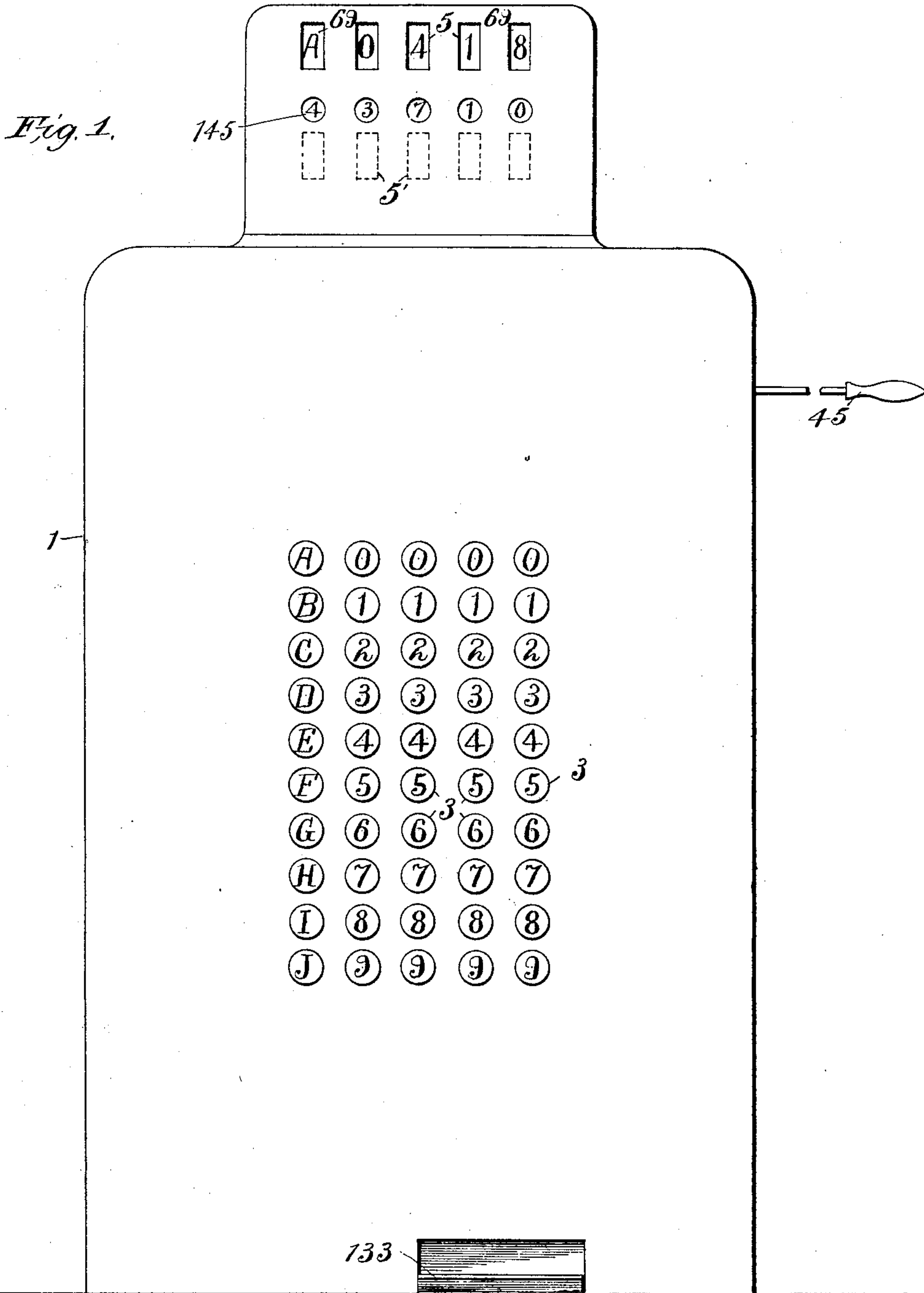
Patented June 24, 1902.

I. S. DEMENT.
CASH REGISTER.

(Application filed Mar. 9, 1900.)

(No Model.)

7 Sheets—Sheet 1.



Witnesses.
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No. 703,188.

Patented June 24, 1902.

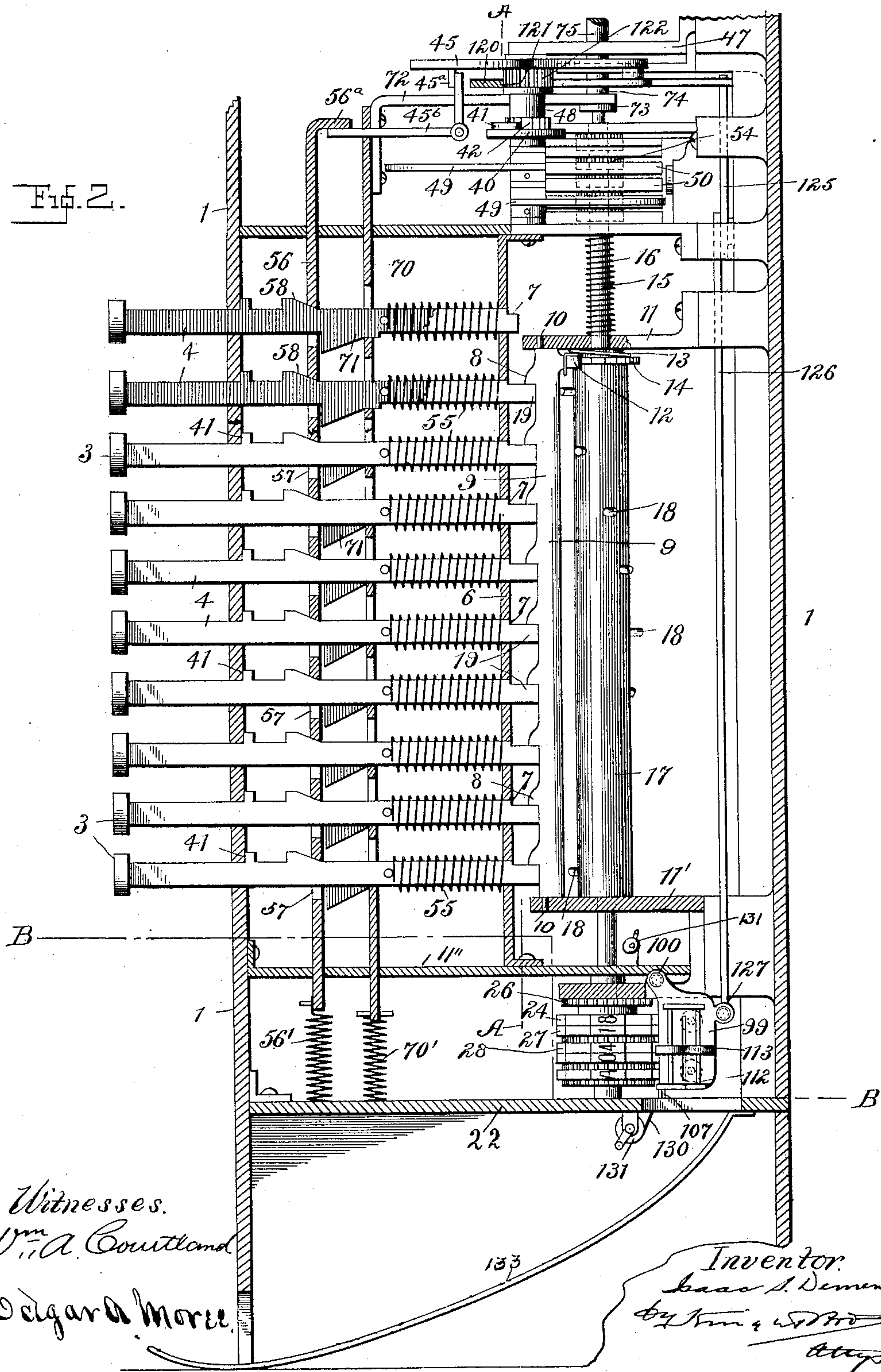
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(No Model.)

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Fig. 2.



