(No Model.) 3 Sheets—Sheet 1.

M. H. FOSTER.

AUTOMATIC SALESMAN.

No. 464,067. Patented Dec. 1, 1891.

Fig. 1.

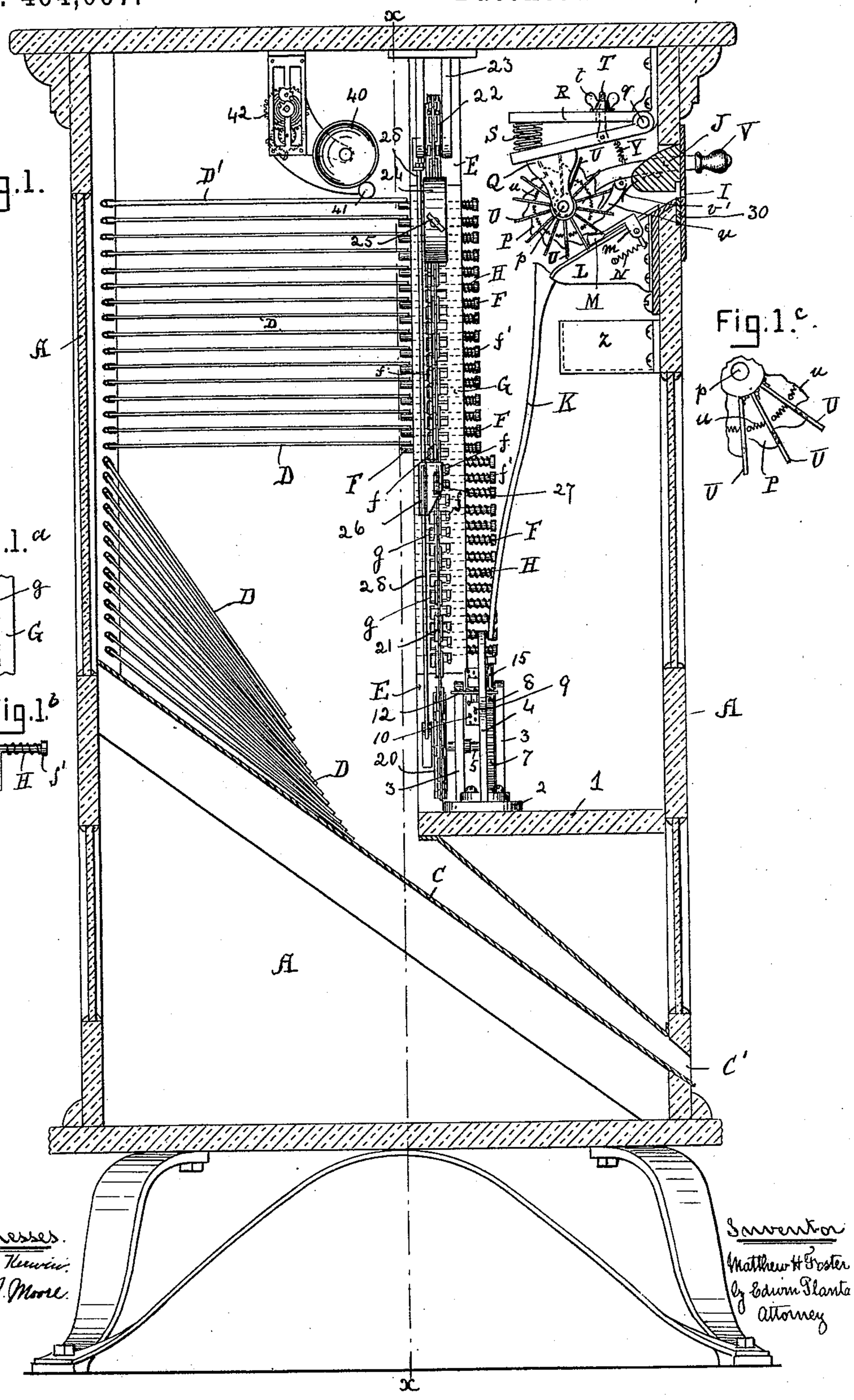

Fig. 1a.

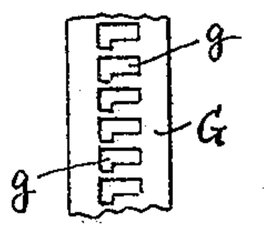

Fig. 1b.

