

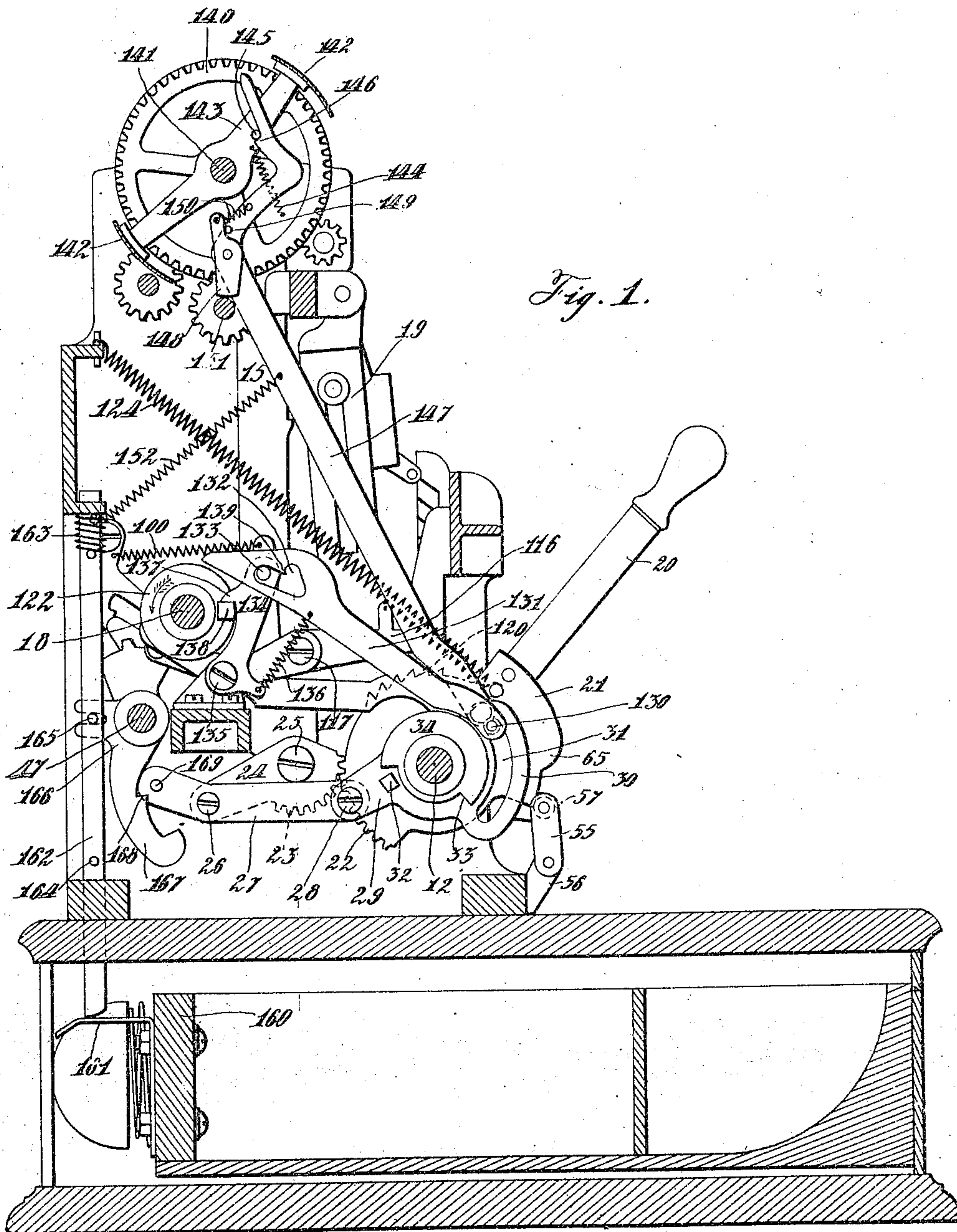
No. 864,495.

PATENTED AUG. 27, 1907.

E. J. VON PEIN.
CASH REGISTER.

APPLICATION FILED JULY 24, 1905.

4 SHEETS—SHEET 1.



Witnesses
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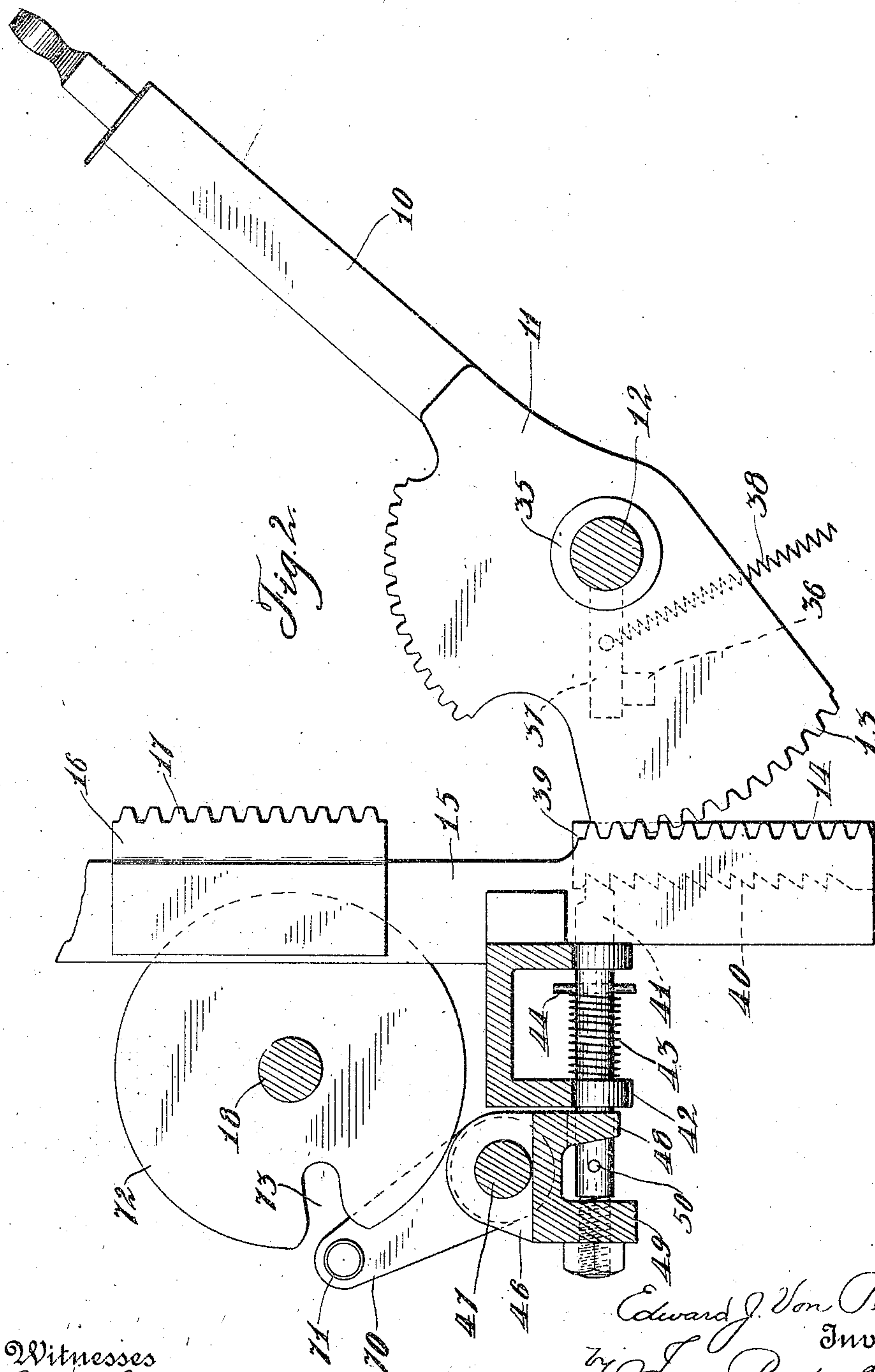
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4 SHEETS—SHEET 2.



