

906,969.

E. VAN CAMP.
CASH REGISTER.
APPLICATION FILED MAY 6, 1907.

Patented Dec. 15, 1908.
2 SHEETS—SHEET 1.

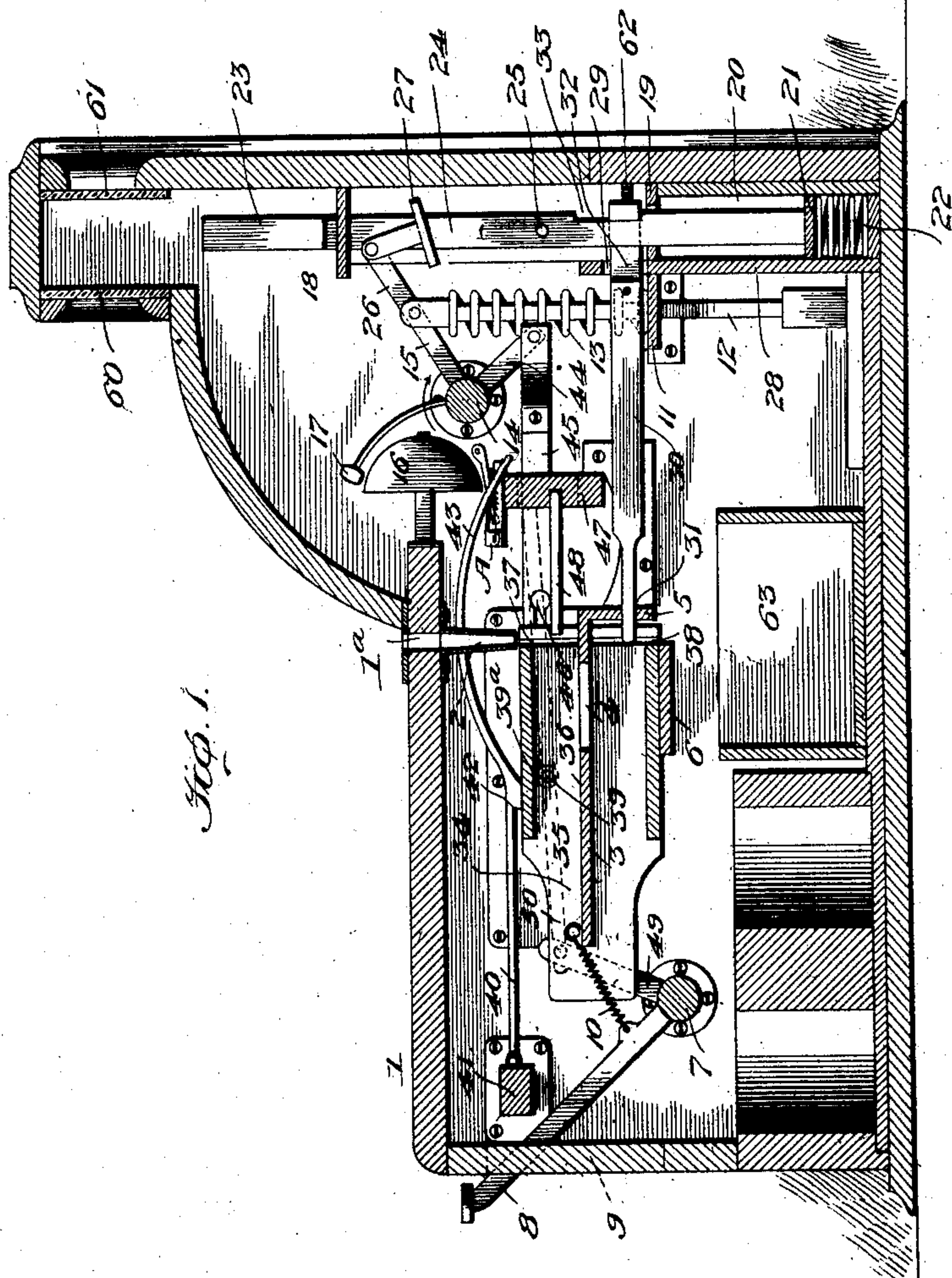


Fig. 1.

