

(No Model.)

8 Sheets—Sheet 1.

R. P. THOMPSON.
CASH REGISTER.

No. 532,924.

Patented Jan. 22, 1895.

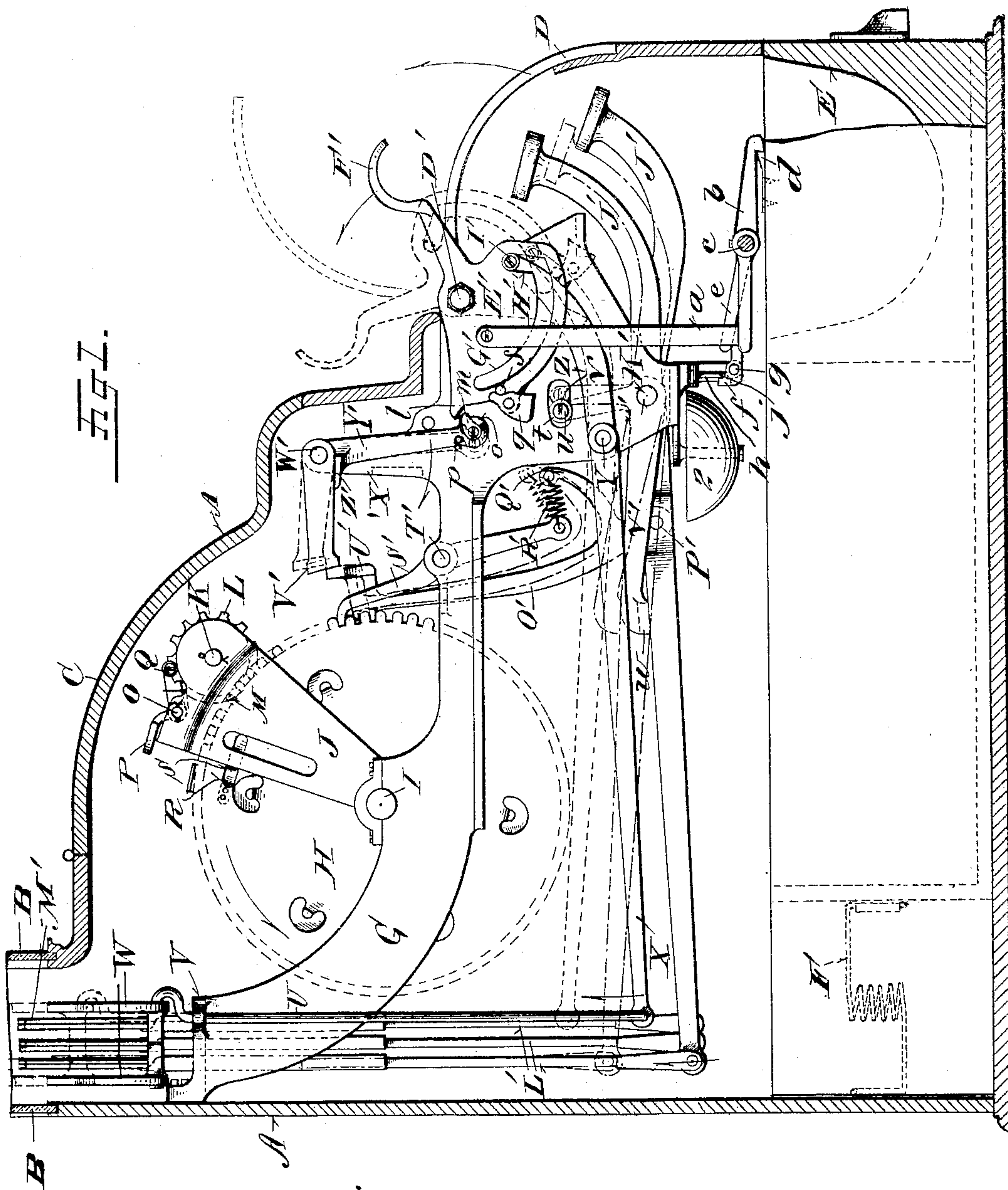


Fig. 1.

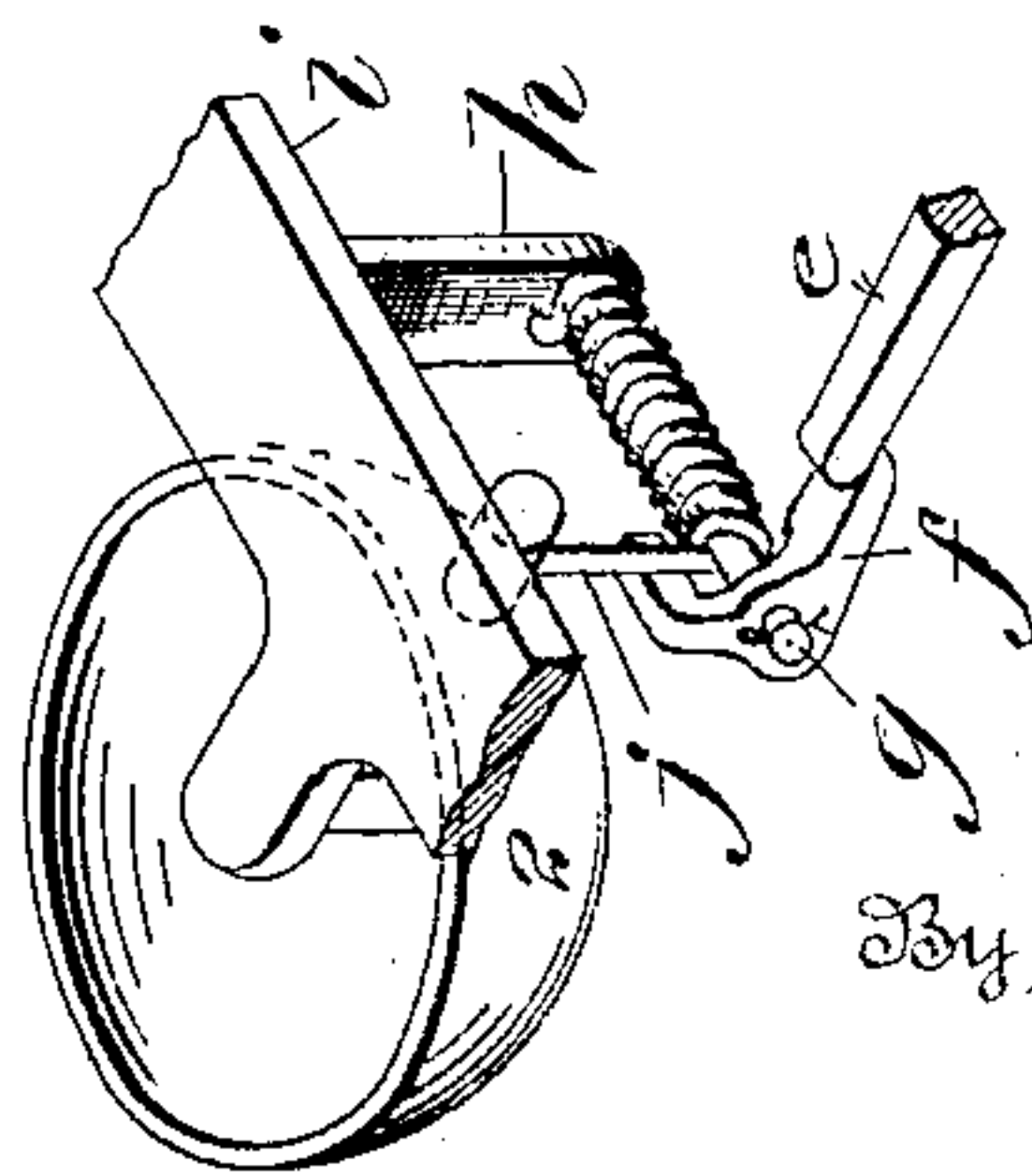


Fig. 2.