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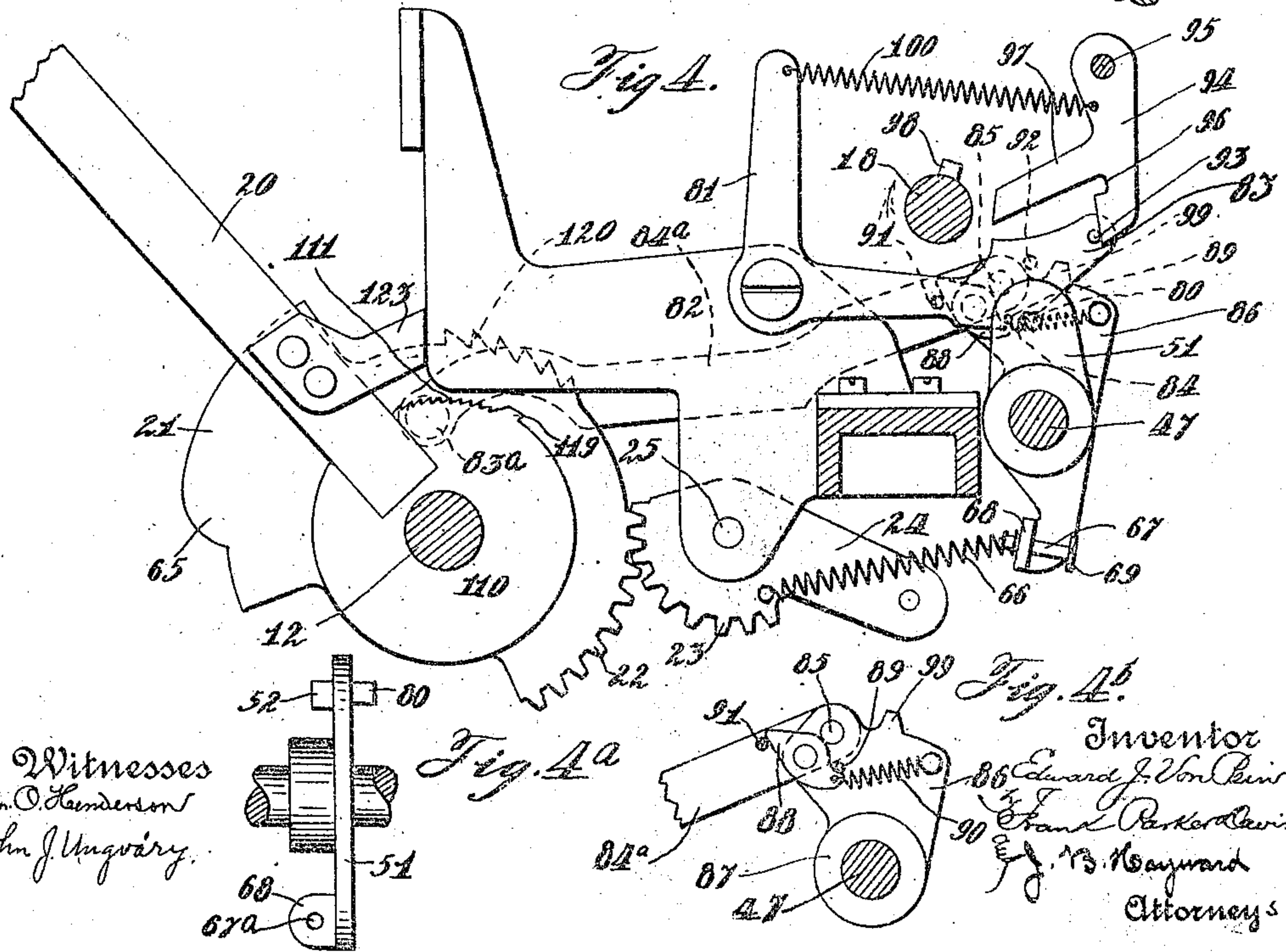
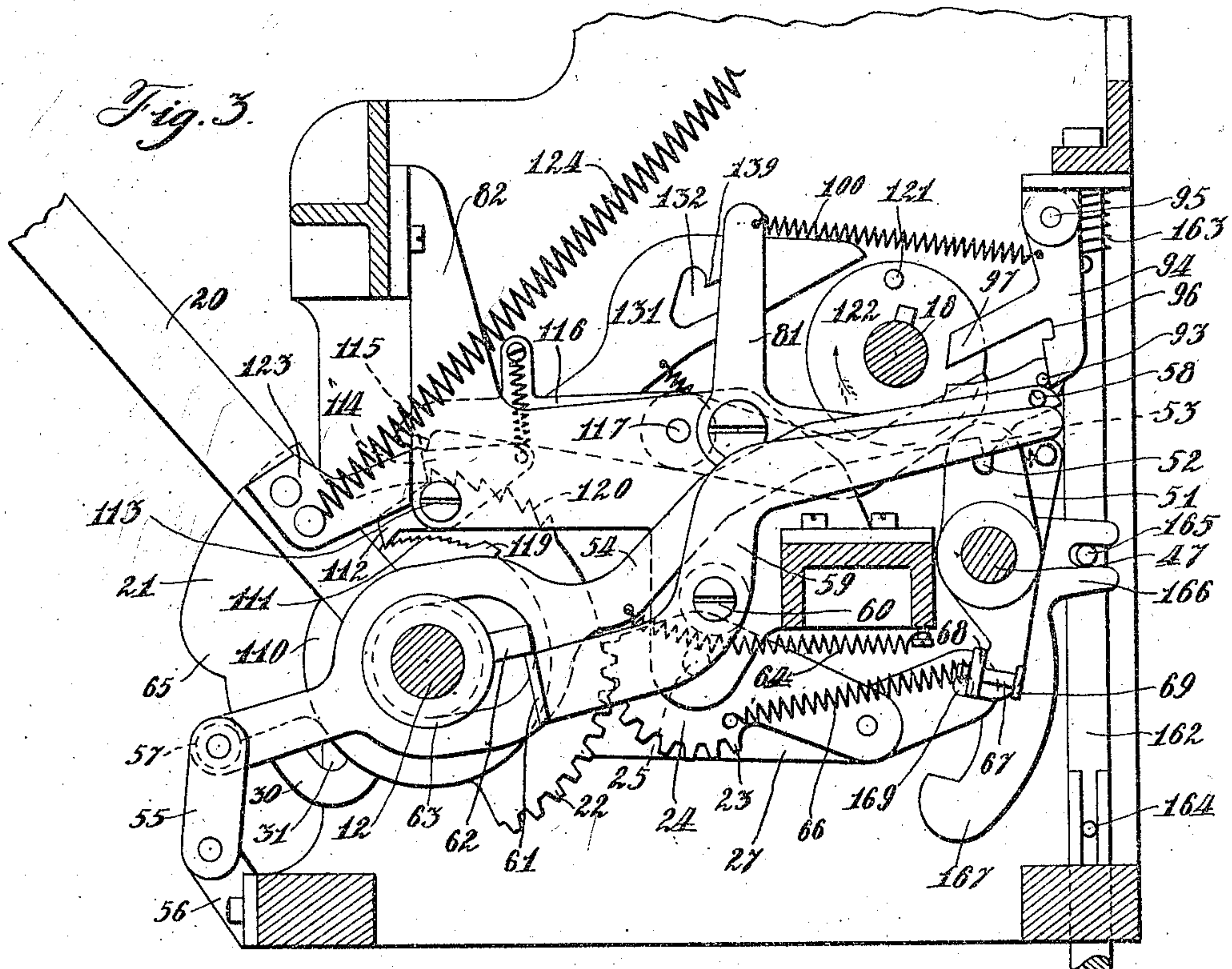
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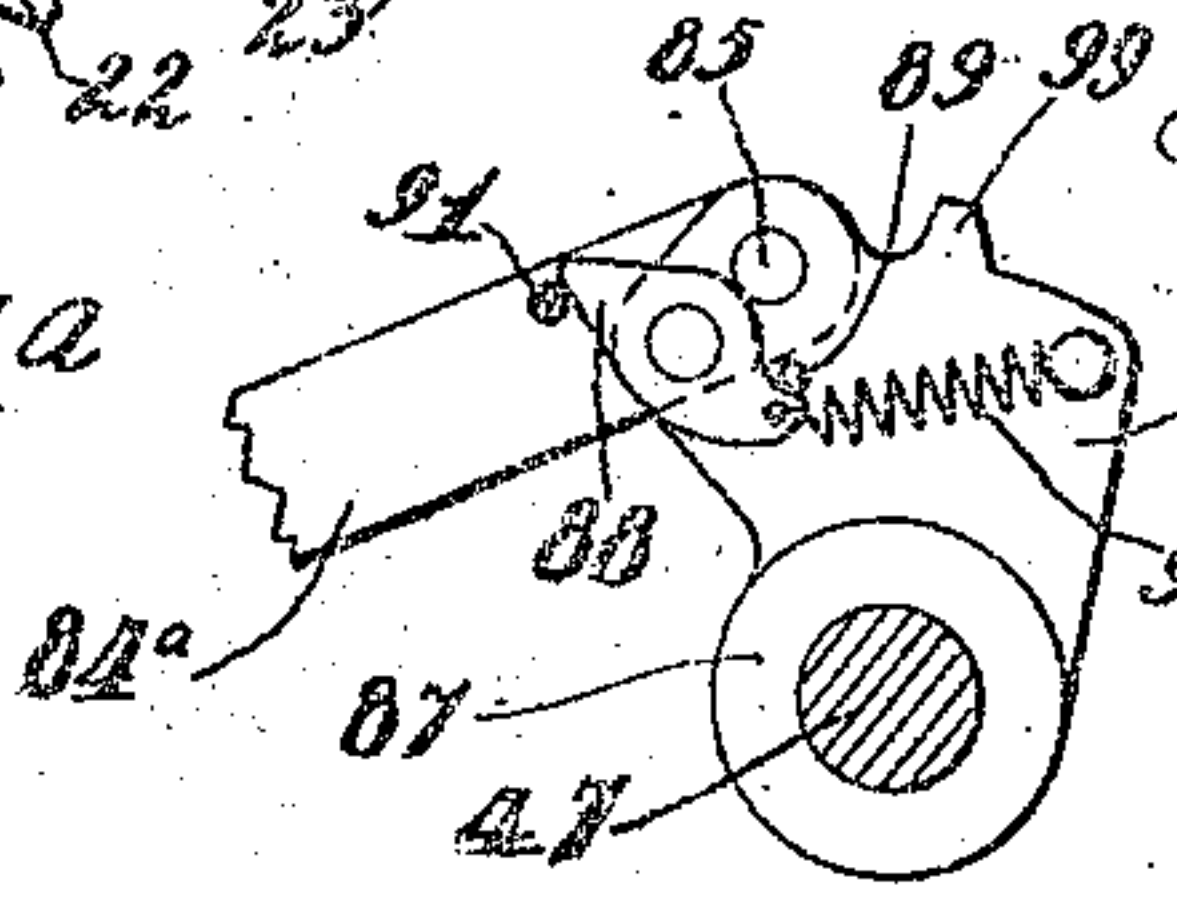
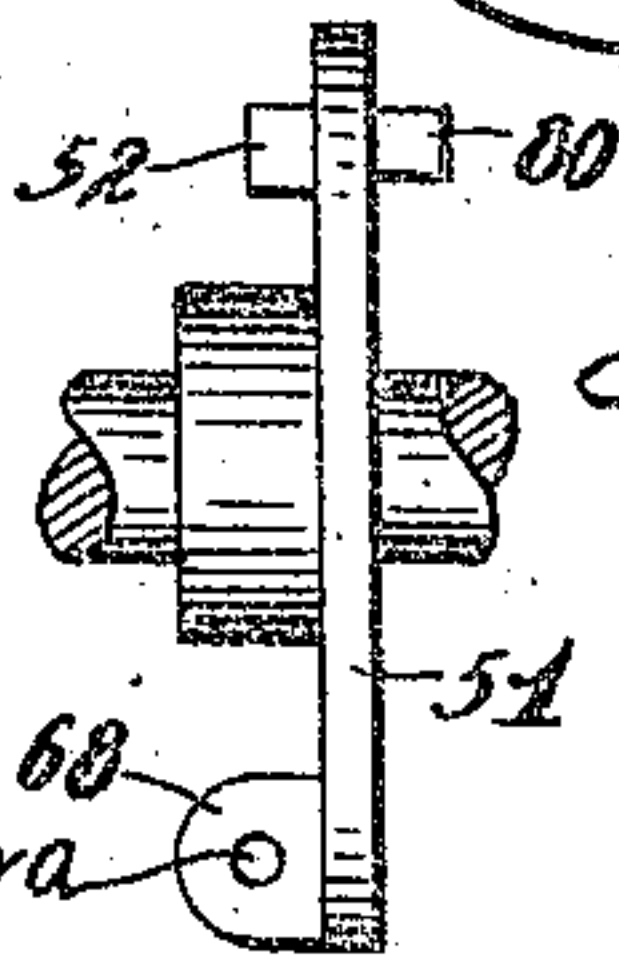
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

