

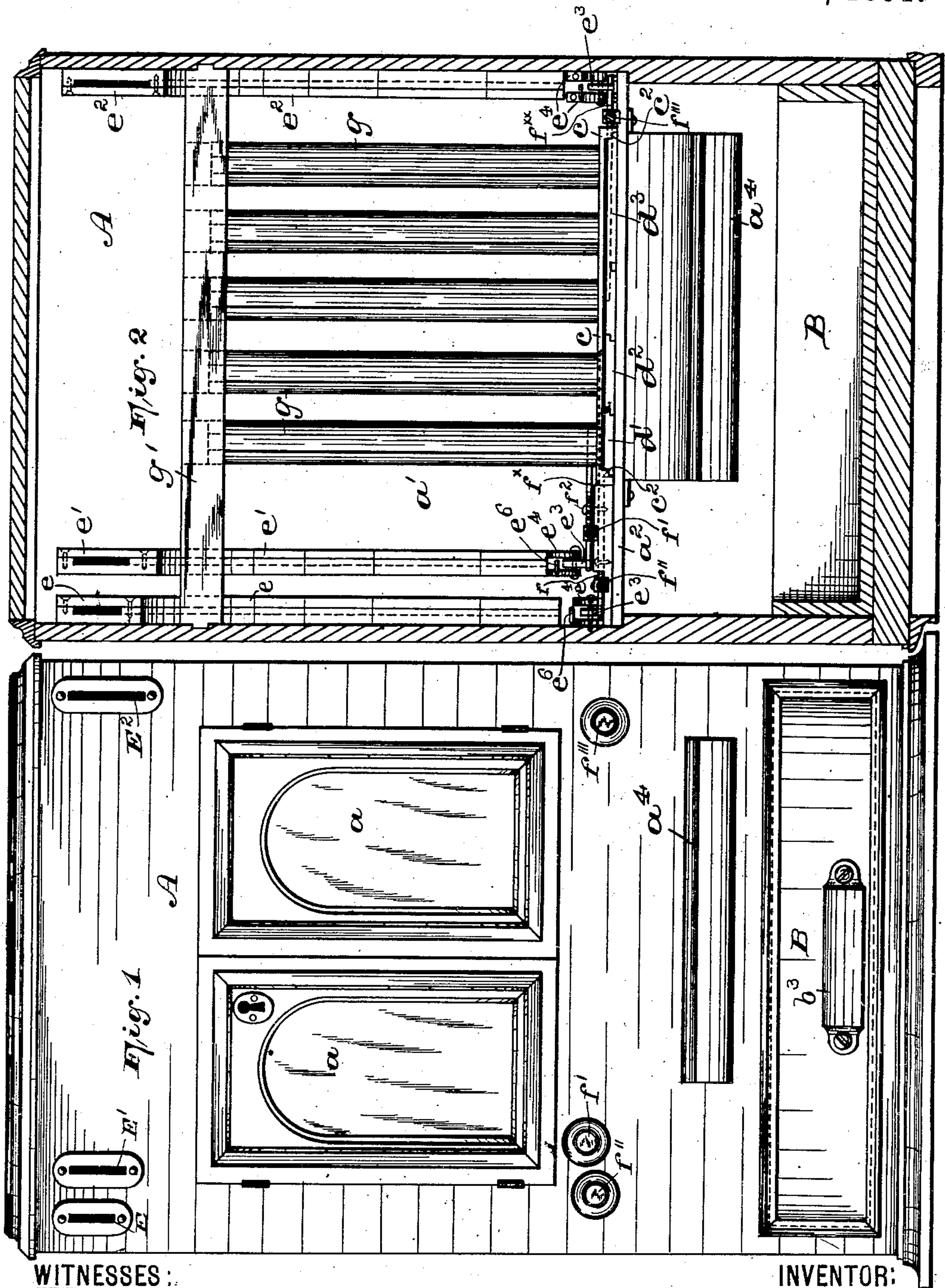
(No Model.)

4 Sheets—Sheet 1.

F. J. WOOD.  
VENDING APPARATUS.

No. 462,024.

