

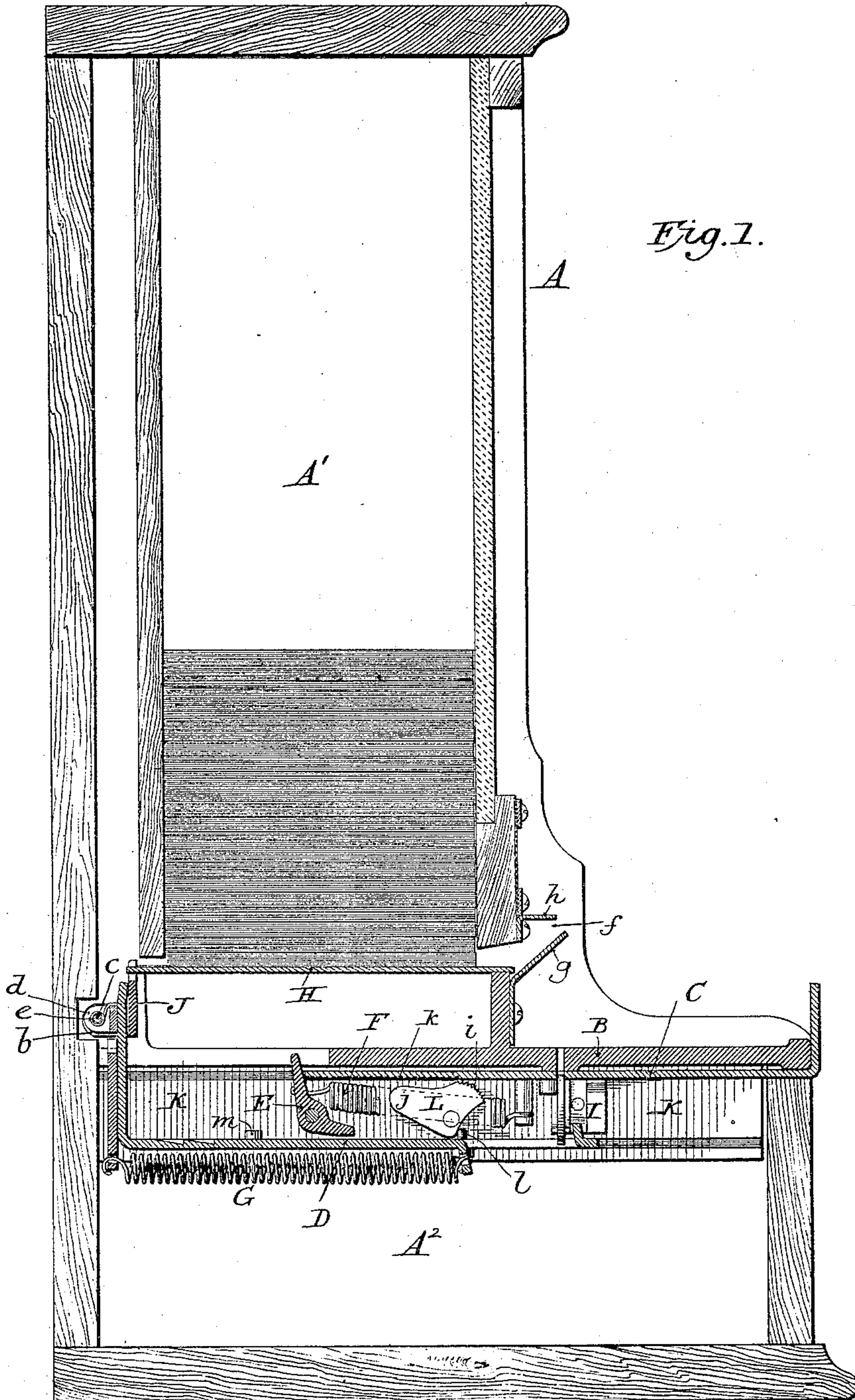
(No Model.)

2 Sheets—Sheet 1.

J. A. WILLIAMS.  
AUTOMATIC VENDING MACHINE.

No. 430,499.