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2 SHEETS—SHEET 2.

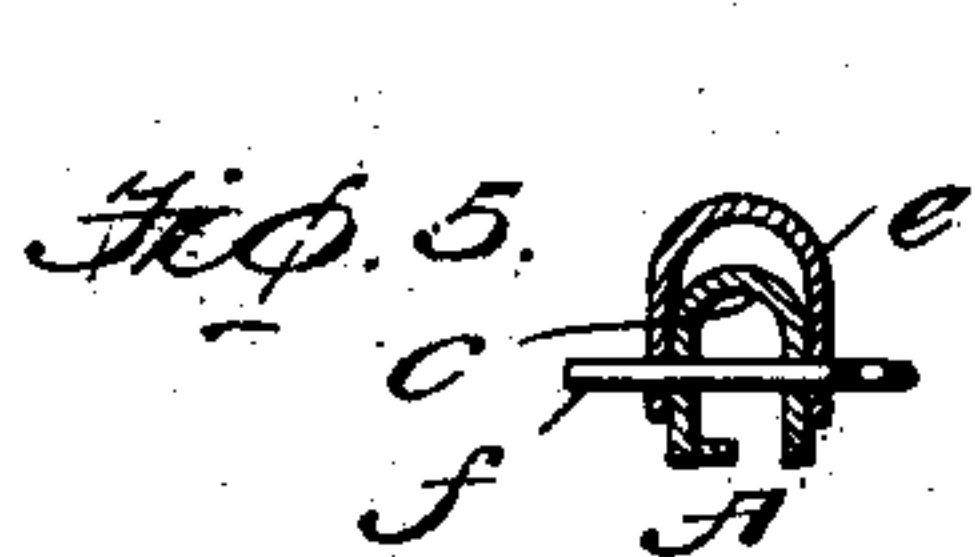