Fig. 5.

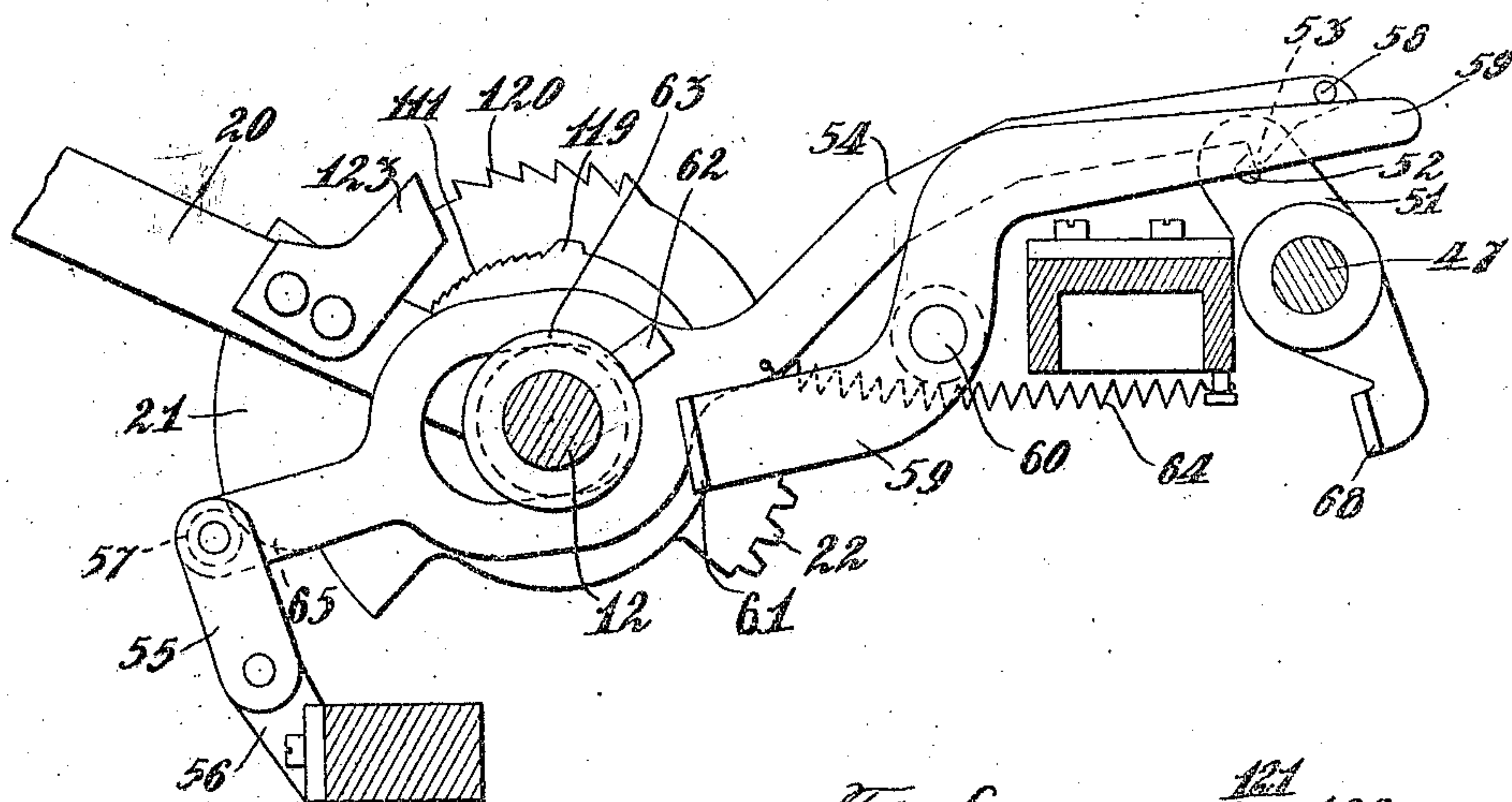


Fig. 6.