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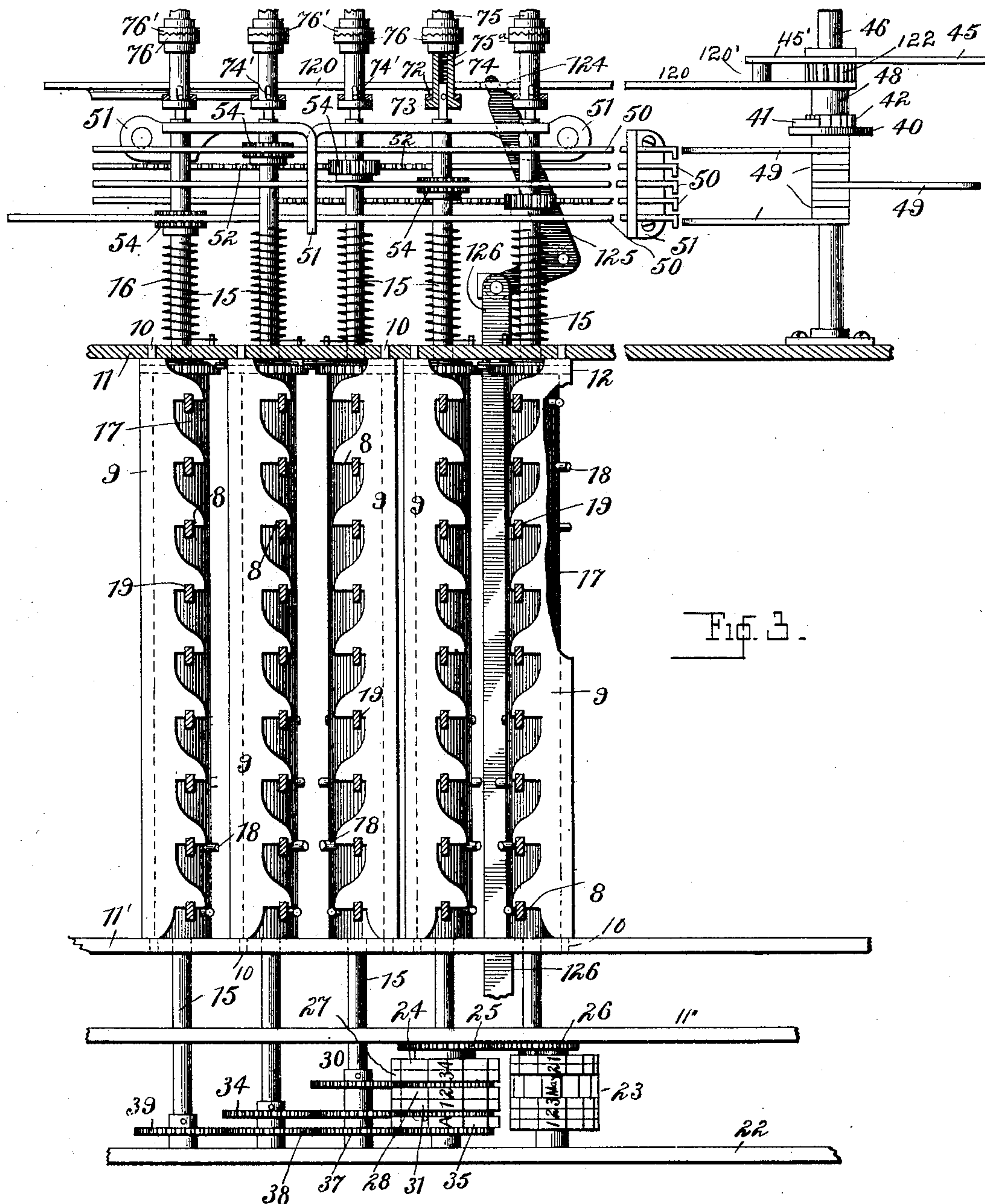
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7 Sheets—Sheet 3.



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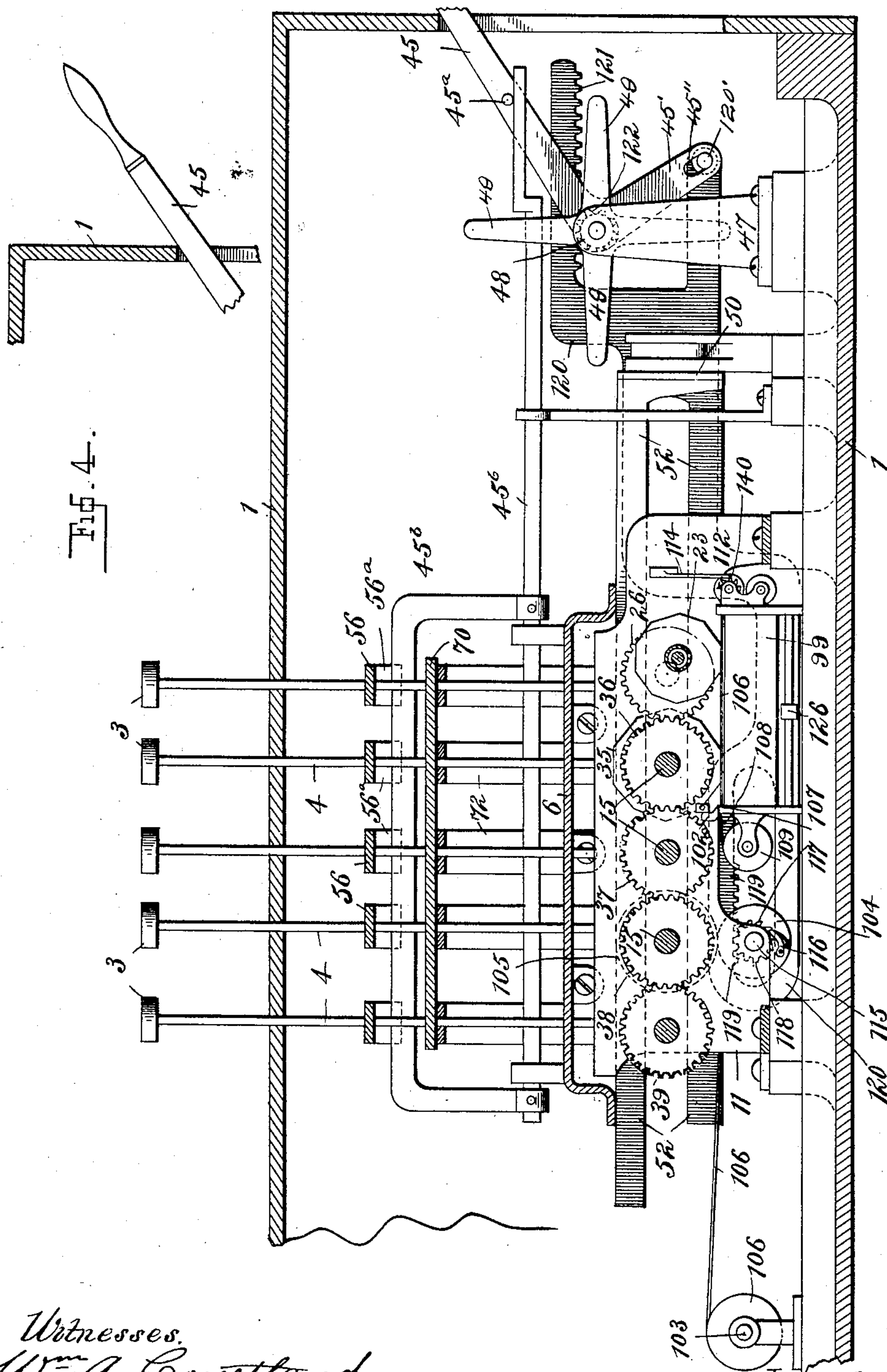
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CASH REGISTER.

(Application filed Mar. 9, 1900.)

(No Model.)

