

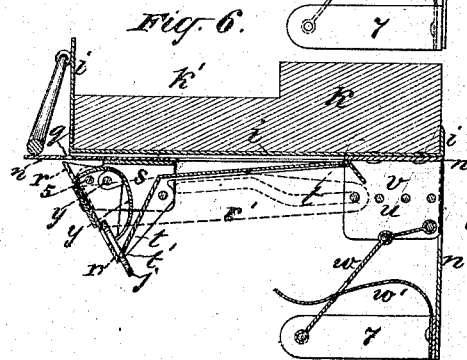
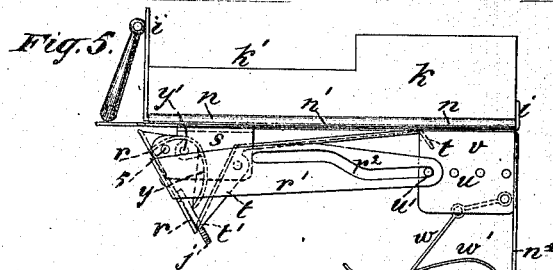
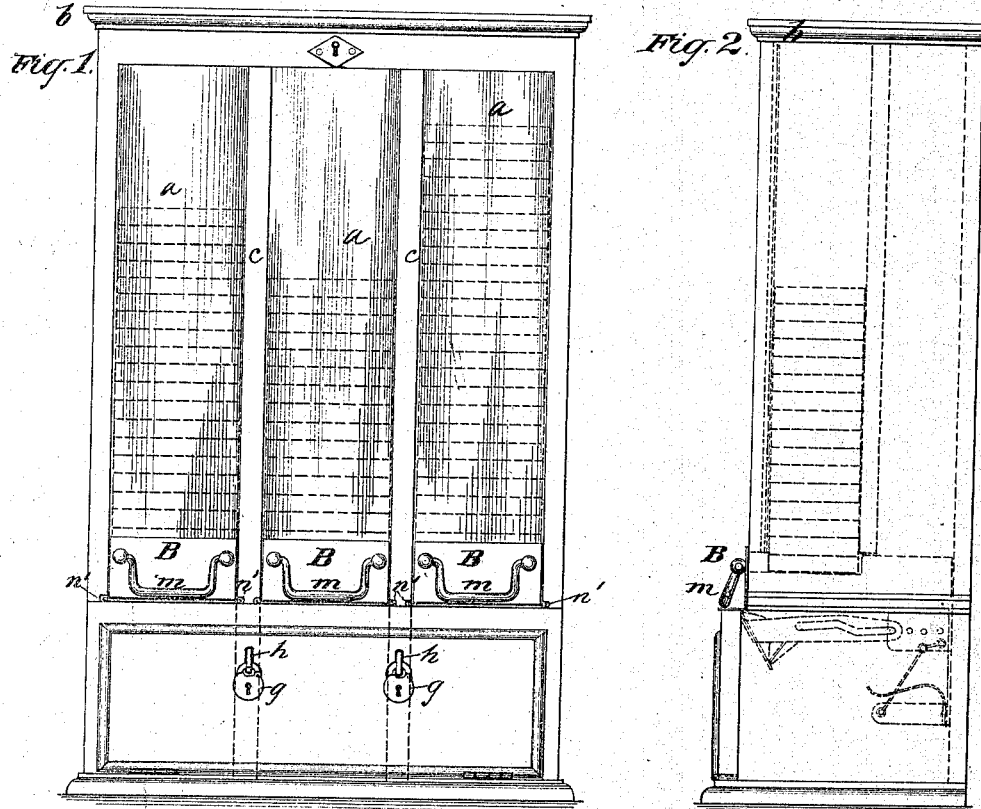
(No Model.)

2 Sheets—Sheet 1.

F. M. LEAVITT.  
SELLING MACHINE.

No. 384,770.

Patented June 19, 1888.



WITNESSES.  
John P. Eckert.  
Geo. C. Brown.

INVENTOR.  
Frank M. Leavitt.  
by Chas. W. Higgins.  
Attorney.