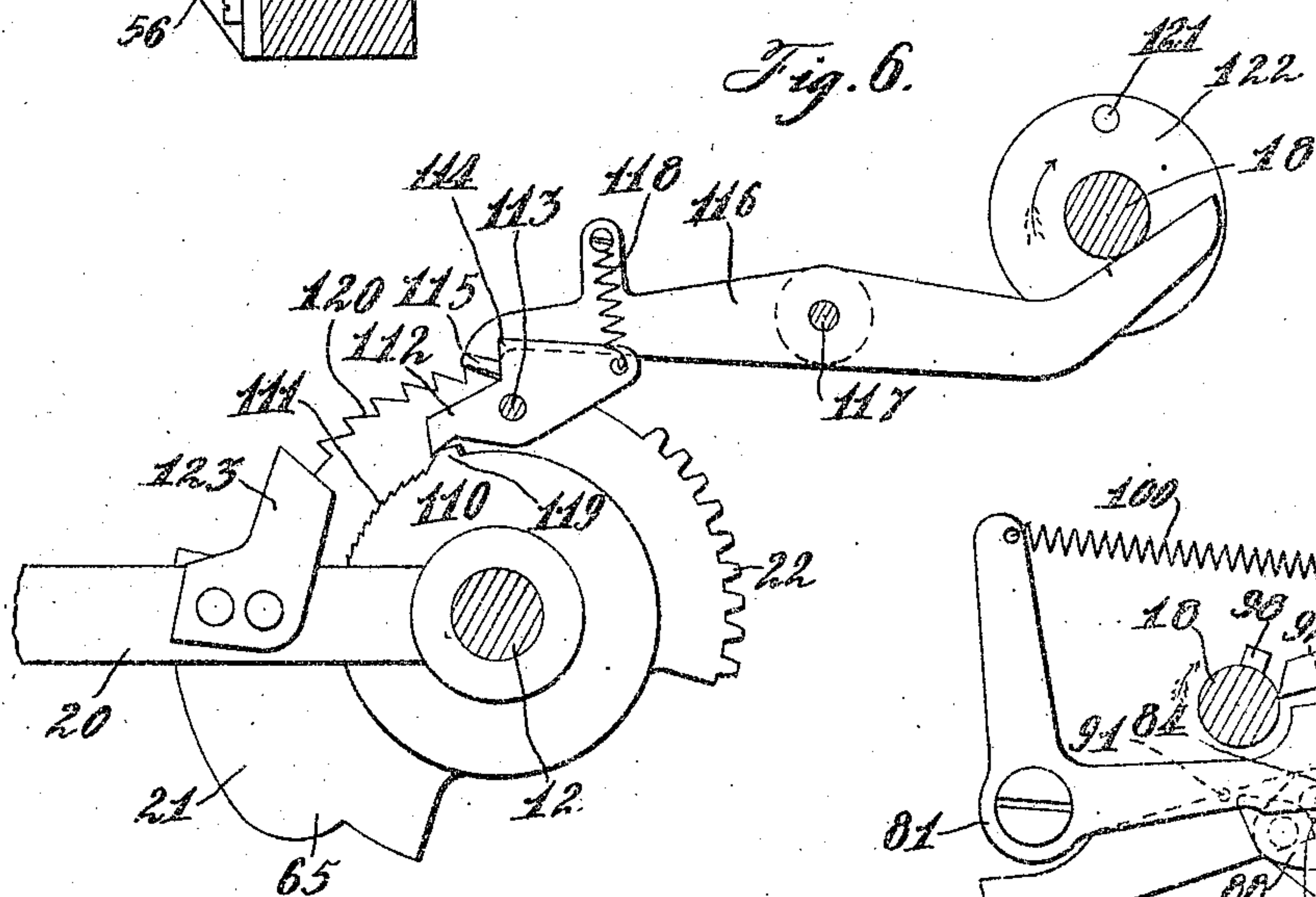
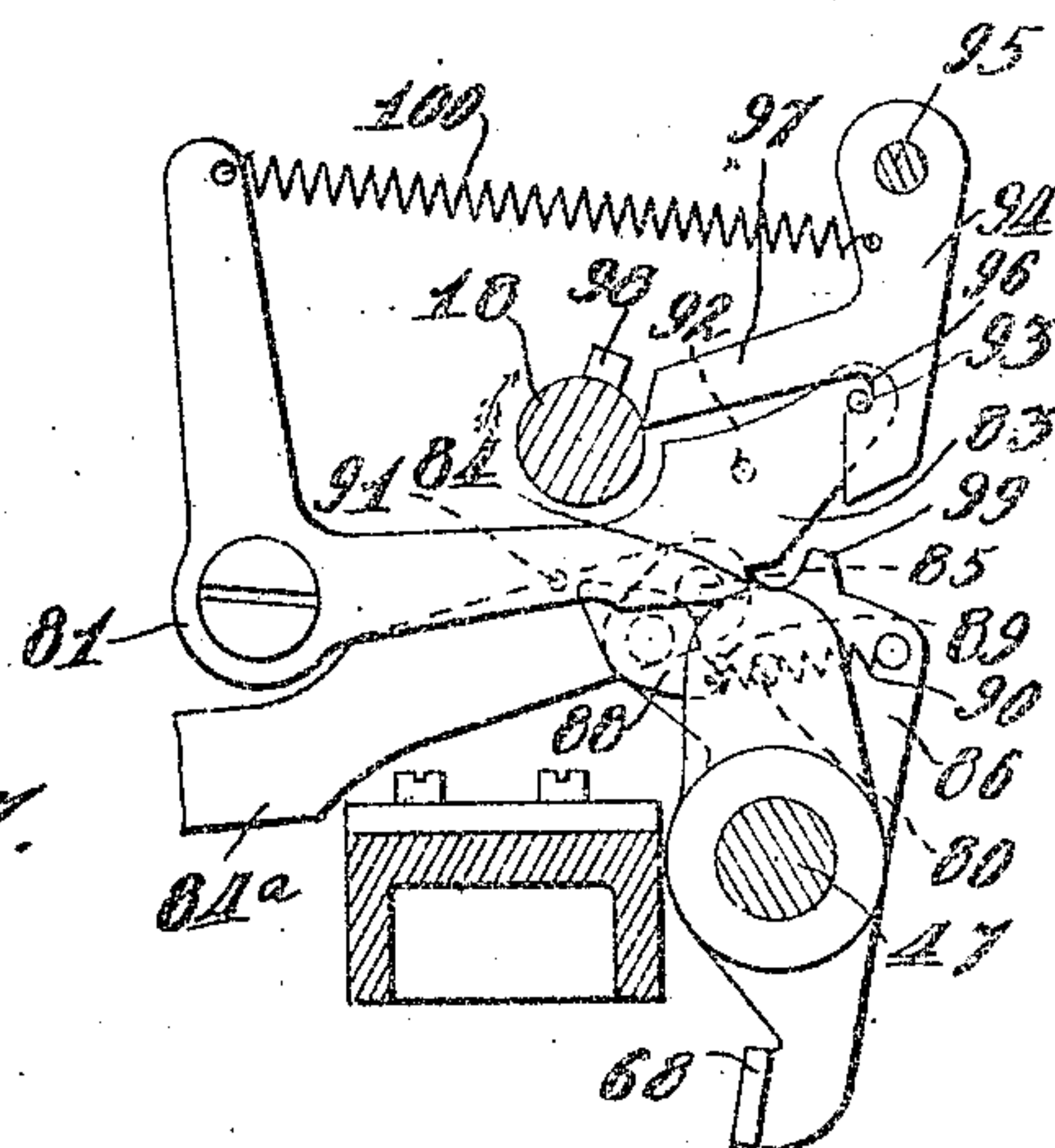


Fig. 7.