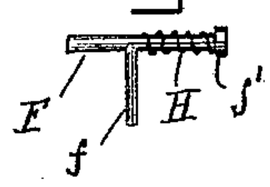

Fig. 1c.

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Fig. 2.

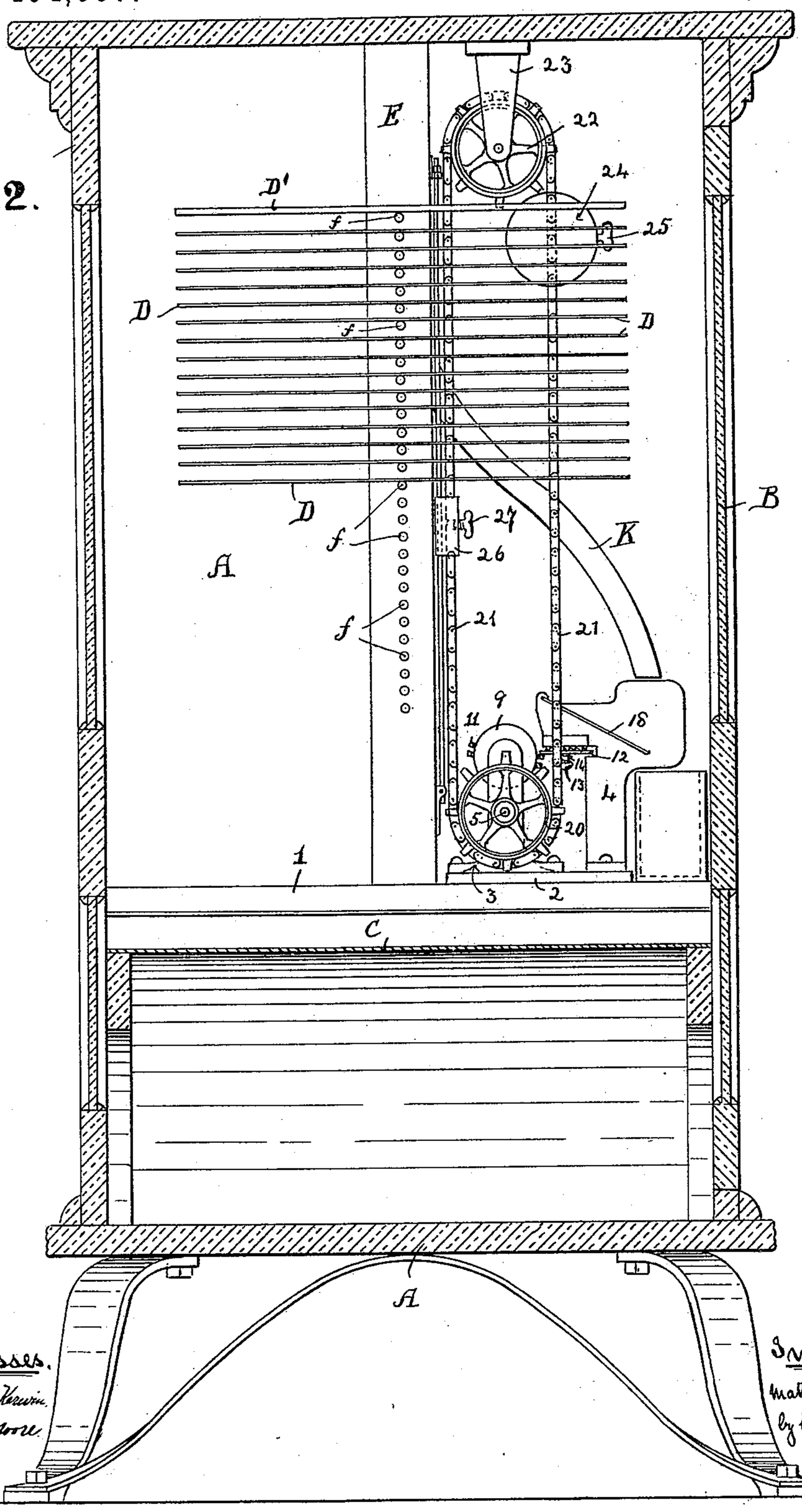

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Fig. 3.

