

No. 682,792.

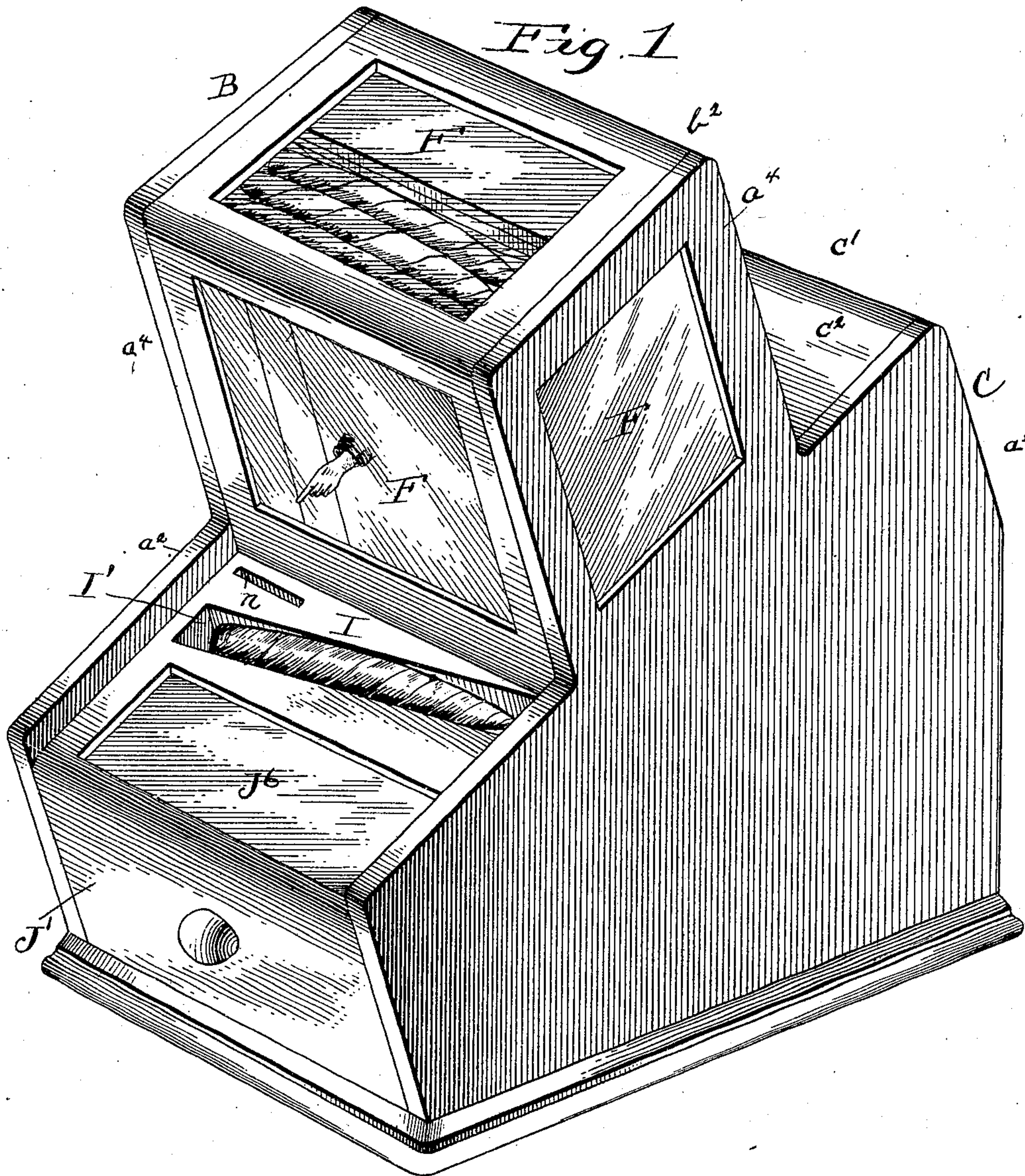
W. D. DOREMUS.  
VENDING MACHINE.

Patented Sept. 17, 1901.

(No Model.)

(Application filed May 2, 1900.)