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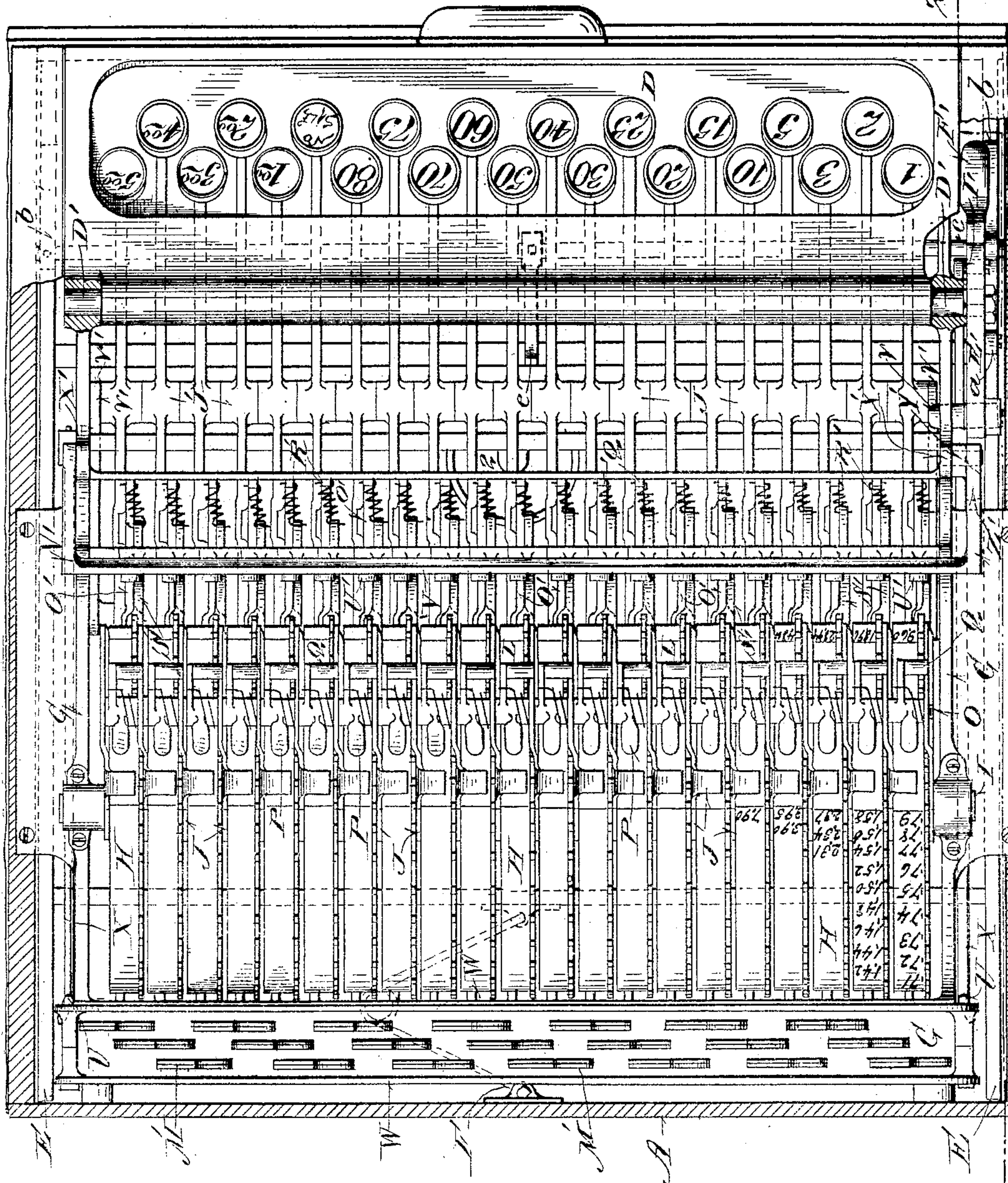
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8 Sheets—Sheet 2.

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8 Sheets—Sheet 3.

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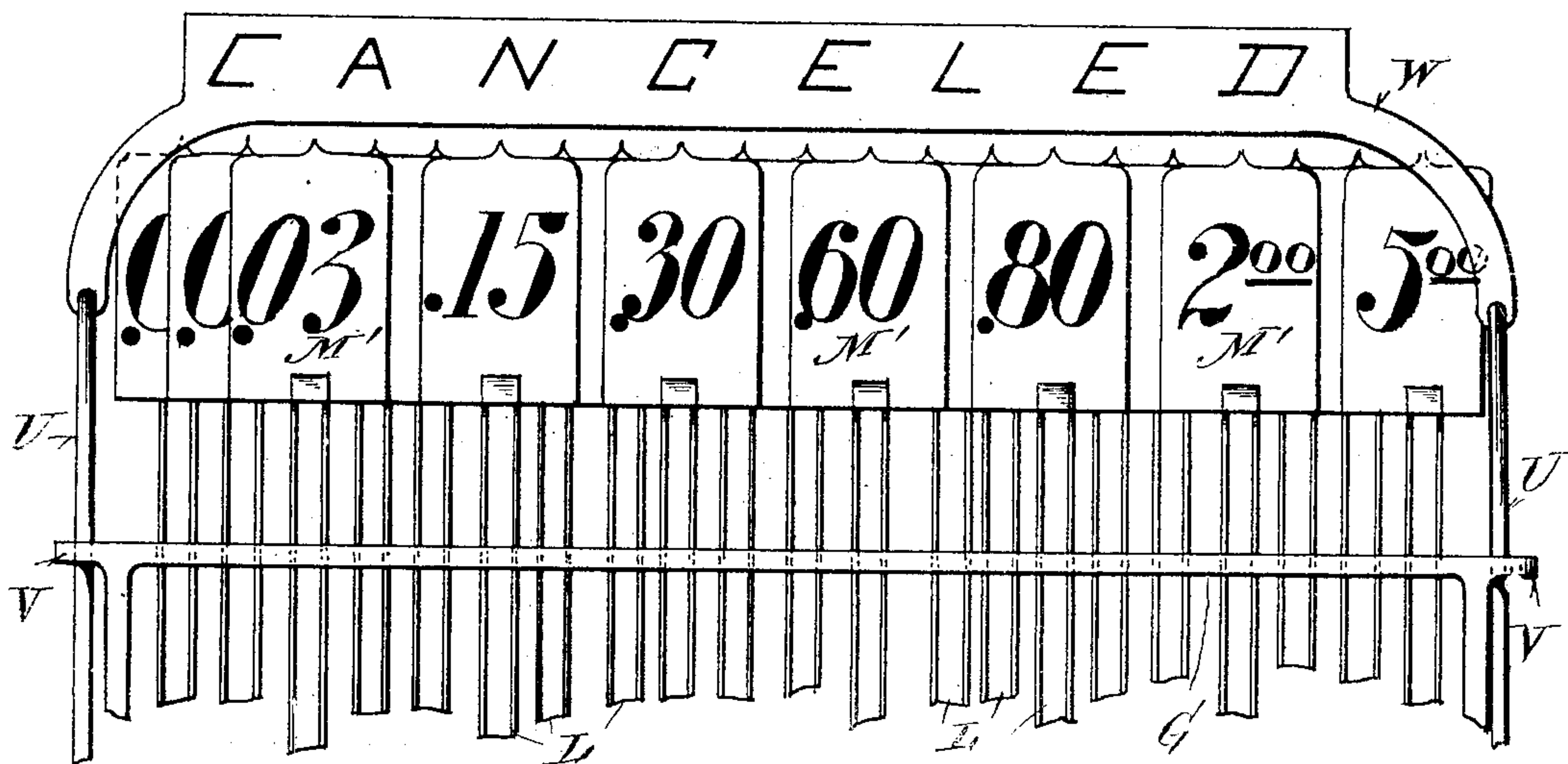


Fig. 4.

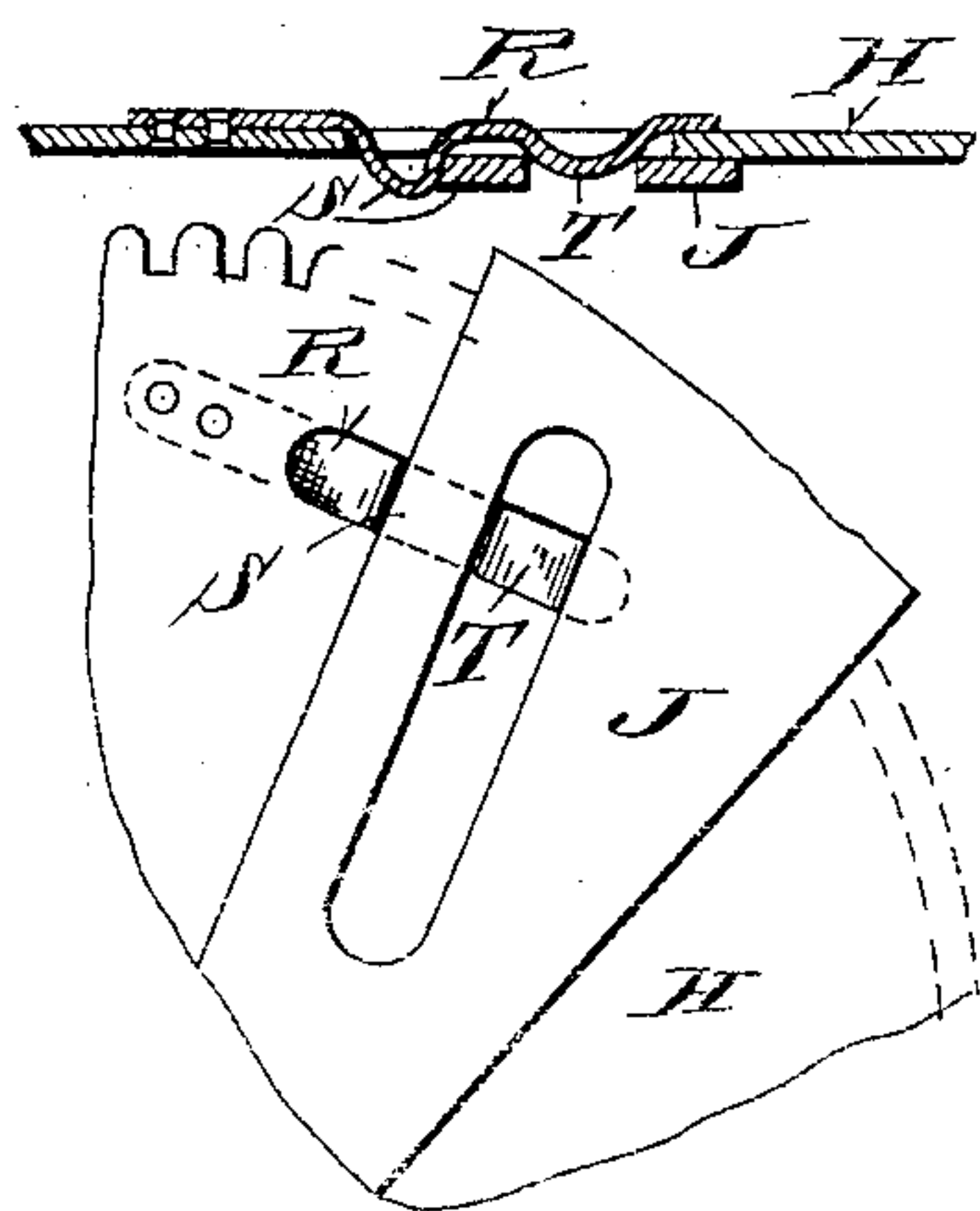


Fig. 5.