7 Sheets—Sheet 4.



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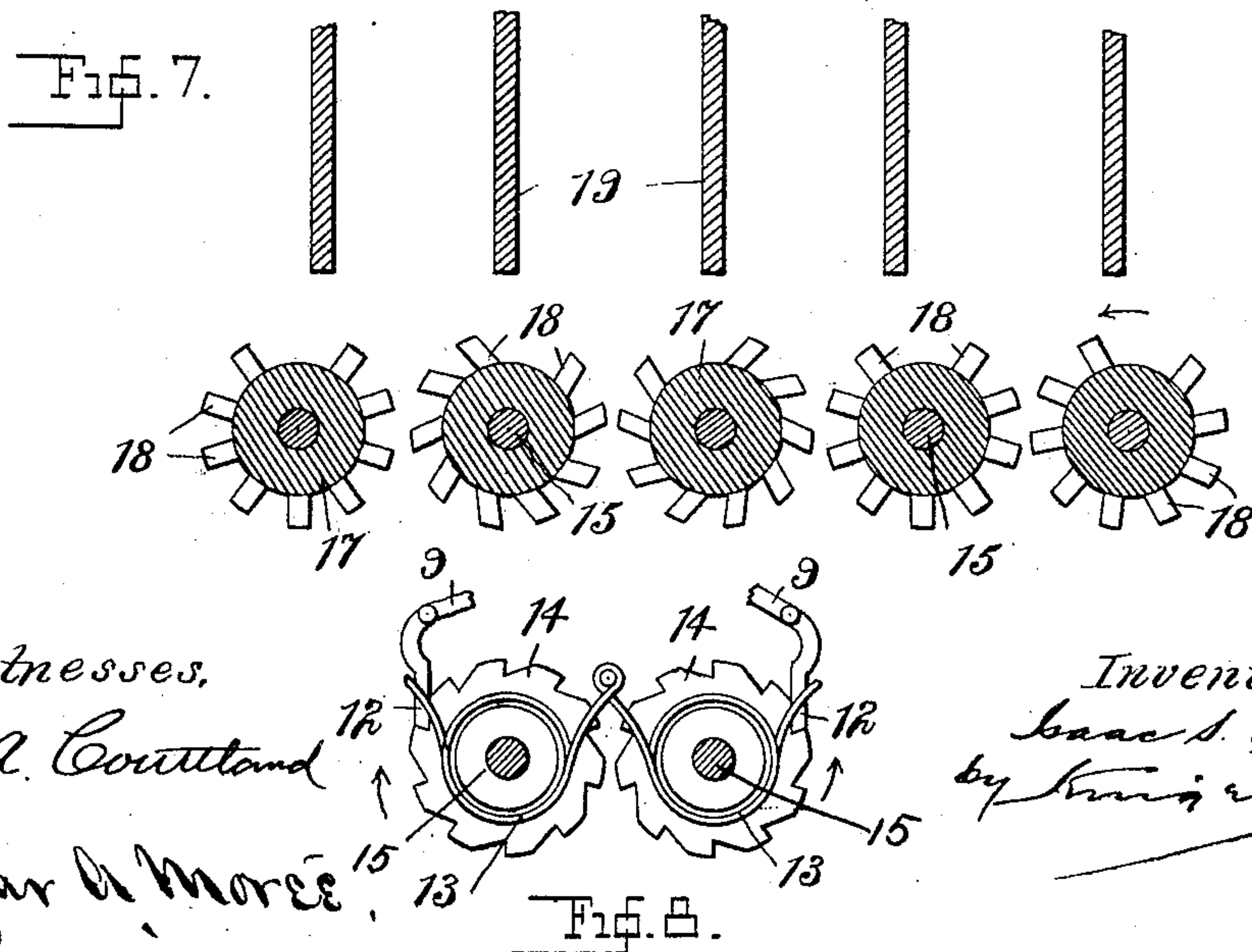
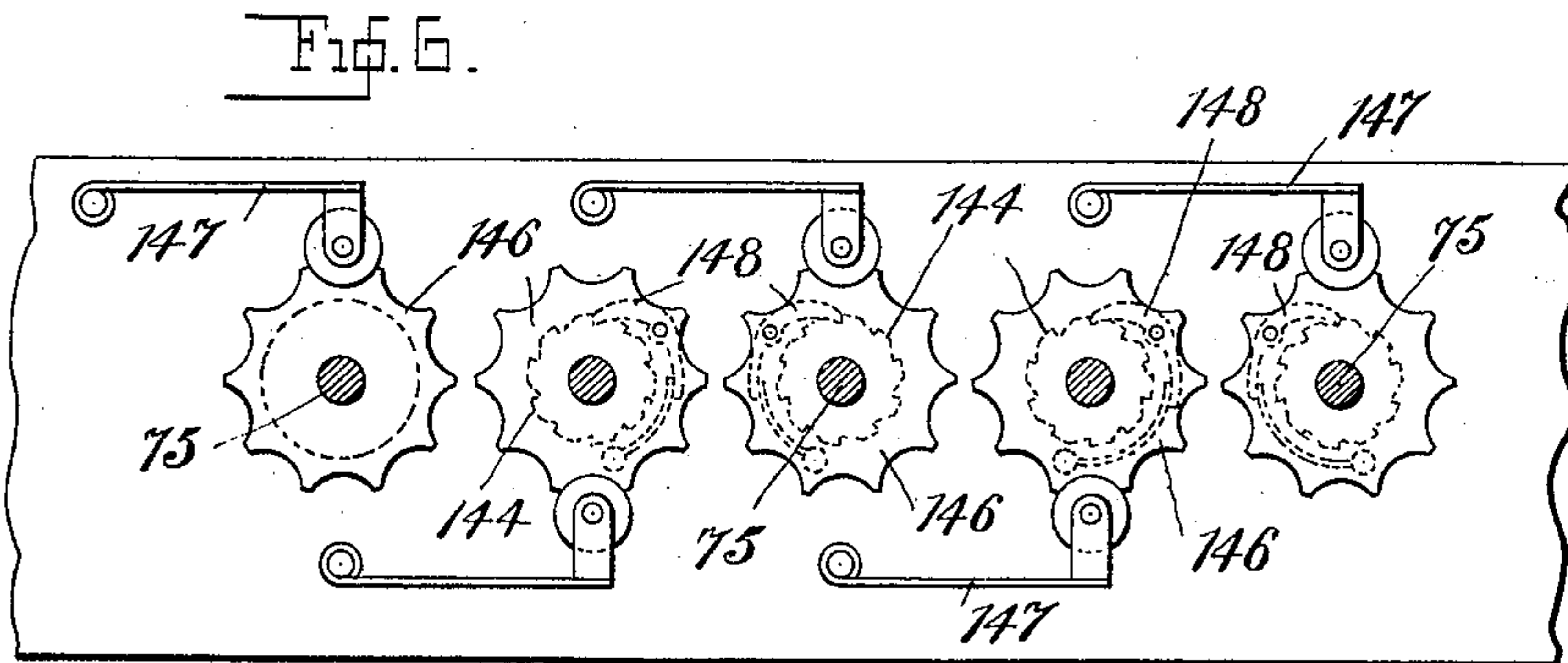
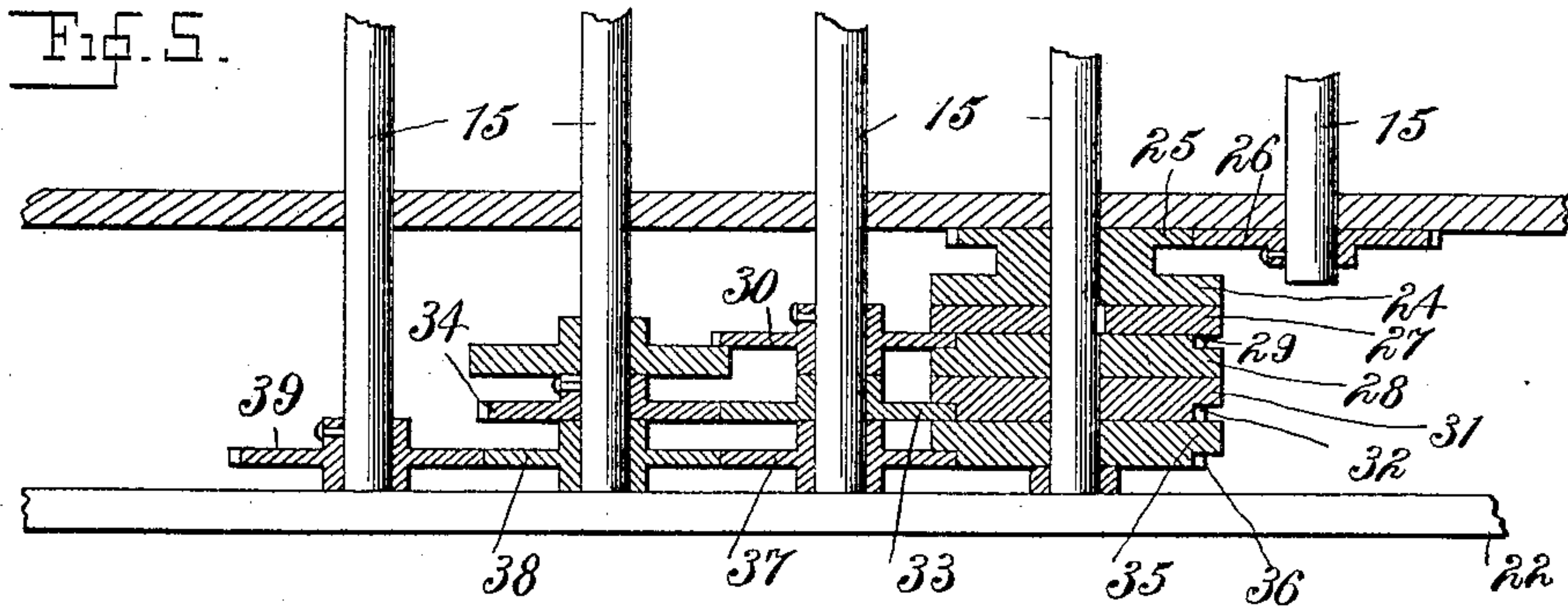
Patented June 24, 1902.