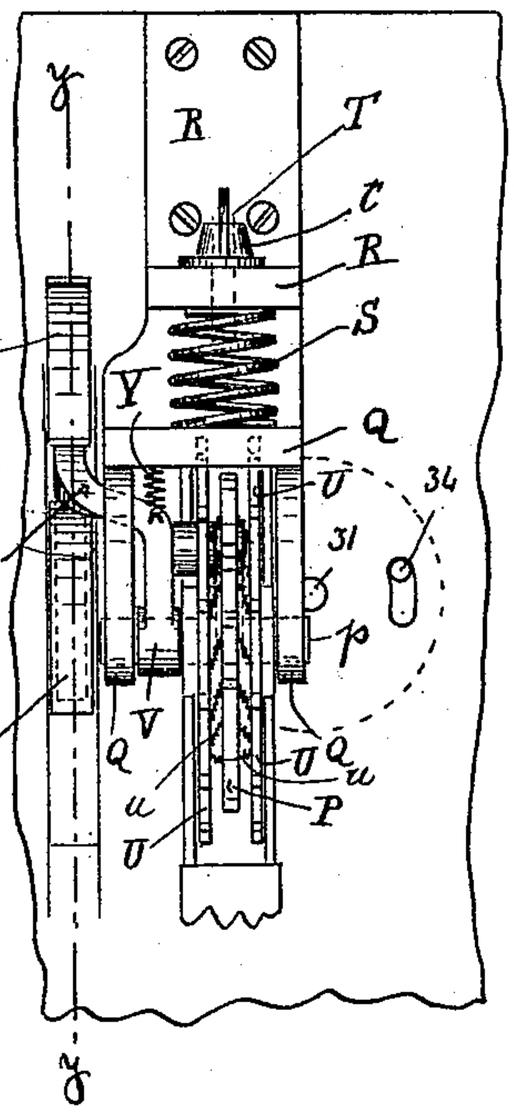


Fig. 4.

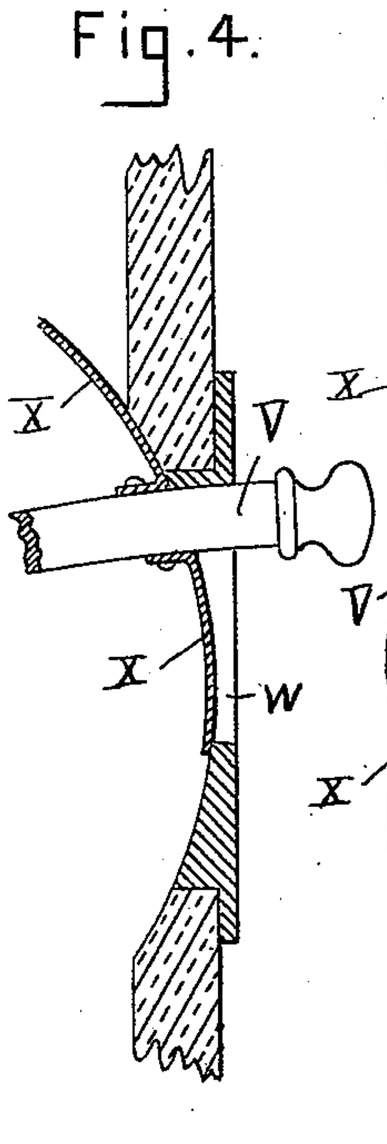


Fig. 5.

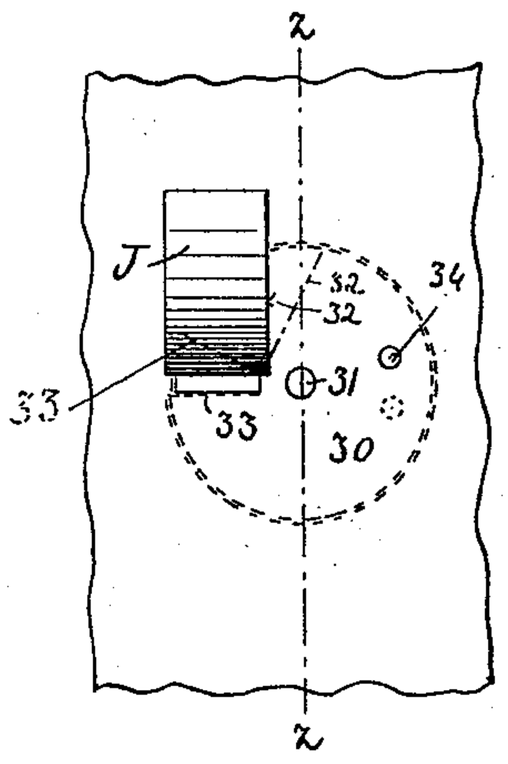


Fig. 6.