3 Sheets—Sheet 1.



Witnesses  
E. W. Hart  
Frank E. Newton

Inventor  
William Doremus  
by Joseph M. Bush  
his Attorney

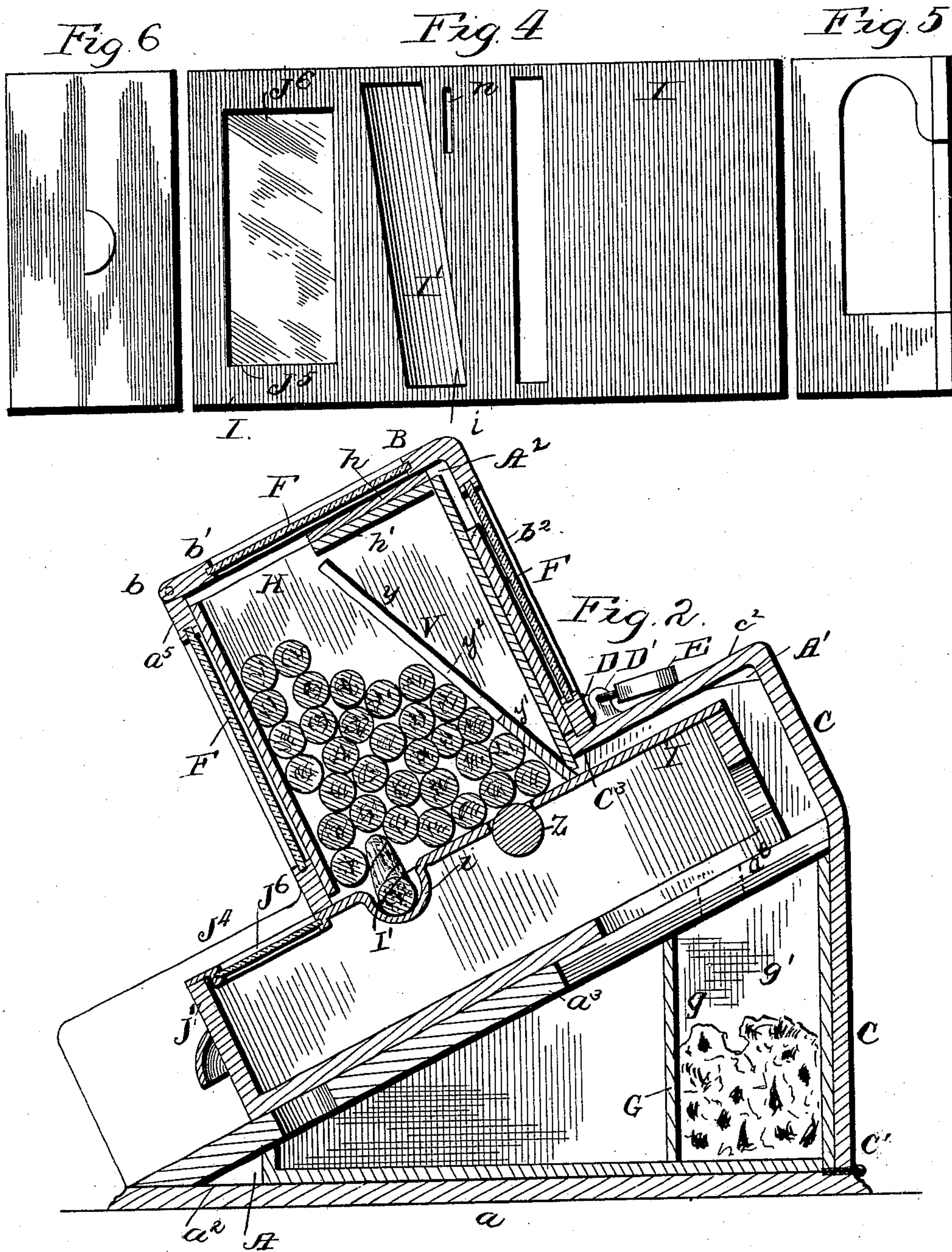


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(No Model.)

