No. 740,998. PATENTED OCT. 6, 1903.

J. A. WILLIAMS.

VENDING MACHINE.

APPLICATION FILED DEC. 26, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

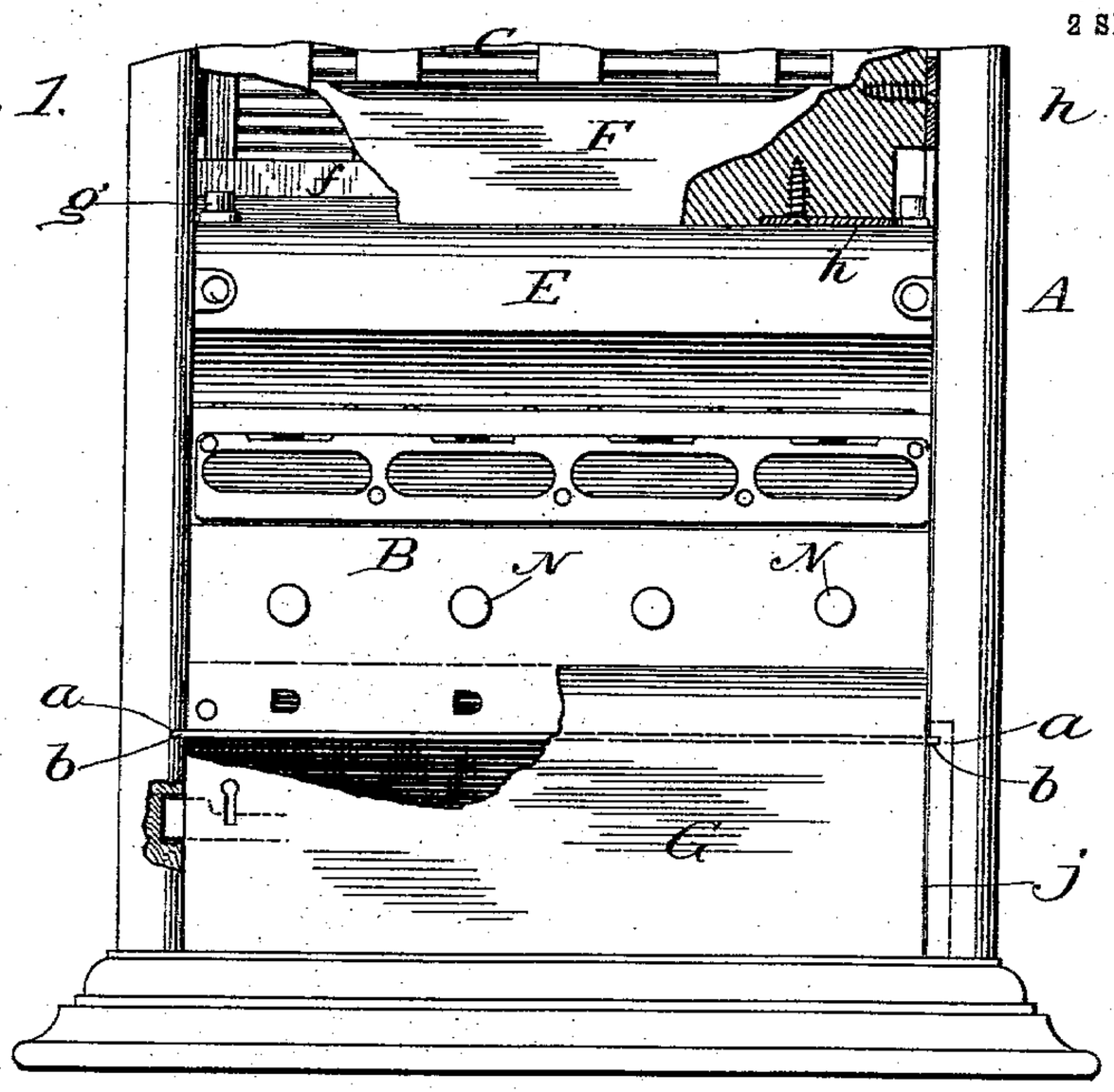
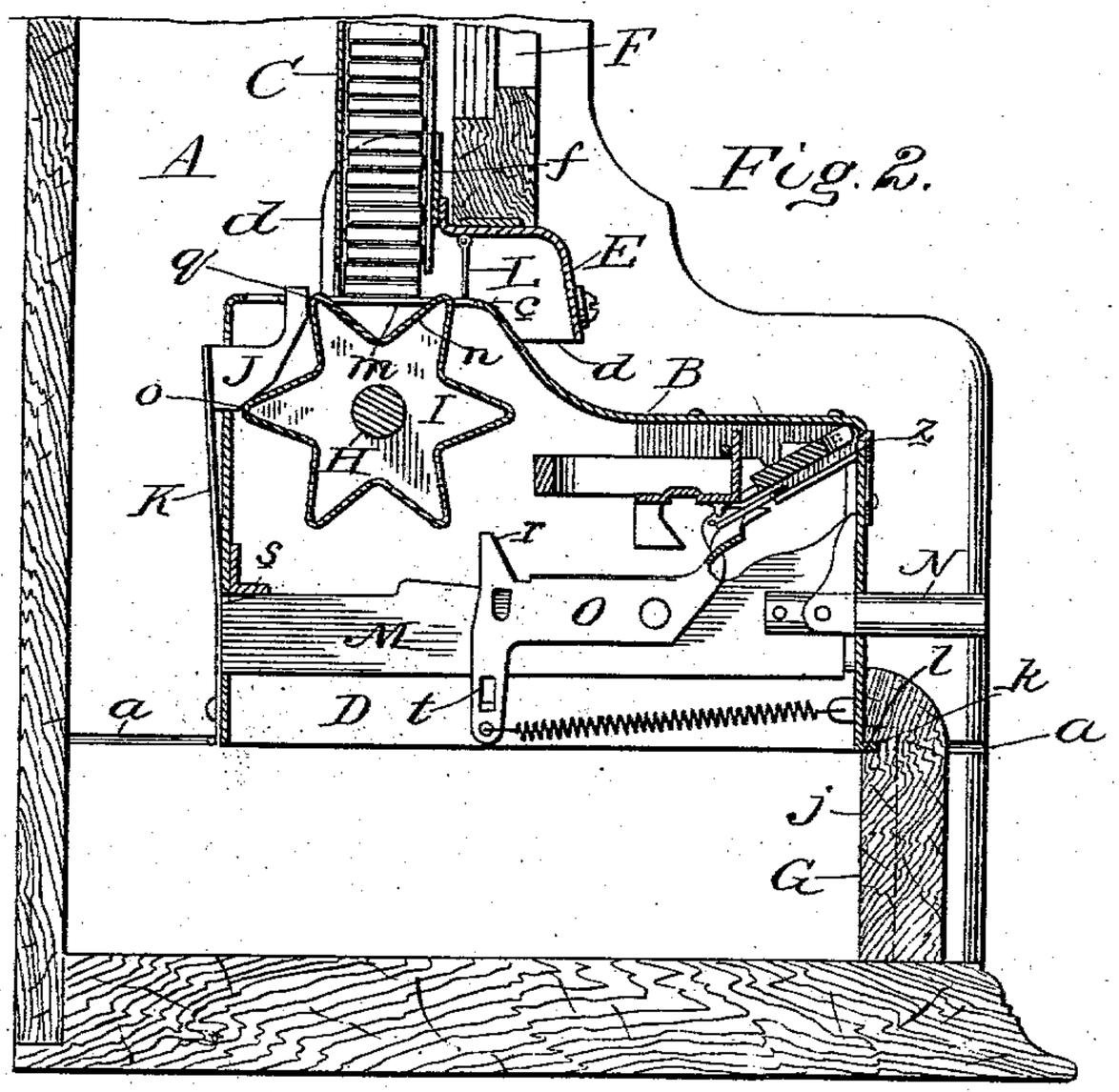


Fig. 2.