Patented June 17, 1890.



Attest:

JOHN A. WILLIAMS

Inventor:

*Chauncy R. Beechworth*  
*Horace A. Dodge*

by *Dodges & Sons*

Attorneys:

(No Model.)

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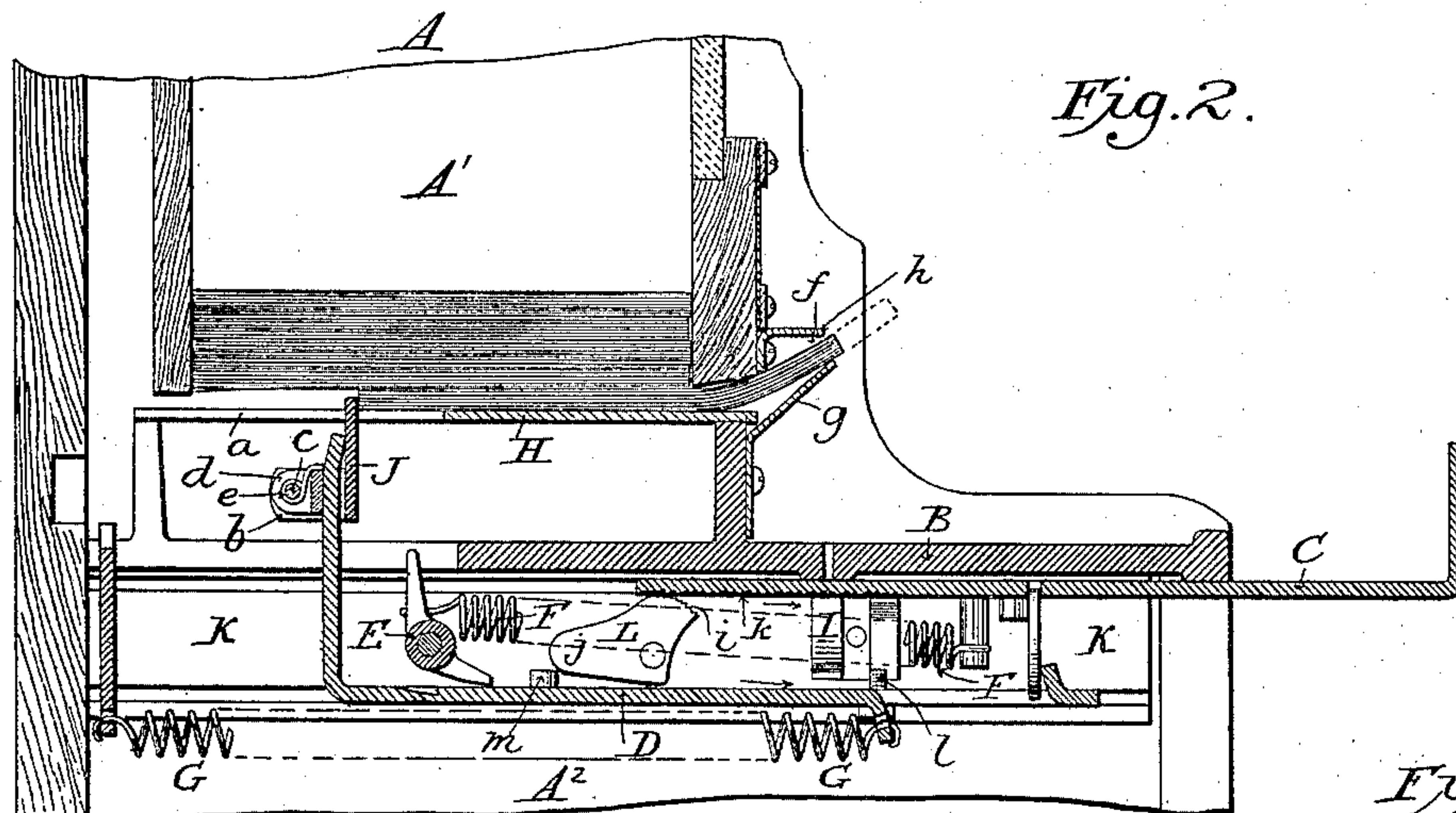


Fig. 2.