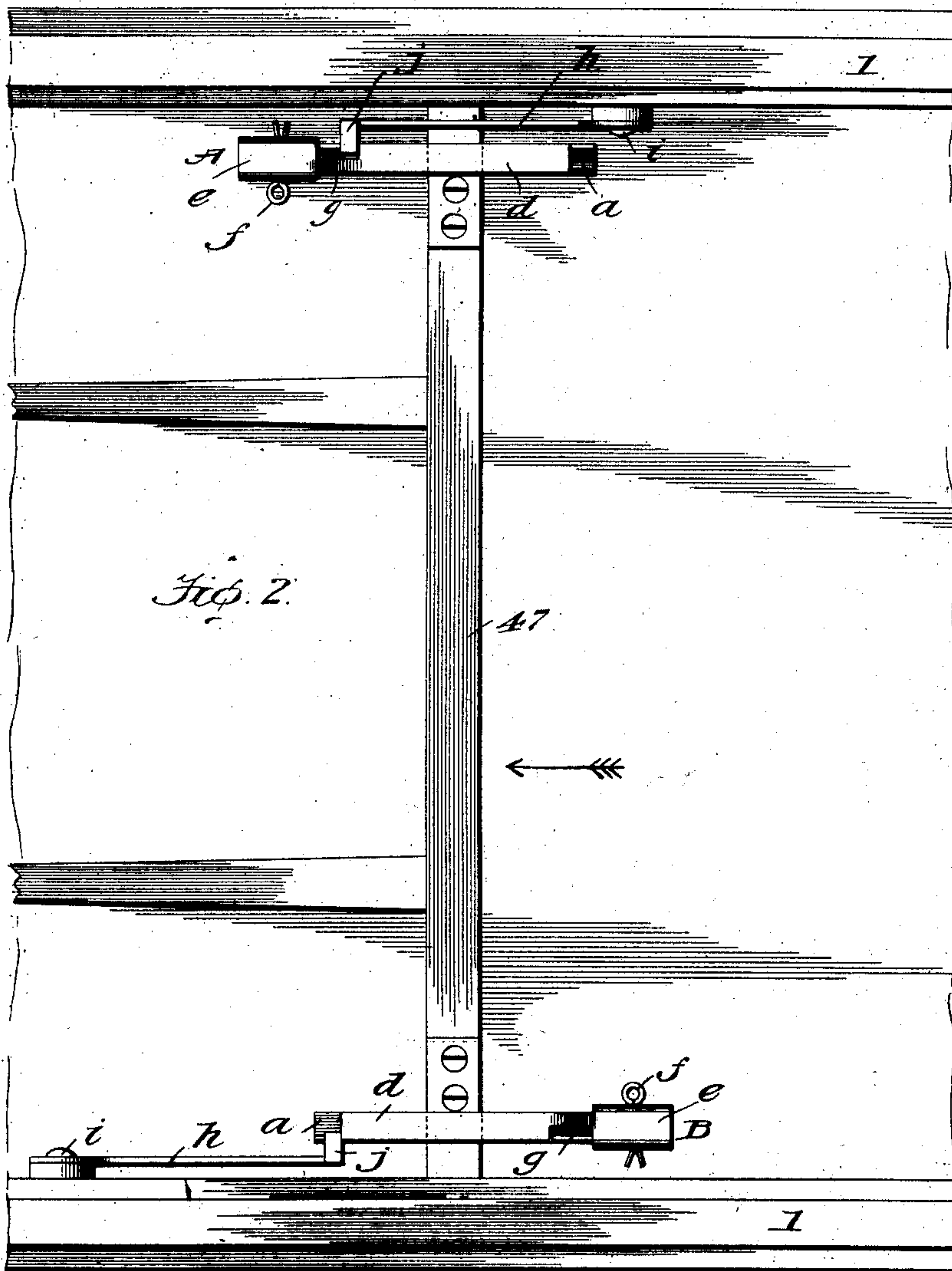
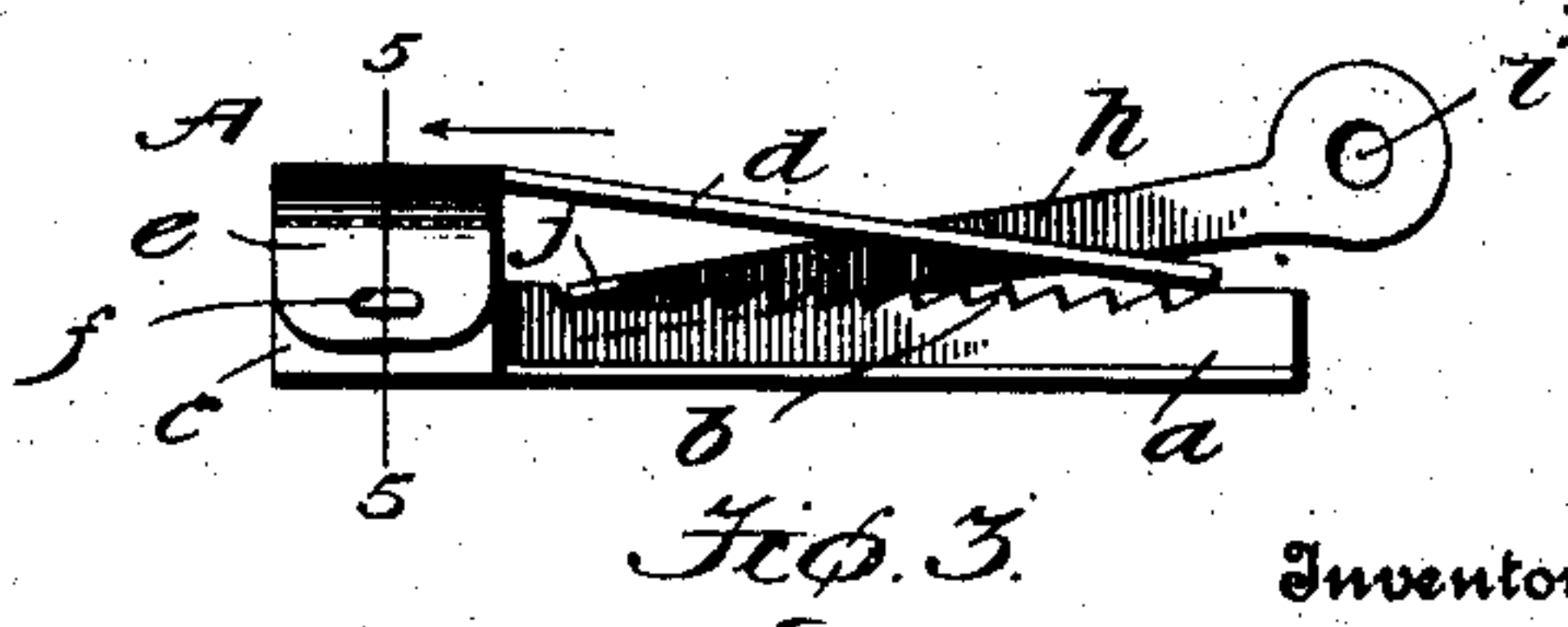