Witnesses

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

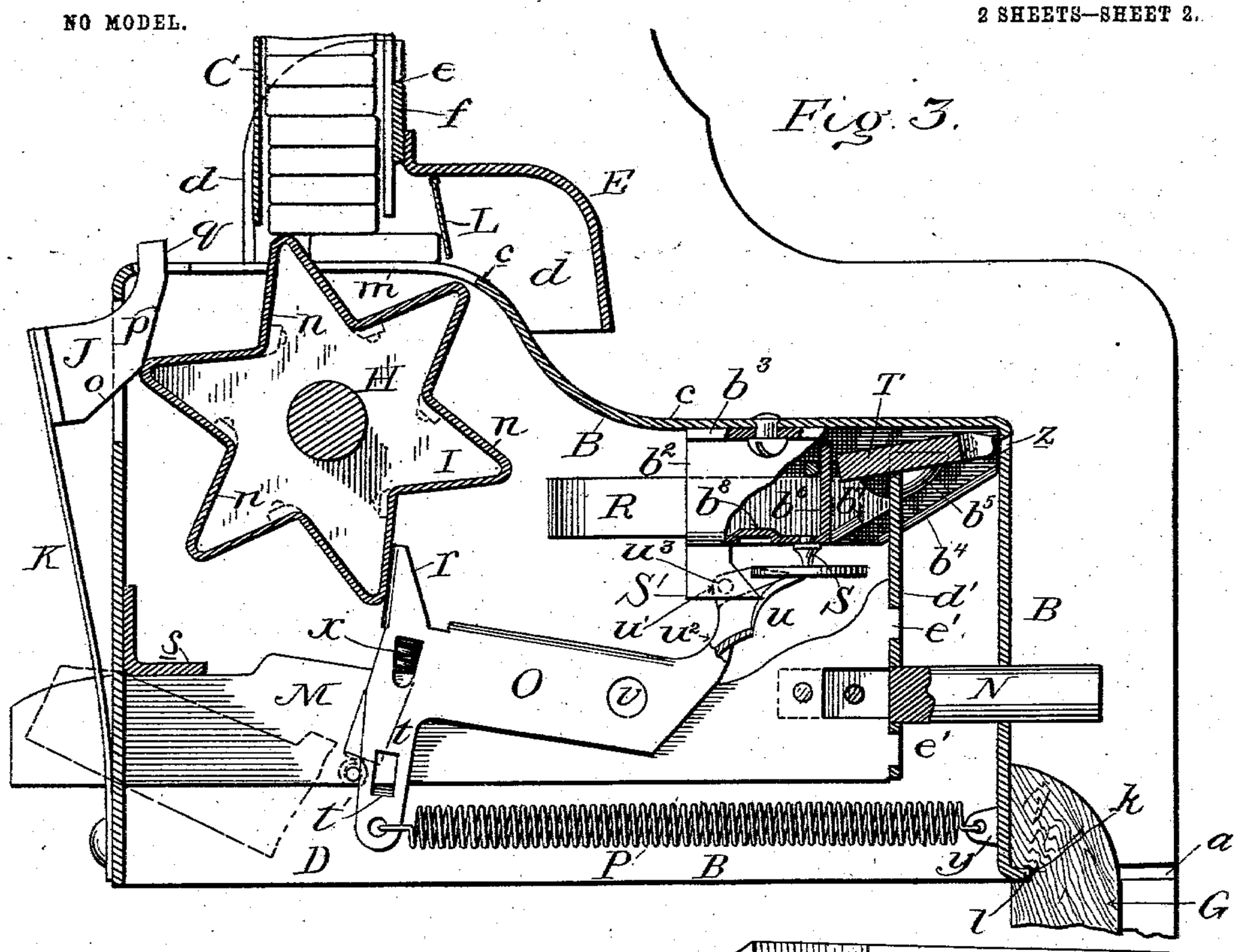


Fig. 4.