Patented Oct. 27, 1891.



WITNESSES:

Wm. H. Canfield, Jr.  
John G. Pringle

INVENTOR:

Franklin J. Wood  
BY Fred C. Praentzel, ATT'Y.

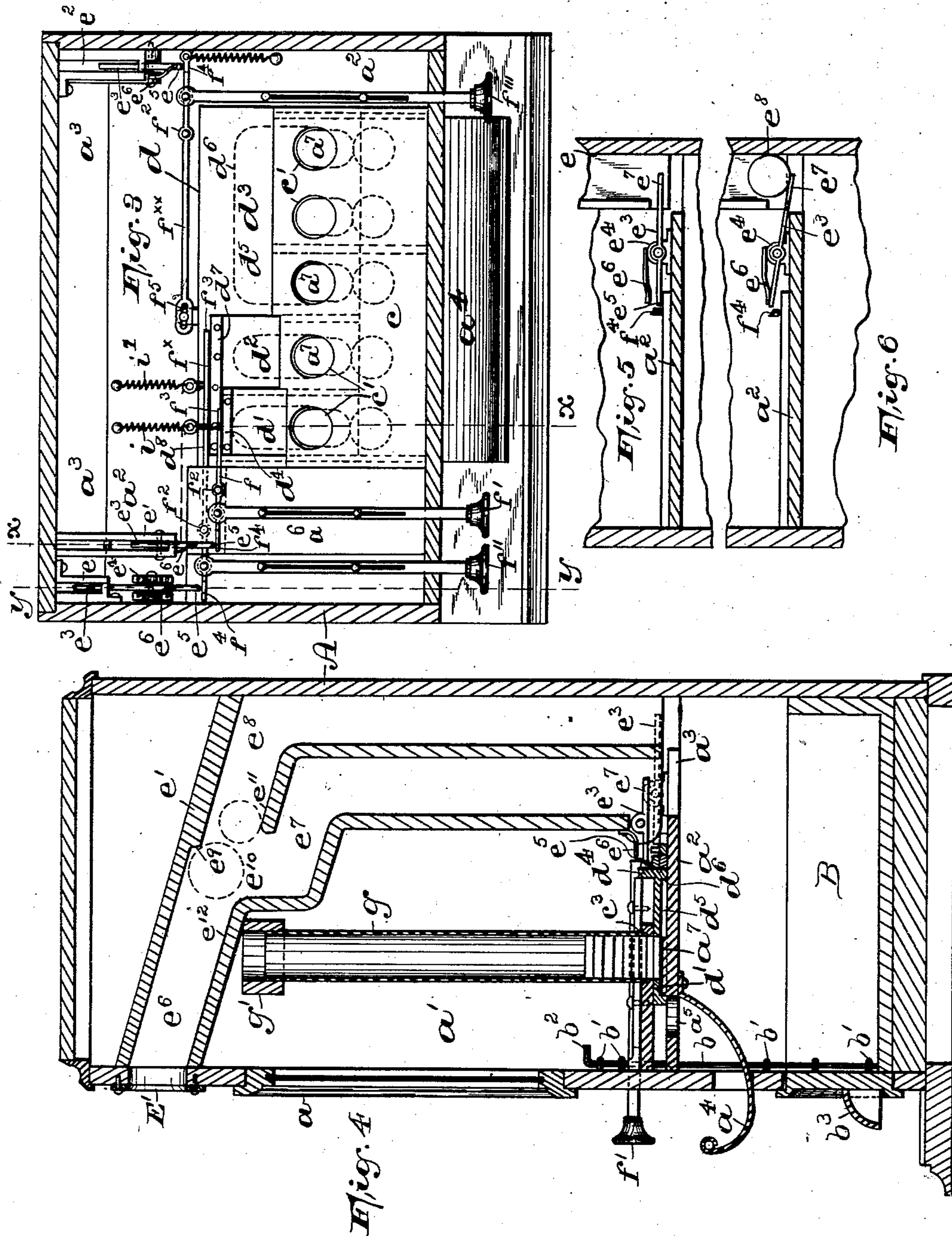
(No Model.)