3 Sheets—Sheet 2.



Witnesses  
E. W. Hart  
Frank E. Newton

Inventor  
Willard Belmont Doremus  
by Joseph M. Raul  
his Attorney



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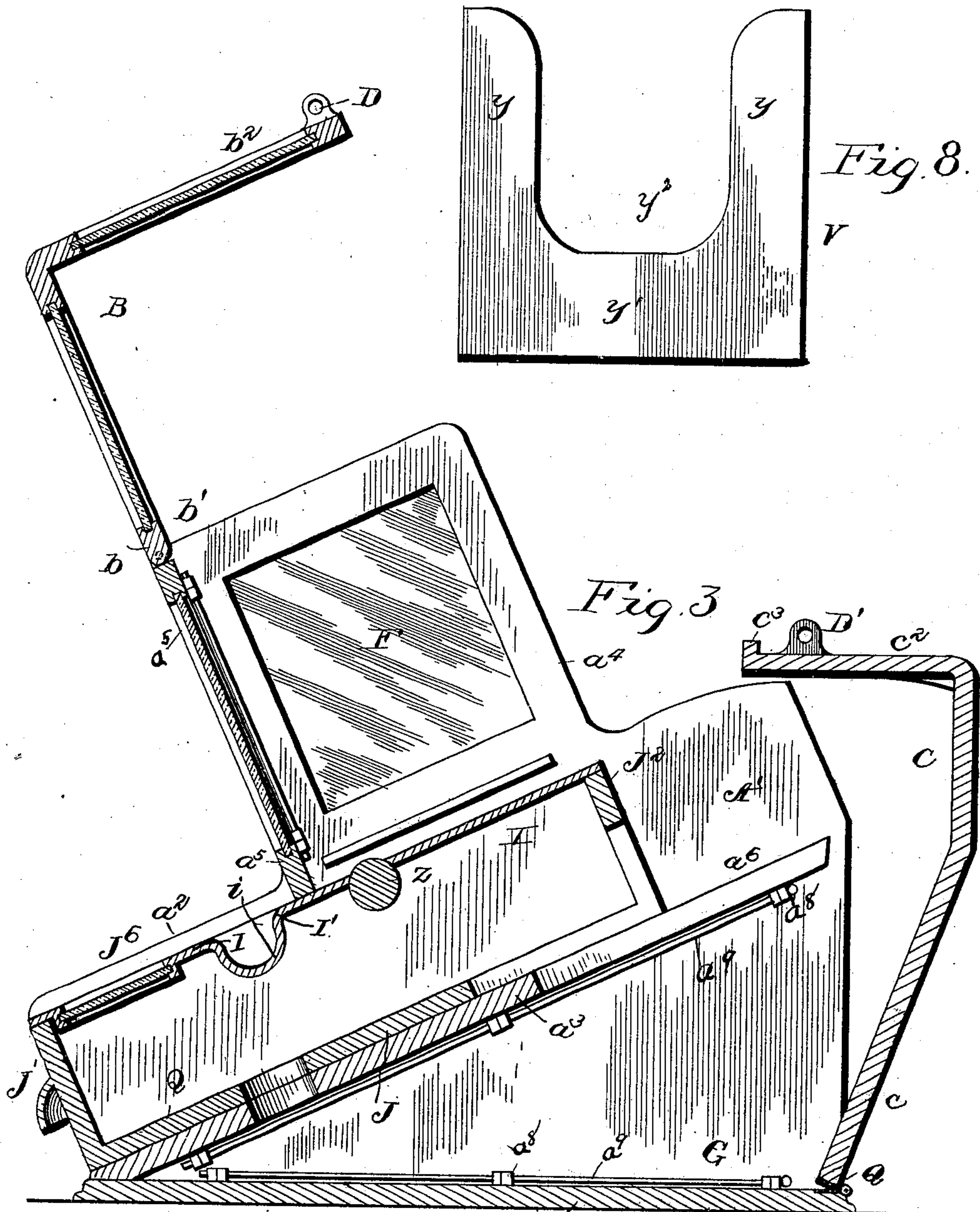
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(No Model.)

**3 Sheets—Sheet 3.**



Witnesses  
E. W. Hart  
Frank E. Newton

Inventor  
Edward Selmont  
Lorenus  
by  
Joseph W. Bussell  
his Attorney



# UNITED STATES PATENT OFFICE.

WILLARD DELMONT DOREMUS, OF WASHINGTON, DISTRICT OF COLUMBIA,  
ASSIGNOR TO THE REX CIGAR VENDING COMPANY, OF SAME PLACE.

## VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 682,792, dated September 17, 1901.

Original application filed January 31, 1899, Serial No. 704,051. Divided and this application filed May 2, 1900. Serial No. 15,200. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD DELMONT DOREMUS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Vending-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, it being a division of my application, Serial No. 704,051 and bearing date of January 31, 1899, and which is a copending application.

My invention relates generally to vending-machines, but more especially to that portion of the mechanism of such machines by which the article vended or delivered is withdrawn from the general stock of articles contained in the machine.

The object of my invention is to produce improved mechanism for withdrawing a single article from the general stock, and is designed especially, but not exclusively, for vending or delivering cigars.

In cigar-vending machines the nature of the article, and particularly the fragility of the cigar-wrapper, render it necessary to the successful operation of the machine that provision be made for preventing mutilation of the cigars through the operation of the withdrawal mechanism. This being most frequently occasioned by the pinching of the cigar between the coacting members of the withdrawal mechanism, it has been discovered that it may be obviated by causing the cigar in the withdrawal mechanism to assume a position oblique to the wall of the receptacle, against or in operative proximity to which the delivery member of the withdrawal mechanism works. It is upon this principle, accordingly, that my device is designed to operate.

In the accompanying drawings, Figure 1 is a perspective view of one form of embodiment of my invention, showing a cigar exhibited in the pocket of the delivery member. Fig. 2 is a longitudinal vertical section of the subject-matter of Fig. 1, but with the deliv-

ery member in the position it occupies when receiving an article to be delivered from the general stock. Fig. 3 is a view corresponding to that shown in Fig. 2, but showing the delivery member in the position illustrated in Fig. 1 and the door and cover of the machine open. Fig. 4 is a top plan view of the delivery member detached. Fig. 5 is an inner end view of the preferred form of delivery member illustrated. Fig. 6 is an outer end view of the same. Fig. 7 is an elevation of one side of the same. Fig. 8 is an elevation of the follower detached.

In its simplest form of embodiment my invention comprises a receptacle for a stock of cigars and in coöperative relations therewith a delivery member.

In the preferred form of embodiment of my machine, as illustrated, I provide a box or housing, which, constituting the frame of my machine in its preferred form, comprises three chambers or compartments A, A', and A<sup>2</sup>, defined, respectively, by suitable walls. The frame proper preferably has a bottom wall *a*, constituting a base for the machine, to which are united side walls *a'* and *a<sup>2</sup>*, the side walls being provided, respectively, with extensions, (indicated by way of distinction by *a<sup>4</sup>*.) A partition-wall *a<sup>3</sup>* extends on a forward incline from the front of the base *a*, and uniting the side walls *a'* and *a<sup>2</sup>* is located in the plane of division between the chambers A and A'. The upper edges of the side walls *a* and *a'*, above the partition *a<sup>3</sup>*, are preferably inclined to correspond to the inclination of said partition.

*a<sup>5</sup>* indicates cross-frame pieces which unite the side frame extensions *a<sup>4</sup>* on one end and are located approximately at the top and bottom of said extensions.

B indicates a receptacle-cover, which is movably secured in place and is preferably hinged, as indicated at *b*, to the upper cross-piece *a<sup>5</sup>*. The cover B preferably comprises a top section *b'* and an end section *b<sup>2</sup>*, and it together with the side-piece extensions *a<sup>4</sup>* and the space between said extensions and the cross-pieces *a<sup>5</sup>* being fitted, respectively, with glass plates (indicated by the common



reference-letter F) constitute five sides of a receptacle designed to hold the stock of cigars to be delivered from the machine. This receptacle is preferably made of a shape and size to accommodate an ordinary box of cigars, which when in place constitutes what may be called a "supplementary receptacle," and for the inspection of the marks and stamps upon which the glass plates F are provided. It is obvious that by the means described cigars may be sold from the original package and that all requirements of law may be complied with. In Fig. 2 of the drawings a box inserted into the receptacle is indicated by the reference-letter H. When so inserted, one side of the box of cigars is removed, as illustrated, and a section of the cover  $h$  may be turned back upon the section  $h'$  to permit inspection of the quality of the cigars.