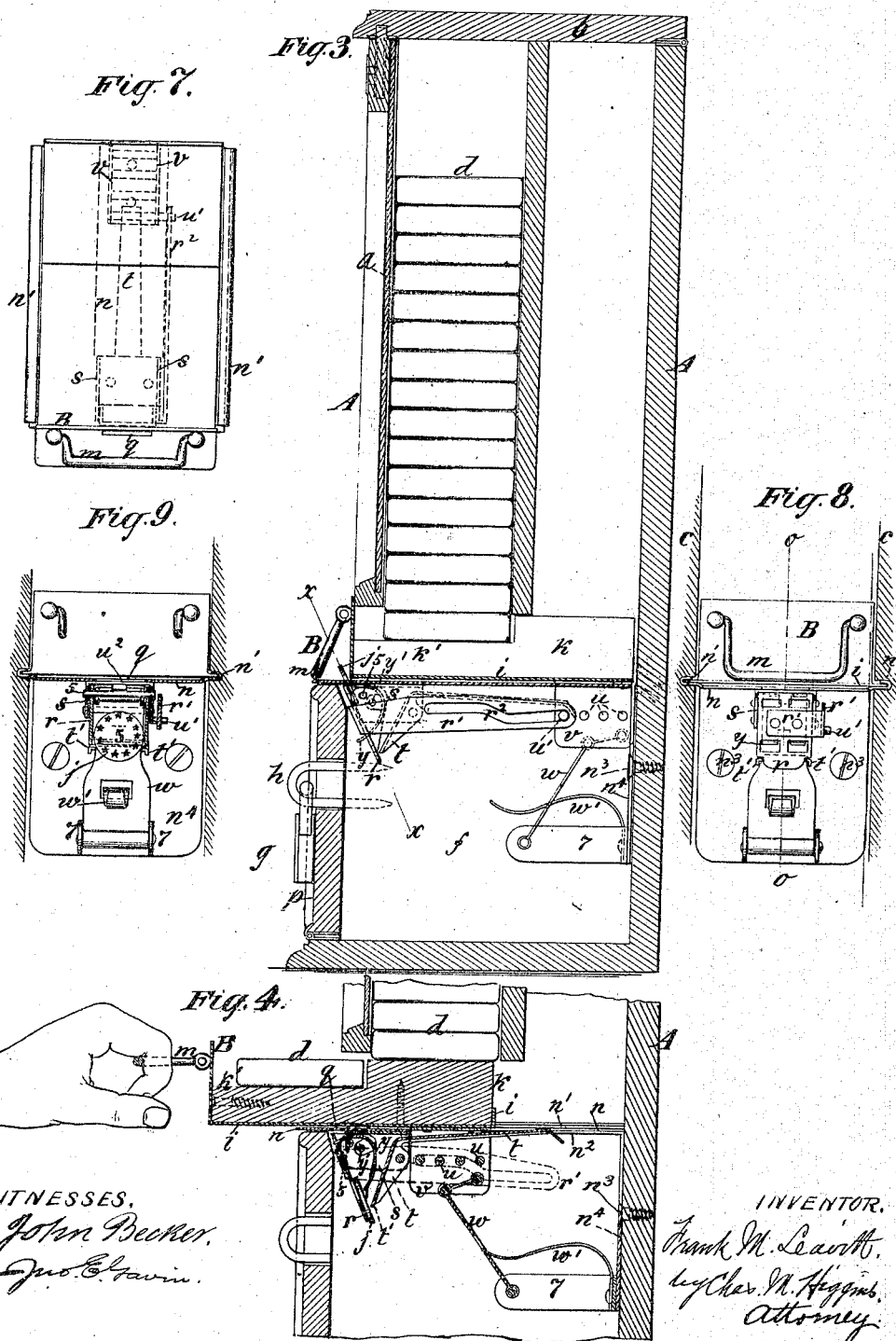
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2 Sheets—Sheet 2.

F. M. LEAVITT.  
SELLING MACHINE.

No. 384,770.

Patented June 19, 1888.



WITNESSES,  
John Becker.  
Geo. E. Gavin.

INVENTOR.  
Frank M. Leavitt.  
by Chas. M. Higgins.  
Attorney.

# UNITED STATES PATENT OFFICE.

FRANK M. LEAVITT, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE E. W. BLISS COMPANY, OF SAME PLACE.

## SELLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 384,770, dated June 19, 1888.

Application filed July 18, 1887. Serial No. 244,587. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK M. LEAVITT, of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Selling-Machines, of which the following is a specification.