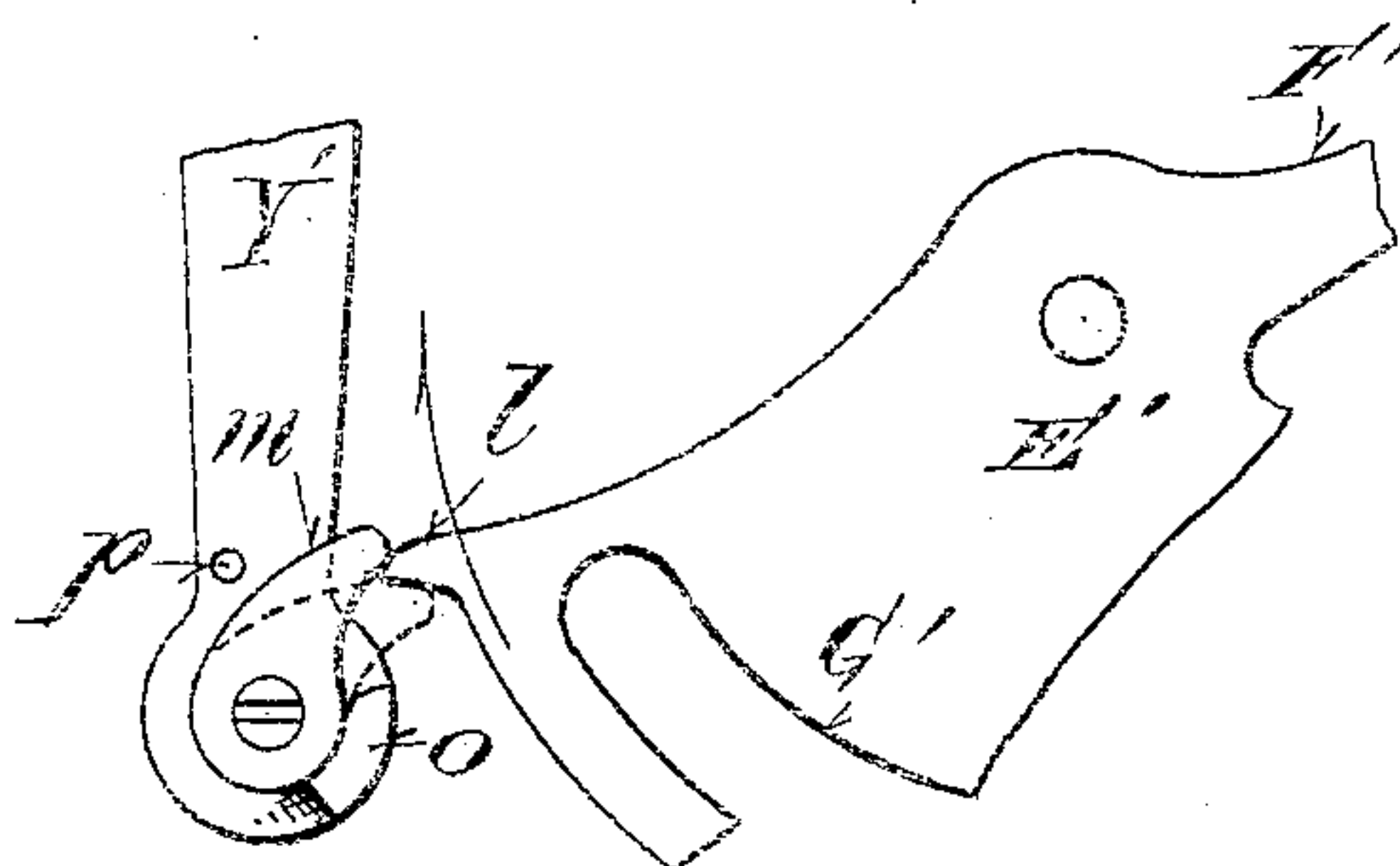


Fig. 6.

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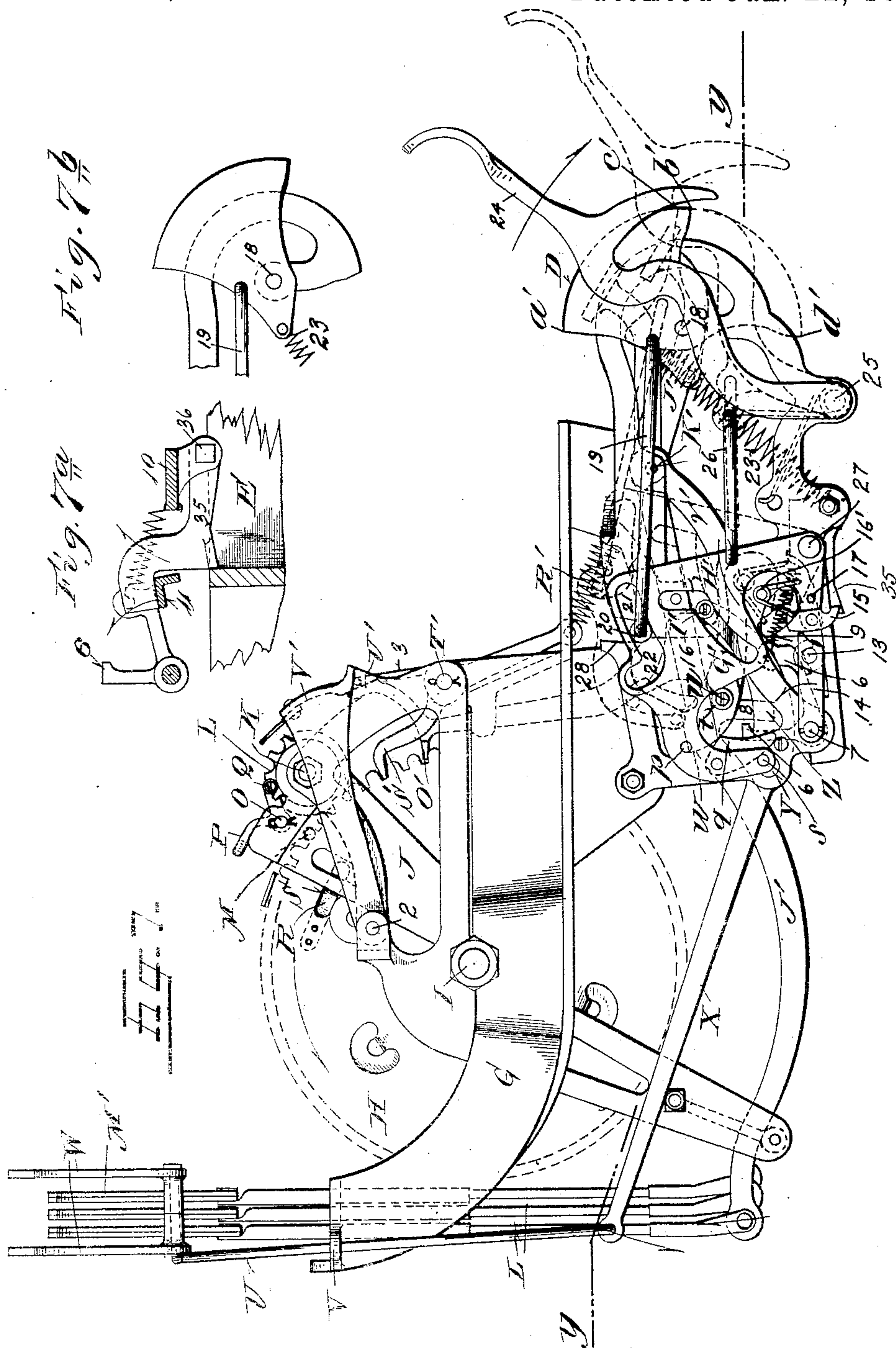
(No Model.)

8 Sheets—Sheet 4.

R. P. THOMPSON.
CASH REGISTER.

No. 532,924.