4 Sheets—Sheet 2.

F. J. WOOD.  
VENDING APPARATUS.

No. 462,024.

Patented Oct. 27, 1891.



WITNESSES:

Wm. B. Canfield, Jr.  
John C. Russell

INVENTOR:

Franklin J. Wood,  
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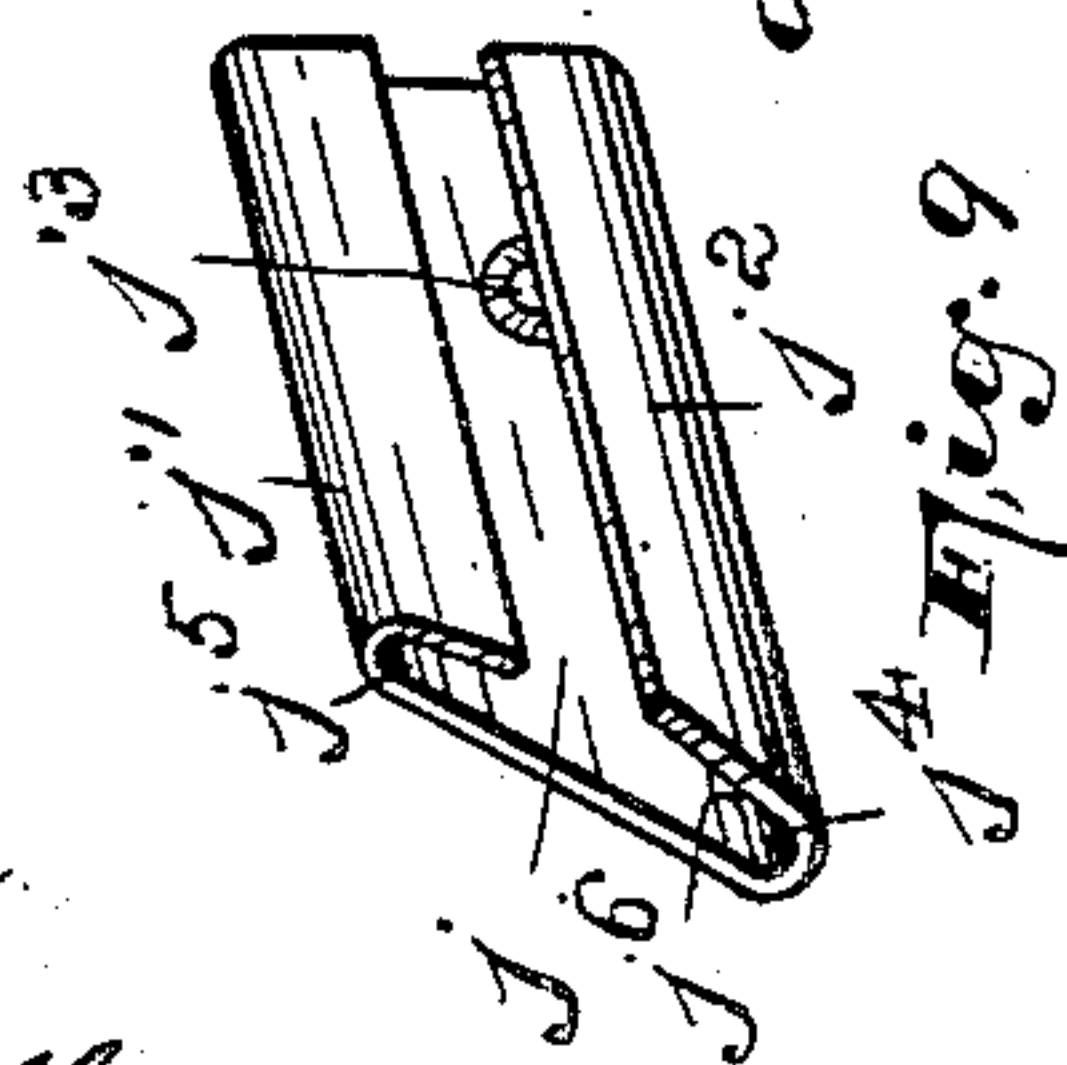
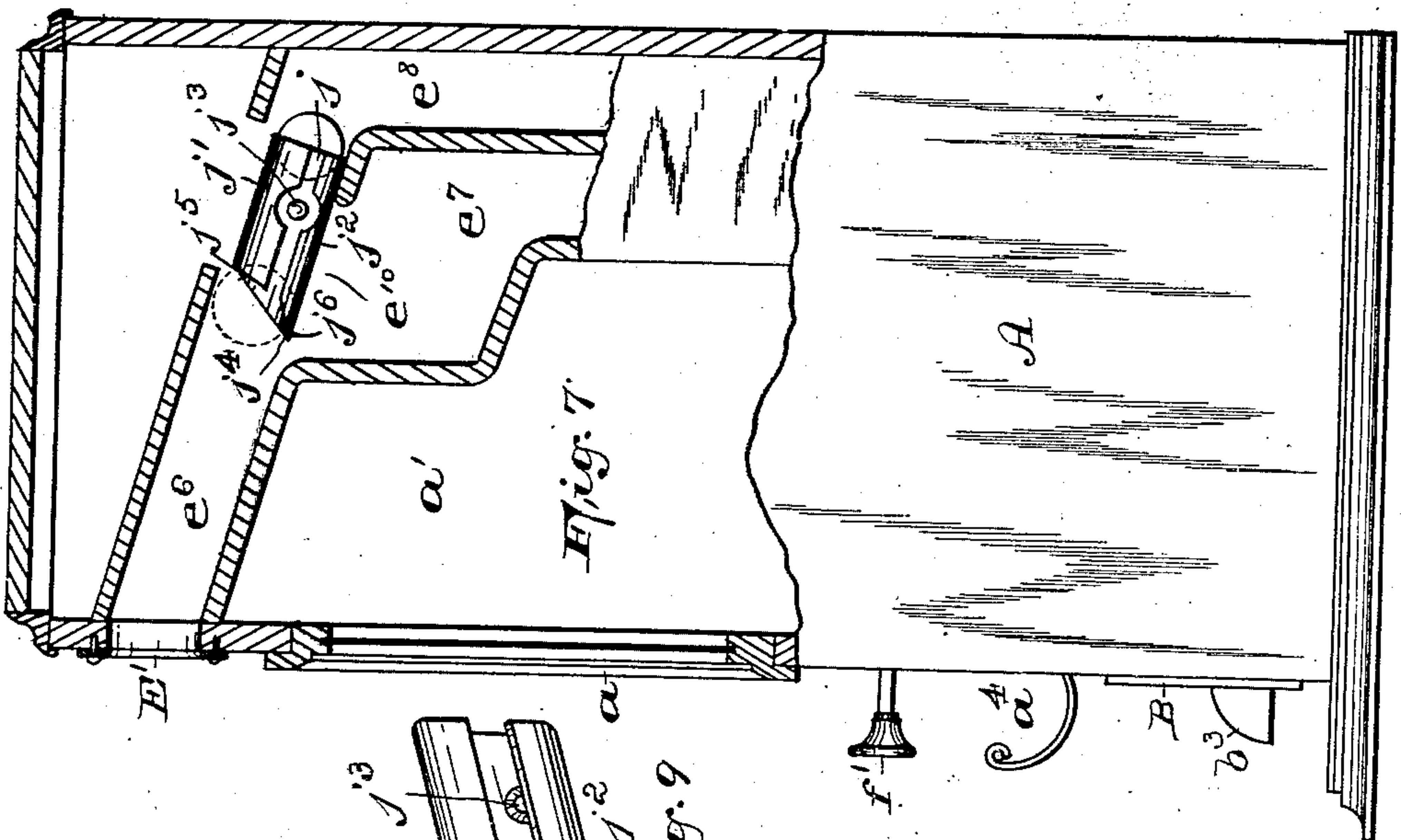
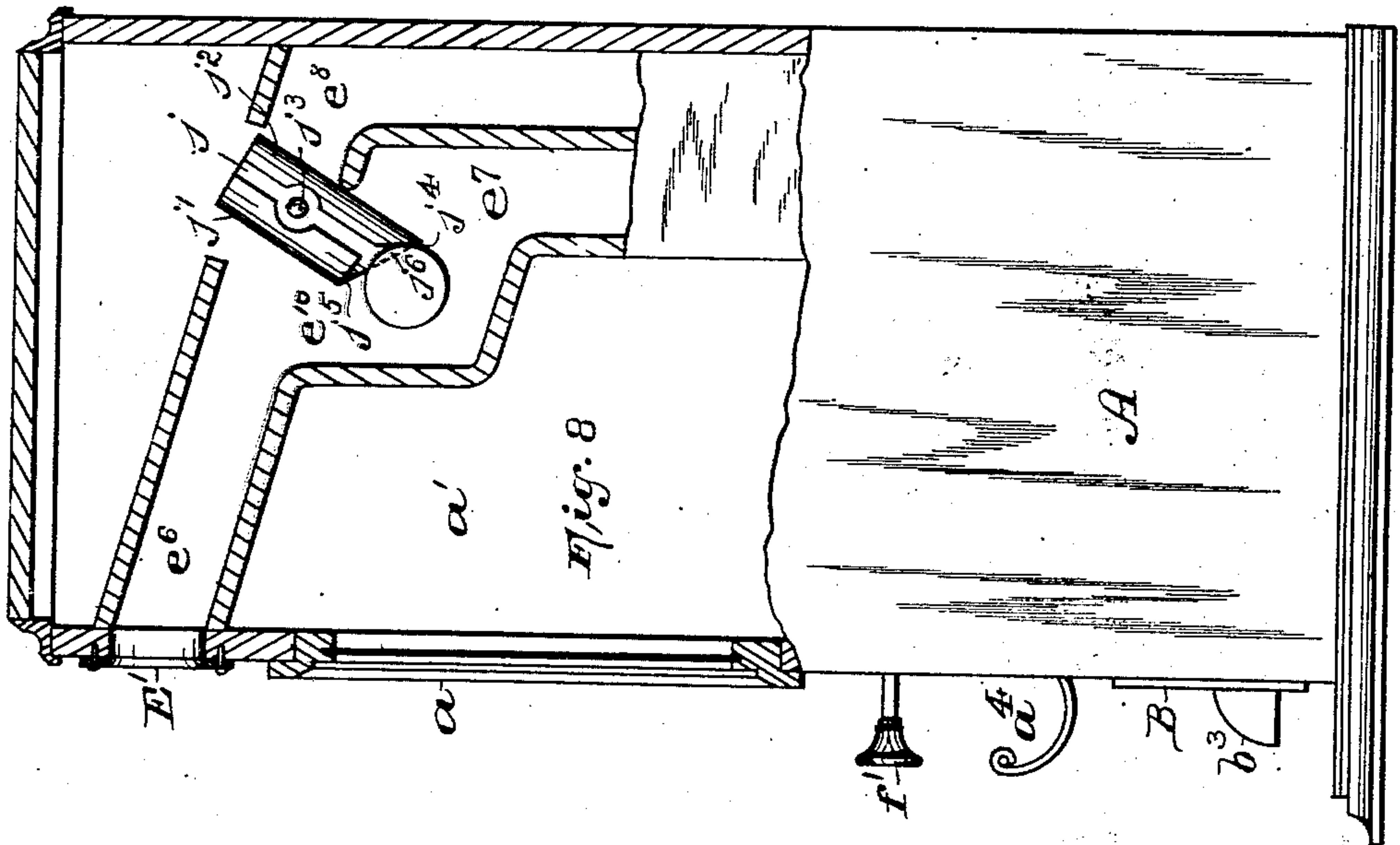
(No Model.)