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD VAN CAMP, OF BROOKSTON, INDIANA.

CASH-REGISTER.

No. 906,969.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed May 6, 1907. Serial No. 372,245.

To all whom it may concern:

Be it known that I, EDWARD VAN CAMP, citizen of the United States, residing at Brookston, in the county of White and State of Indiana, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification.

My invention relates to cash registers and analogous devices; and it has for one of its objects to provide improved means for preventing retrograde movement of an element that is moved to actuate one or more working parts, until said element reaches the end of its traverse, this with a view of assuring proper operation of said working parts.

Another object of the invention is to provide in combination with an element that is moved in opposite directions to perform functions, means whereby the element is held against retrograde movement in either direction until it completes its stroke or traverse in the opposite direction.

The improvements are designed more particularly for use in the cash register constituting the subject matter of my patent issued April 9, 1907, and numbered 849,869; and their novelty, utility and practical advantages will be fully understood from the following description and claims when the same are considered in connection with the accompanying drawings, forming part of this specification, in which:

Figure 1 is a longitudinal, vertical section of the cash register of my patent aforesaid; the same being shown as properly equipped with one of my novel ratchet mechanisms. Fig. 2 is an enlarged, detail plan view showing the reversely arranged ratchet mechanisms of my invention in proper position relative to the fore and aft movable bar. Fig. 3 is a detail side elevation of one of the ratchet mechanisms. Fig. 4 is a similar view of the other ratchet mechanism. Fig. 5 is a transverse section taken in the plane indicated by the line 5—5 of Fig. 3.

Similar numerals and letters of reference designate corresponding parts in all of the views of the drawings.

Among other features, the cash register illustrated in Fig. 1 comprises a casing 1 in which is a check slot 1^a from which depends a chute 2, a fixed horizontal wall 3 having an opening 4 and a depending flange 5, a narrower fixed wall 6 disposed below the wall 3, a transverse rock-shaft 7 journaled in the casing near the forward end thereof and hav-

ing a thumb lever 8 extending through a slot 9 in the casing, a coiled spring 10 extending between and connected to the wall 3 and lever 8, a fixed wall 11, a vertical plunger 12 guided in said wall and pressed upward by a spring 13, a transverse rock-shaft 14 journaled in the casing 1 and having an arm 15 pivotally connected to the plunger 12, a gong 16 designed to be struck by a hammer 17 on the shaft 14, upper and lower fixed walls 18 and 19, a sub-casing 20, a follower 21 movable in sub-casing 20 and arranged on a coiled spring 22, an annunciator 23 having a stem 24 extending down through guide apertures in the walls 18 and 19 and bearing at its lower end on the follower 21 and also having a lateral pin 25 on said stem, an arm 26 fixed to rock-shaft 14, a bar 27 pivoted to the arm 26 and having an aperture loosely receiving the annunciator stem 24; said bar 27 being designed when the shaft 14 is rocked in the direction indicated by arrow to engage the pin 25 and depress the annunciator 23, provided said annunciator is in its uppermost position, a transverse vertical wall 28 having an aperture 29, a longitudinally-movable bar 30 having a reduced forward end extending through an aperture 31 in the flange 5 of wall 3 and also having a recess 32 in its side presented to the recessed portion 33 of the annunciator stem, a check-carrying slide 34 movable fore and aft on the fixed walls 3 and 6 and having side walls 35 connected together and bifurcated at 36 to receive the wall 3 and also having vertical check-receiving grooves 37 and 38 and further having on opposite sides lateral studs 39 and 39^a, a longitudinally-disposed gravitating latch 40 pivoted to a bar 41 and having a shoulder 42 and a rear curved portion 43, an arm 44 fixed to the rock-shaft 14, a bar 45 pivoted to said arm and having a slot 46 receiving the stud 39 on the slide 34, a fore and aft movable transverse bar 47 arranged under the curved portion 43 of latch 40 and having a forwardly extending finger 48 and also having an opening loosely receiving the slotted bar 45, an arm 49 fixed on the rock shaft 7, and a bar 50 fixed to the bar 47 and pivotally connected to the said arm 49.