My invention relates to that class of machines having an inclosing-case containing a series of packages of merchandise which are saleable for a coin of certain value, the deposit of which coin in a slot of the case will automatically unlock a drawer or pull and thus allow the withdrawal of one of the packages by the depositor or purchaser. Machines of this type usually embody a columnar reservoir containing the packages, a slide or drawer beneath the reservoir to receive each package successively from the base of the column, an external coin-slot, and internal locking mechanism to control the locking of the drawer, arranged in relation to the coin-slot so as to be released by the deposit of the coin.

In the construction of the machine in which my present invention is embodied I make the case with a series of columnar reservoirs for distinct columns of packages or articles, each column having a distinct drawer and each drawer its distinct coin-slot and locking mechanism, and each drawer is mounted on a base or way plate, which, with the drawer, is bodily insertible and removable to and from the case, and said base or way plate sustains all the locking mechanism of that drawer; hence if the locking mechanism of any drawer or "section" becomes inoperative, it may be bodily removed from the case and replaced by a new section without delay. Furthermore, the coin-slot is made through the base or way plate of the drawer just in front of the edge of the closed drawer, so that when the drawer is pulled out the slot is covered, thus preventing the deposit of a second coin until the drawer has been again fully closed.

My invention therefore consists partly in the construction and arrangement of the features above outlined and also partly in the special locking mechanism, which includes a coin-trip or locking-lever arranged between the coinway and locking stops or ratchets, a specially arranged and constructed tilting escapement in the coinway between the slot

and the locking-lever to prevent the deposit of two coins at once, as well as to prevent tampering with the locking-lever, and also a coin-dumping device and coin-lever to positively operate the same by the movement of the drawer, with other details, as hereinafter fully set forth.

In the drawings annexed, Figure 1 presents a front elevation of my improved selling-machine, and Fig. 2 is a side elevation thereof. Fig. 3 is an enlarged sectional side elevation with the drawer closed, and Fig. 4 is a fragmentary section of similar kind with the drawer opened. Fig. 5 is a side elevation of one of the drawer-sections removed, consisting of the drawer, its base or way plate, and the mechanism therewith connected. Fig. 6 is a sectional view of the same. Fig. 7 is a plan view of a removed section. Fig. 8 is an end elevation thereof, and Fig. 9 is an end elevation, partly in section, on line *xx* of Fig. 3.

Referring to Figs. 1, 2, 3, and 4, *A* indicates the case of the machine, which is preferably upright, of an oblong rectangular form, made of wood, with fixed base, back, and sides, but with a hinged top, *b*. The case is divided interiorly by vertical partitions *c c*, which extend from top to bottom into columnar spaces or reservoirs to receive columns of the packages or articles, *d*, to be sold, as shown by full and dotted lines in Figs. 1, 2, and 3. A transparent or glass front, *a*, covers the front of each column or space between the partitions *c c* to expose and display the packages or goods and enable the purchaser to select such as he wishes, while a fixed back board, *e*, about half-way within the case, forms the back of the columnar spaces, as shown best in Fig. 3. In each columnar space between the partitions there slides a drawer, *B*, below the column of packages and below the glass front and back board, *e*, as fully shown in Figs. 1, 3, and 4, and below these drawers, in the bottom of the case, there is left a free space or chamber, *f*, which, as shown later on, receives the coins deposited for the extracted packages. The front of this chamber *f* is covered by a hinged front or door, *p*, the top edge of which closes up under the base of the drawers and is secured by padlocks *g*, engaged with staples *h*, which project from the partitions *c c* through

slots in the door, as seen in Figs. 1 and 3. The top door or lid, *b*, is locked to the top front bar of the case, as seen in Figs. 1 and 3, and may be opened to fill the columns with the packages, as will be readily understood. Now referring to Figs. 3, 5, 6, 7, and 8, each drawer B consists of a foundation-plate, *i*, of sheet metal and a solid block of wood, *k*, secured to the plate, each end of which plate is bent up at right angles over the ends of the block, as seen best in Figs. 5 and 6. The front end of the plate is bent up high enough to form the entire pull-front of the drawer, and is provided with the pull *m*, as seen in Figs. 5, 6, and 8. This foundation or bottom plate of the drawer projects at each side beyond the body of the drawer, constituting side guide-flanges for the drawer. Now each drawer fits or slides in and upon a way-plate or base-plate, *n*, (best shown in Figs. 8, 9, 5, and 6,) which way-plate is also formed of sheet metal, with each edge *n'* turned up in a U form over the projecting guide-flanges of bottom plate, *i*, (see Figs. 8, 7, and 9,) thus forming the ways or guides in which the drawer can freely and securely slide in or out. The drawer is just of a width to fit the columnar spaces between the partitions *c c*, the sides of which are, however, grooved to admit the overturned edges *n'* of the way-plate *n*, thus enabling the drawer, with its way-plate and attachments, to be easily slid into true place below the columns of packages, and to be there securely supported by the grooved partitions *c c*, as will be readily understood from Figs. 8, 9, and 1.