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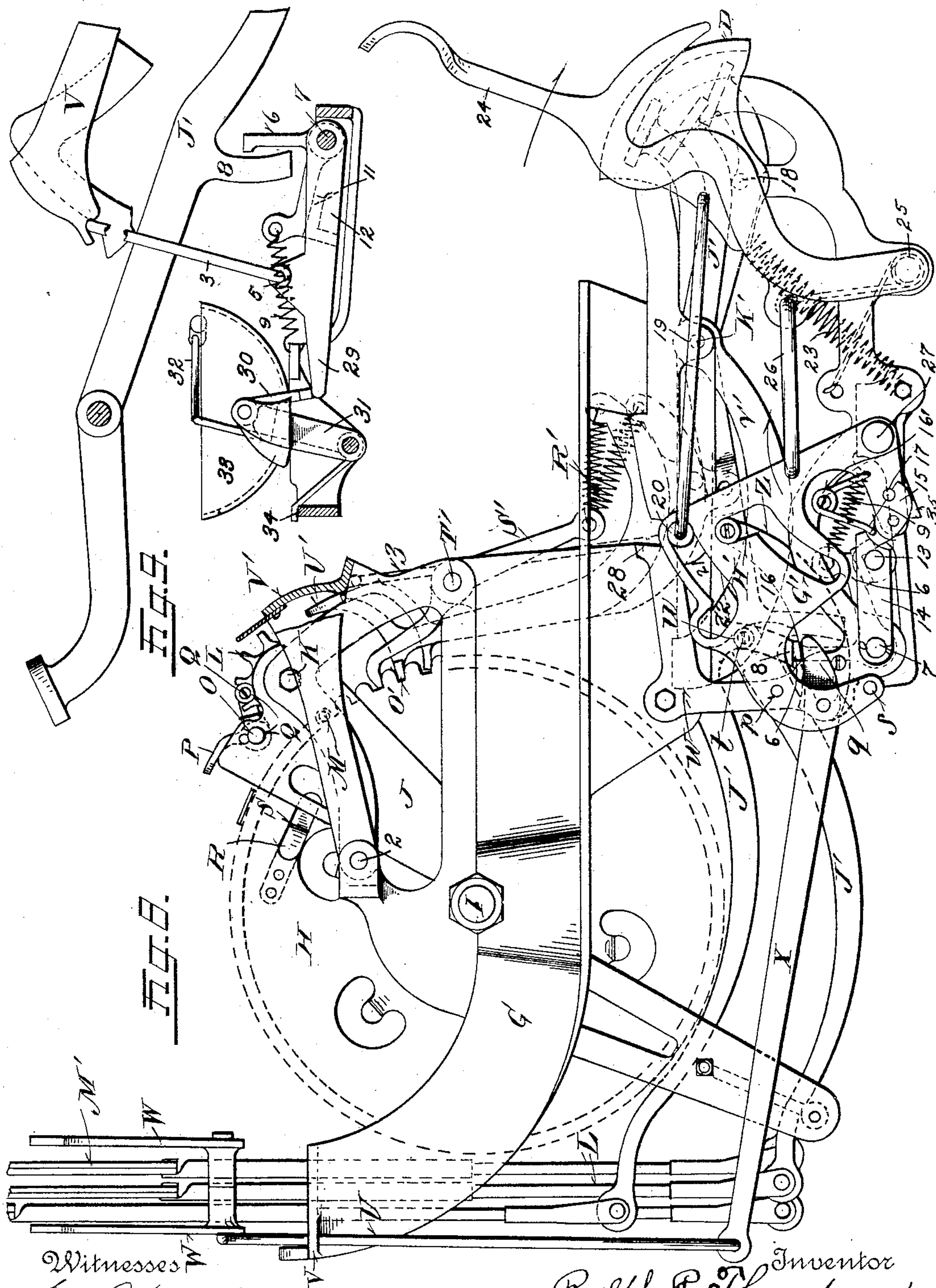
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8 Sheets—Sheet 5.

R. P. THOMPSON.
CASH REGISTER.

No. 532,924.

Patented Jan. 22, 1895.



Witnesses

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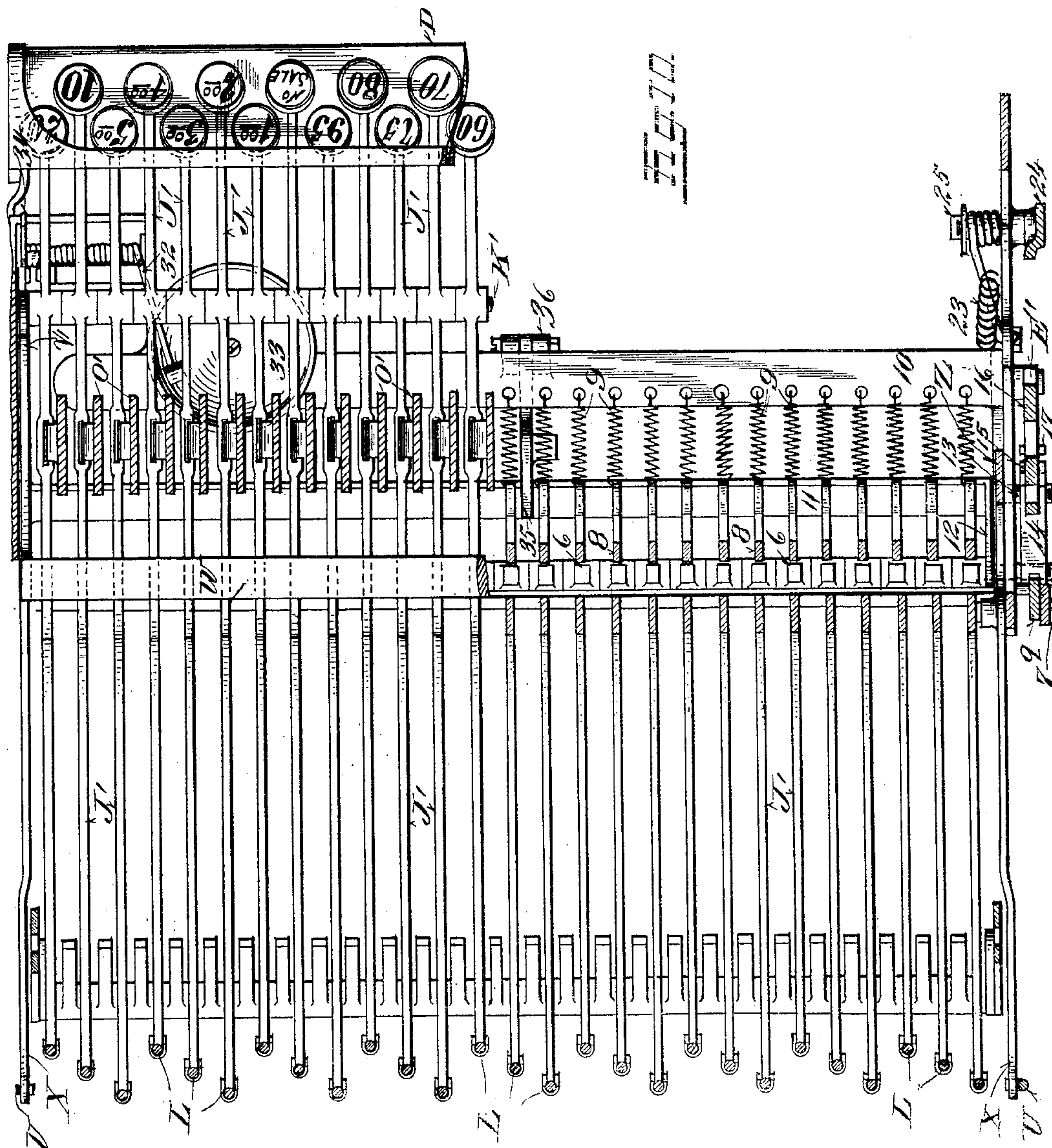
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8 Sheets—Sheet 6.

R. P. THOMPSON.
CASH REGISTER.

No. 532,924.