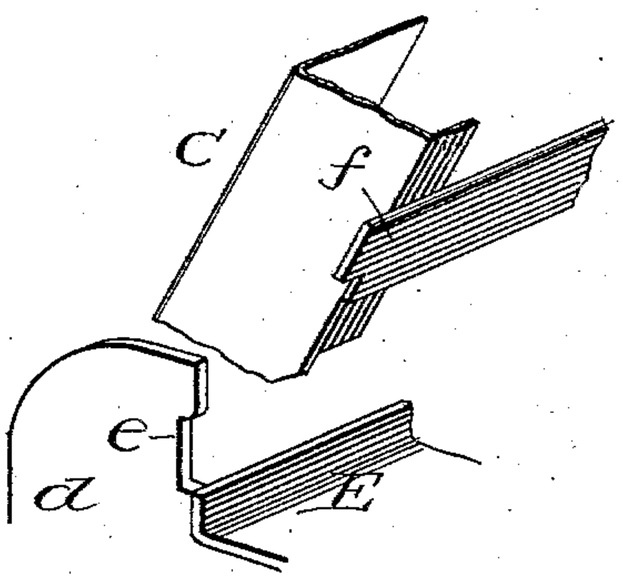
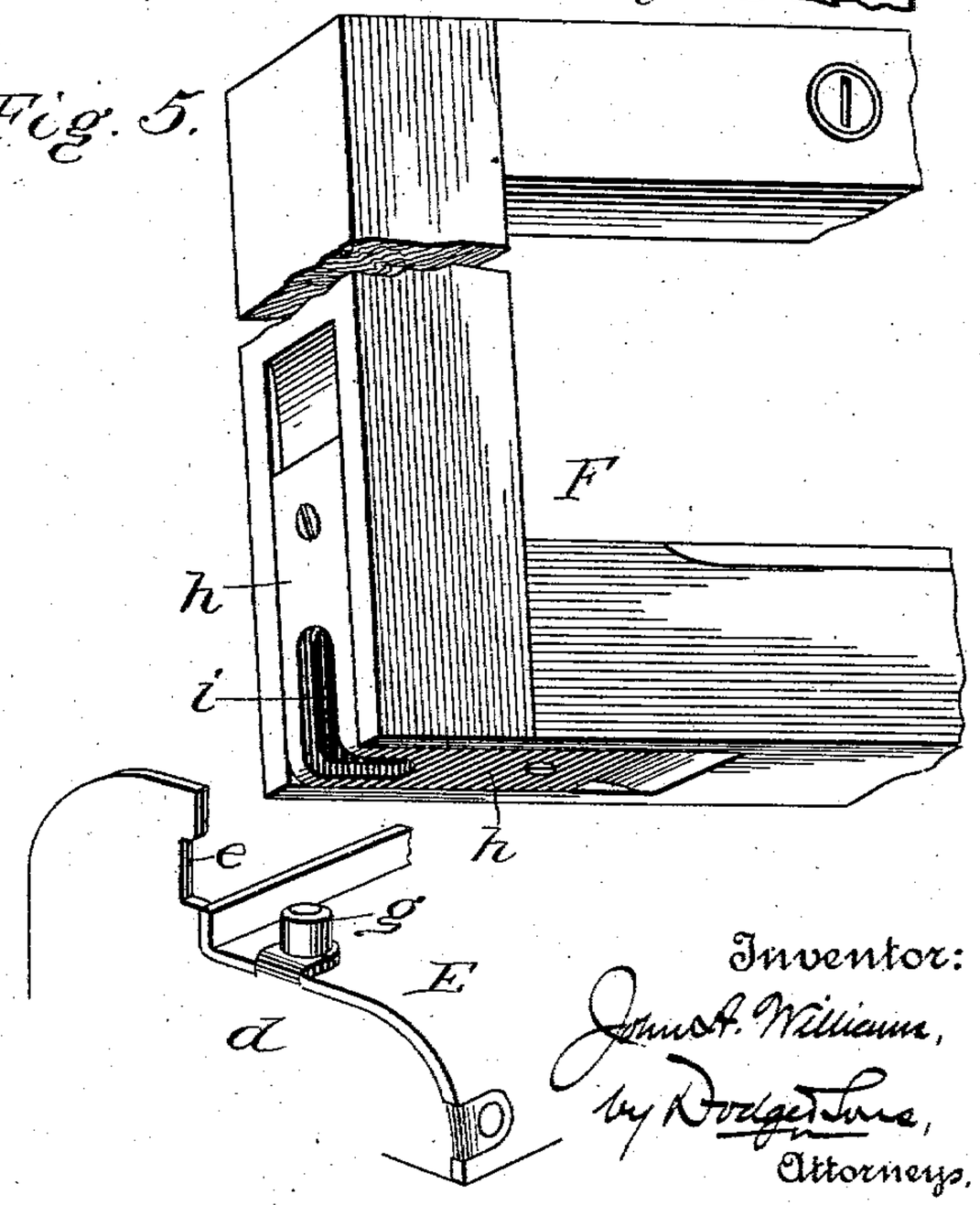