The back end, *n''*, of the way-plate is bent downward at right angles to fit against the back of the case, to which it is fastened by the screws *n'''*, (seen in Figs. 3, 4, and 8,) thus fixing the same to the case and preventing the withdrawal thereof from the exterior of the case. Now each drawer, with its way-plate and its attachments, as seen in Figs. 5, 6, and 7, form what I term a "section," and all the coin-receiving and drawer-locking mechanism is carried by the drawer-plate and way-plate, so that each section is complete in itself for each columnar space, so that hence when the door *p* is opened and the screws *n'''* removed any section may be bodily removed from the case, to be again bodily replaced, or if one section becomes inoperative it can be thus bodily removed and a new operative section put in its place, thus preventing any trouble or delay in rendering the machine operative in all its compartments, which is one important advantage of my present invention.

Now, referring to Fig. 3, it will be seen that the drawer-block *k* has a recess, *k'*, into which the last package in the column will fit when the drawer is fully slid in, while the top of the block at the rear fits close under the back board, *e*, and is flush with the under side of the next overlying package; hence when the drawer is slid out, as in Fig. 4, the package in the recess will be exposed and may be extracted, while the top of the block will slide

under and support the remaining column of packages, which, when the drawer is slid in, will again fall into the recess, as in Fig. 3.

It may be further noted, on reference to Fig. 3, as well as Figs. 5 and 6, that the way-plate *n* projects beyond the front of the drawer-plate when the drawer is closed, and also overlies the top edge of the door *p*, and that the coin-receiving slot *q* is formed in this overhanging end of the way-plate, close up to the front of the drawer when closed, as fully shown in Figs. 7, 3, 5, and 6. Just below this coin-slit there is pivoted an inclined coin slide or plate, *r*, which is pivoted at 5 to a U-shaped clip or pair of ears, *s*, which is riveted to the bottom of the way-plate *n*. From this coin-slide *r* there extends a dumping or shifting lever-arm, *r'*, having a cam-slot, *r''*, which, extending backward, engages a pin, *u'*, upon a clip, *v*, which is secured to the bottom of the drawer-plate *i* and projects therefrom through a slot, *n''*, in the middle of the way-plate. Now in the clip *s*, behind the coin-slide *r*, is pivoted the coin-trip or locking-lever *t*, the short arm of which inclines downwardly and forwardly at an angle to the coin-slide *r*, the two approaching closely at the tips, the tip of the coin-lever *t* being forked or formed with two short prongs, *t'*, which will normally embrace the narrow rounded tip of the coin-slide *r*, as seen in Figs. 3 and 8. The long arm of the coin-lever is heavier than the short arm and causes the lever to normally gravitate into the position shown in Figs. 3 and 8, which is the normal position of parts with the drawer shut. In this position it will be seen that the tip of the short arm of the coin-lever closely approaches the tip of the coin-slide *r*, while the tip of the long arm of the lever, which is slightly bent or hooked to act as a pawl, drops into engagement with one of a series of stops or ratchet-pins, *u*, in the clip *v*. The pin *u'*, which engages the slot *r''* of the shifting-lever *r'* of the slide *r*, is a prolongation of one of the pins *u*, as fully shown in Figs. 3, 4, 5, 6, 8, and 9. It will therefore be seen, referring to Fig. 3, that normally the drawer is locked by the engagement of the long arm of the locking-lever with the pins *u*, and hence if it were attempted to pull out the drawer the clip *v*, carrying the pins *u*, being secured to the drawer, would be forced against the end of the locking-lever which is pivoted on the fixed way-plate, and hence would positively restrain the drawer from moving out. If, however, the proper coin is deposited in the coin-slit, as indicated at *j* in Fig. 3, it will slide down the inclined face of the pivoted coin-slide *r* and fall into the grasp of the forked tip of the locking-lever, as seen in Figs. 9 and 5, thereby overbalancing the lever and causing its long arm to be lifted out of engagement with the stop-pins *u*, as shown in Fig. 5. The drawer can now be freely pulled out, as seen in Fig. 4, thus exposing the package *a* and enabling it to be freely withdrawn by the operating purchaser or depositor. This out movement of the drawer