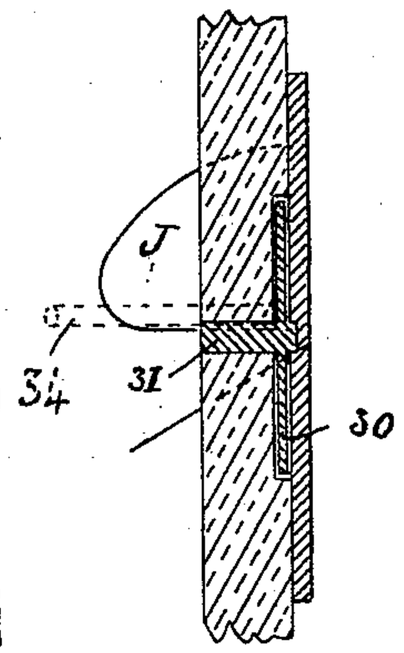


Fig. 7.

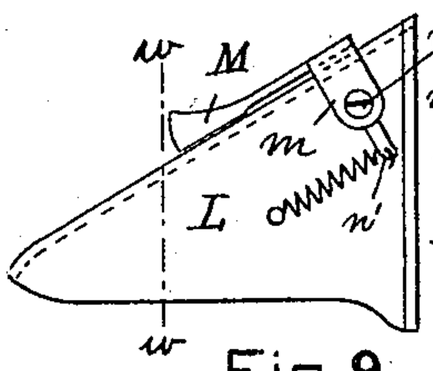


Fig. 8.

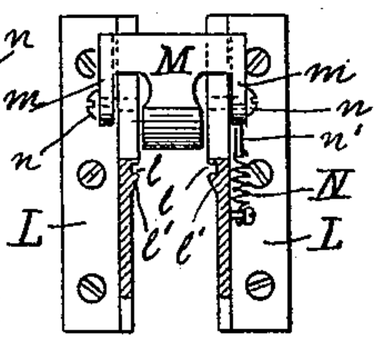


Fig. 9.

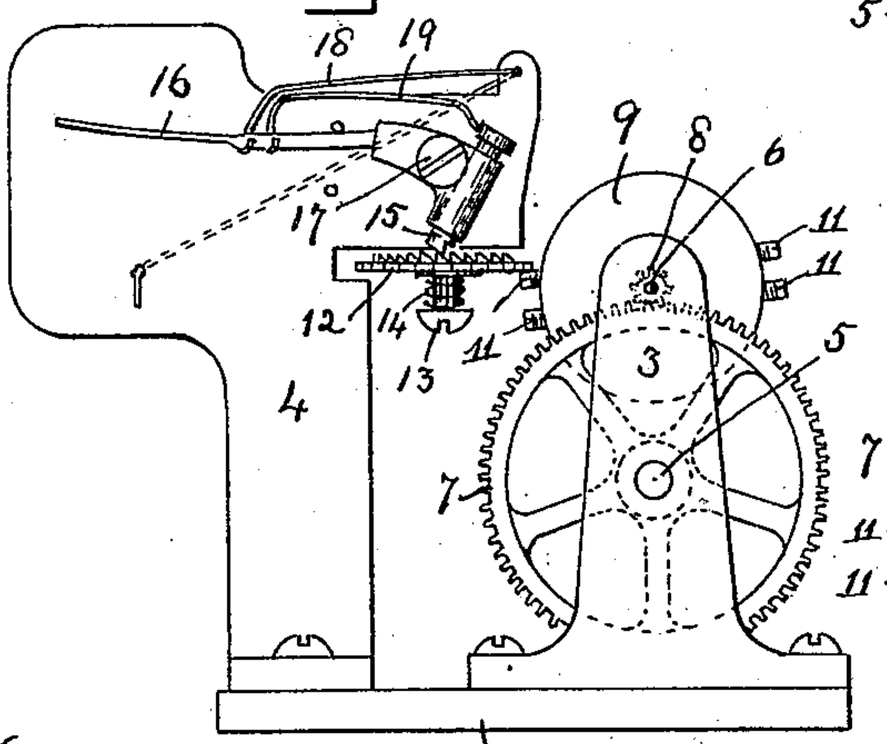


Fig. 10.