I. S. DEMENT.
CASH REGISTER.

(Application filed Mar. 9, 1900.)

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7 Sheets—Sheet 5.



Witnesses,
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I. S. DEMENT.
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(Application filed Mar. 9, 1900.)

(No Model.)

7 Sheets—Sheet 6.

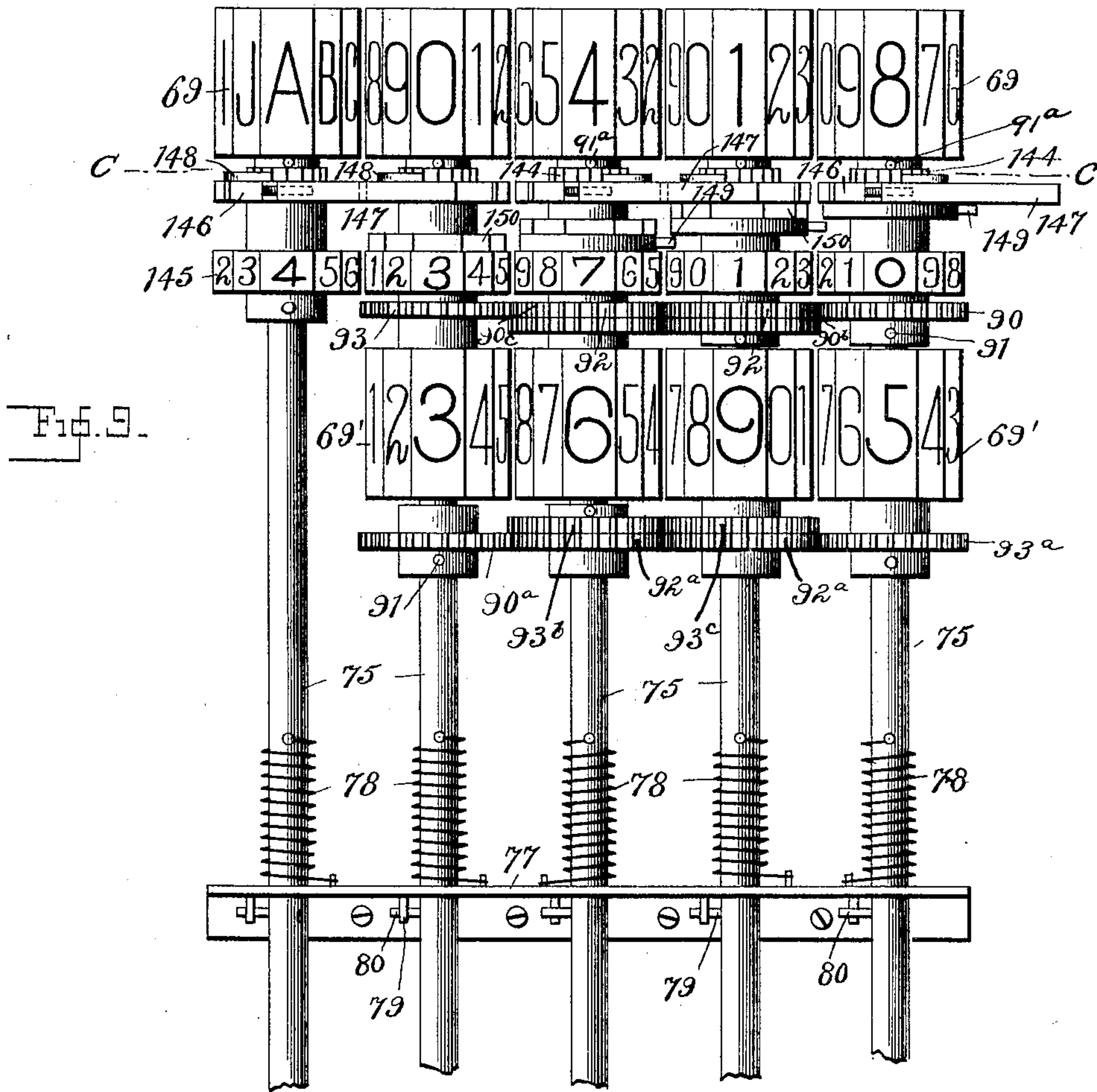
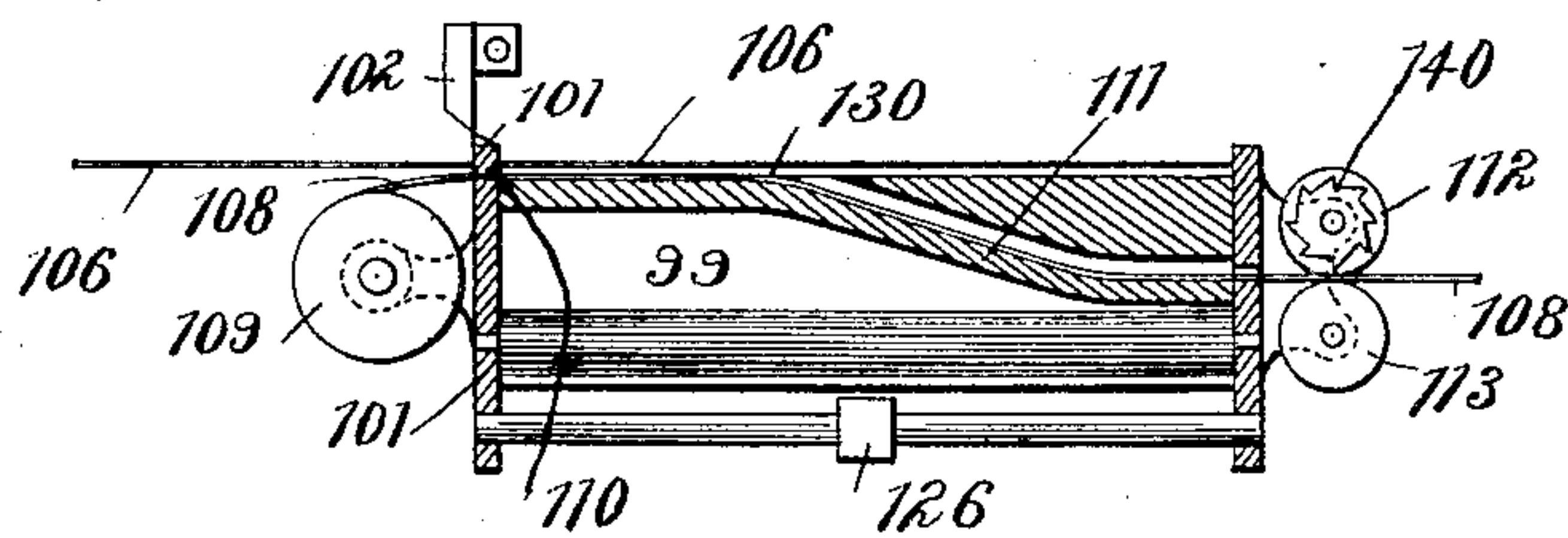


Fig. 10.