will of course move the clip *v* up against the clip *s*, which will limit the out-motion of the drawer, as seen in Fig. 4, and the same motion will cause the pin *u* to move in the slot of the shifting or dumping lever *e'* to the upper end or incline of said slot, which will thereby sway or swing the coin-slide *r* away from the tip of the coin-lever, as fully shown in Fig. 4, thus releasing the coin from between the two and allowing it to dump or fall freely into the lower chamber, *f*, thereby positively releasing the coin at the end of the out-motion of the drawer and causing it to drop or dump into the internal coin-chamber, *f*. As soon as the coin drops, as described, the coin-lever *t* will of course gravitate back to its normal position, and when the drawer is slid inward the clip *v*, with its pin *u*, will be moved backward under the pawl-tip of the coin-lever and will slip past the same like ratchet-teeth under a pawl, so that when the drawer is fully closed the pawl-tip of the cam-lever will engage between the last pins of the series to lock the drawer as before, as shown in Fig. 3.

It may now be understood that the object of employing a series of pins, *u*, to engage the end of the coin-lever is to prevent the drawer being again pulled out after being partly pushed in, and without depositing a second coin, with the view of dishonestly abstracting a second package, for by this means it will be seen that the first of the series of pins will engage the lever if it is attempted to pull out the drawer before it has been fully pushed in, and thus frustrate any dishonest attempts to abstract a second package. It is therefore obvious that to get a second package it will be necessary to first push in the drawer fully, and then to deposit the proper coin to cause the locking-lever to unlock the drawer, thus insuring automatic security in the operation of the machine. In order to insure the rapid and complete shutting of the drawer when once partly pushed in, a toggle-joint, *w*, is pivoted at one end to the clip *v*, and at the other end to a projection, *7*, on the downwardly-turned end of the way-plate *n*, with a strong spring-tongue, *w'*, bearing on said toggle. The result of this arrangement is that when the drawer is half out the toggle will be straight or on "dead-center," and spring and toggle will be neutral; but when the drawer is pushed in or pulled out a little beyond this mid-position the toggle and spring will pass the dead-center and act to throw the drawer forcibly either fully open or fully closed, as the case may be, thus discouraging any tampering with the drawer or closing it so quickly after it passes the mid-position as to bring the drawer at once into the locked position, where only the deposit of a coin can release it.

It may be further seen, on reference to Fig. 3, that the drawer cannot be opened until the coin has been fully entered and passed through the slot, for the reason that the slot is in the path of the drawer, and the coin, if protruding, would obstruct the motion of the drawer.

It will also be seen that when the drawer is once pulled out the slot is completely covered, as seen in Fig. 4, and consequently a second coin cannot be inserted while the drawer is out, and consequently two coins cannot be inserted by mistake in return for only one package, thus saving the purchaser from loss. Now, in order to prevent the insertion of two coins in the slot at the same time while the drawer is closed, and also to prevent the picking of the locking mechanism by tampering with the locking-lever through the coin-slot, I interpose what I may term a "guard-escapement," *y*, between the coin-slot and the detent-lever, which is shown best in Figs. 3, 4, and 6. This escapement is a curved plate pivoted at or near the middle in the clip *s* at the point *y'*, its opposite arms extending, like the arms of an escapement, toward the coin-slide *r* at the upper and lower ends thereof. The said arms of the escapement are forked at the ends to enter slots in the coin-slide, as seen in Fig. 8, according as either arm or end of the escapement is swung or tilted against the coin-slide in either of its positions. (Shown, respectively, in Figs. 3 and 4.) The escapement is of the full width of the clip *s*, or pivotally occupies the transverse space between the ears of the clip, and is interposed longitudinally between the coin-slide *r* and the locking-lever *t*, as seen in Figs. 8 and 4, and its pivot-point *y'* is a little above the middle, so that the lower arm of the escapement constantly gravitates into the position shown in Fig. 3, where it intersects or crosses the coin-slide *r* in advance of the locking-lever *t* and covers or protects the end of said locking-lever, whereas the short arm is retracted away from the coin-slide out of the line of the coin-slot and the path of the inserted coin. Consequently a coin may be freely inserted in the slot and will slide down the coin-slide, but in so doing it will strike against the long arm of the escapement, as seen in Fig. 5, and thus tilt it in the opposite direction, when the short arm will be swung toward the coin-slide, and thus close the coin-passage above the already-deposited coin, which coin continues to slide farther down and finally rests upon the locking lever, and thus tips or unlocks the same, as already described and shown in Figs. 5 and 6; hence a second coin cannot be now inserted while the first is in place, (see Figs. 5 and 6,) but as soon as the drawer is opened the coin will be released and deposited or dumped, as seen in Fig. 4, as already described, and the escapement will then swing back to its normal position, as seen in Fig. 3. In this position it will be seen that the escapement also prevents any wire or lock-pick from being inserted to move the locking-lever, for any such pick will first contact with the escapement and cause it to tilt, so as to bring the short arm against the pick before the long arm is tilted far enough to permit the descent of the pick, and thus prevent the possibility of moving the pick far enough down to touch the locking-lever. It is true that a