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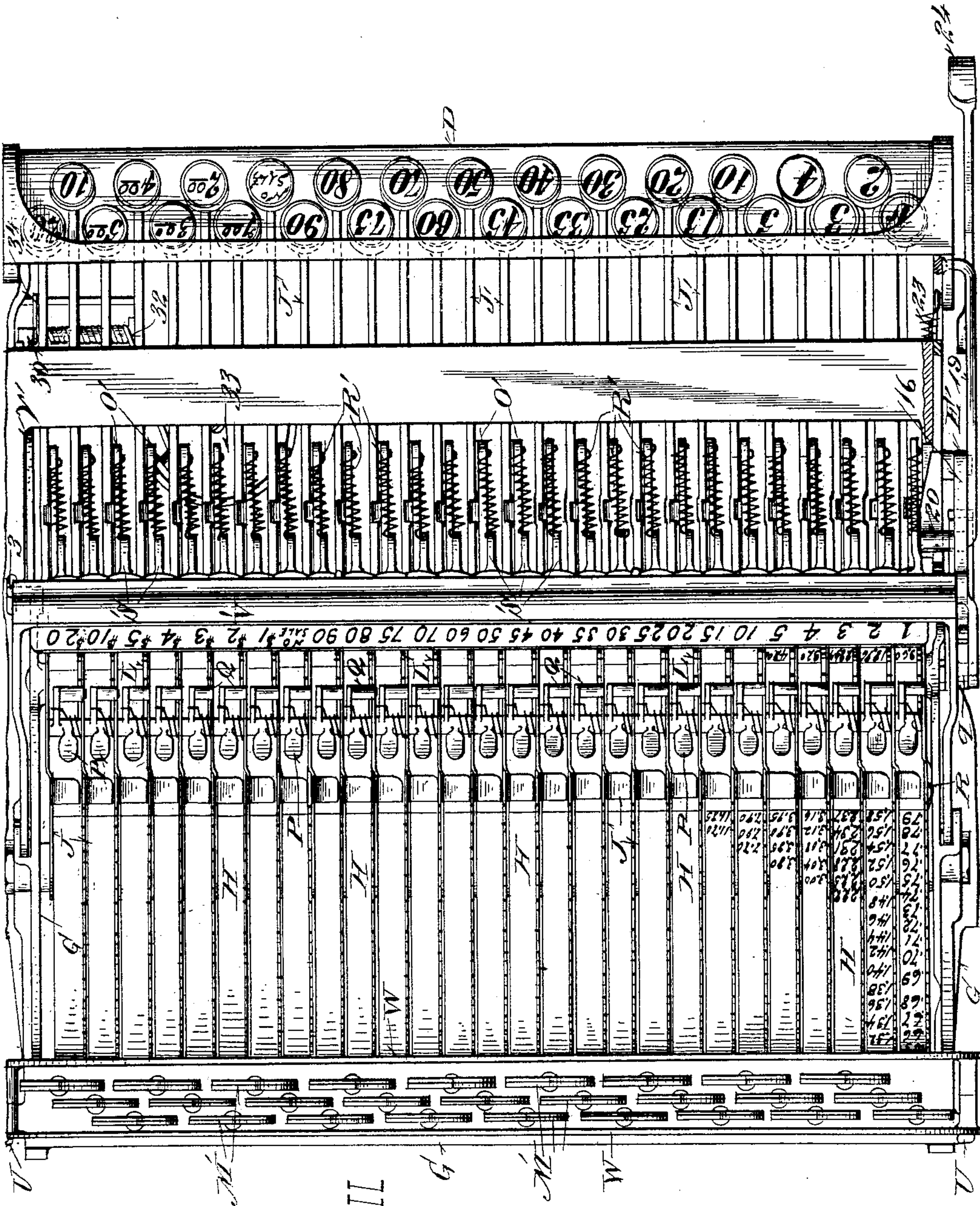
(No Model.)

8 Sheets—Sheet 7.

R. P. THOMPSON.
CASH REGISTER.

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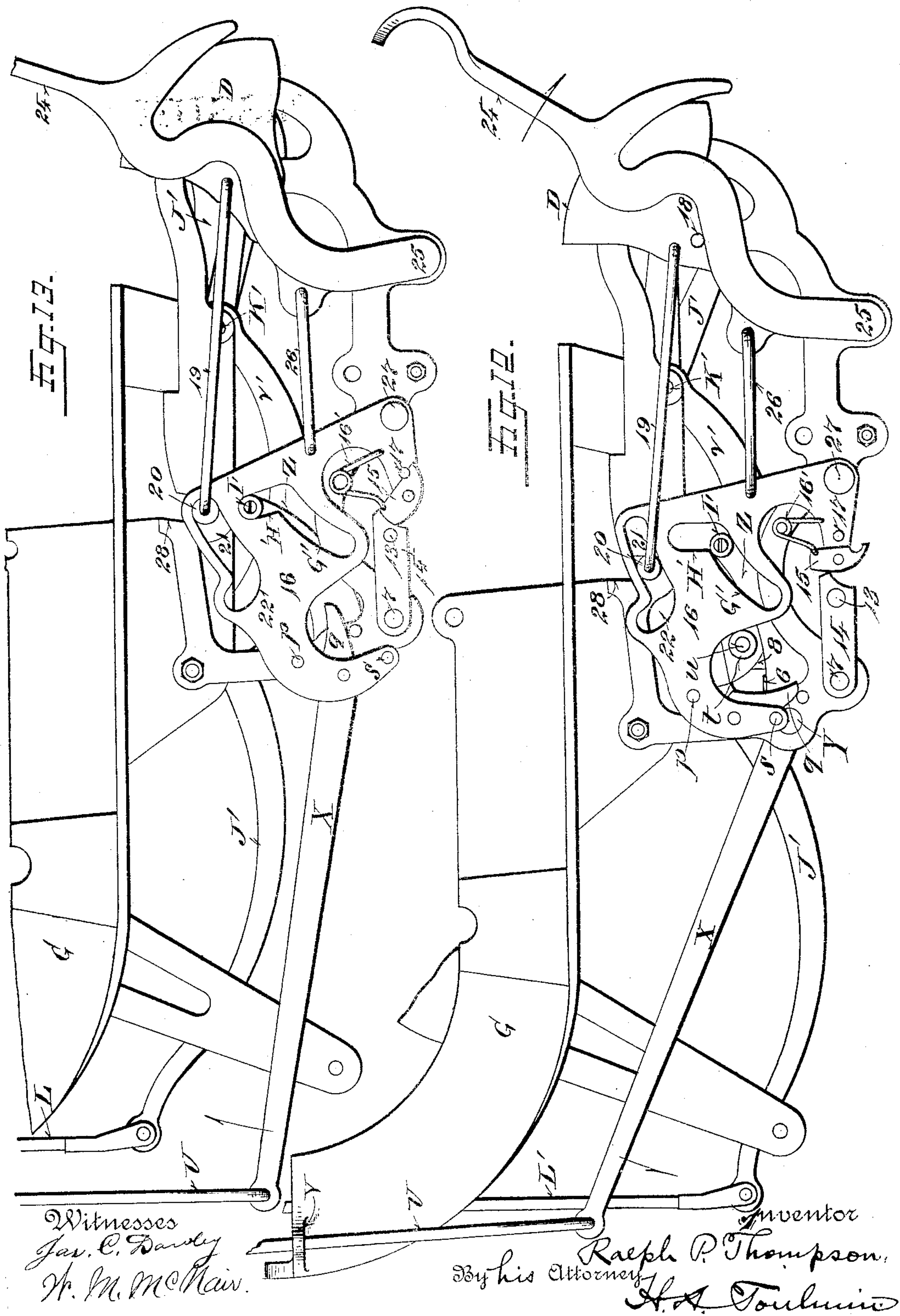


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No. 532,924.

Patented Jan. 22, 1895.



UNITED STATES PATENT OFFICE.

RALPH P. THOMPSON, OF SPRINGFIELD, OHIO.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 532,924, dated January 22, 1895.

Application filed August 2, 1894. Serial No. 519,244. (No model.)

To all whom it may concern:

Be it known that I, RALPH P. THOMPSON, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in cash registers of the class wherein registering mechanism is operated and the amount of the purchase exhibited to the view of the purchaser by actuating
15 certain keys or levers.

I believe myself to be the first inventor to produce a cash register embodying the following objects and mechanism to carry them into practical effect:

20 First, a key cover to exclude access to a depressed key to prevent such key from being partially manipulated when a succeeding sale is made, which partial manipulation might result in again exhibiting the same purchase
25 card, yet without causing the registering mechanism to operate, and thus resulting in exhibiting such subsequent sale without registering it. This is to protect the proprietor against dishonest employes.

30 Second, an arrangement of pawls, keys, registering mechanism, and a stop-bar, by which the pawls are made to act to suspend and hold the keys in operated position.

35 Third, a cancel-card which becomes displayed at or about the time said cover starts to open, and remains so displayed until the cover again closes, during which interval of display the indicator last exhibited is withdrawn, and the indicator for the amount next
40 sold becomes exhibited, so that if a dishonest employé should do anything to keep the key-cover partially open, for any fraudulent purpose he might conceive, the cancel-card would still remain displayed and the indicator showing the amount just registered be hidden
45 from the view of the purchaser, thus at once showing that the employé had been guilty of some fraudulent act.