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UNITED STATES PATENT OFFICE.

EDWARD J. VON PEIN, OF DAYTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO, (INCORPORATED IN 1906.)

CASH-REGISTER.

No. 864,495.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed July 24, 1905. Serial No. 270,914.

To all whom it may concern:

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

This invention relates more particularly to that class of cash registers in which there is a series of differentially adjustable setting elements which are first moved to the proper setting position and then the complete operation of the machine is subsequently effected by means of an operating member such as a crank handle; and it is among the objects of the invention to provide improved devices for restoring the setting elements to normal position, and to associate with the various setting and operating mechanisms certain devices requiring a proper sequence of operation of the various elements, all of which will be hereinafter more specifically set forth.

These improvements are shown and described as applied to the style of cash register set forth in Letters Patent of the United States to Thomas Carroll, No. 751,611, issued February 9, 1904, but it will readily be seen that certain of the devices herein described and claimed can be applied to other forms of cash registers.

With these and incidental objects in view, the invention consists in certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims and a preferred form of embodiment of which is hereinafter specifically described with reference to the drawings which accompany and form part of this specification.

Of said drawings: Figure 1 represents a side elevation of the machine partly sectionalized including the cash drawer in the base of the machine. Fig. 2 represents an enlarged detail view of one of the setting levers with its registering rack and its connecting detent mechanism. Fig. 3 represents a vertical cross section of the machine taken between the amount setting levers and the special restoring lever, showing certain of the parts shown in Fig. 1, but looking from the opposite side of the machine. Fig. 4 represents a detail view of certain of the parts shown in Fig. 3, including the special restoring lever and locking devices connected therewith. Figs. 4^a and 4^b represent detail view of part of the locking devices shown in Fig. 4. Figs. 5, 6 and 7 represent further detail view of the separate devices shown in Fig. 3, the parts being in these figures shown in displaced position.

In the general operation of the machine there is a series of differential amount setting levers 10 (see

Fig. 2) which are attached to segmental plates 11 pivoted upon a transverse shaft 12, and the plates 11 are formed at their rearward sides with teeth 13 which mesh with teeth 14 formed on the forward side of a vertical rack bar 15, which rack bar carries on its upward portion a plate 15 formed with counter actuating teeth 17. After the amount levers have been set to their proper positions by the aid of denominational scales which may be suitably attached to the outer cabinet of the machine, the main operating shaft 18 is revolved by means of a crank handle or other suitable device, whereupon the counter (not shown herein) is bodily carried downward in an oscillating frame 19 (see Fig. 1) to cause the registering wheels of the counter to be moved over the counter engaging rack 17, and thereby the counter is actuated to an amount corresponding to the setting positions of the amount levers. A reference to the above mentioned Carroll patent will give a more elaborate description of the registering devices, such description not being necessary herein since these registering elements are not involved in the present improvements.

After the amount levers have once been set and the machine operated as above described, it is very desirable for the purpose of avoiding mistakes, to provide some means for restoring all of the amount levers to normal zero position prior to their adjustment for a subsequent transaction, and this mechanism will now be described. The actuating means for this purpose comprises a special restoring lever 20 which is fast to a plate 21 pivoted upon the transverse shaft 12. The rearward portion of the plate 21 is formed with teeth 22 which mesh with teeth 23 formed on a lever 24 suitably pivoted at 25 to a support extending downward from the main frame of the machine. This lever 24 has pivoted to it at 26 a link 27 which extends forward and at 28 is pivoted to the rearwardly extending arm 29 of a disk 30 loosely mounted upon the shaft 12, this disk 30 having formed in its forward side a slot 31 the purpose of which will be later described. The arm 29 has formed upon it a lug 32 which is arranged to engage a shoulder 33 formed in a collar 34 fast upon the shaft 12. It will thus be seen that when the restoring lever 20 is pulled downward, the intermeshing of the teeth 22 and 23 will cause the lever 24 to be rocked downward thereby carrying forward the link 27 and giving the disk 30 a rotation reversely to that of the direction of movement of the lever 20 and its disk 21. This movement of the disk 30 is utilized to restore the amount setting levers to normal position in the manner now to be described. Each amount setting lever as shown in Fig. 2 is mounted to rotate freely upon the shaft 12 by reason of the collar 35 attached to the segmental plate 11, but each plate 11 has formed upon its side a square lug 36 which lies in the

path of an arm 37 fast to and projecting outwardly from the shaft, so that any setting movement of the lever 10 will cause the lug 36 to move the arm 37 upward and thereby rock the shaft 12 in its bearings in the frame of the machine, and therefore the shaft 12 will be rocked to an extent corresponding to the greatest amount of any amount setting lever which is operated, and this rotation of the shaft 12 will of course also rock the collar 34 (see Fig. 1) to bring the shoulder 33 nearer to the restoring lug 32, and if any amount lever is moved to its "9" position the shaft 12 will be rocked sufficiently to cause the shoulder 33 just to engage the lug 32. Now upon the operation of the restoring lever 20, the lug 32 is given a reverse movement in the manner just described and thereby by rocking the collar 34 and shaft 12, restores all the arms 37 to normal position and hence by acting upon the lugs 36 restores all the setting levers to normal position. A spring 38 (see Fig. 2) extends between the main frame of the machine and one of the arms 37 to cause the shaft 12 normally to be rocked in the direction to restore the setting levers to normal position.

In order to hold any amount lever in the position to which it is operated and thus prevent its return to normal position under the impulse of the spring 38, the vertical rack plate 15 has attached to it a detent plate 39 which is formed with teeth 40 which are engaged by a detent plunger 41, which plunger is suitably socketed in a stationary cross bar 42 of the machine and is normally held in engagement with the teeth by means of a spring 43 which presses against a pin 44 extending through the plunger. The shape of the teeth 40 and the plunger 41 is such as will be seen from Fig. 2 that when the amount lever 10 is moved downward it will be impossible to return the same to normal position, only advance movement of the lever being possible, while retrograde movement is impossible. When the levers are restored to zero however in the manner previously described, it is necessary of course to withdraw the plungers 41 from engagement with the teeth 40 so as to permit this restoration, and this mechanism will now be described. The rearward ends of the plungers 41 pass through apertures formed in the forward side of a rock frame 46 which is fast to a rock shaft 47, the frame constituting two downwardly extending legs 48 and 49. The butt end of each plunger 41 abuts against an adjusting bolt seated in the leg 49, so that the rearward movement of any amount setting lever will, by forcing the plunger 41 rearward as the teeth 40 pass over the same, effect a slight rocking rearward of the frame 46. There is also formed upon the rearward end of the plunger 41 a pin 50 which is arranged to be engaged by the forward leg 48 of the rock frame; this engagement takes place by means of an independent rearward rocking of the frame 46 in a manner to be described, this independent engagement taking place at the time of the restoration of the amount levers to normal position, and the purpose of the same being to release the plunger from engagement with the teeth 40 so that the amount levers can return freely. The mechanism for effecting this is shown in Fig. 3 and also more clearly in detail in Fig. 5. Fast upon the rock shaft 47 is a two-armed lever 51, the normal position of which is shown in Fig. 3 and the displaced position of which is shown in Fig. 5. The upper end of this lever is formed with a laterally projecting lug