Fig. 4.

Fig. 3.

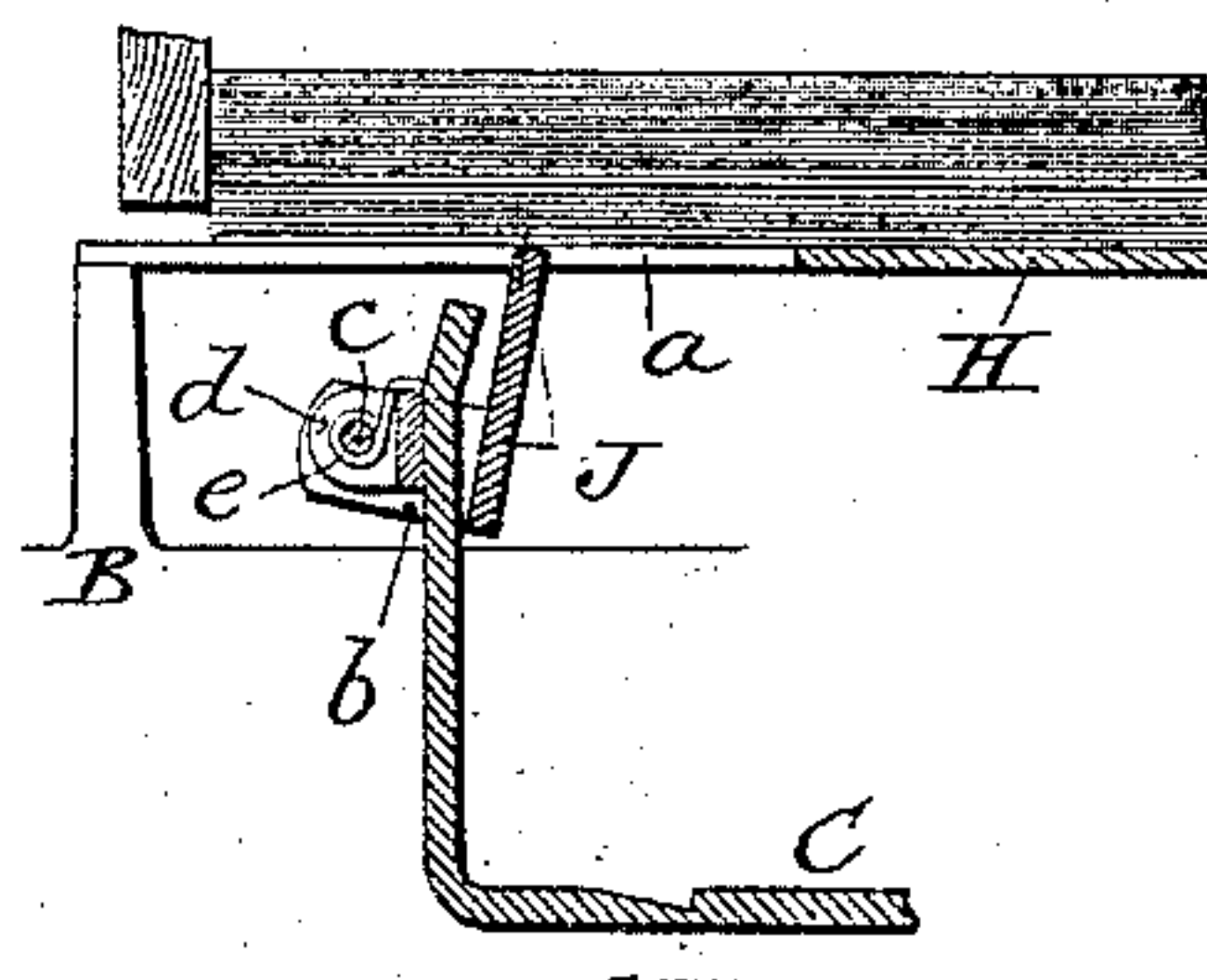