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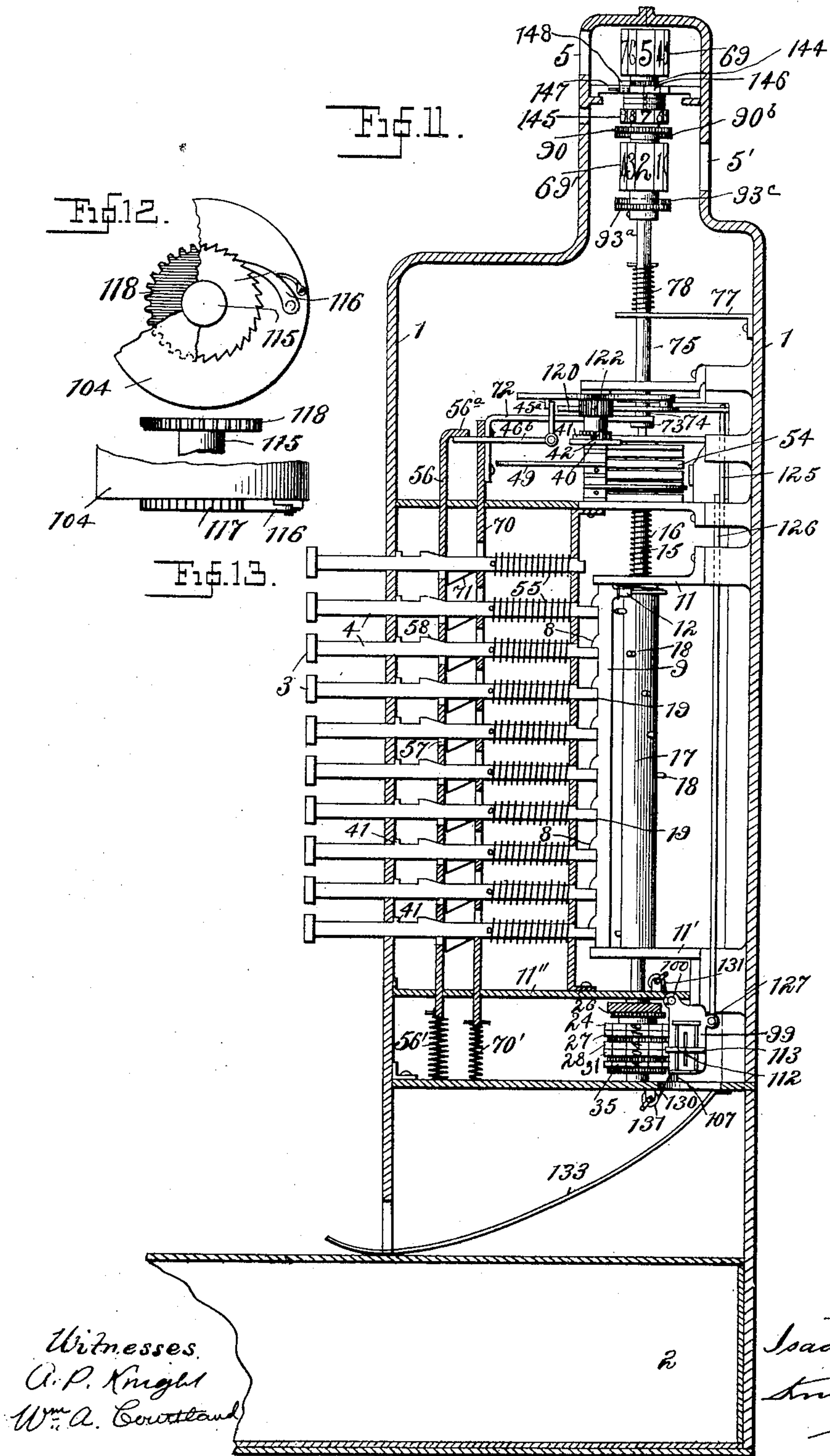
Patented June 24, 1902.

I. S. DEMENT.
CASH REGISTER.

(Application filed Mar. 9, 1900.)

(No Model.)

7 Sheets—Sheet 7.



UNITED STATES PATENT OFFICE.

ISAAC S. DEMENT, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AMERICAN MECHANICAL CASHIER COMPANY, A CORPORATION OF NEW JERSEY.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 703,188, dated June 24, 1902.

Application filed March 9, 1900. Serial No. 7,972. (No model.)

To all whom it may concern:

Be it known that I, ISAAC S. DEMENT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification.

This invention relates to improvements in cash-registers, and particularly in cash-registers of a type wherein each stop-cylinder and its connecting mechanism are subject to the operation of a plurality of keys which cause different amounts of progression of same.

My invention comprises improved means for controlling the operation of the stop-cylinder and operating means in this manner, and also improved means for recording and registering and improved means for operating the indicators to show the amount of purchase.

In the accompanying drawings, Figure 1 is a front elevation of a cash-register embodying my invention. Fig. 2 is a vertical section of the machine from front to back, the upper part thereof being removed. Fig. 3 is a vertical section on line A A of Fig. 2. Fig. 4 is a horizontal section on line B B of Fig. 2 looking from below. Fig. 5 is a detail sectional view of the recording-wheels on the plane of their axes. Fig. 6 is a detail sectional view of the register stop-wheels on the line C C in Fig. 9. Fig. 7 is a sectional view of certain of the devices for controlling the operation of the stop-cylinders. Fig. 8 is a detail view of the pawl mechanism for controlling the stop-cylinders. Fig. 9 is a detail elevation of the indicators, register, and controlling mechanism. Fig. 10 is a detail sectional view of the recording-platen. Fig. 11 is a vertical section of the complete apparatus. Figs. 12 and 13 are detail views of a feed device of the recorder.

The machine herein shown is adapted for use as a cash-register for indicating, recording, and registering the amount of purchases and the department in which the purchase was made or the nature of the purchase.

The operating mechanism is inclosed and supported in a suitable case 1, which may be provided in its lower portion with a cash-

drawer 2. (See Fig. 1.) For sake of compactness I prefer to make the keyboard or face of the machine vertical, the push keys or buttons 3 being carried by the key-rods or keys 4, projecting from the case-front horizontally. At the top of the case are apertures, through which the indicators are exhibited, there being preferably one set of such apertures 5 at the front and another set 5' (dotted in Fig. 1) at the back of the machine.

The keys 3 are shown as arranged in five vertical rows or groups, which are intended to represent, respectively, units, tens, hundreds, thousands, and lettered departmental keys, each row having ten keys. The key-rods 4 are supported and guided by sliding in the front of the case 1 and in a vertical plate 6, fixed in said case. The top key of each row is an idle key, having no operating connection with the stop-cylinder mechanism, except that the top departmental key, like the other departmental keys, unlocks the indicators. In the value rows this top key is the cipher-key, and in all of the rows it corresponds to the normal position of the stop-cylinders. All of the other value-keys are connected to operate the stop-cylinder mechanism, each row of said keys being adapted to control one stop-cylinder. Each of the value key-rods 4 has near its inner end a shoulder 7, and these shoulders are adapted to engage with lugs or projections 8, extending from rocking frames or bars 9, pivoted at 10 in the frame-plates 11 11', which are fixed horizontally in the case.

Each frame or bar 9 has a pawl 12 thereon, (see Figs. 2 and 8,) and a spring 13 tends to hold such pawl in engagement with a ratchet-wheel 14, fast on the shaft 15 of the stop-cylinder mechanism, this pawl and ratchet-wheel constituting a detent mechanism for said shaft. The several shafts 15 are mounted to rotate in the frame-plates 11 11', and springs 16, connected to said shafts and to the frame-plate 11, tend to rotate the shafts in the direction indicated by the arrows in Fig. 8, such rotation being normally prevented by the pawls 12. The alternate shafts rotate in opposite directions, except the shafts corre-

55

60

65

70

75

80

85

90

95

100

sponding to the "thousands," and the departmental keys, which rotate in the same direction. Fast on each of said shafts, between the spring-plates 11 11', are drums or stop-cylinders 17, which have projecting from their cylindrical surfaces pins or studs 18, arranged in spiral or helicoidal order, as shown on Figs. 2 and 3. The inner ends 19 of key-rods 4 extend in beyond the shoulder 7, so that when any of the keys is pressed in and its shoulder 7, striking the projection 8 on the corresponding pawl-frame 9, tilts said frame and by lifting its pawl 12 releases a shaft 15, so as to allow the latter to turn under the influence of its spring, the end 19 of the key will come into engaging relation with that one of the pins 18 corresponding to the value-key operated and stop the rotation of the drum. (See Fig. 7.) The extent to which the drum will turn before it is thus stopped will depend upon the circumferential position of the pin thus engaged, and owing to the spiral arrangement of the pins the angular movement of the drums will be successively greater for each succeeding key, counting from the top of the row. Each stop-cylinder 17, with spirally-arranged detent parts or means 18, thus constitutes a controlling device or rotary stop device controlling, through the medium of the shaft 15, the operation of the corresponding indicator. It will be noted that the detent mechanism constituted by pawl 12 and ratchet-wheel 14 is adapted to hold the stop-cylinder not only in normal position, but to any position to which it may be shifted, so that on release of the value key-rods, as hereinafter explained, said pawls reengaging with the ratchet keep the stop-cylinders in the position in which they have been stopped by the value-keys until said cylinders are moved back by the resetting mechanism, the ratchet then slipping under the pawl to allow of such back movement.

At the bottom of the machine the shafts 15, except the units-shaft, rest at their lower ends in bearings in a horizontal frame-plate or bottom plate 22, the units-shaft having a bearing in the plate 11'. Between the frame-plates 11' and 22 are located the record-printing wheels and their operating mechanism, and also a "counter" for indicating the total number of operations of the machine. This counter (indicated at 23 in Fig. 3) may be mounted on and actuated by a separate shaft in any usual or suitable manner. As it forms no part of my present invention it need not be further described.