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN A. WILLIAMS, OF BROOKLYN, NEW YORK, ASSIGNOR TO UNITED STATES SLOT MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 740,998, dated October 6, 1903.

Original application filed February 17, 1896, Serial No. 579,574. Divided and this application filed December 26, 1902. Serial No. 136,695. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. WILLIAMS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

My invention pertains to vending-machines, and has reference more particularly to the construction of the cabinet or casing within which the operative mechanism for delivering the packages or articles is contained.

This application is divided out of the parent application, Serial No. 579,574, filed in my name on the 17th of February, 1896, in compliance with the requirements of the Patent Office.

The improved construction is illustrated in the accompanying drawings, in which—

Figure 1 is a front view of the lower portion of the vending-machine embodying my invention, the upper portion of the cabinet being omitted and the front board of the money-box being broken away to show the interior space; Fig. 2, a vertical section through the same with the parts in normal position; Fig. 3, a similar section on a larger scale, but with the parts in the position they assume when the machine is being operated; Fig. 4, a perspective view showing the manner of inserting and holding in place the magazine; Fig. 5, a perspective view showing how the cabinet front or upper door is applied and held in place.

In the drawings, A indicates a cabinet or case the side walls of which are provided in their inner faces with horizontal saw-kerfs or grooves *a* to receive lateral flanges *b*, formed upon the end plates of the metallic shell or body B, within which is contained the operative mechanism. This shell B is of a construction similar to that shown and described in Letters Patent of the United States No. 530,148, granted to me under date December 4, 1894, upon which the present invention is an improvement. In the present instance, however, I have shown the shell of a width to contain four delivery devices side by side; but obviously I may make it to contain but one or to contain several such devices, as desired.

Shell B is formed of a sheet of metal bent to form a front and a back wall with an intervening bed or table *c*, having two different levels, upon the higher of which rests the magazine C, while the articles dispensed are delivered upon the lower level. This shell is provided with end plates D, which being riveted to the main plate or body of the shell keep the front and rear walls in proper position and relation and which, as above mentioned, are provided with flanges *b* to enter the grooves *a* of the cabinet.

The end plates D are carried upward above the level of the bed or table *c* and fashioned into extensions *d*, one at either end of the shell B, and formed each with a projecting arm to support a curved guard-plate or shield E. Each arm *d* has its forward edge provided with a notch *e* above the inner edge of the shield E, as shown in Figs. 3, 4, and 5. These notches are designed to receive the projecting ends of a cross-bar *f*, extending across the front of the magazine C a short distance above the lower end of the latter, and serve to hold the lower end of the magazine in place, the lower edge of the cross-bar *f* dropping in behind the rear edge of the shield or guard E, which thus prevents the magazine from moving in any direction after being once placed in position.