In the practical operation of the mechanism described, a check is deposited in the slot 1^a and drops through chute 2 and assumes a position in the upper grooves 37 of the slide 34 and on the wall 3 in rear of the opening 4. The thumb lever 8 is then pressed downward,

when the bar 47 will be drawn forward through the medium of the rock-shaft 7, arm 49 and bar 50. When this takes place, the finger 48 will bear against the check in the slide grooves 37, when the stud 39 on the slide will through the bar 45, rock the shaft 14 in the direction indicated by arrow so as to cause the bar 50 to move downward. The slide 34 is moved forward as described until its lateral projection 39^a reaches a position in front of the shoulder 42 of the latch 40, when the check drops from the grooves 37 down through the opening 4 in wall 3 and assumes a position in the lower grooves 38 and on the lower wall 6. The thumb lever 8 is now released, when the spring 10 will operate to raise said lever, and through the medium of the lever, the rock-shaft 7, the arm 49 and the bar 50 will quickly move the bar 47 rearward. In its said rearward movement the bar 47 will raise the latch 40 out of engagement with the projection 39^a of the slide 34, when the spring 13 will suddenly expand, and by so doing will forcibly rock the shaft 14 in the direction opposite to that indicated by arrow and strike the hammer 17 against the gong 16. At the same time, the spring 13 will raise the plunger 12, and through the medium of the rock-shaft 14 and the arm 44 and bar 45 quickly draw the slide 35 rearward. On this movement of the slide, the check being in the lower grooves 38 of the slide and on the wall 6 will be carried rearward and against the forward end of the bar 30 so as to move said bar rearward and in that way disengage the rear wall of its recess 32 from the lower wall of the recess 33 in the stem 24 of annunciator 23, when the spring 22 below said stem and annunciator will force the same upward until the annunciator rests between the glasses 60 and 61. When the annunciator stem 24 is forced upward as stated, its rear edge, below its recess 33, will engage the rear wall of the recess 32 in bar 30 and thereby hold said bar 30 against forward movement under the action of its spring 62. Because of this the forward end of the bar 30 will not bind against the rear side of the check, and hence the check after serving the purpose stated will drop from the grooves 38 in slide 35 past the rear edge of wall 6 and into a check drawer 63.

The construction thus far described is similar to that shown and described in my above mentioned patent 849,869.

With a view of compelling a full stroke or traverse of the bar 47 in each direction before it can move or be moved in the opposite direction so as to prevent fastening or displacement of a check in the event of the operator accidentally releasing the lever 8, and, at the same time, assure proper operation of all of the working parts, I provide the reversely-arranged ratchet mechanisms A and B best shown in Figs. 2 to 5. These ratchet

mechanisms respectively comprise a bar *a* fixed on the fore and aft movable bar 47 and extending in the direction of movement thereof and having teeth *b* on its upper edge and also having an inverted U-shaped portion *c* at one end, a vertically swinging arm *d* having an inverted U-shaped portion *e* at one end straddling the portion *c* of bar *a* and pivotally connected thereto at *f* and having a notch *g* in its outer edge at a point adjacent to its center of movement, and a gravitating pawl *h* pivoted at *i* to the adjacent side wall of the casing *l* and having an angular toe *j* at its free end.