The recording-wheels are mounted on the tens-shaft—that is, the second shaft 15. The top wheel 24, Figs. 3 and 5, which is the units-wheel, is loose on its shaft and is connected by gears 25 26 with the units-shaft 15. (See Fig. 5.) The second or tens wheel 27 is fast on its shaft 15. The third number-wheel 28 is loose and is connected by gears 29 30 with the third or hundreds shaft 15. The next

number-wheel 31 is also loose and is connected through gears 32 33 34 (wheel 33 being an idler) with the fourth or thousands shaft. The last wheel 35 is also loose and is connected by fast-gears 36 39 and idlers 37 38 with the shaft 15, which is controlled by the departmental keys. By means of the gearing, as above described, the operation of the several shafts 15 by their controlling-keys causes numbers or characters corresponding to such keys to be presented on the recording-wheels 24 27 28 31 35 in position for recording.

The resetting movement of the stop cylinder or drum 17 to normal position is effected by handle 45, loosely mounted on shaft 46, (see Fig. 3,) which is journaled in the frame-plate 11 and bracket 47. An arm 45', extending from this handle, engages by slot 45'' with pin 120' on a sliding bar or plate 120, which has rigidly connected therewith or formed therein a rack 121, engaging with a pinion 122 on a collar 48, which is loose on shaft 46 and carries or is rigidly connected to a ratchet-wheel 42. A collar 40 is fast on the shaft 46 and carries a pawl 41, engaging with the ratchet-wheel 42, and the said shaft carries a plurality of, in this case five, arms 49, adapted to engage, respectively, with the ends of slide-bars 50, which are mounted to slide in guide-holes in fixed plates 51, and said slide-bars having racks 52, engaging with pinions 54 on the respective drum or stop-cylinder shafts 15. (See Figs. 3 and 4.) In the forward rotation of the handle 45 the bar 120 is moved endwise, the pinion 122 is rotated, and the ratchet-wheel 42 slips under the pawl 41; but in the return movement of the handle and of bar 120 the ratchet engages the pawl and is carried around, so that the arms 49 are brought against the ends of the slide-bars, and the latter, through the said racks and pinions, cause the drum-shaft 15 and the drums 17 to be turned back to normal position. In order to insure correct registering, it is necessary to arrange the register-operating arms 49 on the shaft 48 in different angular positions, so that they will operate the slide-bars and the drums successively. The arm 49, that operates the departmental indicator mechanism, may, however, be in line with one of the register-operating arms, as shown. The first or forward movement of the shaft 48 also operates the recording mechanism, as hereinafter set forth.

The value and departmental keys on key-rods 4 are provided with springs 55, tending to push the keys outwardly, and with stops or shoulders 41, that limit their outward movement. It is necessary to provide means for holding each operated key in operated position until the first or forward movement of the handle takes place. For this purpose a lock-plate 56 (see Fig. 2) is provided for each row of key-rods (see Fig. 4) supported so as to be capable of sliding vertically and having holes 57 through which the keys 4 pass, and each key-rod 4 has a shoulder or

projection 58 inclined on its inner side and riding against the lock-plate, so that when the key is pushed in the incline on this projection pushes the lock-plate endwise, so as to allow the shoulder to catch under the plate, this movement being resisted by a spring 56'. The plate then holds the key from returning until said plate is again moved, the key-rod spring 55 then throwing the key out to its normal position. Such lengthwise movement of the plate is effected by connection from the handle 45, said handle carrying a pin 45^a, which engages with one arm of a lever or rocking frame 45^b, whose other arm is extended so as to engage with lugs 56^a on the upper ends of all of said plates 56, so as to lift all of the said plates on the first movement of the handle, thus unlocking all keys which may have been pushed in. A plate 70, supported so as to be capable of sliding vertically and provided with holes to receive the respective departmental key-rods is normally held up by a spring 70' and is depressed or operated by inclined projections 71 on the departmental key-rods, these projections being absent from the value series or row of keys, as shown in Fig. 2, wherein the two uppermost value-keys have been removed to expose two of the departmental keys. The said plate 70 has an extension 72, engaging with flanges 73 on clutch-collars 74, which are mounted to slide vertically on shafts 15, but forced to rotate therewith by a pin-and-slot connection 74', (see Fig. 3,) springs 75^a being provided to press said collars upwardly. The collars 74 carry crown-tooth clutches 76, engaging with similar clutches 76' on shafts 75, extending vertically upward in line with the vertical shafts 15 and adapted to be connected with said shafts 15 by said crown-tooth clutches 76 76' on the ends of said shafts. These shafts 75 are journaled in fixed frame-plates 77 and carry at their upper ends the indicators which are shown more fully in Fig. 9. There are two rows or series of such indicators, as shown at 69 69' one above the other, the indicators of the respective rows being adapted to show through the respective front and back apertures 5 and 5', Fig. 1. Springs 78 tend to turn rods or shafts 75 oppositely to the movement imparted to them by the stop-cylinder shafts 15, and fixed stop-pins 79 engage with pins 80 on said shafts 75 to stop the indicators in normal or zero position when they are turned by such springs. On a depression of any of the departmental key-rods 4 its inclined projection 71 depresses the sliding plate 70, and thereby opens or disengages the clutches 76. Shafts 75 being thus released are then turned back to normal position by their springs 78 and stopped there by the stop-pins. At the same time the operation of the department-key releases the department stop-cylinder, which is turned by its spring until stopped by such key. Any value-keys which may be operated also serve to release the corresponding stop-cylinders

and stop them in angular positions corresponding to the key operated. These movements will correspondingly affect the wheels of the recorder; but the corresponding values or indications will not appear on the register and indicator until the handle 45 is operated—that is, moved first backward and then forward. The first half of the movement of the handle 45—that is, its backward movement—releases the lock-plate 56 from the key or keys that have previously been operated, and the keys being thrown out to normal position by their springs 55 the inclined projections thereon are freed from the plate 70, which then rises to its normal position. This engages the clutches, so that the forward movement of the handle, operating the arms 49, slide-bars and racks 50 52, pinions 54, shafts 15, and clutches 76, turns the shafts 75 and sets the indicators 69 69' to exhibit numbers or characters corresponding to the keys which were depressed. It will be seen that the operation of the departmental and value keys, while causing direct and immediate movement of the recording mechanism, does not tend to operate the indicator mechanism, but only to release same to allow the indicators to be turned back or reset to normal position by springs 78 from the position to which they were thrown in the last operation. The indicators 69 69' will, however, be thrown to exhibit the result of the key manipulation upon the movement of the handle 45, and the figures or characters so exhibited will remain in sight until the next operation of a departmental key. Inasmuch as the two rows of indicators 69 69' are intended to be viewed, respectively, from front and back it is necessary to provide transmitting connections connecting the said wheels of the two series in inversely-symmetrical manner. Thus looking from the front of the machine and assuming that the indicators 69 of the upper row are fastened on their shafts by pins 91^a and are operated directly by same the indicators 69' of the lower row are loose on their shafts, but are operatively connected thereto in the following manner:

The right-hand shaft 75 (see Fig. 9) carries a gear 90, fastened thereon by a pin 91 and connected through idlers 92 92 to a gear 93, loose on the left-hand shaft 75, but rigidly connected to the indicator 69', which is also loose on said shaft. Similarly the fast gear 90^a on the left-hand shaft is connected through the gears 92^a 92^a 93^a to the indicator 69', which is loosely mounted on the right-hand shaft. The intermediate indicators are similarly connected by gears 90^b 93^b, fast on the respective intermediate shafts, and engaging with gears 90^c 93^c, fast on the indicators. By this arrangement of gearing the lower row of indicators 69' is made to always read correctly from left to right looking from the back of the machine, while the upper row of indicators 69 reads correctly from left to

right looking from the front of the machine. The departmental indicator needs no connections, as the characters can be read equally well at either end of the line. It is here shown provided only for the upper forwardly-presented row of indicators.