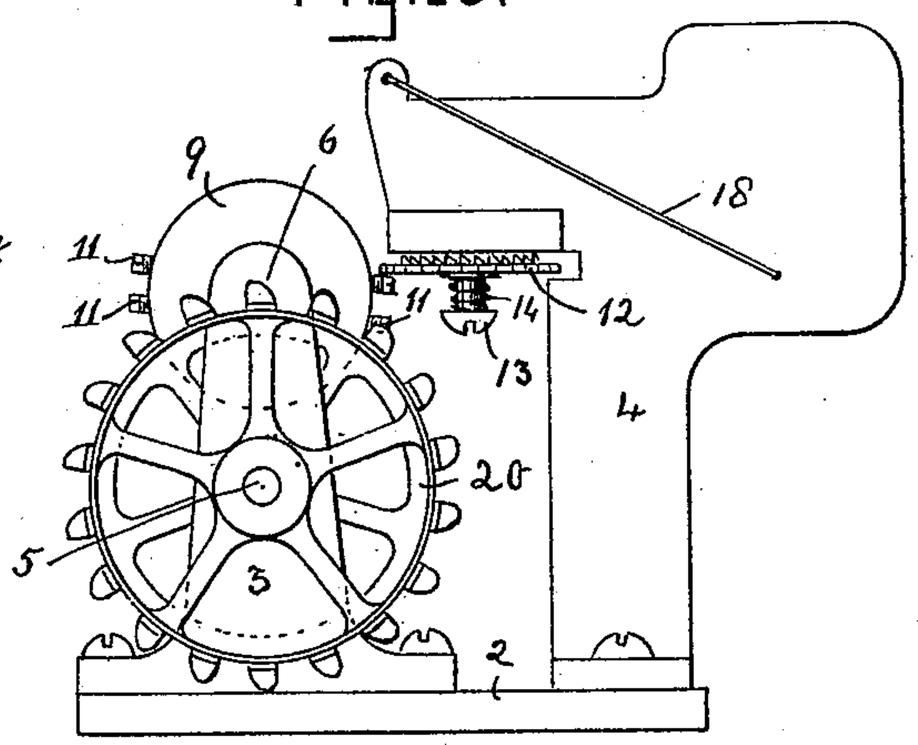
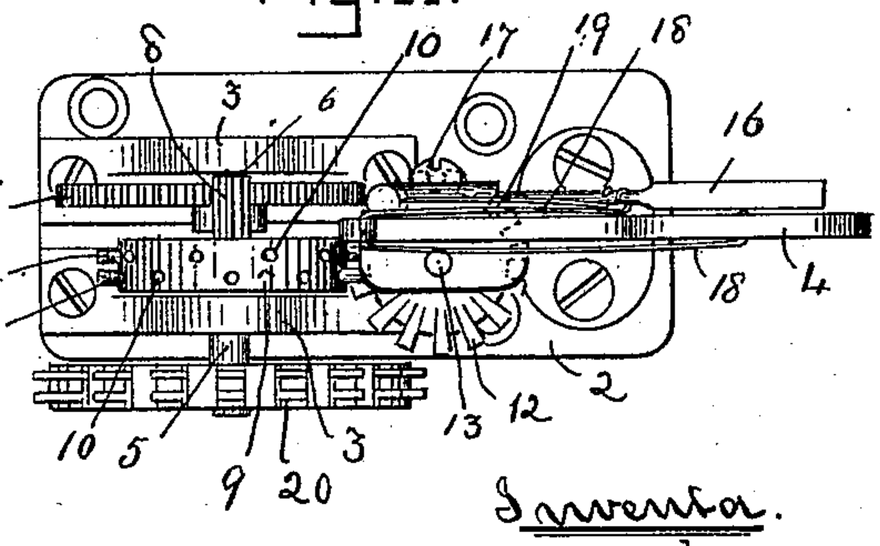


Fig. 11.



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UNITED STATES PATENT OFFICE.

MATTHEW H. FOSTER, OF HAVERHILL, MASSACHUSETTS, ASSIGNOR TO CHARLES W. MORSE, OF SAME PLACE.

AUTOMATIC SALESMAN.

SPECIFICATION forming part of Letters Patent No. 464,067, dated December 1, 1891.

Application filed July 15, 1890. Serial No. 358,868. (No model.)

To all whom it may concern:

Be it known that I, MATTHEW H. FOSTER, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Automatic Salesmen, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to certain improvements in apparatus for automatically effecting the sale and delivery of goods of various kinds by the insertion in the apparatus of a coin or coins amounting to the value of the article to be delivered.