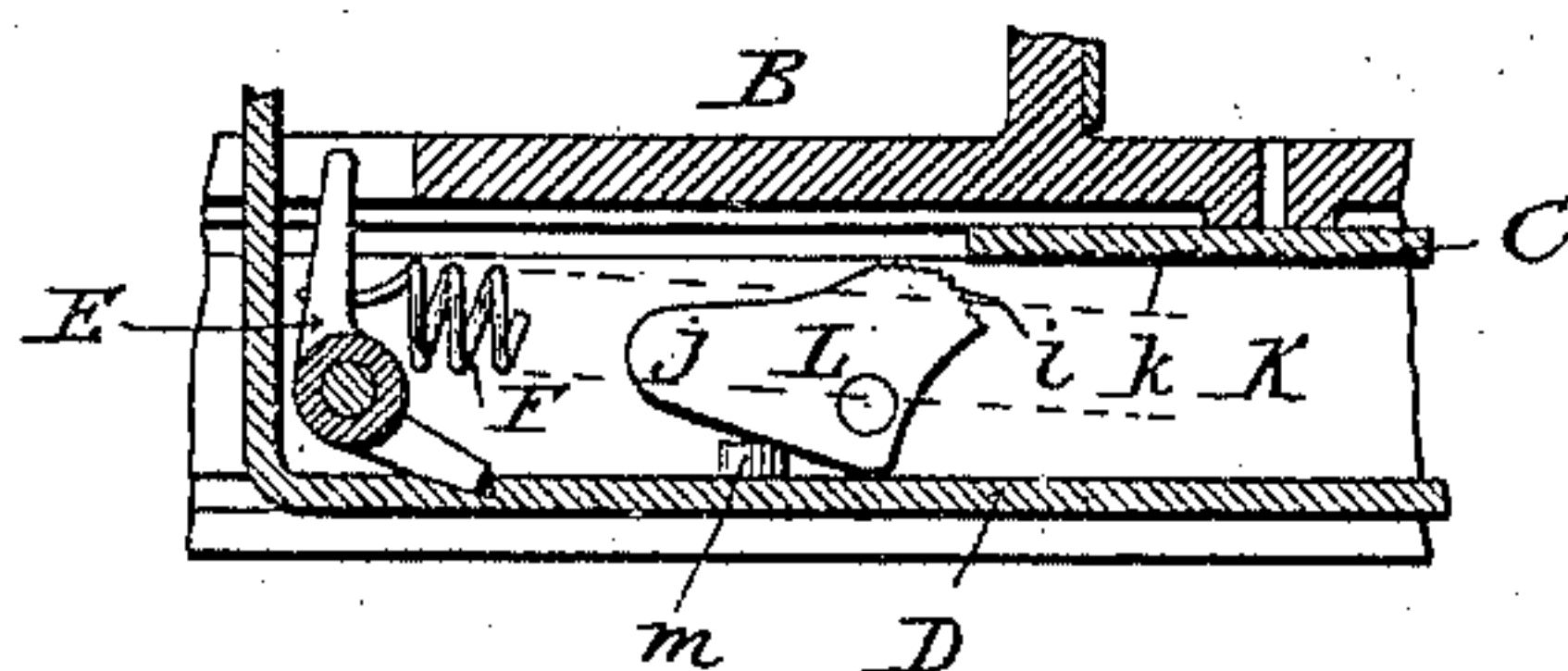