50 Fourth, a presser-bar and its intermediate mechanism to depress any elevated key with its indicator when the machine is manipulated for a subsequent sale so that the last

previous indicator shall be automatically depressed by the very act of operating the machine into position for access to another key 55 for a subsequent sale, whereby a dishonest employé would be prevented from the possibility of maintaining a key down and indicator up while registering another amount, which, if permitted, would enable him to exhibit in such second registry a smaller sum than the amount seen, but which, with the amount already standing exhibited would be equal to the amount seen, so that if a dollar was standing exhibited and a sale was made 65 for one dollar and twenty-five cents he could satisfy a purchaser that he had registered one dollar and twenty-five cents by simply registering twenty-five cents, which when read in connection with the one dollar already exhibited would be equal to the one dollar and 70 twenty-five cents received; and certain other minor devices and objects; all of which will be hereinafter more fully described and particularly pointed out in the claims. 75

In the accompanying drawings, in which like reference letters and figures indicate corresponding parts: Figure 1, represents a vertical sectional view of the casing of the machine, taken on the line *xx* of Fig. 3 and showing in 80 side elevation the preferred form of mechanism; Fig. 2, a detail perspective view of the bell which sounds when the machine is operated, and of the immediate mechanism for actuating the bell clapper; Fig. 3, a plan view of the 85 mechanism illustrated in Fig. 1, with the casing broken away in the upper portion to facilitate illustration; Fig. 4, an elevation of the face of the cancel card or plate and the indicators; Fig. 5, a sectional view and elevation of a portion of one of the registering wheels, its double acting spring detent, and a portion of the 90 frame; Fig. 6, an enlarged detail view of a portion of the cam and the arm and dog or trip for actuating the stop-bar; Fig. 7, a side elevation, with the casing removed, of a modified form of actuating mechanism showing the same in normal position in full lines and the first succeeding position in dotted lines; Fig. 7^a, a detail view of the modified form of devices for locking and unlocking the drawer; 100 Fig. 7^b, a detail view of the pivoted cover; Fig. 8, a similar view to Fig. 7, on a slightly larger scale, with the parts in the final or ex-

treme operative position; Fig. 9, a detail view of the modified form of bell mechanism, key-support, and stop-bar operating rod; Fig. 10, a horizontal sectional view on the line *y y* of Fig. 7, showing the same form of mechanism as illustrated in Figs. 7 and 8; Fig. 11, a plan view of such latter form of mechanism, the casing being omitted; Fig. 12, a side elevation such as shown in Fig. 7 with the mechanism in normal position but with the first succeeding position in dotted lines omitted, and Fig. 13, a like view to Fig. 8 with the parts in the final or extreme position but with numerous of the remote devices omitted.

As observed, and shown in the figures, I have illustrated two forms of mechanism for reaching the same ends. I will first describe that form embodied in Figs. 1, 3, and 6.

In Fig. 1 the full lines illustrate the machine in what may be called zero or normal position; the dotted lines, (and I refer now particularly to the cover, its handle, the keys and the indicator lever) in the intermediate or first adjusted position, and the dashed lines the final or register position. This mechanism is inclosed in a suitable casing, of metal or wood, designated A, with a glass or transparent housing B through which the cancel cards and the indicators are seen, and the hinged top or cover C which is thrown up for getting to the inner mechanism for setting the registering wheels back to zero. This top will be provided with a suitable lock in practice. The casing further consists of a key-cover D, preferably of circular form and mounted to swing on a pivot, and finally, in the lower part of the casing is placed a money drawer E which is opened by a suitable spring F when the lock mechanism, hereinafter described, is released. Within this casing I mount and secure a suitable frame G which affords bearings for the various shafts, &c., and a guide for the rods which carry the cancel cards and indicators.

The register mechanism proper, consists of a series of wheels or disks H hung to rotate upon a fixed arbor I, mounted in the frame G. The periphery of these wheels or disks is provided with a scale of figures agreeing with the denomination or sum indicated by the key associated with the wheels, respectively. These wheels are also provided with teeth as more clearly seen in Fig. 1, which are engaged by an actuating or key-pawl, and a locking or arresting pawl to be hereinafter referred to. Between each two of the registering wheels is a plate J fixed to the shaft I and held together by a shaft K at their upper ends. This shaft carries a like series of register wheels to those just described, designated L, but smaller in diameter. To every revolution of the wheels H, the wheels L are rotated one notch, as usual in this class of mechanism, a pin M on the wheels H being arranged to engage with the teeth of the wheels L. These latter wheels also bear a scale of figures, the lowest of which is as much higher than the

highest figure on the larger associated wheel as the amount indicated by the associated key, as also usual in these machines.

A rod O, supported by the plates J carries a series of spring detents P having antifriction rollers Q which fit in the teeth of the wheels L so that the latter will move but one notch or tooth at a time. By placing the thumb or finger on the spring detents P and disengaging them from the wheels L, the latter may be turned back to zero-position by at the same time turning by hand the wheels H back to such position. The wheels H each have a double shouldered spring pawl R, which engages with the plates J, as more clearly seen in Fig. 5. When the wheels H are rotated by actuating the keys these spring pawls R spring out of engagement with the plates J, as more clearly seen in Fig. 5. When the wheels H are rotated by hand back to zero-position the pawls re-engage the plates J, the shoulders S arresting them in one direction and the shoulders T arresting them against rebounding in the other direction.

A rod U at either side of the machine is guided at V in the frame G, and carries two cancel cards or plates W which may be seen, when elevated, from either side of the housing B, and which when up indicate that the purchase has been canceled, and remain up until the key cover again closes over the keys so that the particular key exhibiting the last sale cannot be reached again until the cover is again opened to register the next sale, which latter opening of the door is again preceded by the elevation of the cancel-card to such an extent that the amount has been canceled before the cover has opened for the operator to get access again to such key. In other words, these cancel cards obscure the up-standing indicator and thus cancel it before the operator can get access to the key of such indicator for the purpose of a false manipulation to make it serve the purpose of indicating a second but unregistered sale. To these rods U are attached levers X, one at either side of the machine, mounted on a cross shaft Y, carried by the frame G. See Figs. 1 and 3. One of these levers has an extension Z which is operated in the manner presently described.

The cover D, before referred to, is supported on studs D' mounted in the frame G, and to one of these studs is secured a cam plate E' having a handle F' which serves as a handle to the cover D. This cam-plate has a slot G' concentric to its center of movement, and a bunched slot H' forming a cam surface proper to depress the front end of the extension Z of the lever X, a stud and antifriction roller I' projecting from the extension Z into the slot H'. Accordingly, it will be seen that by moving the handle F' away from an operator standing in front of the machine, the cam plate E', through its slot H', will elevate the cancel cards W, through the rods U and levers X, and extension Z. When the stud I'

reaches the slot G' the effect is merely to hold the cancel cards elevated. Keeping this set of things in mind, attention is next directed to the series of keys J' , there being one for each large register wheel H , and being hung upon a cross shaft K' , also supported in the frame G . These keys at their rear ends each connects with the rod L' guided in the upper part of the frame G and each carries an indicator M' bearing a figure or figures corresponding with the figure or sum on the keys, respectively. These keys further each carries a pawl O' pivoted thereto at P' and engaging each pawl at its upper end with one of the wheels H , as shown. The pawls O' each have a projection Q' to which is attached a spiral spring R' , which in turn connects at the lower end with an arresting pawl S' , of which there is one for each wheel H , engaging therewith, and mounted on a cross shaft T' , also supported by the main frame G . A further provision of each actuating pawl O' is the head U' which when the pawl O' is lifted by the actuation of the key passes behind the stop-bar, to be hereinafter described, and becomes thereby held absolutely against the possibility of escaping from its toothed engagement with its wheel H . Thus when a key has been elevated at its rear end and the amount of the purchase exhibited, and the sum registered, the key remains suspended and the indicator exhibited by reason of the key being held up by its pawl O' which hangs upon its toothed engagement with its wheel and cannot be disengaged until the stop-bar is removed from contact with its head U' . This stop-bar is shown at V' and extends across the entire row of pawls O' and is supported upon arms which are pivoted on studs W' projecting from the posts X' of the frame G . One of these studs further carries an actuating arm Y' whose lugs Z' fits against the under side of one of the stop bar arms.

The arresting pawls S' act to prevent a return movement of the large wheels, when engaged by and during the disengagement therefrom of the pawls O' and during their descent, which takes place in the manner presently to appear.

So far in the described operation the cancel cards have been elevated, and the depressed key has elevated one indicator, and the cover D with its handle F' has assumed the position shown in dotted lines in Fig. 1. As the cam E' moved during these operations it actuated the arm Y' and the stop-bar V' , but this was of no effect and merely incidental to getting the machine started from its normal position. The stop-bar V' , of course, falls back to the position shown in full lines in Fig. 1 ready to oppose any withdrawal of the pawl O' when it moves up a little later and after the operator has depressed the key. The money drawer E was also released during this movement of the cam E' and the bell 2 was rung. A pitman a , actuated by the cam E' presses on the inner arm of a latch b ,

mounted on a rock-shaft c , and adapted to engage with the shoulder d on the drawer. This rock-shaft c runs across the machine and has a similar latch which engages with a similar shoulder d at the farther side of the drawer. The arm e , also carried by the rock-shaft c , presses down on the trip f carried by the rod g , projecting from the lug h on a cross-bar i of the general frame. On the rod g is placed the coils of the bell clapper j . See Fig. 2. Thus the bell was rung at the time the cover was released, and thrown open by the spring F . So far in the operation, as described, the cover D with its handle F' has reached the dotted position shown in Fig. 1. The cover is now closed, either by its own gravity or by hand. In doing this the slot H' in the cam E' receives the stud I' and consequently the cancel cards are permitted to drop and exhibit the indicator which has been elevated by the key that has been depressed. Thus the machine is standing with the cover closed and one key depressed at one end and elevated at the other, as shown in the dashed lines. In this condition access cannot be had to the depressed key or to any of the others without again opening the cover D .