The invention consists of a series of hinged shelves, upon which the articles to be sold are placed, said shelves being supported by spring-bolts, and means for releasing one shelf at a time as the coins are deposited in the apparatus; also, in means for preventing the articles being delivered except by coins of the proper value, and in various details of construction, as hereinafter fully set forth, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a vertical transverse section of an automatic salesman embodying my invention. Figs. 1ª, 1ᵇ, and 1ᶜ are detail views. Fig. 2 is a vertical section taken on line *x x* of Fig. 1. Fig. 3 is a rear view of the coin-detector. Fig. 4 is a vertical section taken through line *y y* of Fig. 3. Fig. 5 is a rear view of the magnet, slot, and cover. Fig. 6 is a vertical section taken on line *z z* of Fig. 5. Fig. 7 is a side view of the coin-guide leading from the slot to the chute. Fig. 8 is a vertical section of the same, taken on line *w w* of Fig. 7. Fig. 9 is a view of one side of the mechanism for operating the slide that releases the shelves. Fig. 10 is a view of the other side of the same, and Fig. 11 is a plan view.

A represents the case, of wood or other suitable material, and B a door in the side of the same. (See Fig. 2.)

C is a shelf that inclines from the rear to the front of the casing and leads to a slot C′, through which the articles to be sold are delivered. To the rear part of the case above the said shelf are hinged a number of shelves D, that support the articles to be sold.

E is a frame carrying a number of spring-bolts F. To one side of this frame is secured a plate G, provided with a series of slots *g*, that are slightly wider at the rear end. (See Fig. 1ª, which represents a portion of this plate.) The bolts F are each provided with a small pin *f*, (see Fig. 1ᵇ, which is a view of one of the bolts detached,) that works in the slot *g*, and a head *f′*. A small spiral spring H is placed upon the bolt and bears against the head *f′* and the side of the frame E, so that the tendency is to keep the bolt F drawn toward the front of the casing; but when a bolt is pressed back it is retained in place by the pin *f* being pressed down into the enlarged portion of the slot *g* in the frame G. These bolts support the forward end of the shelves D, as shown. (See Fig. 1.)

At the rear of but above the slot I, through which the coins are inserted, is secured a powerful magnet J, which if a piece of iron or similar metal should be inserted through the slot will attract the same and prevent its operating the machine, as hereinafter described.

To the inside of the casing, just below the slot, is secured a coin-guide that conducts the coin from the slot I to the chute K. This guide is shown detached in Figs. 7 and 8, and consists of two side plates L, each provided with a small recess *l*, the space across being the exact width of the coin intended to be employed, the coin being supported on each side by the small lips *l′*, so that if the coin is of smaller diameter it will fall through into the box Z. Over the top of this guide is arranged what I term a "coin detector or crusher"—that is, a piece of metal M, of about the form shown and a little narrower than the space between the two plates L. The forward end of this piece M is provided with two ears or lugs *m*, that pass down by the sides of the plates L and are secured thereto by screws *n*, which form fulcrums upon which the piece M oscillates. One of the ears is provided with a tail-piece *n′*, to which one end of a spiral spring N is connected, the other end of the spring being secured to a

stud on the side of the plate L. The object of this spring is to hold the piece M in its normal position—that is, just above the groove *l*—so that a coin can pass beneath it.

Above the piece M is a ratchet-shaped wheel P, mounted upon a short shaft *p*, carried by a frame Q, hinged at *q* (see Fig. 1) to a piece R, secured to the front of the case. A spiral spring S is inserted between the piece R and frame Q to keep them forced apart, and a screw-threaded bolt T is pivoted to the frame Q and passes through a slot in the piece R and is fitted with a thumb-nut *t*. The object of this bolt and thumb-nut is to regulate the distance that the frame Q is forced down by the spring S.

Mounted upon the shaft *p* on each side of the ratchet-wheel P is a small sleeve, to which is hinged a series of arms U, an arm for each tooth of the ratchet-wheel. These arms can move only in one direction—that is, forward—as will be best seen in Fig. 1ᶜ, which shows a position of the ratchet-wheel and three of the arms drawn to a larger scale. Small spiral springs *u*, connected at one end to the ratchet-wheel P and at the other end to the arms U, hold said arms in their normal position, and the arms are of such a length that the arms which stand in front of the piece M will extend down below the groove *l* and prevent the coin or other article from passing down until it has been tested.