wire may be inserted clear down between the prongs of the escapement in the line of the central dotted line, *o o*, in Fig. 8; but as the locking-lever is itself forked at the end and its prongs are wider than or outside the prongs of the escapement, as seen in Figs. 8 and 9, such centrally-inserted wire cannot possibly touch the locking-lever. It will be also seen that as the coin-slot is in the direct path of the motion of the drawer the drawer cannot in any event be pulled out while a pick or other obstruction is in the slot, thus providing by these several expedients named great security against picking and yet rendering the mechanism very simple.

It may be seen on reference to the drawings that the form of the mechanism is such that all the parts may be made from sheet metal and wire, such being the actual construction as illustrated, which conduces greatly to cheapness and lightness of manufacture. Regular ratchet-teeth might, however, be substituted for the pins *u*, if desired; but the pins are preferred.

I do not of course limit myself to the special construction of all the features shown; but

What I claim as my invention is—

1. In a selling-machine, the combination, with an inclosing-case having a reservoir for packages or articles and a drawer sliding in relation thereto, of a guiding base or way plate for said drawer, and locking mechanism mounted wholly on said drawer and way-plate, said drawer, with its way-plate and locking mechanism, being bodily attachable and removable to and from said case, substantially as herein set forth.

2. In a selling-machine, an inclosing-case having compartments for containing the packages of articles to be sold, each of said compartments having at its lower end grooves in its sides, in combination with a way-plate at the bottom of each compartment fitting in the grooves thereof, said way-plate being itself formed with guide grooves or ways, and a drawer for each compartment resting and sliding on the way-plate for such compartment, said drawer having side flanges which engage the guide-grooves in said way-plate, substantially as set forth.

3. In a selling-machine, an inclosing-case having compartments for containing the packages or articles to be sold, each of said compartments having at its lower end grooves in its sides, in combination with a way-plate at the bottom of each compartment fitting and sliding in the grooves thereof and removably secured in position therein, said way-plate having its edges within said grooves bent over to constitute guide grooves or ways, and a drawer for each compartment resting and sliding on the way-plate for such compartment, said drawer having side flanges which engage and slide in the guide grooves or ways in said way-plate, substantially as set forth.

4. The package-drawer for a selling-machine having a block with a recess at its front end

and a raised platform at its rear end, in combination with a metallic bottom plate secured to said block having its ends turned up against the ends of said block, and having its side edges projecting beyond the sides of said block, substantially as set forth.

5. In a selling-machine, the drawer *B*, in combination with the way-plate *n*, underlying the drawer, having ways in which the drawer slides, with one end of the plate projecting beyond the front of the drawer and containing the coin slot *q*, with locking mechanism controlling the locking and unlocking of the drawer arranged beneath said slotted way-plate, substantially as herein set forth.

6. In a selling-machine, a drawer resting and adapted to slide on a guiding base or way plate, in combination with said guiding-base or way plate having a coin-slot therein at the front edge of said drawer, and which slot is covered when said drawer is drawn out, and remains covered until said drawer is again fully closed, substantially as set forth.