4 Sheets—Sheet 3..

F. J. WOOD.  
VENDING APPARATUS.

No. 462,024.

Patented Oct. 27, 1891.



WITNESSES:

Wm. H. Bainfield, Jr.  
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INVENTOR:

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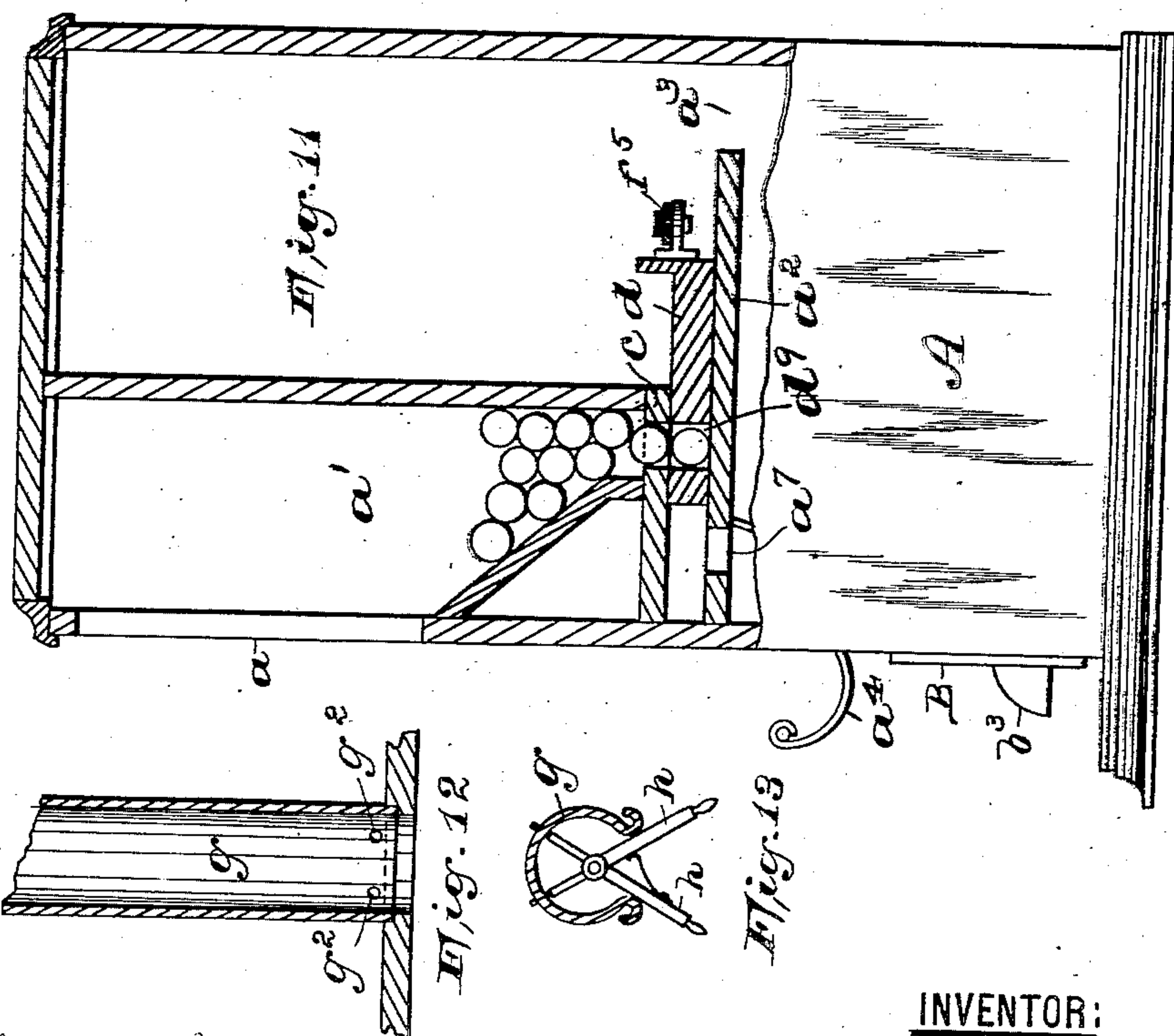
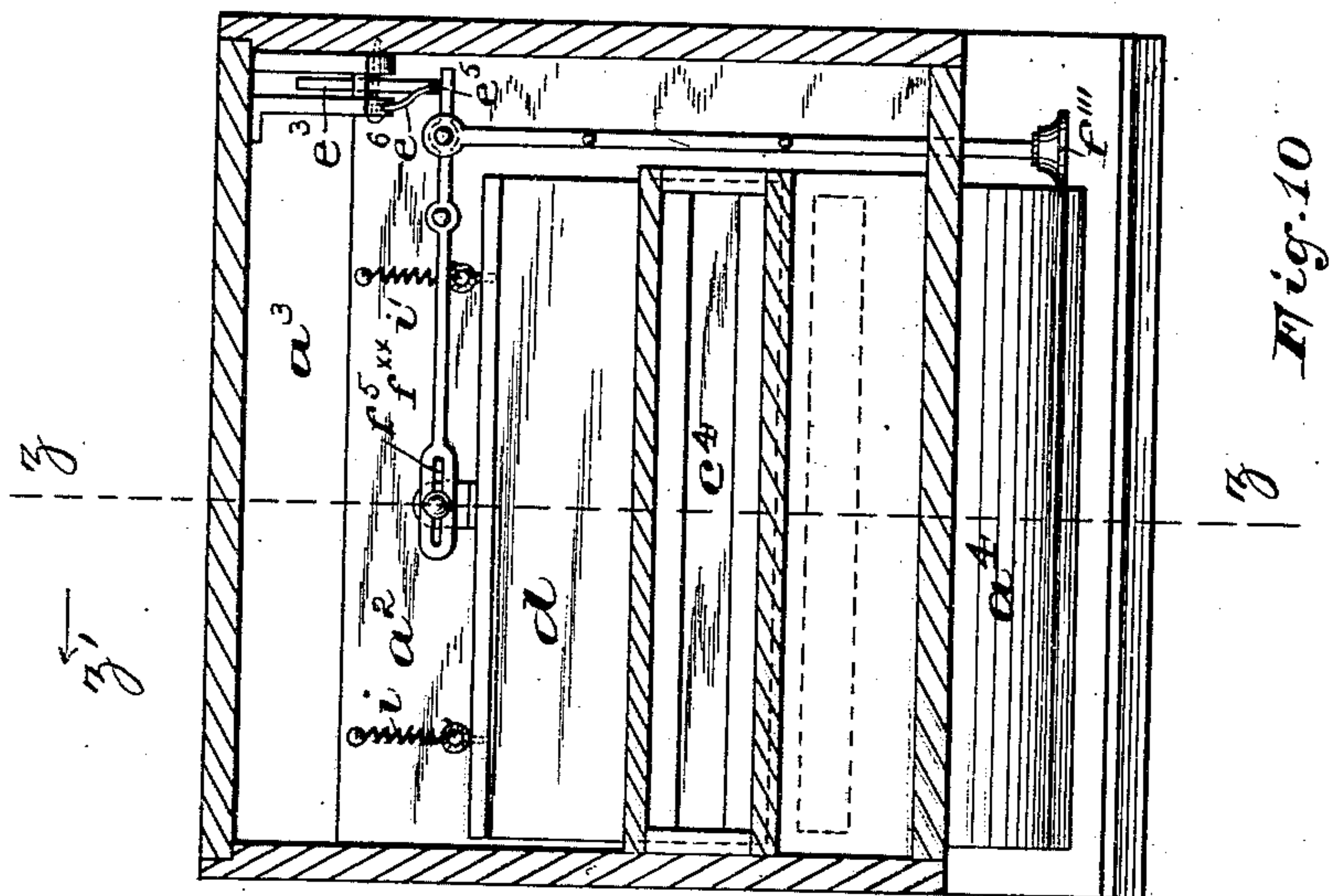
(No Model.)

4 Sheets—Sheet 4.

F. J. WOOD.  
VENDING APPARATUS.

No. 462,024.