To one end of the shaft *p* is secured a lever V. This lever is slightly bent, so as to pass out through an opening W in the casing by the side of the money-slot I, and to the upper and lower sides of this lever are secured curved pieces X, that keep the opening W covered at all times. To this lever V is pivoted a pawl *v*, (see Fig. 1,) that is held in contact with the teeth of the ratchet-wheel P by a spring *v'*. When the lever V has been drawn down, it is returned to its normal position by a spring Y, connected to the lever and the frame Q. After the coin has passed down the groove *l* it passes into the chute K, from which it falls upon the tail of the operating-lever of the delivering apparatus, which is supported upon a shelf 1, and consists of a base 2, provided with standards 3 3 4. In the standards 3 3 are mounted two shafts 5 6, and upon the shaft 5 between the standards is secured a cog-wheel 7, that is in gear with a pinion 8 upon the shaft 6, which also carries a disk 9, provided on its circumferential face with two series of holes 10, (see Fig. 11,) into which pins 11 are secured, a pin for each coin that is required to deliver an article, viz: Supposing it is intended to sell a two-cent article, such as a daily paper, two pins would be inserted into the holes, and diametrically opposite two other pins would be inserted. One of these pins rests against a toothed plate or wheel 12, provided on its upper side with ratchet-teeth and secured to the standard 4 by a screw 13 and spring 14. The plate or wheel 12 has a tooth for every alternate tooth of the ratchet that is upon its upper side.

15 is a pawl that fits the ratchet-teeth on the top of the plate 12, and is mounted in the end of the operating-lever 16, that is fulcrumed at 17 to the standard 4. This lever is kept in its normal raised position by a spring 18, and the pawl is kept depressed by a spring 19. The shaft 5 extends beyond the standard 3 on one side, and has mounted thereon a sprocket-wheel 20, over which is passed an endless chain 21, that also passes over a similar sprocket-wheel 22, mounted in a bracket 23, secured to the top of the casing. To this chain is secured a weight 24 and a slide 26, each adjustably secured thereto by thumb-screws 25 27. The slide on one side embraces a guide-rod 28, by which it is guided and held in contact with the plate G.

When the last article passes out of the apparatus—that is, when the top shelf D′ falls—the slot I is automatically closed and an alarm is rung in in the following manner: At the rear of the slot I, just on one side, is a disk 30, having at its center a stud 31 formed in one with it or upon which it is free to turn. (See Figs. 3, 5, and 6.) This disk is cut away on one side, so that the edge 32 rests against the magnet J and the edge 33 is just on a level with the lower edge of the slot I when the apparatus contains any articles for sale, it being held in place by a rod 34, extending rearward and resting upon the front edge of the top shelf D′, and when the last article is sold the said shelf falls, and the rod thus losing its support falls and turns the disk so as to close the slot, the edge 33 passing up into a recess formed in the front edge of the magnet J, as shown in dotted lines in Fig. 5.

An alarm is rung to notify that the last article has been sold, as follows: 40 represents a gong, (see Fig. 1,) and 41 the hammer therefor, operated by clock-work 42, secured inside the casing. When the top shelf D′ is supported by its bolt F, the hammer 41 is held up and cannot vibrate; but as soon as the shelf falls the hammer is operated by the clock-work and rings an alarm.

The operation is as follows: The thumb-screw 25 of the weight 24 is loosened and the weight slipped to the upper end of the chain 21 and there secured. The thumb-screw 27 of the slide 26 is also loosened and the slide slipped to the bottom of the chain 21. The shelves D are then raised one by one and secured by the bolts F, as before described, the articles to be delivered being placed upon them as they are being raised or inserted after they are secured in place, as may be desired. When the upper shelf D′ is raised, the slot I is opened and the alarm locked. Supposing the articles to be sold are two cents each, two pins 11 will have to be secured into the disk 9 and diametrically opposite two other pins. If the articles are of greater value, then an additional pin would have to be inserted on both sides of the disk, one pin on each side