I will now refer, first, to the devices for operating the arm Y' to elevate the stop-bar V' to release the pawls O' and, second, to the devices for returning the depressed key back to normal position during the act of opening the cover to register the next sale. The first of these devices consists of a lug l on the cam-plate E' and of a trip m , pivoted to the arm Y' and playing between a stop o , and a stop p . See Fig. 6 particularly. When the cam plate moves downward the lug l engages with the trip m , and the latter being resisted by the stop o , the arm Y' is forced rearward and the stop-bar V' elevated to the dotted position so as to free the head U' of the then elevated pawl O' . While the arm Y' is thus under control the trip q pivoted to the cam-plate E' and resisted in one direction by the stop s , is engaging with the roller t , on the stud u of the projection v , forming a part of what I term the presser bar, consisting of arms v' hung on the cross-shaft K' , there being one at each side of the machine, and connected by a cross-bar w that rests upon the upper edge of all of the keys. Now when the cover D is opened to register the next sale it will be understood that the then depressed key is thus forced back into normal position by positive means, to wit: the trip q and the projection v , and the cam E' . Thus the positive return operation of the key prevents the possibility of a dishonest employé from slipping some instrument into the machine when the cover is open to lock the key down so as to use the then exhibited amount to indicate a subsequent sale of like amount. A key thus interfered with and locked down will prevent the operator, after doing this and closing the cover, from again opening the cover at all.

Thus his instrument or wedge fraudulently inserted will be fastened up in the machine and act as a tell-tale on what he has been trying to do. On the other hand, the cover, it will be seen, does not open until after the trip *q* has acted against the arm *v* and forced the key up at one end and down at the other to withdraw the indicator. Thus the operator cannot get access to a depressed key to hold it down by hand and so attempt to use the amount then exhibited to represent a subsequent sale; so that in this machine the possibility of fraud in the manner here indicated is absolutely prevented, for before the cover has opened enough to give access to the depressed key the slot *H'* will have operated on the stub *I'* and elevated the cancel cards, while at the same time, or about the same time, the trip *q* will have acted on the projection *v* and forcibly elevated one end of the key and depressed the other end with its indicator.

I will now refer to the modified form of mechanism principally shown in Figs. 7, 8, 10, and 11 of the drawings. All the mechanism in these figures which is lettered correspondingly with the letters already used is the same in construction as that already described and so designated. Accordingly, I shall in the remaining detail description confine myself to a statement of those parts which differ in construction and which are modified in arrangement from the parts already described, which perform the same functions.

In the modified form the stop-bar *V'* is pivoted within the radius of the wheels *H*, as seen at 2, Figs. 7 and 8, instead of outside of the said wheels, and is actuated by a rod 3 extending under it, and lifted at the proper time by being connected with the arm 12 of the pawl-lifting bar 11, as shown at 5. See Fig. 9. In the other form the pawls *O'* were described as having the function, among other functions, of holding the keys in indicating position by a suspension action of the pawls *O'* through their engagement with the teeth of the wheels *H*, which engagement is maintained by the head *U'* coming against the stop-bar *V'*. In this form the keys are additionally held up at their rear ends by a series of holding up pawls 6, strung on a cross rod 7, carried by the frame, one of such pawls being under each key. Each key is also, in this form, provided with a foot 8 which rests upon the appropriate pawl 6 when the key is elevated at the rear end, a spring 9 attached to each of said pawls and to a cross piece 10 of the frame acting to draw the pawls under the foot pieces at the proper time. The provision of these supporting pawls leads to the necessity of means to dislodge them from under the foot pieces 8 of the keys. This means consists of a bar 11 extending across the entire machine and having arms 12 which are pivoted upon the cross-rod 7. This bar 11 also has a stud 13 which carries an arm 14

whose other end is hung on the cross rod 7. This arm 14 is engaged at the proper time to drop the indicators by a trip 15 carried by the cam plate 16, which cam-plate is somewhat modified from the cam-plate *E'* in the other form. This trip is actuated by a spring 16' and stopped by a stop 17. The trip 15 is shown engaged with the arm 14 in Fig. 8 and it will lift that arm and accordingly lift the cross-bar 11, which, in turn, lifts the lower ends of the supporting pawls 6 and moves their upper ends from under the foot pieces of the keys.

In the form first described the cover *D*, the handle *F'* and the cam *E'* are connected rigidly together. In this form the handle and door are not connected directly together, the cover being pivoted at 18 to a portion of the frame, and actuated by a pitman 19 having an antifriction roller 20 fitting a slot 21 with a branch 22 in the cam-plate 16. A spring 23 connected to the cover and suitably secured to the frame acts to assist in returning the cover to closed position.

The handle 24 is pivoted at 25 to the frame and is connected by a pitman 26 to the cam plate 16, while the plate itself is mounted upon a pivot 27, supported by the main frame. Thus it will be understood that when the handle is operated, motion is transmitted to the cam-plate and that the latter will move from the position shown in full lines in Fig. 7 to the position shown in dotted lines in that figure, by taking hold of the handle 24 and moving it from the full line position to the dotted line position. In this full line position the cancel-cards are shown as elevated, the assumption being that they have been left in that position, or the machine adjusted to such position. Consequently in such full line position the stud *I'* has passed from the branch *H'* of the slot *G'*. As yet the cover *D* is closed. Now by moving the handle 24 from this full line position to the dotted line position in Fig. 7 the stud *I'* will continue to remain in the slot *G'* and hence to hold up the cancel cards; and the pitman 19 will have been lifted by the branched slot 22 from out of the notch 28 in the main frame and forced forward to the dotted position, thereby opening the cover fully from the closed position designated from *a'* to *b'* to the position designated by *c'* to *d'*. In this position the parts are all in the relation indicated by the dotted lines in Fig. 7. Thus the keys are exposed above the upper corner *c'* of the now open cover. The operator will then depress the desired key to middle position, shown by dotted lines in Fig. 8, which will elevate the corresponding indicator and at the same time actuate the register mechanism through the pawl *O'*. As this operation takes place the foot 8 of the key manipulated will pass over the corresponding supporting pawl 6 and be held up by it. The next thing to do is to lower the cancel cards so as to expose the indicator thus elevated. This is done by moving the handle 24 from

the dotted position shown in Fig. 7 to the position shown in Fig. 8, which will at the same time close the cover and set the cam plate back to the position shown in Fig. 8. By this change of position of the cam plate, the stud I' will have been permitted to enter the branched slot H', a requisite of dropping the indicator cards. This change of position of the cam plate will also have brought the pivoted trip 15 under the arm 14, as shown in Fig. 8, so as to be ready to lift the cross-bar 11 and thus throw the supporting pawl 6 from under the foot 8 of the key which had been depressed. This latter operation will, of course, not occur until the handle 24 is again actuated in the direction of the arrow from the position shown in Fig. 8 so as to open the cover and depress another key when another sale is made.

Referring to Fig. 9 it will be seen that one of the arms 12 of the cross-bar 11 has been extended at 29 so as to lift a pawl 30 carried at the upper end of a pivoted bar or frame 31 whose pivot is supported by a part of the general frame. This mechanism is to actuate the bell clapper 32 which strikes a bell 33, suitably supported under the keys. The clapper arm is in the form of a wire spring coiled about the pivot bar 31 and resting at the end 34 on the main frame. Thus when the extension 29 is elevated by the action of the trip 15 and the arm 14, in the manner above described, it will lift the pawl 30 and throw the bar 31 against an extension of the clapper arm, and as the extension 29 escapes past the pawl 30 the clapper arm rebounds and the clapper strikes the bell. This is so timed as to occur when the indicator is dropped and the drawer permitted to open. The drawer is held locked in this form of the machine by a detent 35 hung at 36 to a part of the main frame and resting at the other end on the cross bar 11. A lug on the drawer opposes this pawl and when the latter is raised by the cross bar 11 the lug is freed and the drawer opened by the spring.

The objects, advantages, safeguards, and modes of operation hereinbefore described in connection with the first and preferred form of this machine, each and all apply to and are performed in practice by this last described modified form.

I would accordingly have it understood that I do not confine myself to the details of construction, or the special arrangements and organizations, shown and described, but that my invention is broader than these and comprehends other details of construction and other forms of arrangement and organization, so long as the same mode or substantially the same mode of operation is retained, producing like results.

The registering mechanism shown and described, is of the class known as detail adders, but I do not confine myself to the use of this type of registering mechanism in connection with my improvements.

The cover D is shown and described as pivoted; but it may be otherwise mounted. The stop-bar V', is also shown and described as pivoted, but it too, may be otherwise mounted.

In the general statement of my invention described herein, I have used the term "hidden" in speaking of the cancel-cards; but it is to be understood that this term includes besides an actual exclusion of the indicators from view, any other obstruction of them or indication that they had been canceled.

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

1. In a cash register, the combination with a cover adapted to inclose the keys, a cancel card and intermediate devices connecting the said cover and said card and acting to display the former when the latter is operated.

2. In a cash register, the combination with a cover adapted to inclose the keys, a cancel card, and intermediate devices connecting the said cover and card together, and adapted when the cover is approaching or undergoing opening-movement to display the card and maintain it displayed until the cover is again substantially closed.