C indicates the lower door of the frame, which, comprising a lower portion  $c$  and an upper portion  $c^2$ , shaped to conform to the contour of the rear edges of the side pieces  $a'$  and  $a^2$ , may be hinged to the bottom wall  $a$ , as indicated at  $C'$ . The front edge of the door-section  $c^2$  is provided with a flange  $c^3$ , which when the door and cover are closed, as shown in Fig. 2, underlies the edge of the cover, so that the door and cover constitute coöperative members for closing the case, and also for permitting access to the interior thereof when required. For securing the door and cover in their closed positions, they may be provided with eyes  $D'$  and  $D$ , respectively, which, overlapping when the parts are closed, may be locked as by the shackle of a padlock E.

The chamber or compartment  $A'$ , as defined by the partition  $a^3$  and the lower cross-piece  $a^5$ , is provided for the accommodation of a delivery member, which, being movable for the performance of its function, preferably reciprocates upon the partition  $a^3$ . The essential feature of the delivery member is represented by a plate I, (illustrated as of an oblong rectangular shape,) provided with a cut-off  $I'$ , (illustrated as an obliquely-disposed edge,) formed upon the plate. This edge in the form of an embodiment of my invention illustrated constitutes one edge of an oblique slot defined in the plate, the slot being closed below by a pocket  $i$ , whose depth is sufficient to accommodate an article or cigar to be delivered, so that the plate when the cigar is in the pocket may freely pass underneath the lower edge of the lower cross-piece  $a^5$ , or, in other words, the lower edge of the front wall of the receptacle. As has been specified, the only essential feature of the cut-off is the oblique edge  $I'$ , and the complete definition of the slot by four walls may be omitted, and the pocket, as attached to the plate I may be dispensed with, it being sufficient to provide for the support of a cigar in operative contact with the cut-off  $I'$  during the withdrawal movement of the plate I.

In view of the foregoing explanation I prefer to employ the form of plate I illustrated, incorporated with a movable frame, of which it forms the top. The said frame is completed by a bottom wall J, a front wall  $J'$ , a rear end wall  $J^2$ , and side walls  $J^3$  and  $J^4$ . The said frame is of shape and dimensions to fit snugly but movably between the portions of the side pieces  $a'$  and  $a^2$ , which define the chamber  $A'$ , and between the lower cross-pieces  $a^5$  and the partition  $a^3$ , and thereby to close the front opening into the chamber  $A'$  in any position of its reciprocation, so that access to the interior of the housing of the machine can be obtained through the chamber  $A'$  only by the reciprocation of the plate I and its frame in the performance of its operative function. The plate I, with its frame, being adapted to move in and out along fixed lines of movement and between fixed limits, the cut-off  $I'$  being located obliquely in the plate I is presented by the movement of said plate at an oblique angle to the lower cross-piece  $a^5$ , with which the cut-off  $I'$  coöperates in its delivery or withdrawal operation.

As shown in the drawings, the receptacle is inclined forwardly, and the part  $a^3$  is correspondingly inclined. Consequently the cigars in the receptacle tend to gravitate toward the lower corner of the receptacle and into operative engagement with the cut-off  $I'$  of the plate I, which constitutes a movable bottom for the receptacle. In order that the mass of cigars in the receptacle shall yield to this tendency, it is necessary that they should be kept loose and free to move therein. For that purpose I employ agitating mechanism, (represented in the drawings by a follower or movable plate Y, in the receptacle and an obstruction or roller Z, projecting above the plate I.) The plate Y and the obstruction Z may be employed conjointly or independently, as preferred. The plate Y preferably comprises two vertical arms  $y$  and a connecting member  $y'$ , defining between them a space  $y^2$ , through which inspection of the cigars within the receptacle may be permitted. The plate Y is preferably loosely placed within the receptacle, or it may be hinged at its lower edge therein, and its function is to urge by its gravity the cigars within the receptacle toward the lower corner thereof. The obstruction or roller Z is positive in its action and tends to agitate the mass of cigars in the receptacle and to prevent them from forming bridges or arches, which might support them out of operative contact with the cut-off  $I'$ . This it does by displacing the foot of the arch or, in other words, by shaking up the mass of the cigars within the receptacle. In order to reduce friction between the obstruction Z and the cigars in the receptacle, I prefer to make it revoluble and also to locate its axis parallel to the edge of the lower cross-piece  $a^5$ . By this arrangement the tendency of the operation of the roller Z is to keep the longitu-



dinal axes of the cigars within the receptacle parallel to said cross-piece, and therefore oblique to the cut-off I'. The roller Z constitutes, therefore, an alining device.