To insert the magazine, its top is inclined forward, so that its lower end and the lower edge of cross-bar *f* may pass behind the rear edge of guard E, as indicated in Fig. 4, and when dropped to a point where the projecting ends of bar *f* rest upon the lower walls of the notches *e* the magazine is swung up to its proper vertical position against suitable stops or supports. To prevent access being had to the magazine, a cover or protecting-front F is provided. To secure this front in position, I provide studs *g* upon the top of shield or guard E and I mortise the lower corners of the front F (which is preferably in the form of a glazed sash or frame) and seat in the mortise angle-plates *h*, provided with slots or openings *i* to receive or to fit over the studs *g*. The plates *h* serve also to give strength to the frame or sash F and to prevent its being broken open except by the application of very considerable force. The upper end

of the front or frame F enters between the walls of the cabinet and below the top board thereof and is secured in place by a lock of any suitable character. By simply unlocking the front it may be removed, thus permitting the magazine to be drawn forward or withdrawn for refilling, and then the parts may be quickly restored to place.

The shell B is prevented from being withdrawn from the cabinet by a removable front board or door G, one end of which is formed with a tenon *j* to enter a mortise in one of the side walls of the cabinet, as shown by dotted lines in Figs. 1 and 2, while the other end is furnished with a lock, the bolt of which shoots into a cavity or engages with a keeper secured to the opposite wall of the cabinet, as shown. The upper edge of the front board or door G rests upon the lower edge of shell B and is provided with a groove or saw-kerf *k* to receive a flange *l*, formed upon the lower front edge of the shell B, as shown in Figs. 2 and 3.

The magazine C rests at its lower end upon the upper level of table *c* of the shell B, and beneath each compartment there is formed an opening *m* in said table extending from a point in front of the magazine to a point in rear thereof and of a measurement at right angles to that just given somewhat less than the distance between the partition-walls of the magazine C. By thus making the openings of less width or measurement than the magazine-compartments ledges are formed upon which the lowermost package or article of each compartment may rest and by which the weight of the column will be supported, as explained in my former patent.

Extending through the shell B, parallel with its front and rear walls, is a horizontal shaft H, upon which are mounted ejector or delivery wheels I of star form, as shown in Figs. 2 and 3. These wheels occupy the same position and perform the same function as the delivery-wheel of the aforesaid patent, but differ therefrom in that instead of being composed of two star-shaped disks connected by cylindrical cross-bars each is now formed with a continuous plate or strip of metal *n*, reaching from one star-shaped disk to the other and conforming thereto in outline, as clearly shown in Figs. 2 and 3. This modification of the wheel is rendered desirable by the fact that the cross-bars of the former wheels afforded a hold for hooked wires and like devices and enabled dishonest persons to operate the carriers occasionally without first depositing the proper coin.

Under the former construction the delivery-wheel or ejector carried a spring-pawl having a V-shaped nose or spur, which entering one or another of a series of notches in the shaft or axle about which the wheel turned served to hold the wheel against accidental rotation and to cause the latter part of its movement to be performed suddenly and with certainty. Owing, however, to the fact that the spring was necessarily of quite limited strength and that the pawl acted near the center of the wheel, the available force for holding the wheel or for completing its throw was not as great as deemed desirable. I have therefore substituted for the pawl a spring-pressed cam-plate J of the form shown in Figs. 2 and 3, one for each carrier or ejector wheel. As shown in said figures, the cam-plate has three bearing-faces *o*, *p*, and *q*, the first and last of which bear against opposing faces of two proximate arms of the wheel when the latter is at rest, as indicated in Fig. 2, thus holding the wheel quite strongly against rotation. When power sufficient to turn the wheel is applied, the upper arm of the wheel leaves contact-face *q*, and the succeeding arm rides upward over face *o*, forcing back the cam-plate J until said arm passes the angle or meeting-point of faces *o* and *p*, whereupon the supporting-spring K of the cam-plate, placed under strain by the outward movement of the latter, suddenly forces the cam-plate inward and carries the wheel forward until said plate bears between the succeeding pair of arms of the wheel. This cam-plate acting at the circumference of the wheel and being carried by a strong but elastic spring gives a very reliable and efficient action.