The recording mechanism comprises in addition to the recording-wheels above described a platen 99, (see Figs. 2, 4, and 10,) pivoted at 100 to a supporting frame-plate 11" and adapted to swing toward the recording-wheels, so as to bring its flat front face against the periphery of the recording-wheels. The platen carries at one end a knife-blade 101, adapted to cooperate with the knife-blade 102, fixed on the frame of the machine. A strip of paper 106 to be used for checks is supplied in the form of a spool or a roll of paper placed on a spindle 103, Fig. 4, is led between feed-rolls 104 105, then passed between the impression-face of the platen and the recording-wheels, being guided by guide 107. A record-strip 108 is supplied from a roll 109, Fig. 10, journaled on the frame of the platen itself, and is led through a slot 110 in knife-blade 101, then passing back of the check-strip 106—that is to say, between said check-strip and the platen—and down through a slot 111 in the platen and between the feed-roll 112 113, also journaled on the platen. The feed-roll 112 carries a ratchet-wheel 140, which in each downward movement of the platen engages with a pawl 114, Fig. 4, to turn the said roll and cause the record-strip to feed forward a slight distance. The feed-roll 104 is loosely mounted on its shaft 115 and carries a pawl 116, engaging with a ratchet-wheel 117, which is fast on the shaft. A pinion 118, also fast on the shaft, is engaged by a rack 119 on a slide-bar 120, which at its other end is operatively connected by pin-and-slot connection 120' 45" with the arm 45' of the operating-handle 45, as above described. The slide-bar 120 also engages by a slot connection 124, Fig. 3, with a lever 125, connected at its other end with a rod 126, pivoted at 127 to the platen. When the handle 45 is operated, the slide-bar 120 is pushed in the direction opposite to the movement of the record-strip, (see Fig. 4,) the ratchet-wheel 117 slips under pawl 116, and on the return movement of the handle the slide-bar, by rotating the ratchet-wheel, carries the pawl 116 and feeds the roll 114 around and advances the record-strip. In the first or forward movement of the handle the slide-bar 120 acts through the lever 125 and rod 126 to throw the platen up against the recording-wheels and make an impression. An ink-ing-ribbon 130 is located between the check-strip and record-strip 106 108 and extends transversely to the direction of the movement of the said strips, being supported by reels 131 on each side, as shown in Fig. 2. When the platen is swung toward the recording-wheels, it presses the check-strip against the ribbon, which is at the same time pressed against the record-strip, forcing the former against

the type-faces of the recording-wheels, and the pressure of such type-faces causes instantaneous impression to be effected from the ribbon on both strips of paper on the sides thereof next to the ribbon. The resulting impression on the record-strip will of course be reversed; but by using translucent paper for this strip the record may be seen through the paper. When the platen presses the check and record strips toward the recording-wheels, it cuts off the check-strip, and when the platen falls again after recording is effected the check so cut off falls into the chute 133, (see Fig. 2,) which guides it to the front of the machine. The record-strip passes out unsevered through the platen and between the feed-rolls 112 113 and serves as a continuous permanent record.

It will be noted that the check-strip will have to receive the impression from the counter as well as from the recording-wheels controlled by the value and departmental keys, and it may also be intended to receive an impression from set or fixed type giving, for example, the proprietor's name, so that it is necessary to make the check-strip extend over the whole front of the platen shown, while the record-strip is deflected and led away through the slot in the platen as soon as it has passed under the recording-wheels. For a similar reason the feed of the record-strip need be but slight, while that of the check-strip must be greater, as indicated by the different expedients adopted for such feeding operations.

The registering apparatus may be located in any suitable position. I have shown it as arranged between the two rows of indicators, Figs. 1 and 9. Such mechanism comprises ratchet-wheels 144, fixed on the several shafts 75, registering-wheels 145, loose on said shaft, and stop-wheels 146, rigidly attached to said registering-wheels and having indented peripheries engaged by spring pawls or dogs 147, so as to snap into the indentations and hold the number-wheels in proper position. Each stop-wheel 146 carries a spring-pawl 148, engaging with the corresponding ratchet-wheel 144, so that in the movement of the ratchet-wheel when the shaft 75 is turned under the influence of its spring 78, as before described, the ratchet-wheel will turn freely under the pawl; but on the movement of the shaft 75, due to the return movement of the corresponding shaft 15, the pawl, stop-wheel, and registering-wheel will be carried around to an extent dependent on the amount of such return movement. This return movement is effected by the operation of the handle and connecting mechanism, as above set forth, and as it is always equal in amount to the rotative movement of the shafts under the influence of their springs, as determined by the operating-keys, the registering-wheels 145 will be rotated to an extent dependent on the keys which are depressed. Pins 149 are provided on the combined registering and

stop wheels, so as to "carry" the excess over ten to each registering-wheel to the registering-wheel of next higher denomination in a well-known manner. It will be noted that the last shaft controlled by the departmental key is not provided with any ratchet; but the registering-wheel, which is loosely mounted thereon, is only operated to carry devices from the thousands registering-wheel, as shown, thus giving capacity for greater registration. The indicating mechanism may be visible or covered by a locked slide, as desired.

I prefer to make the type on the value and departmental recording-wheels reversely to the usual system—that is to say, the types are preferably non-reversed type, reading direct instead of backward. The result of this is that the check-strip between the ribbon and the recording-wheels is printed direct or in the proper manner to be read direct, while the recording-strip between the ribbon and the platen is printed in reverse, so that looked at from the face it would read backward. To overcome this objection, I make the record-strip more or less translucent, so that by holding it up to the light it can be read from the back, and will thus appear direct or non-reversed. Moreover, by using the record-strip sufficiently soft the impression will be embossed thereon, so as to be read easily from the back.

The machine or mechanism above described may be used in conjunction with a mechanical cashier—for example, such as described in Patent No. 618,932, granted to myself and Charles F. Bassett February 7, 1899, and in that case the operating-handle (here represented at 45) may be connected to such cash-register so as to be operated therefrom, so that operation of the mechanical cashier will effect the resetting of the stop-cylinders and the operation of the register and indicators.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination with a plurality of indicators and a plurality of sets of keys, of a controlling device corresponding to each set of keys, and controlled by said keys so as to move from normal position to different positions, clutch connections between the respective controlling devices and indicators, means adapted to be operated by one of said sets of keys to release said clutch connections, means for restoring the indicators to normal position when so released, and resetting mechanism for the aforesaid controlling devices, operatively connected with the clutch-releasing means so as to cause engagement of the clutch and consequently effect the operation of the indicator during the resetting movement.

2. The combination with a register and a plurality of keys, of a controlling device controlled by said keys so as to move from normal position to different positions, an indicator and an indicator-shaft, a clutch con-

nection between the controlling device and the indicator-shaft, means for releasing such clutch connection, means for restoring the indicator to normal position when thus released, a resetting mechanism for the aforesaid controlling devices operatively connected with the clutch-releasing means so as to cause engagement of the clutch and consequently effect the operation of the indicator during the resetting movement, and a pawl-and-ratchet connection between the indicator-shaft and the register to cause operation of the register during such resetting movement.

3. The combination with a plurality of keys, of a rotary controlling device provided with an actuating-spring and with a series of stops adapted to engage the respective keys to arrest the rotary controlling device in different positions, detent means adapted to hold the rotary controlling device against the action of its spring and adapted to be operated by the said keys, so as to release the rotary controlling device when a key is operated but to return to operative position upon release of the keys so as to hold the rotary controlling device in the position in which it is arrested by the key, resetting mechanism for the rotary controlling device and an indicator having operating connection with the rotary controlling mechanism and operated during the return movement thereof.

4. The combination with a plurality of keys, of a rotary controlling device provided with an actuating-spring and with a series of stops adapted to engage the respective keys to arrest the rotary controlling device in different positions, detent means adapted to hold the rotary controlling device against the action of its spring and adapted to be operated by the said keys, so as to release the rotary controlling device when the key is operated but to return to operative position, upon release of the keys, so as to hold the rotary controlling device in the position in which it is arrested by the key, resetting mechanism for the rotary controlling device and a register having operating connection with the rotary controlling mechanism and operated during the return movement thereof.

5. In a register, the combination with a rotary controlling device carrying a series of stops, and a spring for actuating said controlling device, of a plurality of keys arranged to engage said stops to arrest said controlling device in different positions, a ratchet connected to said rotary controlling device and a pawl device controlled by said keys and engaging said ratchet so as to hold the rotary controlling device in normal position until released by the operation of a key, and after the release of the key from said stop device, to hold the said controlling device in the position in which it was held by the key.

6. In a cash-register, the combination of a plurality of indicating devices, spring-driven controlling mechanisms adapted to shift the

respective indicating devices, groups of keys acting as stops for the respective controlling mechanisms, means for restoring the keys, pawl-and-ratchet means for holding the controlling mechanism in shifted position when the key is restored to normal position and means for resetting the controlling mechanisms.