5 In the rear of the chamber A may be provided a moistening-chamber  $g$ , defined by a transverse partition  $G$ , and containing a moistener or sponge  $g'$ , the vapor from which is accessible to the contents of the receptacle, 10 as through the aperture  $a^6$  in the partition  $a^3$ .

The parts constituting the housing or frame of my machine may be assembled or united in any preferred and suitable manner; yet, because of its simplicity, convenience, efficiency, and economy of construction I prefer to provide upon the inner faces of the wall-pieces and bottom  $a$   $a'$   $a^2$   $a^3$  eyes  $a^8$ . The eyes of one piece overlapping and registering with those of the next, the parts may 20 be detachably joined together, as by means of rods  $a^9$ , passed through the overlapping and registering eyes. These, however, belong to details of construction and arrangement to which I do not in any wise intend to 25 limit myself in this application. On the contrary, I exhibit the preferred form of embodiment of my invention illustrated only as a representative form of the variety of shapes in which the principle of the invention may 30 be embodied.

The operation of my device may be briefly described as follows: Assuming the parts to be in the relative positions shown in Fig. 1 of the drawings, the receptacle being provided with a stock of cigars and the cover and door closed and locked, the pocket  $i$  being empty, the operator pushes the frame, of which the plate I is the top, toward the receptacle until the cut-off I' passes a sufficient distance 40 underneath the lower cross-piece  $a^5$  to receive a cigar. As the cut-off I' passes underneath the receptacle one of the cigars drops endwise in front of the cut-off—that is, in front of that end of the cut-off which on account of 45 the obliquity of the cut-off is farthest removed from the cross-piece  $a^5$ . As the cut-off advances farther in the cigar which has dropped in front of it at one end descends along its entire length, being facilitated in its move- 50 ment by the weight of the superimposed cigars and operation of the agitating mechanism. It should be observed in this connection that if the cut-off I' form one side of a slot the cut-off may pass without limit underneath the receptacle; but that if the cut-off 55 alone be employed its movement should be limited, so that it will only admit in front of it a single cigar. When the cigar is in proper position in front of the plate I, the cut-off 60 compels the cigar in contact with it to assume a position oblique to the cross-piece  $a^5$ , under which it must pass in order to be withdrawn from the receptacle. This obliquity of position of the cigar in engagement with 65 the cut-off enables it to be withdrawn freely by a shearwise movement not only from underneath the remaining cigars in the recep-

tacle, but also underneath the lower cross-piece  $a^5$ . Consequently it may be withdrawn without permitting the catching or pinching 70 of the cigars in the receptacle or of the cigar in front of the cut-off between the cut-off and the cross-piece  $a^5$ .

It should be observed that the function of the obliquity of the cut-off is performed only 75 when it has assumed operative withdrawal relations both to the cigars contained in the receptacle and to the lower cross-piece  $a^5$ , which, as has been specified, represents the edge of the front wall of the receptacle which 80 coacts with the cut-off to complete the withdrawal operation of the delivery member. By the term "operative withdrawal relation" I designate that relation of the cut-off to its 85 coacting member represented by the lower cross-piece  $a^5$ , which the cut-off assumes when it has received a cigar in front of it preparatory to the withdrawal operation. In other words, if the cut-off assume an accidental obliquity to its coacting member  $a^5$  and not 90 when it is in operative withdrawal relation thereto, as described, that accidental relative obliquity would not be productive of any novel or useful result and would not come 95 within the scope of my invention.