It will be observed that when the wheel I is at rest one arm stands in front and another in rear of the lowermost package of the column in the magazine, and hence an advance of one space or the distance from one arm to another will cause the rear one of said arms to carry before it said bottom package or article and to eject it through the opening left for the purpose in the lower part of the front wall of the magazine, whence it passes down beneath the guard to the lower level of the table. To further guard against the surreptitious turning of the wheel, I place in front of each delivery-opening of the magazine and beneath the shield or guard E a pendulous gate or guard L, which assists in excluding wires or other devices used to turn the delivery-wheel or to withdraw packages or goods.

To actuate the delivery-wheels, I employ for each a sliding bar M, provided with a push-rod N and with a lever O, having a nose or projection *r*, which when the lever is properly rocked or tipped engages with the delivery-wheel and causes it to make a partial revolution in essentially the same manner as in my former machine. The sliding bars M are rounded off at their inner ends to facilitate their introduction beneath a retaining or guiding bar or angle-plate *s*, secured to the rear wall of the shell when assembling the parts of the mechanism, and their passage through openings in said rear wall, through which they slide as the push rods or stems are pressed inward or returned.

The construction of the lever O, its actuation, control, &c., and the construction and operation of the fraud-preventing devices represented in the drawings are omitted from

the present description, being made subjects-matter of another application above referred to. It is sufficient here to say that a coin introduced through a coin slot or opening *z* in the front of the machine is brought into such relation to an arm of lever O as to insure the elevation of the arm *r* of said lever when the push-rod N and slide M are forced inward and to cause said arm *r* to bear against one of the points or arms of the star-wheel I and to effect a partial turning thereof sufficient to cause the cam-plate J to enter between a pair of arms of the star-wheel other than those between which it previously stood, the uppermost arm of the star-wheel serving to force outward the lowermost package or article contained in the magazine in the manner indicated in Fig. 3.

It should be noted that the sliding bar M is formed with tenons *e'* at one end and has between them a space or opening to receive the end of the push-rod N and that the plate *d'*, which coacts with other fraud-preventing devices, is mortised to receive said tenons and is perforated to permit the passage through it of the push-rod N. Said rod is slotted and being passed through the perforation in the plate *d'* and caused to straddle the bar M is secured by pins, the inner one of which passes through the bar M and the push-rod N and the outer of which passes through said rod N and ears of the plate *d'*, thus firmly uniting the several parts.

Having thus described my invention, what I claim is—

1. In a vending-machine, the combination of a shell or casing provided with a delivery device and with an opening in its rear wall; a slide for actuating said delivery device, having its end rounded or beveled substantially as shown to enable it to be passed through the opening at an angle and then raised to its required horizontal position; and a retaining or guiding bar extending inward from the rear wall above the slide to prevent said bar from lifting up when the beveled or rounded portion of the slide is in the opening of the rear wall.

2. In a vending-machine, the combination of the sliding bar M having tenons on its end, and an intervening recess; plate *d'* mortised to receive said tenons, and perforated to receive push-rod N; the push-rod N slotted at its inner end, passed through the opening in the plate *d'* and into said recess; and pins passing through the bar and the rod and through ears of plate *d'*.

3. In combination with cabinet A having kerfs or grooves *a;* shell or casing B containing the operative mechanism of the machine and provided with flanges *b* and *l;* and front board G, provided with groove or kerf *k* to receive flange *l*.

4. In combination with cabinet A, shell or casing B secured therein and provided with studs *g;* and front board or frame F provided with slotted angle-plates *h* to fit over said studs.

5. In combination with a cabinet, and with plates *d* having recesses *e* and shield or guard E; magazine C, provided with cross-bar *f* to pass behind the shield or guard and to enter the recesses *e*, substantially as and for the purpose explained.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN A. WILLIAMS.

Witnesses:
H. C. ROWLEY,
F. J. MASTERSON.