Fig. 6.

Fig. 5.

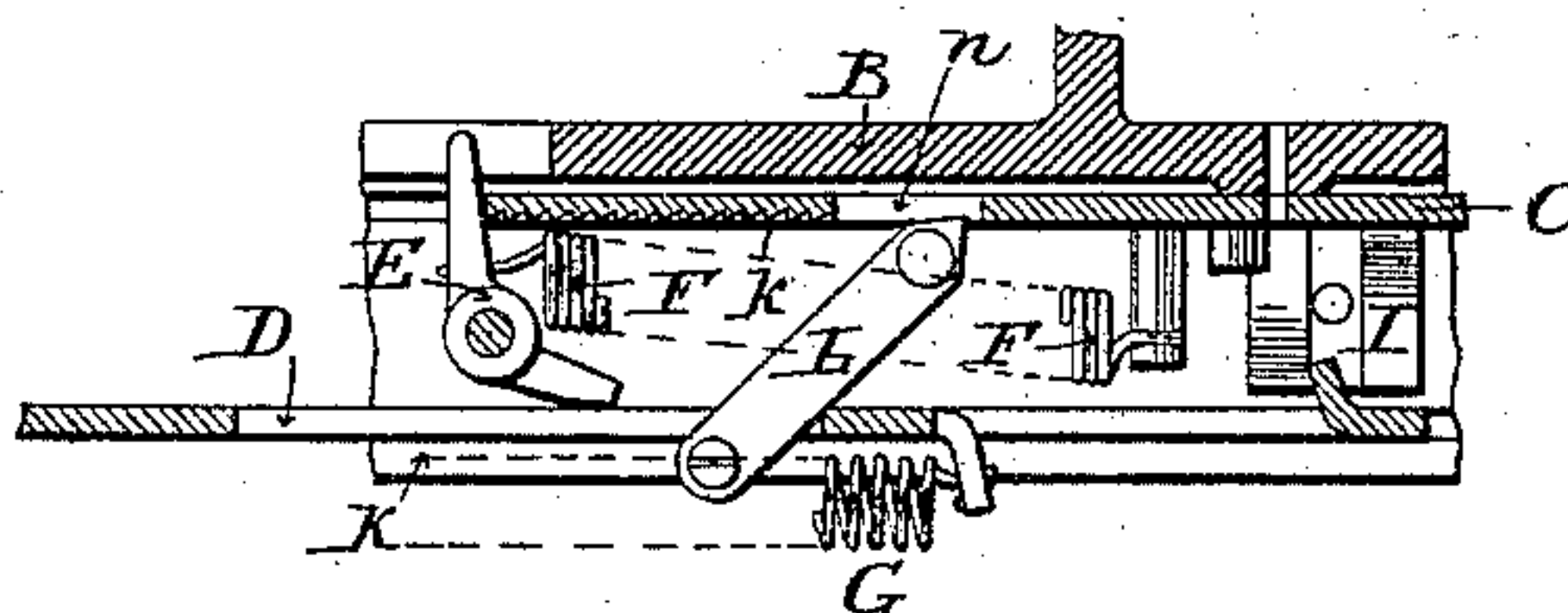
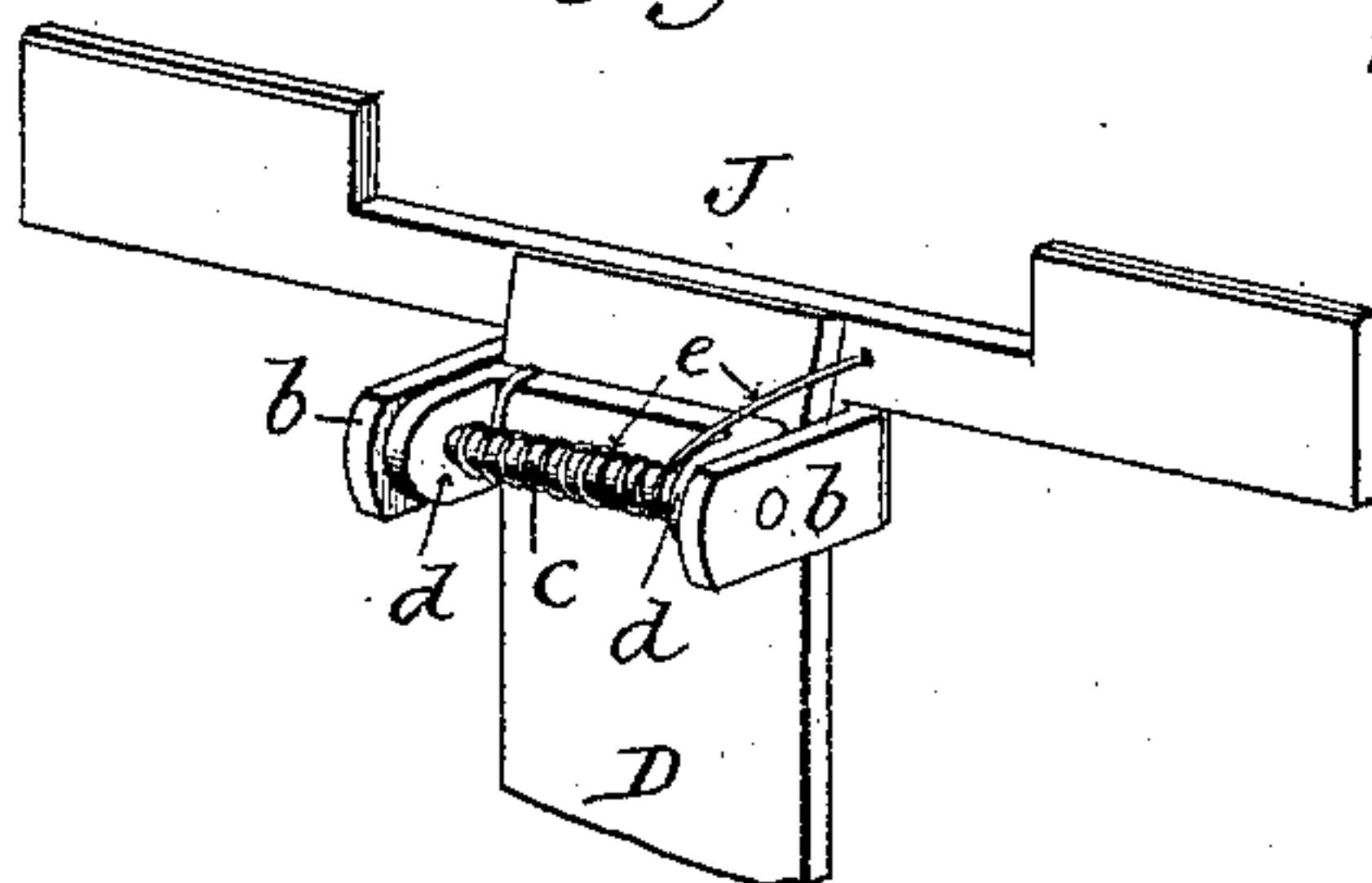