3. In a cash register, the combination with a pivoted cover adapted to inclose the keys, cam mechanism, a lever actuated thereby and the cover moving with the cam during at least a part of the latter's motion, and a cancel card connected to said lever, the cam mechanism being such as to maintain the card displayed until the cover is substantially closed.

4. In a cash register, the combination with the pivoted cover adapted to inclose the keys, a cam connected with the cover and having a main slot and a branch slot, a pivoted lever engaging with the walls of the slots and adapted by the movements of the cam to be elevated and lowered at one end and to have said end maintained elevated, and a cancel card connected with said end.

5. In a cash register, the combination with a series of keys, and indicators adapted to be displayed by the keys, of a key cover which normally incloses the keys, and devices intermediate of the keys and cover by which the cover is prevented from exposing the keys while the indicator is displayed.

6. In a cash register, the combination with a series of keys, and indicators adapted to be displayed by the keys, of a key cover normally inclosing the keys, and devices intermediate of the cover and keys which operate to prevent the cover from exposing the keys while an indicator is displayed and also to return a depressed key to normal position as the cover is opened.

7. In a cash register, the combination with a series of keys, a cover normally inclosing them, indicators attached to the keys, and intermediate presser devices arranged to force a depressed key back to normal position by the action of the cover as it is opened, whereby

if such key is obstructed from so returning by a foreign substance or by manual manipulation the cover will not open.

8. In a cash register, the combination with
5 a cover adapted to inclose a series of keys, a series of such keys mounted on a pivot, an indicator connected to each of said keys, presser devices and trip devices between the keys and the cover the cover being adapted to depress
10 the presser devices until such key yields to the opening of the cover and the trip devices permitting the cover to close without being affected by the depressed key.

9. In a cash register, the combination with
15 a pivoted cover having a plate connected therewith, a series of pivoted keys inclosed by the cover, a rod connected to each key and carrying an indicator, a pivoted presser-bar engaging with the keys and a trip carried by
20 said plate and engaging in one and escaping in the other direction with and from the presser-bar, the arrangement being such as to depress the keys by the opening of the cover, yet permitting the cover to close while a key
25 remains depressed.

10. In a cash register, the combination with a cover, a series of keys adapted to be normally inclosed thereby, and exposed on opening the cover, registering mechanism operated
30 by depressing the outer end of the keys, indicators displayed by operating the keys, supporting devices for the keys to maintain any actuated key in actuated-position, presser devices for the keys, and intermediate devices
35 which, by opening the cover, release the supporting devices and operate the presser devices, whereby the cover cannot open except by returning the depressed key to normal position and withdrawing the indicator.

40 11. In a cash register, the combination with a cover, a series of keys adapted to be normally closed thereby, and exposed on opening the cover, registering mechanism operated by said keys, and indicator cards displayed by
45 said keys, supporting devices for the keys, and presser-devices therefor, a cancel card and a lever connected thereto, and intermediate devices which by opening the cover release said supporting devices, actuate said
50 presser devices and display said cancel card in the proper succession.

12. In a cash register, the combination with a cover, a series of keys adapted to be normally covered thereby, and to be exposed on
55 opening the cover, indicators displayed by said keys, registering mechanism operated by said keys through pawls which also act to support said keys, and stop devices for said pawls, and presser devices for said keys, a
60 cancel card and a lever connected thereto, and devices connected with the cover and adapted to release the operating and supporting pawl, to actuate the presser devices, and return a depressed key to normal position
65 and to actuate said lever to display the cancel card, all in the proper succession.

13. In a cash register, the combination with

a cover, a series of keys normally covered thereby and exposed on opening the cover, indicators displayed by said keys, a lever
70 and a cancel card displayed by said lever, and intermediate devices connected with the cover and adapted to press a depressed key back to normal position as the cover is opened and also adapted to actuate said lever, in the
75 proper succession.

14. In a cash register, the combination with a cover, a series of keys adapted to be normally inclosed thereby, and exposed on opening the cover, an indicator displayed by each
80 key, and a presser bar for the keys, a lever and a cancel-card displayed thereby, a cam, a trip device connected to said cam and adapted to operate the presser bar to return a depressed key to normal position as the
85 cover is being opened and to operate said lever, and display a cancel card in proper succession.

15. In a cash register, the combination with a cover, a series of keys adapted to be normally inclosed thereby, and exposed on opening the cover, presser devices for the keys, registering mechanism and intermediate devices actuated by the keys to operate said
90 mechanism, a stop bar or device to engage with the said devices between the keys and register mechanism to prevent their disengagement from the latter at the limit of the throw, to prevent "overthrowing" and devices connected to said cover and arranged
95 to release the stop-bar or device and to actuate the presser device, whereby on returning a depressed key to normal position the stop-bar or devices are released.

16. In a cash register, the following instrumentalities: a cover, a series of keys adapted
105 to be normally inclosed thereby and exposed on opening the cover, an indicator displayed with each key, a presser device for all the keys, a key-pawl for each key and an associated arresting pawl, register mechanism engaged and operated by each key-pawl, a stop-bar for the key-pawls, a lever, a cancel card displayed thereby, a money drawer, locking
110 devices therefor and a sounding gong, a cam-plate connected to the cover and acting to operate the presser bar, the stop-bar, the drawer lock and gong, the actuation of these several parts being properly timed, whereby a depressed key is made inaccessible after registering, whereby such key is pressed back to
115 normal position as a condition to the opening of the cover, whereby the canceled card is displayed as the indicator is so withdrawn, and whereby "overthrowing" is prevented.

17. In a cash register the following instrumentalities: a cover, a series of pivoted keys adapted to be inclosed thereby when closed, and exposed when open, a pivoted presser-bar for all the keys, an indicator for each key,
120 a pawl carried by each key, and register mechanism operated by each of said pawls, an associated arresting pawl for each key-pawl, a pivoted stop-bar adapted to engage with all

of the key-pawls to prevent "overthrowing," a pivoted arm carrying a pivoted trip to actuate the stop-bar, a lever connected with a cancel-card, a drawer, a lock therefor and a sounding gong, a cam-plate connected with the cover and having a main and branched slot, a pivoted trip and projecting lug and operating a pitman to release the drawer-lock and operate the bell, the said slots, pivoted trip and lug of the cam plate, respectively operating the said lever the presser-bar and the stop-bar actuating arm, all substantially as described.

18. In a cash register, the combination with a series of keys, of a pivoted presser bar extending across the entire number of keys and having a projection by which it is operated, a cover and intermediate devices between the cover and said projection adapted to come in contact with the latter, substantially as and for the purpose described.

19. In a cash register, the combination with a series of registering wheels, of a series of keys, a key-pawl carried by each key and engaging with the registering wheels, and a retaining pawl for each wheel, the retaining pawls being adapted to engage with the key pawls and to withdraw the latter from engagement with the wheels when the retaining pawls are manually drawn outward, whereby the said wheels may be set back to zero by thus releasing them of engagement with the key-pawls and retaining pawls.

20. In a cash register, the combination with a series of keys, and registering mechanism, of a pawl pivoted to each key, extending upward and so engaging with said mechanism as not to slip or slide thereon, and a stop-bar extending across the line of said pawls and arranged to engage with them to prevent their withdrawal from engagement with such mechanism and thus dropping down, whereby said pawls are made to act to suspend and hold the keys in operated position.

21. In a cash register, the combination with registering mechanism, operating keys and pawls, of a stop-bar located near to said pawls and arranged to come in contact with them and an operating device for the stop bar actuated from outside of the machine casing, and intermediate devices within the casing connecting the outside operating device with the said stop-bar, whereby the stop-bar

may be manually moved out of engagement with the pawls.

22. In a cash register, the combination with the registering mechanism, a series of keys and pawls pivoted to and actuated by the latter and engaging with teeth in the former, of arresting pawls also engaging with said teeth and a stop-bar arranged to oppose the key pawls—and prevent their disengagement from said teeth at or about the limit of their throw, whereby "overthrowing" is prevented and the keys are suspended, the arresting pawls preventing back motion of the registering mechanism.

23. In a cash register, the combination, with registering mechanism consisting in part of a rotatable wheel, and a double shouldered spring pawl attached thereto, of a fixed plate having a slot, the double shouldered pawl being arranged to engage with said plate, substantially as shown and described.

24. In a cash register, the combination with a series of keys, a pawl connected with each key, a pawl associated with each key-pawl, a spring connecting each key-pawl with its associated pawl and registering mechanism including toothed wheels with which both kinds of said pawls engage, the key-pawls to actuate the wheels and the other pawls to prevent the return movement of the wheels, whereby the keys are suspended as well as the wheels actuated.

25. In a cash register, the combination with an outer casing, registering wheels mounted therein, keys and actuating pawls for operating said registering wheels, arresting pawls for preventing the registering wheels from turning backward, a movable stop-bar for holding the actuating pawls in engagement with the registering wheel at the end of the stroke, the movable key cover and suitable intermediate mechanism for operating the stop-bar to release said actuating pawl and allow it to engage the succeeding tooth when the cover is opened.

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

RALPH P. THOMPSON.

Witnesses:

OLIVER H. MILLER,
W. M. MCNAIR.