7. In a selling-machine, the combination, with the reservoir-case and movable drawer, of the movable coin-slide *r*, arranged adjacent to the coin-slot, a locking device arranged in juxtaposition to the said slide, the cam-lever *r'*, attached to said slide *r*, and a projection on the drawer engaging said lever, substantially as and for the purpose set forth.

8. In a selling-machine in which the deposit of a coin releases locking mechanism to allow the opening of a package-drawer, a plate having a coin-slot, a coin-slide leading therefrom, and locking devices, in combination with a pivoted escapement-lever located immediately beneath said coin-slot and between it and the locking device, said escapement-lever having two arms, the upper of which is normally out of the path of the coin and the lower of which stands normally across the coin-slide in the path of the coin and is adapted to be struck by a coin when inserted, whereby the upper arm is swung across the slide immediately beneath the coin-slot, said upper arm; when so swung across the coin-slide, being closer to the exterior mouth of the coin-slot than the diameter of the coin which operates the machine, whereby the insertion of such a coin is prevented, substantially as set forth.

9. In a selling-machine in which the deposit of a coin releases locking mechanism to allow the opening of a package-drawer, a plate having the depositing coin-slot, the detent mechanism, a locking-lever, and a coin-slide for conducting the coin from the coin-slot to said lever, in combination with an escapement-lever pivoted immediately beneath the coin-slot and between it and said locking-lever, said escapement-lever having two arms, the upper of which is normally out of the path of the coin and the lower of which stands normally across the coin-slide in the path of the coin and is adapted to be struck by a coin when inserted, whereby the escapement-lever is tilted and the upper arm is swung across

the coin-slide to close the same and the lower arm is swung away from said coin-slide to permit the coin to strike the locking-lever to tilt the same, said upper arm of the escapement-lever being closer to the exterior mouth of the coin slot than the diameter of the coin which operates the machine, and the lower arm of said lever being nearer to the locking-lever when the same is depressed than the diameter of the coin, whereby, when the coin rests on said locking-lever, it holds said escapement-lever with its upper arm across the coin-slide, substantially as set forth.

10. In a selling-machine in which the deposit of a coin releases locking mechanism to allow the opening of a package-drawer, a plate having the depositing coin slot, the package-drawer sliding on said plate across said coin-slot, the detent locking mechanism, a locking-lever, and a coin-slide for conducting the coin from the coin-slot to said lever, in combination with an escapement-lever pivoted immediately beneath the coin-slot and between it and said locking-lever, said escapement-lever having two arms, the upper of which is normally out of the path of the coin and the lower of which stands normally across the coin-slide in the path of the coin and is adapted to be struck by a coin when inserted, whereby the escapement-lever is tilted and the upper arm is swung across the coin-slide to close the same and the lower arm is swung away from said coin-slide to permit the coin to strike the locking-lever to tilt the same, said upper arm of the escapement-lever being closer to the exterior mouth of the coin-slot than the diameter of the coin which operates the machine, and the lower arm of said lever being nearer to the locking-lever when the same is depressed than the diameter of the coin, whereby, when the coin rests on said

locking-lever, it holds said escapement-lever with its upper arm across the coin-slide, and means actuated by the outward movement of the package-drawer for dumping said coin and thus releasing said escapement-lever, substantially as set forth.

11. In a machine, substantially such as set forth, the combination, with the drawer, of the coin-slide *r*, balanced locking-lever *t*, dumping-lever *r'*, and engaging-pins *u u'*, fixed to the drawer, substantially as shown and described.

12. In a selling-machine, the combination, with the reservoir-case and the movable drawer, of the toggle *w*, having one end fastened to the drawer and the other to the case, and a spring acting on the toggle, substantially as and for the purpose set forth.

13. A selling-machine comprising the following features: an inclosing-case having a package-compartment, a drawer, such as B, to fit said compartment, a way or guiding-base, such as *n*, in which said drawer is mounted, fastening devices securing such base to the case, and a door, such as *p*, closing up against the front end of said guiding-base, whereby, when said door is opened, the drawer and its guide-base can be bodily removed from the case, substantially as herein set forth.

14. A selling-machine comprising the inclosing-case and the package-compartment therein, the drawer B, fitting said compartment, guide-base *n*, in which said drawer is mounted, prolongation *n'* of said base secured to the case, chamber *f*, below said drawer and guide-base, and door *b* to said chamber, substantially as herein shown and described.

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Witnesses:

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CHAS. M. HIGGINS.