Fig. 7.

Attest:

*Sidney P. Hollingsworth*  
*Horace A. Dodge*

JOHN A. WILLIAMS

Inventor.

*by Dodge & Sons,*

*Attorneys.*



# UNITED STATES PATENT OFFICE.

JOHN A. WILLIAMS, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE WILLIAMS  
AUTOMATIC MACHINE COMPANY, OF MOUNDSVILLE, WEST VIRGINIA.

## AUTOMATIC VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 430,499, dated June 17, 1890.

Application filed December 4, 1889. Serial No. 332,523. (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 Automatic Vending-Machines, of which the following is a specification.

My invention relates to automatic vending-machines; and it consists in various improvements hereinafter set forth and claimed.

In the drawings, Figure 1 is a vertical central sectional view of my improved machine from front to rear. Fig. 2 is a similar view of the operating mechanism, but with the parts in a slightly different position. Fig. 3 is a sectional view showing the operation of the dog for holding the actuating-slide in its extended position. Figs. 4 and 5 are views illustrating the construction of the ejector, and Figs. 6 and 7 are views illustrating a slight modification of the dog for holding the actuating-slide.

A indicates a box or casing having a chamber or compartment A' to receive the books or other articles to be sold, and a lower chamber or compartment A<sup>2</sup>, into which the money falls, the two chambers being separated by the operating mechanism and provided each with a door. The operating mechanism is similar to that shown in my patent, No. 414,786, issued November 12, 1889—that is to say, it comprises a flat plate B, an operating-slide C, a delivery-slide D, a pawl or dog E for holding said slide B extended, springs F and G, and a slotted table or support H, as shown in Fig. 1.

Secured to the sides of the guides or walls that carry the slides C D are blocks I, which support the coin that passes through the slots formed in the plate B and slide C; but as the construction of these blocks forms the subject-matter of a separate application, Serial No. 332,521, they are not claimed herein.