It was above specified that when the cut-off I' in the delivery member I constitutes one side of a well-defined slot, which is the preferred form of embodiment of my invention, as specified, the delivery member may pass 100 underneath a plurality of cigars contained within the receptacle. This is not only true, but it is desirable that the cut-off should pass underneath a plurality of the cigars in the receptacle in order to insure the withdrawal 105 of a cigar with the withdrawal of the cut-off from underneath the receptacle.

It is desirable, as above stated, that the cut-off should pass underneath a plurality of cigars in the receptacle, because the movement 110 of the cut-off underneath the cigars not only tends to properly set the cigar to be withdrawn in front of the cut-off, but also adjusts the relative positions of the remaining stock of cigars in the receptacle. This result is 115 accomplished by freedom of movement of the cigars in the receptacle, whereby they may adjust themselves to the disturbing forces generated by the movement of the delivery member beneath them. If the cigars were 120 presented one by one to the delivery member within a confined space, this freedom of movement would be lost and the specified operation of the machine interfered with. By "freedom of movement" I mean freedom of 125 movement in a plane parallel to the delivery member, as well as at an angle thereto, and I designate the means by which this freedom of movement is provided as means for effecting a loose presentment of the articles in the 130 receptacle to the delivery member.

It appears proper to particularly specify that while a reciprocatory delivery member I is illustrated it is not essential that the de-



livery member should be reciprocatory, but only that it should be movable operatively with respect to the receptacle.

As has been specified, the lower cross-piece  
5 *a*<sup>5</sup> constitutes a part of the wall of the receptacle, with which the cut-off of the delivery member coöperates, and it should be noted in this connection that I do not limit myself to any particular form of receptacle and that  
10 the wall with which the cut-off of the delivery member coöperates may be of any extent and shape preferred.

What I claim is—

1. The combination of a receptacle having  
15 an opening, a delivery member provided with a cut-off operatively located when within the receptacle, obliquely to a wall of the receptacle, in operative proximity to which the delivery member works.

20 2. The combination of a receptacle having an opening a delivery member provided with a cut-off arranged to coöperate with a wall of the receptacle, the cut-off being so located that when in operative withdrawal relation  
25 it is oblique to the wall with which it coöperates.

3. The combination with a receptacle having an opening, a delivery member provided with a cut-off arranged to coöperate with a  
30 wall of the receptacle, the cut-off being so located that when in operative withdrawal relation, it is oblique to the wall with which it coöperates, the cut-off and receptacle having relative movement.

35 4. The combination of a receptacle and a delivery member movable relative thereto and in contact therewith, the receptacle having an opening therein adapted to present a plurality of the articles contained in the receptacle simultaneously to the delivery device, the delivery device being provided with  
40 a cut-off and so arranged as to present said cut-off to the articles contained in the receptacle at an oblique angle to the wall of the  
45 receptacle.

5. The combination of a receptacle having

an opening, a delivery member having a cut-off arranged to effect a withdrawal of an article from the receptacle shearwise to a wall of the receptacle, and means for effecting a  
50 loose presentment of the articles in the receptacle to the delivery member.

6. The combination of a receptacle having an opening, a delivery member having a cut-off arranged to be presented at an oblique  
55 angle to the wall of the receptacle with which it coöperates in the withdrawal operation, and means for effecting a loose presentment of the articles in the receptacle to the delivery member.  
60

7. The combination of a receptacle adapted to contain a stock of articles in lines substantially parallel to a wall of the receptacle, a delivery member having a cut-off movable on lines perpendicular to the said wall of the  
65 receptacle, said cut-off having its longitudinal axis arranged at an inclination to said wall.

8. The combination of a receptacle adapted to contain a stock of articles in lines substantially parallel with a wall of the receptacle, and a delivery member provided with a cut-off, the cut-off being adapted to move across the edge of said side of the receptacle, and  
70 lying at an angle thereto when wholly underneath the receptacle.  
75

9. The combination of a receptacle adapted to contain a stock of articles in lines substantially parallel with a wall of the receptacle, and a delivery member provided with a cut-off working at an inclination to said wall of the receptacle, said wall of the receptacle where it coöperates with the cut-off, being fixed with respect to the cut-off with which  
80 it coöperates.  
85

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

WILLARD DELMONT DOREMUS.

Witnesses:

A. G. DU BOIS,  
W. B. RANDALL.