52 which is arranged to be engaged by a nose 53 formed on the rearward end of an arm 54 which at its middle portion is slotted to surround the shaft 12 and at its forward end is pivoted to a link 55, which link at its lower end is suitably pivoted to a support 56 extending upward from one of the cross frames of the machine and at its upper end carries an anti-friction roller 57 which is arranged to be engaged by the disk 21 of the special restoring lever 20. The rearward end of the arm 54 carries a pin 58 which rests upon the rearward arm of a lever 59 pivoted at its middle portion 60 to a support extending from the main frame of the machine, and the forward arm of the lever 59 carries a laterally extending flange 61 which lies in the path of a lug 62 extending from a collar 63 fast to the rock shaft 12. A spring 64 pulls downward and rearward upon the arm 54 so as to cause the pin 58 to press upon the rearward arm of the lever 59, but when the amount levers are all in normal zero position, the rock shaft 12 is in such position that the lug 62 rests upon the flange 61 and raises the rearward end of the lever 59 so that the pin 58 is lifted and the nose 53 remains out of contact with the lug 52 as shown in Fig. 3. As soon however as any amount lever is moved from normal position, the attendant rocking of the shaft 12 withdraws the lug 62 from contact with the flange 61 and permits the rearward end of the lever 59 to drop sufficiently to permit the nose 53 to engage the lug 52; this takes place prior to the movement of the restoring lever 20, but as soon as the restoring lever 20 is operated to return the amount levers to normal position the cam formation 65 of the disk 21 now engages the anti-friction roller 57 and by rocking backward the link 55, also pulls back with it the arm 54, and consequently the nose 53 acting upon the lug 52 causes the rocking of the lever 51 into the position shown in Fig. 5; and this rocking of the lever 51 rocks the shaft 47 and thereby rocks the frame 46 (see Fig. 2) rearward to such an extent that the leg 48 contacts with the pins 50 of all the plungers and withdraws the plungers from contact with their respective teeth 40 so as to permit the free return of all of the amount levers to normal position. As soon as the amount levers have all been restored to normal position, which occurs when the special lever 20 reaches the limit of its downward position, the lug 62 (see Fig. 5) is again brought in contact with the flange 61 so as to raise the rearward end of the lever 59 and thereby disengage the nose 53 from the lug 52 to permit the lever 51 and the rock shaft 47 and the rock frame 46 to return to normal position, this return of the lever 51 to normal position being assisted by means of a spring 66 (see Fig. 3) which is attached at one end to the segmental lever 24 and at the other end to a bolt 67 which passes through an aperture 67^a (see Fig. 4^a) formed in a flange 68 extending laterally from the lower end of the lever 51, the construction being such that upon the first part of the downward movement of the lever 20, the consequent movement of the lever 24 does not put the spring 66 under tension until the lever 20 has reached almost the limit of its downward stroke, at which time the head 69 of the bolt 67 comes in contact with the flange 68, and thereupon the spring begins to be put under tension by the continued movement of the lever 20 so that as soon as the lever 51 is released in the manner just described, the spring 66 will act to restore it to normal position, but

here is no effective tension of the spring 66 on the lever 51 when the lever 51 is first rocked in the manner above described.

After the amount levers 10 have been set to their proper places and the main operating shaft 18 has been started revolving for the purpose of effecting the registration as previously described, it is essential to prevent the subsequent movement of any one of the amount levers; and this is effected by means of an arm 70 (see Fig. 2) which is fast to the rock shaft 47 and at its upper end carries an anti-friction roller 71 which co-operates with a disk 72 fast upon the main revolution shaft 18. The disk 72 is formed with a recess 73 which when the shaft 18 is at normal position stands opposite the anti-friction roller 71 so that upon the movement of any amount lever the recess 73 will permit the movement of the arm 70 caused by the successive movements of the plunger 41 as the teeth 40 pass over it; but as soon as the revolution shaft has been operated the periphery of the disk 72 now rides over the roller 71 and locks the arm 70 from movement thereby preventing the rocking of the shaft 47 and thus effectually locking all of the amount setting levers from operation while the main revolution shaft remains in partly operated position. When however the revolution shaft has made one complete revolution, the recess 73 is again opposite the roller 71 so that the shaft 47 could be rocked, the devices just described being already old in the art; but the present improvements comprise a device which after such complete revolution of the shaft 18 still prevents the operation of any one of the amount levers until the restoring lever has been operated to return all of the amount levers to zero, and thereby it is impossible for the operator of the machine to move any one of the amount levers upon the subsequent transaction until he has first operated the restoring lever to return all of the amount levers to zero, and thus the liability to mistakes by permitting one of the amount levers inadvertently to remain displaced from normal position, is prevented. This mechanism is shown in Figs. 3 and 4, and certain parts thereof in detail in Figs. 4^b and 7. The lever 51 which is fast upon the rock shaft 47 as heretofore described has formed upon it in addition to the previously described pin 52, another pin 80 which projects laterally on the opposite side from the pin 52, as shown in Fig. 4^a, and this pin 80 is arranged to co-operate with a locking bell crank lever 81 which is suitably pivoted to a support 82 extending from the main frame. The rearwardly extending arm 83 of this bell crank lever is formed on its lower side with a locking shoulder 84 as best shown in Fig. 7, and when the arm 83 is dropped into its lowest position this shoulder engages the aforesaid pin 80 and thereby locks the lever 51 from forward movement, as shown in Fig. 4; and when in such position it will be apparent that since the lever 51 and the shaft 47 cannot be rocked forward, it will be impossible to move any one of the amount levers 10 because it would be impossible to move any one of the detent plungers 41 as long as the rock frame 46 remains locked in this manner. This condition of the parts takes place at the end of a complete operation of the machine; and upon a succeeding operation of the machine, the amount levers are unlocked by the operation of the special restoring lever 20 and are then carried back to normal position as heretofore described. This unlocking

of the amount levers is effected as follows. Pivoted at 83^a to the disk 21 of the restoring lever 20 is a link 84^a which extends rearward and is pivoted at 85 to the upper portion of a rock plate 86 (see Fig. 4^b which plate is provided with a collar 87 which is loosely mounted upon the rock shaft 47. At the forward side of this plate is pivoted a wiper pawl 88 which is normally spring-drawn against a stop pin 89 by means of a spring 90. The rearward arm 83 of the bell crank lever 81 has formed upon it on one side two lifting pins 91 and 92 which co-operate with the rocking plate 86, and on the other side a latching pin 93 which co-operates with a latching pawl 94 pivoted to the main frame at 95 and said pawl being shaped with a latching notch 96 to engage the pin 93 and a releasing finger 97 which co-operates with a lug 98 fast upon the main revolution shaft 18. Upon the top portion of the plate 86 is formed a single tooth or projection 99 which co-operates with the lifting pin 32 for the purpose to be described. The operation of these parts is as follows: The arm 83 resting in the position shown in Fig. 4 with its shoulder 84 engaging the pin 80 to prevent the rocking of the shaft 47, the restoring lever 20 is now pulled downward for the purpose of returning the amount levers to normal position; and upon the initial movement of the lever 20, the forward movement of the link 84^a rocks forward the plate 86 and causes the tooth 99 thereof to strike the lifting pin 92 and thereby lift the shoulder 84 out of locking position in front of the pin 80, so that as soon as the cam 65 of the restoring lever disk 21 operates to rock the lever 51 in the manner previously described for the purpose of unlocking the amount levers to permit the same to be restored to normal position, the shoulder 84 will at this time be raised far enough above the pin 80 to permit this rocking of the lever 51 and shaft 47, and after the tooth 99 has passed the lifting pin 92 the arm 83 nevertheless remains raised out of locking position, since the pin 80 has in the meantime been moved forward below the underside of the arm 83 so that the arm now rests upon the pin 80. During this downward movement of the lever 20 the wiper pawl 88 wipes under the lifting pin 91 being free to swing against its spring tension, and when the restoring lever 20 has reached the extremity of its downward position, the wiper pawl has swung in under the pin 91; and upon the return of the lever 20 to normal upward position, the upper side of the wiper pawl now strikes the lifting pin 91 and by reason of the movement of the pawl being limited by the stop pin 89 the pawl now acts upon the pin 91 to lift the arm 83 and thereby carry the latching pin 93 upward far enough to be engaged by the notch 96 of the pawl 94, the pawl 94 and the bell crank lever 81 being connected together by means of a spring 100 which normally draws the pawl forward and the arm 83 of the bell crank lever downward. This displaced and latched position of the arm 83 is shown in Fig. 7, and during the movement of the restoring lever 20 of course the amount levers are restored to zero position and are now free to be operated. As soon as they are operated then the registration is effected by the rotation of the shaft 18, whereupon the lug 98 strikes the releasing finger 97 and forces the pawl 94 backward and permits the arm 83 again to drop down so that its shoulder 84 again engages the pin 80 and locks the amount levers from movement until the restoring lever has again been operated.

It will thus be seen that after the amount levers have once been set for one transaction and the machine operated to effect the registration, the amount levers cannot be again set except after the operation of the restoring lever which re-sets all of the amount levers to normal position; and in order to prevent a second successive operation of the restoring lever after it has once been operated to restore the amount levers to normal position the following device is provided as shown in Figs. 3 and 6.