The table or support H is provided with two slots *a*, extending from its rear edge forwardly, said slots being designed to receive and permit the movement therein of the ejector-plate J, which is shown in Figs. 1, 2, 4, and 5. This plate is provided with two rearwardly-extending arms *b b*, carrying a

rod or shaft *c*, which latter is in turn supported by arms *d d*, projecting from the rear face of the upturned end of the delivery-slide, the plate with its rod or shaft moving relatively to the arms *d d*, as indicated in Fig. 4. A spring *e* is coiled about the rod *c*, and being connected at one end with the plate and at the other end with the slide or any other fixed part, tends normally to keep the upper edge of the plate up above the upper face of the table or support H, in position to strike the book or other article to be sold, when the slides are carried forward. By drawing the plate J forward toward the front of the machine the book will be ejected through the outlet or discharge-opening *f* sufficiently far to enable the operator to take hold of it and remove it. When this has been done, the plate is released and moves inward toward the back of the machine; but in thus moving backward the weight of the books depresses or rocks it, so as to cause the upper edge to be flush with the upper face of the table or support H, upon which the books rest. As soon as the plate passes from beneath the pile of books the spring *e* will throw it up to the position indicated in Figs. 1 and 2 preparatory to the ejection of another book. This construction and arrangement of the plate J precludes any effacement of the books or other articles, and also prevents it from catching onto them and thereby interfering with the operation of the machine. While this particular construction is designed more particularly for use in machines selling books, it is of course apparent that it may be applied to machines used for selling other articles. The number of the slots *a* will also be varied according to the nature of the article to be sold, some articles requiring narrow and others requiring wide supports.

Secured to the front of the machine is a guard *g*, which inclines upwardly and away from the lower edge of the outlet or opening *f*, that effectually prevents the withdrawal of the books or other articles, for in order to withdraw a book it is necessary to bend it slightly, as shown in Fig. 2, which cannot be done from without so long as the guard *g* is in place. A second guard *h*, projecting forwardly from the upper edge of the discharge-



outlet *f*, aids in protecting the machine against surreptitious withdrawal of the articles.

Pivoted to the inner face of one of the guide-walls *K* for the slides is a pawl or dog *L*, which, as shown in Figs. 1, 2, and 3, comprises a toothed or roughened portion *i* and a tail *j*, the tail of the pawl or dog being heavier than the head or toothed portion and tending to keep the latter up in engagement with a toothed portion *k* of the actuating-slide.

Secured to the delivery-slide near its forward end is a lug *l*, which, when the slide is in its normal position, bears against or under the heel of the pawl or dog *L* and keeps its toothed portion away from the under face of the actuating-slide, while near the rear end of the delivery-slide is lug *m*, which, when the said slide is pulled outward far enough to eject a book, rides under the tail of the dog, rocking the same and throwing the toothed portion out of engagement with the actuating-slide. When the delivery is moved so far as to bring its lug *m* under the tail of the dog *L*, it will be found to be in such position as to be engaged by the pawl or dog *E*, as shown in Fig. 3, the said slide being held in this position by the dog *E*, as clearly shown in my patent, No. 414,786, before referred to. Now when the operator releases his hold of the actuating-slide the latter's spring draws it inward, and as it moves inward it strikes the upper end of the pawl *E*, rocking the latter and permitting the delivery-slide to be also drawn inward. The return or inward movement of the actuating-slide is sudden, so that by the time it strikes the pawl *E* and releases the delivery-slide *D* the pawl *L* may assume its normal position, the said actuating-slide *C* will be found to be at the limit of its inward movement and in its normal position.