The teeth of the bar *a* comprised in the mechanism A are disposed in one direction while the teeth of the bar *a* comprised in the mechanism B are disposed in the opposite direction, as will be seen by reference to Figs. 3 and 4; and from this it follows that when the bar 47 is moved in the direction indicated by arrow in Fig. 2, the pawl *h* of the mechanism A will permit the teeth *b* of bar *a* to freely pass it, but will preclude movement of the bar in the opposite direction. When the bar 47 reaches the end of its traverse in the direction indicated by arrow, the toe *j* of the pawl *h* will rest on bar *a*, clear of the arm *d*, and then on the movement of the bar 47 in the direction opposite to that indicated by arrow, the said arm *d* will move under the toe *j* until the notch *g* in the arm reaches a position under toe *j* when the said toe will drop through the notch and assume the position shown in Fig. 3, ready on the movement of bar 47 in the direction indicated by arrow to cooperate with the bar *a* in preventing retrograde movement of said bar 47.

When the bar 47 is moved in the direction opposite to that shown in Fig. 2, the pawl *h* of the mechanism B will permit the teeth *b* of bar *a*, Fig. 4, to freely pass it, but will effectually prevent movement of the bar 47 in the opposite direction. When the bar 47 reaches the end of its traverse in the direction opposite to that indicated by the arrow, the toe *j* of the pawl *h*, in mechanism B, will rest on bar *a*, clear of the arm *d*, Fig. 4, and then on the movement of the bar 47 in the direction indicated by arrow, the said arm *d* will move under the toe *j* until the notch *g* in the arm reaches a position under toe *j* when the said toe will drop through the notch and assume a position on bar *a*, ready on the movement of the bar 47 in the direction opposite to that indicated by arrow to cooperate with the bar *a* in preventing retrograde movement of said bar 47.

It will be gathered from the foregoing that my novel mechanisms effectually prevent retrograde movement of the bar 47 in either direction without interfering with or rendering difficult the movement of the bar in the direction that it is proper for it to move; also, that said mechanisms are simple and inex-

pensive, and are well adapted to withstand the usage to which cash registers are ordinarily subjected. In this latter connection it will be noted that the specific connection 5 shown and described between the arms *d* and bars *a* of the mechanisms A and B contribute materially to the strength and durability of the mechanisms.

Having described my invention, what I 10 claim and desire to secure by Letters Patent, is:—

1. The combination in a cash register, of a casing, an element movable to and fro in the casing, and reversely arranged mechanisms 15 for preventing retrograde movement of said movable element until the same reaches the ends of its strokes; the said mechanisms respectively comprising a bar fixed to the movable element and extending in the direction of 20 movement thereof and having teeth disposed in one direction and also having an upwardly extending portion at one end, a gravitating arm pivoted to said upwardly extending portion and normally resting on the bar adjacent to the opposite end thereof and having 25 an opening adjacent to said pivotal connection, and a gravitating pawl pivoted to the casing and having a portion arranged to be raised by the arm and to drop through the 30 opening thereof and also arranged to engage the teeth of the bar.

2. In a ratchet mechanism, the combina-

tion of a suitable fixed support, a bar movable with respect to the support and having teeth disposed in one direction and also hav- 35 ing an upwardly extending portion at one end, a gravitating arm pivoted to said upwardly extending portion and normally resting on the bar adjacent to the opposite end thereof and having an opening adjacent to 40 said pivotal connection, and a gravitating pawl pivoted to the said support and having a portion arranged to be raised by the arm and to drop through the opening thereof and also arranged to engage the teeth of the bar. 45

3. The combination in a ratchet mechanism, of a movable bar having teeth disposed in one direction and also having an inverted U-shaped portion at one end, a gravitating arm arranged to normally rest at one end on 50 the bar and having a notch in its edge near its center of movement and also having an inverted U-shaped portion straddling and pivoted to that of the bar, and a gravitating pawl having a lateral toe arranged to be 55 raised by the arm and to drop through the notch thereof and also arranged to engage the teeth of the bar.

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

EDWARD VAN CAMP.

Witnesses:

CHAS. E. HOEVERDA,
JOHN W. MOODY.