Fast upon the disk 21 of the restoring lever is a second and smaller disk 110 having formed on its upper side teeth 111 which are engaged by a pawl 112 which is pivoted at 113 to the support 82. The pawl 112 is formed with a raised shoulder 114 upon which, when the restoring lever 20 is in normal position as shown in Fig. 3, there rests the laterally extending flange 115 which projects from the forward end of a lever 116 pivoted to the support 82 at 117, the lever 116 and the pawl 112 being connected by a spring 118. When the restoring lever is moved downward, the pawl 112 engages the teeth 111 to prevent retrograde movement of the restoring lever, and as soon as the lever reaches the extremity of its downward position as shown in Fig. 6 a projecting lug 119 formed on the periphery of the disk 110 strikes the pawl 112 and rocks the same about its pivot to such an extent that the supporting shoulder 114 is thrown rearward sufficiently to permit the flange 115 to drop into position to engage larger teeth 120 formed on the upper periphery of the disk 21; and the flange now remaining in this position against the shoulder 114 holds the pawl 112 out of engagement with the teeth 111 to permit the lever to return to normal position, but the engagement of the flange 115 with the larger teeth 120 now prevents the lever from again being advanced toward lower position and permitting only return to normal position, and when the lever has thus been returned to normal position it is permanently locked from movement in any direction until the main revolution shaft 18 of the machine is operated, in which event a pin 121 formed upon a disk 122 which is fast to the revolution shaft 18 strikes the rearward arm of the lever 116 and thereby forces the same downward and thus raises the forward end of the lever to withdraw the flange 115 from engagement with the teeth 120, whereupon the flange again rests upon the shoulder 114 and the lever 20 may now be operated. The upward movement of the lever 20 is limited by means of a stop arm 123 fast to the side of the lever, which stop arm strikes the stationary support 82 when the lever is in normal operated position, as shown in Fig. 3; and the lever is normally spring drawn to its upper position by means of a spring 124 extending between the stop arm 123 and the main frame of the machine, so that it is merely necessary for the operator to move the restoring lever to the extremity of its lower position and then release the same whereupon it will of itself fly back to normal upper position.

In order to prevent a second operation of the machine after the amount levers have once been set and the crank handle once operated, the following mechanism is provided as shown in Fig. 1. The aforesaid disk 30 which is rotated in a direction reversely to that of the restoring lever disk 21 in the manner hitherto described, has formed in its forward side the slot 31 which has already been referred to. Projecting into said slot is a pin 130 which extends laterally from the forward

end of a lock retracting arm 131. The rearward end of this arm 131 is formed with a V-shaped slot 132 which engages a pin 133 formed on the upper end of a locking pawl 134 pivoted at 135 to a portion of the main frame of the machine, the pawl 134 and the arm 131 being connected by a spring 136, which normally draws the arm 131 downward and draws the pawl 134 rearward so as to carry a nose 137 formed thereon, into engagement with a lug 138 formed on the other side of the disk 122 which carries the pin 121 as just described, and is fast to the main operating shaft 18. When the restoring lever 20 is moved downward, the disk 30 is rotated reversely as hitherto described and at the end of the downward movement of the lever 20 the lower end of the slot 31 is brought into position to engage the pin 130 so as to force rearwardly the arm 131 to an extent sufficient to bring the forward portion of the V-shaped slot opposite the pin 133 so that the arm 131 drops down slightly and because of the shape of the slot the pointed portion 139 is now hooked over the pin 133, so that upon the return of the lever 20 to normal position, the upper end of the slot 31 now strikes the pin 130 and retracts the arm 131 thereby carrying with it the pawl 134 so as to release the nose 137 from engagement with the lug 138, thus unlocking the main revolution shaft of the machine. And upon the revolution of the main operating shaft 18 by means of the crank handle, the lug 138 strikes the rearward end of the arm 131 and lifts the same to such an extent as to withdraw the nose 139 from engagement with the pin 133, thus permitting the pawl 134 again to spring rearward into position to engage the lug 138 and lock the machine from a second operation until the restoring lever has been operated as before described to release the operating shaft.

The setting of the amount levers also serves to set suitable rotary indicators to denote the amount of each transaction, these indicators 140 being pivoted upon a transverse shaft 141 and being set directly by the previously described rack bars 15 which carry upon their upper ends racks which mesh with pinions fast to the indicators all as described in the aforesaid Carroll patent. In order to conceal these indicators as soon as the restoring lever has been given its initial movement to effect the restoration of the amount levers, there are provided screens or flashes 142 which are carried upon opposite ends of arms 143 mounted to turn upon the shaft 141. These flash arms are normally drawn to horizontal position by means of a spring 144, but the arms are retained in upper position by means of the engagement of the pin 145 with a nose 146 formed in the upper curved end of an arm 147 which at its lower end is pivoted to the disk 21 of the restoring lever. On the upper end of the arm 147 is pivoted a wiper pawl 148 which is normally retained against a stop pin 149 by means of a spring 150, the lower end of the pawl normally resting upon a stationary transverse shaft 151. When the lever 20 is drawn downward, the arm 147 is carried downward with it but the pawl 148 bears against the shaft 151 and thereby carries the upper end of the arm 147 forward in such manner as to withdraw the nose 146 from engagement with the pin 145, thus permitting the flash to drop under its spring tension; but upon the continued downward movement of the arm 147 the pawl 148 slides free past the forward side of the shaft 151 and the upper end of the arm 147 is then drawn rear-

ward to such an extent that the nose 146 is again brought into position to engage the pin 143 upon the upward stroke of the lever 20, whereby the flash will again be raised to expose the indicators upon such return stroke of the lever 20. The arm 147 is normally drawn rearward by means of a spring 152 so as to cause the nose 146 always to engage the pin 143.

In order to prevent the operation of the restoring lever while the cash drawer remains open, there is provided on the rear of the cash drawer 160 a rearwardly extending arm 161 upon which there normally rests a plunger 162 which is spring-pressed downward by means of a spring 163, the extent of the downward movement being limited by means of a stop pin 164. A second pin 165 fast to the middle portion of the plunger 162 engages the bifurcated rearwardly extending arm of a bell crank lever 166, the downwardly extending arm 167 of which bell crank lever is formed with a locking notch 168 which is arranged to engage a pin 169 formed on the rearward end of the link 27 heretofore described as being rocked downwardly and forwardly upon the movement of the restoring lever 20. It will thus be seen that when the cash drawer is open the arm 161 will be withdrawn from beneath the plunger 162 so as to permit the plunger to assume its downward position, whereupon the pin 165 will act upon the bell crank lever 166 to carry the notch 168 into the path of the pin 169, and thereby the restoring lever cannot be operated until the cash drawer is closed, this device necessitating the closing of the cash drawer at the end of each operation of the machine before a second registration can be effected.

While the form of mechanism here shown and described is admirably adapted to fulfil the objects primarily stated, it is to be understood that it is not desired to confine the invention to the one form of embodiment here disclosed, for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow.

The invention having been described, what is claimed as new is as follows:

1. In a cash register, the combination with a series of differentially adjustable setting elements, of a manipulative device for effecting the restoration of said elements to normal position; an operating mechanism; and a lock for said manipulative device controlled by said operating mechanism.
2. In a cash register, the combination with a series of differentially adjustable setting elements, of a manipulative device with connections for positively restoring said elements to normal position; an operating mechanism; a lock for said manipulative device; and means for releasing said lock by the operation of said operating mechanism.
3. In a cash register, the combination with manipulative amount determining means, of a restoring device for effecting the restoration of said manipulative means to normal position; an operating mechanism; means for locking said device after one operation thereof; and means for releasing said locking means by said operating mechanism.
4. In a cash register, the combination with a series of differentially adjustable setting elements, of a restoring lever for returning said adjustable elements to normal position; means for locking said restoring lever after the same has been operated to return said elements; an operating mechanism; and means connected with said operating mechanism for releasing the lock for said restoring lever.
5. In a cash register, the combination with a series of differentially adjustable setting elements, of a restoring

lever for effecting the restoration of said elements to normal position; a full stroke device for compelling the complete movement of said restoring lever and for also locking the same at the end of one complete operation thereof; an operating mechanism; and means connected with said operating mechanism for tripping said full stroke device to unlock said restoring lever.