When a coin of the requisite size is placed in the machine, it will be supported at its lower sides by the blocks *I* and at the upper edge by the walls of the coin-slot in the actuating-slide *C* and a lug in rear of the coin, the lower edge of the coin being in such position as to engage a lug on the delivery-slide *D*, as shown in Fig. 1. Now when the operator pulls the slide *C* outward the coin carried thereby will strike the lug on the delivery-slide *D* and lock it to the actuating-slide *C*, so that the two slides will move together as the slide is pulled outward. As the delivery-slide *D* is thus moved outward by the actuating-slide, the lug *l* is carried from beneath the pawl *L*, and the head or toothed portion of the latter allowed to come into contact with the under face of the slide *C*; but owing to the inclination of the teeth on the slide and the pawl and the curvature of the face of the head of the pawl the slide *C* will ride freely over the pawl without engaging therewith. Should it happen that the operator releases the actuating or operating slide *C* before it has been pulled outward far enough to cause the delivery-slide *D* to eject the article the spring

*F* will tend to return the actuating-slide *C* to its normal position within the machine; and it will be seen that if this were permitted the two slides would be disconnected and the coin permitted to fall into the money-box without making any adequate return for the money. It is to prevent this that the pawl *L* is used, it being clear that as soon as the slides *C* and *D* begin to move inward the slide *C* will be arrested in its movement by the toothed face of the pawl, the teeth of the latter engaging the teeth or notches in the under face of the slide *C*, and thereby preventing the dislodgment of the coin and further inward movement of the slides. When the slide *C* is pulled outward far enough to eject the article, the stud *m* on the slide *D* will be brought under the tail of the dog *L*, while the dog *E* will engage the slide *D* and hold the latter in its extended position. If the slide *C* be now released, its spring will draw it inward and cause the said slide to strike the pawl *E*, thereby releasing the slide *D* and withdrawing the stud *m* from under the dog *L*, as before explained.

Instead of constructing the pawl *L* as shown in Figs. 1, 2, and 3, it may be made as illustrated in Figs. 6 and 7, upon reference to which it will be seen that the pawl has its upper end pointed to engage and hold the actuating-slide, while its lower end projects downward through a slot in the delivery-slide. When the parts are in their normal position, as represented in Fig. 6, the pointed upper end of the pawl will be found resting in a depression *n* in the slide *C*; but should the slide *C* be only partially withdrawn the upper end of the pawl will engage the teeth *k* on the slide *C* and hold the said slide, together with the slide *D* and the coin, against inward movement, essentially in the same manner as the pawl *L*. (Illustrated in Figs. 1, 2, and 3.) When the slide *C* has been pulled outward far enough to cause the slide *D* to eject the article or package, the said slide *C* will be found to have moved from over the upper end of the pawl, as shown in Fig. 7, so that when said slide is released it will strike and ride over the upper end of the pawl, rocking the latter, as indicated by dotted lines in said figure.

A locking device for holding the slide *C* extended in the manner set forth herein, is not broadly claimed in this application, but is claimed, broadly, in other applications filed by me, Serial Nos. 332,521 and 352,882.

Having thus described my invention, what I claim is—

1. In a vending-machine, the combination, with a plate or support *H*, adapted to receive the books or other articles and provided with an opening *a*, of a delivery-slide *D*, provided with arms *d d*, and a pivoted ejector plate *J*, journaled in the arms *d d* and working in the opening *a*, all substantially as shown.

2. In combination with a slotted plate *H*, delivery-slide *D*, provided with arms *d d*, a



pivoted ejector-plate provided with arms *b b*, a rod *c*, connecting the arms *b d*, and a coiled spring *e*, all arranged substantially as shown.

3. In a vending-machine, the combination,  
5 with a delivery-slide and an actuating-slide, of a gravitating pawl or dog *L*, adapted to engage and hold the actuating-slide in a partially-extended position.

4. In a vending-machine, the combination,  
10 with a delivery-slide, of a pawl for holding said slide in its extended position, an actuating-slide, and an independent pawl for holding the actuating-slide in its partially-extended position.

5. In a vending-machine, the combination, 15 with a delivery-slide *D*, provided with lugs *l m*, of an actuating-slide *C*, provided with teeth, and a pawl *L*, arranged in the path of the lugs, all substantially as described.

In witness whereof I hereunto set my hand 20 in the presence of two witnesses.

JOHN A. WILLIAMS.

Witnesses:

HENRY ROWLEY,  
F. A. HUBBARD.