7. In a register, the combination with a rotary controlling device carrying a series of stops, and a spring for actuating said controlling device, of a plurality of keys arranged to engage said stops to arrest said controlling device in different positions, a ratchet connected to said rotary controlling device, a pawl device controlled by said keys and adapted to engage the said ratchet to hold the rotary controlling device against the action of the spring except when a key is operated, locking means engaging with said keys to lock same in operative position, a resetting mechanism for the rotary controlling device, a releasing means connected with the said locking means and operated by the resetting mechanism to release the said locking means, and means for returning the keys to normal position when released from the locking means.

8. In a register, the combination with a rotary controlling device carrying a series of stops, and a spring for actuating said controlling device, of a plurality of keys having shoulders and arranged to engage said stops, to arrest said controlling device in different positions, a ratchet connected to said rotary controlling device, a pawl device controlled by said keys and engaging the ratchet to hold the rotary controlling device against the action of its spring except when a key is operated, a locking-plate adapted upon the operation of any of said keys to engage with the shoulder of such key to hold same in operated position, resetting mechanism for the rotary controlling device, a releasing device engaging with the said locking-plate and adapted to be operated by the resetting mechanism to release said locking-plate, and means for returning the keys to normal position when released from the locking means.

9. In a cash-register the combination of a rotary controlling device provided with an actuating-spring and with a series of stops, a plurality of keys adapted when operated to engage the respective stops of the said controlling device to stop the said controlling device in different positions, locking means adapted to engage the said keys, when operated, to hold same in operated position, an indicator, a clutch connection between the indicator and the rotary controlling device, means for releasing such clutch connection, resetting mechanism for the rotary controlling device, a releasing device engaging with the said locking device and adapted to be operated by the said resetting mechanism and means operated by said resetting mechanism to cause engagement of the clutch previous

to the resetting movement of the rotary controlling device, so that the indicator is operated in such resetting movement.

10. In a cash-register, the combination of a rotary controlling device provided with an actuating-spring and with a series of stops, a plurality of keys adapted when operated to engage the respective stops of the said controlling device to stop the said controlling device in different positions, locking means adapted to engage the said keys, when operated, to hold same in operated position, a register, a clutch connection between the register and the rotary controlling device, means for releasing such clutch connection, resetting mechanism for the rotary controlling device, a releasing device engaging with the said locking device and adapted to be operated by the said resetting mechanism and means operated by said resetting mechanism to cause engagement of the clutch, previous to the resetting movement of the rotary controlling device, so that the indicator is operated in such resetting movement.

11. In a cash-register the combination with an indicator, of a rotary controlling device provided with an actuating-spring and with a series of stops, a plurality of keys respectively adapted, when operated, to engage with the respective stops of the rotary controlling device and stop the latter in different positions, locking means adapted to lock said keys in operated position, means for returning the keys to normal position when released from such locking means, a clutch connection between the indicator and the rotary controlling device, a clutch-releasing plate operated by said keys and adapted to release the clutch when a key is operated, resetting mechanism for the rotary controlling device, an actuator for said resetting mechanism, and means operated by said actuator to cause release of the key-locking plate, from the key and consequent movement of the key and the clutch-releasing device to normal position and the reengagement of the clutch before the resetting operation, so that the indicator will be operated during such resetting operation.

12. In a cash-register, the combination with a register, of a rotary controlling device provided with an actuating-spring and with a series of stops, a plurality of keys respectively adapted, when operated, to engage the respective stops of the rotary controlling device and stop the latter in different positions, locking means adapted to lock said keys in operated position, means for returning the keys to normal position when released from such locking means, a clutch connection between the register and the rotary controlling device, a clutch-releasing plate operated by said keys and adapted to release the clutch when a key is operated, resetting mechanism for the rotary controlling device, an actuator for said resetting mechanism, and means operated by said actuator to cause release of the key-locking plate from the key and consequent move-

ment of the key and the clutch-releasing device to normal position and reengagement of the clutch before the resetting operation, so that the register will be operated during such resetting operation.

13. In an indicator, the combination with an indicator, of a rotary controlling device provided with an actuating-spring and with a series of stops, a plurality of keys respectively adapted, when operated, to engage with the respective stops of the rotary controlling device and stop the latter in different positions, a ratchet on the rotary controlling device and a pawl engaging therewith and controlled by said keys, to hold the rotary controlling device against the action of said spring except when said keys are in operated position, locking means adapted to lock said keys in operated position, means for returning the keys to normal position when released from such locking means, a clutch connection between the indicator and the rotary controlling device, a clutch-releasing plate operated by said keys and adapted to release the clutch when a key is operated, resetting mechanism for the rotary controlling device, an actuator for said resetting mechanism and means operated by said actuator to cause release of the key-locking plate from the key and consequent movement of the key and the clutch-releasing device to normal position and the reengagement of the clutch before the resetting operation, so that the indicator will be operated during such resetting operation.

14. In a register, the combination with a register, of a rotary controlling device provided with an actuating-spring and with a series of stops, a plurality of keys respectively adapted, when operated to engage the respective stops of the rotary controlling device and stop the latter in different positions, a ratchet on the rotary controlling device and a pawl engaging therewith and controlled by said keys, to hold the rotary controlling device against the action of said spring except when said keys are in operated position, locking means adapted to lock said keys in operated position, means for returning the keys to normal position when released from such locking means, a clutch connection between the register and the rotary controlling device, a clutch-releasing plate operated by said keys and adapted to release the clutch when a key is operated, resetting mechanism for the rotary controlling device, an actuator for said resetting mechanism and means operated by said actuator to cause release of the key-locking plate from the key and consequent movement of the key and the clutch-releasing device to normal position and reengagement of the clutch before the resetting operation so that the register will be operated during such resetting operation.

15. In a cash-register, the combination with a stop-cylinder provided with a series of spirally-arranged stops, and a spring for actuat-

ing said stop-cylinder, of a series of push-keys, adapted, when operated, to directly engage said stops on the stop-cylinder, a ratchet carried by said stop-cylinder and a pivoted bar engaged directly by said keys and carrying a pawl engaging with such ratchet.

16. The combination with a plurality of controlling-keys, of a controlling device, adapted to be moved from normal position to different positions in the operation of the respective keys, a recording mechanism whose recording means are connected to and moved in conjunction with such controlling device during its movement from normal position, a resetting mechanism for the controlling device, an actuating device for the resetting mechanism having a to-and-fro movement, a platen for the recording mechanism connected to said actuating device so as to operate to produce a record during one movement of the actuating device, the return movement of the actuating device serving to withdraw the platen and reset the controlling device, and an indicator and means controlled by said actuating device to connect said indicator to said controlling device during such resetting movement.

17. In a cash-register, the combination with the registering devices, of a plurality of rotary controlling devices therefor, a plurality of groups of keys controlling the said register through the said controlling devices, a handle, a shaft operated thereby, arms placed in different angular positions on said shaft, slide-bars adapted to be operated successively by said arms, and means, consisting of racks on said slide-bars and pinions on the rotary controlling devices for operating the registering mechanism from said handle, through the said shaft, arms, slide-bars, racks and pinions and rotary controlling devices.

18. The combination with the recorder and the registering devices, of controlling devices for the registering devices and the recorder, an operating device having a to-and-fro movement, a platen for the recorder operatively connected with said operating device, and a resetting mechanism for the said register-controlling device connected by a pawl-and-ratchet connection with the said operating device.

19. The combination with the recording-wheels and the pivoted recording-platen, of an operating-handle, a sliding bar connected to and operated by said handle, a lever operated by said bar and a rod connecting such lever to the platen.

20. The combination with the recording-wheels and the means for feeding a check-strip in position to be printed upon by said wheels, of a recording-platen adapted to press the strips against the recording-wheels and provided with cutting means for cutting off the check-strip, said platen being so pivoted as to move away from said recording-wheels after the printing is effected, so as to

allow the check-strips to drop by gravity, a guide-chute for receiving the severed check, and means for operating the platen.

21. The combination with the recording-wheels and a pivoted platen, means for simultaneously feeding a check-strip and a record-strip between the recording-wheels and the platen, means carried by the platen for cutting off the check-strip, guiding means for the platen for guiding the record-strip away from the cutting means, and means for carrying an inking-ribbon between the check-strip and the record-strip.

22. The combination with a plurality of

parallel operating-shafts with two indicators arranged, one fast and one loose, on each shaft and the fast and loose indicators arranged respectively in two rows, of gear-wheels mounted on said shafts and connecting each of the said operating-shafts on one side with an indicator on the other side, so as to cause the indicators to exhibit similarly on front and back.

ISAAC S. DEMENT.

Witnesses:

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