6. In a cash register, the combination with a series of differentially adjustable setting elements, of a reciprocatory restoring lever for effecting the restoration of said elements to normal position; a full stroke device for said restoring lever, effective during the forward movement of the lever; a second full stroke device effective during the backward movement of the lever; and means connected with said first full stroke device for making said second full stroke device effective at the end of the forward movement of the lever.

7. In a cash register, the combination with a series of differentially adjustable setting elements, of a reciprocatory restoring lever for effecting the restoration of said elements to normal position; a full stroke device for said restoring lever, effective during the forward movement of the lever; a second full stroke device effective during the backward movement of the lever; means for disabling said first full stroke device at the end of the downward movement of said lever with provisions whereby said first full stroke device will enable said second full stroke device when the first device is disabled; and means for disabling said second full stroke device after the lever has been returned backward to normal position, and at the same time enabling the first full stroke device.

8. In a registering mechanism, the combination with a reciprocating operating element, of a full stroke device effective during the forward movement of said element; a second full stroke device effective during the backward movement of said element, one full stroke device being constructed and positioned to enable the other as it is itself disabled.

9. In a cash register, the combination with a reciprocatory operating element, of a full stroke device effective during the forward movement of said element; a second full stroke device effective during the backward movement of said element; and means associated with this first full stroke device for automatically disabling the same by the end of the forward movement of said element with provisions whereby said disabling movement causes the second full stroke device to become effective for the backward movement of said element.

10. In a cash register, the combination with manipulative amount determining means, and a restoring device for effecting the restoration of said manipulative means to normal position, of an operating mechanism; a lock for automatically locking said operating mechanism after one complete operation thereof; and means for controlling said lock by said restoring device.

11. In a cash register, the combination with a series of differentially adjustable setting elements, and a restoring lever for positively restoring said setting elements to normal position, of an operating mechanism; a lock for said operating mechanism for automatically locking the same after one complete operation; and means for releasing said lock by the operation of said restoring lever.

12. In a cash register, the combination with manipulative amount determining means, and a restoring device for effecting the restoration of said manipulative means to normal position, of an operating mechanism; a lock for automatically locking said operating mechanism after one complete operation thereof; and means operative upon the completion of the movement of the restoring device for releasing said lock for the operating mechanism.

13. In a cash register, the combination with manipulative amount determining means, a restoring device for effecting the restoration of said manipulative means to normal position, and an operating mechanism; of means for automatically locking said manipulative means at the end of one complete operation of said operating mechanism; and means connected with said restoring device for releasing said lock for the manipulative means.

14. In a cash register, the combination with manipulative amount determining means, a restoring device for

effecting the restoration of said manipulative means to normal position, and an operating mechanism; of means for automatically locking said manipulative means at the end of one complete operation of said operating mechanism; and means connected with said restoring device for unlocking said manipulative means upon the initial movement of said restoring device prior to the subsequent restoration of said manipulative means to normal position accompanying the continued movement of the restoring device.

15. In a cash register, the combination with a series of differentially adjustable setting elements, a restoring lever for positively returning said elements to normal position, and an operating mechanism; of means for automatically locking said adjustable elements at the end of one complete operation of said operating mechanism; and means for unlocking said adjustable elements upon the initial movement of said restoring lever prior to their movement of restoration by said lever.

16. In a cash register, the combination with manipulative amount determining means, a restoring device for effecting the restoration of said manipulative means to normal position, and an operating mechanism; of a locking device for locking said manipulative means during the operation of said operating mechanism while permitting the operation of said manipulative means when the operating mechanism is in normal position; a second locking device becoming effective by the operation of said operating mechanism whereby to lock said manipulative means after one complete operation of the operating mechanism; and means connected with said restoring device for releasing said second lock.

17. In a cash register, the combination with manipulative amount determining means, a restoring device for effecting the restoration of said manipulative means to normal position, and an operating mechanism; of means for automatically locking said manipulative means after one complete operation of said operating mechanism; means connected with said restoring device for releasing said lock for the manipulative means; and means for automatically locking said restoring device after one operation thereof.

18. In a cash register, the combination with a series of adjustable setting elements, a restoring device for positively restoring said setting elements to normal position, and an operating mechanism; of means for automatically locking said adjustable elements after one complete operation of said operating mechanism; means for releasing said locking means by the operation of said restoring lever; and means for automatically locking said restoring lever after the same has been operated to restore said adjustable means.

19. In a cash register, the combination with manipulative amount determining means, a restoring device for effecting the restoration of said manipulative means to normal position, and an operating mechanism; of means for automatically locking said manipulative means after one complete operation of said operating mechanism; means connected with said restoring device for releasing said lock for the manipulative means; means for automatically locking said restoring device after one operation thereof; and means for releasing the lock for the restoring device by the operation of said operating mechanism.

20. In a cash register, the combination with a series of adjustable setting elements, a restoring device for positively restoring said setting elements to normal position, and an operating mechanism; of means for automatically locking said adjustable elements after one complete operation of said operating mechanism; means for releasing said locking means by the operation of said restoring lever; means for automatically locking said restoring lever after the same has been operated to restore said adjustable means; and means for releasing the lock for said restoring lever by the operation of said operating mechanism.

21. In a cash register, the combination with manipulative amount determining means, and a restoring device for effecting the restoration of said manipulative means to normal position, of indicator devices controlled by said manipulative means; a flash for concealing said indi-

cator devices; and means connected with said restoring device for causing the operation of said flash to conceal the indicator devices during the first part of the operative movement of said restoring device and for again causing the operation of said flash to expose the indicator devices at the end of the operative movement of said restoring device.

22. In a cash register, the combination with differentially adjustable setting elements, a restoring lever for restoring said elements to normal position, indicators controlled by said adjustable elements, and a flash for said indicators, of means connected with said restoring lever for causing the operation of said flash to conceal the indicators during the movement of restoration of said adjustable elements, and for again causing the operation of said flash to expose the indicators at the end of the operative movement of said restoring lever.

23. In a cash register, the combination with manipulative amount determining means, a restoring device for effecting the restoration of said manipulative means to normal position, an operating mechanism, and a cash drawer; of means connected with said cash drawer for locking said restoring device and said operating mechanism when the cash drawer is in open position.

24. In a cash register, the combination with differentially adjustable setting elements, a restoring lever for positively restoring said elements to normal position, an operating mechanism, and a cash drawer, of means for locking said operating mechanism at the end of one complete operation thereof; means for releasing said lock by the operation of said restoring lever; and means connected with said cash drawer for locking said restoring lever while the cash drawer is in open position.

25. In a cash register, the combination with differentially adjustable setting elements, and a restoring device for positively restoring said elements to normal position, of means for latching said elements against retrograde movement after they have been adjusted to differential positions; and means connected with said restoring device for disabling said latching means prior to the positive restoration of said elements by said restoring device.

26. In a cash register, the combination with differentially adjustable setting elements, and a restoring device for positively restoring said elements to normal position, of means for latching said elements against retrograde movement after they have been adjusted to differential positions; means connected with said restoring device for disabling said latching means prior to the positive restoration of said elements by said restoring device; and means for enabling said latching means upon the complete restoration to normal position of said adjustable elements.

27. In a cash register, the combination with a normally locked operating mechanism of normally locked amount determining devices and a manipulative element which when moved unlocks and restores said determining devices to normal position and unlocks the operating mechanism.

28. In a cash register, the combination with a normally locked indicating mechanism and amount determining devices for positioning same, of a shutter for said indicating mechanism, and a manipulative element for unlocking and positively restoring said indicating mechanism to zero position and operating said shutter.

29. In a cash register, the combination with accounting devices and amount controlling devices movable from a normal position determining the entry on same, of means for returning said controlling devices to normal position, a cash safe having a movable part, and means controlled by said cash safe for locking said returning means from operation.

30. In a cash register, the combination with an element having a constant excursion, of two full stroke pawls for same having interacting provisions whereby one controls the enabling of the other.

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

EDWARD J. VON PEIN.

Witnesses:

WM. O. HENDERSON,
CARL W. BENST.