for each coin. A person now drops a coin into the slot I, which passes down the guide L until arrested by the arms U exactly under the piece M. He then draws down the lever V, which, by pawl *v*, causes the ratchet-wheel P to be rotated the distance of one tooth, said tooth riding over the piece M, the wheel P being raised, and with it the frame Q, the spring S exerting a certain pressure upon it, but not sufficient to crush a good coin. The coin then passes down the chute K and strikes the tail of the lever 16, which throws the pawl 15 forward and moves the ratchet-wheel 12 the distance of one tooth, thus moving it so that a space is presented opposite the pin, allowing it to pass through, the weight 24 and the chain 21 causing the sprocket-wheel 20, and with it the gearing, to turn as soon as the pin is released. Upon the purchaser inserting the second coin and drawing down the lever V the coin is tested as before and passes down the chute, striking the tail of lever 16, which again moves the ratchet-wheel 12, so as to release the other pin 11, and the disk 9 flies round until the pin that was on the opposite side comes into contact with the plate 12. The gearing being thus released allows the weight 24 to fall and draws up the slide 26, so as to bring it into contact with the pin *f* of the bolt F, that supports the lowest shelf D. As soon as the pin is raised the spring H draws the bolt back and the shelf D falls of its own weight, the paper or other article that was on it passing out of the delivery-slot C′. This operation is repeated until the last article is delivered, when the top shelf D′ falls and closes the slot I and gives an alarm, as before described. Should a person attempt to obtain goods by anything but a good coin, it will be detected. If of iron, the magnet J will attract it and it will be pushed off of the magnet and fall into the box Z by the next coin inserted. If of lead or other soft material, it will be bent by the piece M and forced through between the plates L into the box Z, because it will not have sufficient strength to overcome the resistance of the spring S and raise the frame Q. It will be seen that by this construction the articles are delivered one at a time by the falling of a shelf, which is caused to be released by the semi-rotation of the disk 9, provided with pins that are released by the coins falling upon the releasing-lever, and any number of pins may be employed, according to the value of the articles to be delivered. It will also be seen that the apparatus can be operated only by good coins of the proper value.

What I claim as my invention is—

1. In an automatic salesman, a series of hinged shelves supported by spring-bolts and means for releasing one shelf at a time by coins deposited in the apparatus, substantially as set forth.

2. In an automatic salesman, a disk provided with pins, in combination with a toothed plate having ratchet-teeth on its upper side and a pawl and lever operated by coins falling upon the tail of said lever for automatically releasing the pins to allow the disk to rotate, substantially as set forth.

3. In an automatic salesman, a disk cut away on one side and mounted upon a stud on one side of the slot through which the coins are inserted, and a rod for holding said disk to keep the slot open or to close the same by the falling of the rod, substantially as set forth.

4. In an automatic salesman, a series of shelves D, hinged at their rear ends, in combination with a series of spring-bolts H, mounted in a frame E, and a plate G, having a slot *g* for each bolt, substantially as shown and described.

5. In an automatic salesman, a series of hinged shelves D, frame E, spring-bolts F, and slotted plate G, in combination with sprocket-wheels 20 22 and endless chain 21, weight 24, and slide 26, substantially as set forth.

6. In an automatic salesman having a series of hinged shelves supported by spring-bolts, the combination of a slide 26, endless chain 21, weight 24, sprocket-wheel 22, bracket 23, sprocket-wheel 20, shaft 5, cog-wheel 7, shaft 6, pinion 8, disk 9, pins 11, toothed plate 12, having ratchet-teeth upon its upper surface, pawl 15, and lever 16, substantially as set forth.

7. In an automatic salesman, a coin-guide consisting of two plates L, having recesses *l*, in combination with a crusher M, ratchet-wheel P, shaft *p*, arms U, hinged to sleeves on each side of the ratchet-wheel P, springs *u*, lever V on shaft *p*, frame Q, hinged to piece R, spring S, screw T, and thumb-nut *t*, arranged and operated substantially as set forth.

8. An automatic salesman having the following elements: a series of hinged shelves supported by spring-bolts, a slide for releasing said bolts, means for operating said slide, a coin-detector, a disk for closing the slot, and an alarm operated by the falling of the upper shelf, substantially as set forth.

9. In an automatic salesman, the disk 30, cut away on one side, stud 31, and rod 34, arranged and operated substantially as and for the purpose set forth.

10. In an automatic salesman, a stationary magnet arranged immediately at the back of and above the slot through which the coins are inserted, whereby if a piece of iron is inserted through the slot it will be attracted and held by the magnet until pushed off by the insertion of another piece or coin, thus preventing it from entering the coin-guide, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 23d day of May, A. D. 1890.

MATTHEW H. FOSTER.

Witnesses:

EDWARD H. BROWN,

CHARLES E. HOYT.