Patented Oct. 27, 1891:



WITNESSES:

Wm. H. Canfield. Jr.  
John G. Trudell

INVENTOR:

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BY Fred C. Gaentzel, ATT'Y.



# UNITED STATES PATENT OFFICE.

FRANKLIN J. WOOD, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF  
TO MILTON E. BLANCHARD, OF SAME PLACE.

## VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 462,024, dated October 27, 1891.

Application filed February 13, 1891. Serial No. 381,348. (No model.)

*To all whom it may concern:*

Be it known that I, FRANKLIN J. WOOD, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Vending Apparatus; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My present invention relates to improvements in vending or ticket-selling machines, and has for its object to provide a means whereby one, two, or more packages or tickets may be automatically delivered from the machine after a coin of a predetermined denomination has been properly introduced into the proper coin-chute in the machine; and the invention has for a further object to provide a vending-machine with means for causing a coin which is of smaller size, and hence of less value, to be deposited into the money-receptacle without in the least interfering with the mechanism for releasing the delivery-shelf mechanism.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter more fully set forth, and finally embodied in the clauses of the claims.

The invention is illustrated in the accompanying four sheets of drawings, in which similar reference-letters are employed to indicate corresponding parts in each of the several views.

On Sheet 1, Figure 1 is a front elevation of my improved vending-machine. Fig. 2 is a vertical section illustrating the arrangement of several chutes, each for a coin of a different denomination, and also showing the arrangement of the coin-operated delivery-shelf-releasing mechanism. On Sheet 2, Fig. 3 is a horizontal section of the machine, clearly illustrating the arrangement of the improvements for operating the delivery-shelf. Fig. 4 is a vertical section taken on line  $x$  in Fig. 3, clearly illustrating the arrangement and construction of the chute provided with a coin-

separator, whereby the coin of the proper size is directed into one passage and thereby releases the mechanism, while a coin of smaller size is caused to pass into a second passage and enters the coin-receptacle without operating the shelf-releasing mechanism. Figs. 5 and 6 are vertical sections of parts of the machine, taken on line  $y$  in Fig. 3, clearly illustrating the form of coin-operated releasing mechanism which I contemplate using in my present form of machine. On Sheet 3, Figs. 7 and 8 show my coin-separating chute provided with a rotating coin-separator in which the coin of the smaller diameter is caused to roll entirely between guides in said plate without causing the same to rotate upon its pivotal pin, while a coin of the proper diameter is arrested upon its edge and thereby tilts the separator, the coin being caused to drop down into the desired passage and thereby operate the releasing mechanism. Fig. 9 is a perspective view of the coin-separating plate. On Sheet 4, Fig. 10 is a horizontal section of a modified form of construction especially adapted for the selling of lead-pencils or sticks of candy. Fig. 11 is a vertical section taken on line  $z$  in Fig. 10, looking in the direction of arrow  $z'$ . Figs. 12 and 13 are detail views of the package or ticket holding tubes employed in the construction illustrated in Figs. 2, 3, and 4.

In the above-described views, A is the case, of any desirable size and construction, provided with a suitable glass or other door or doors  $a$ , which are hinged to the front of said casing with a suitable locking device and with a suitable money or coin receiving drawer B, which is provided with a rod  $b$ , extending up into the upper part of the casing, being loosely arranged in staples  $b'$  in the drawer and in the casing and provided with a finger-piece  $b^2$ , whereby when the doors  $a$  have been unlocked and opened said rod  $b$  can be raised and the money-drawer pulled out by means of its pull  $b^3$ . In this manner one lock and key serves to secure both the money-drawer and the doors  $a$  to the goods or tickets containing chamber  $a'$ . This chamber is separated from the lower part of the casing by a shelf  $a^2$ , secured to the sides of the casing, as will be seen from Fig. 2, said shelf ex-



tending back far enough so as to leave an open space  $a^3$  directly beneath the coin-chute, as will be seen from Figs. 3, 4, 5, and 6. Upon this shelf  $a^2$  is arranged a tube-holding plate  $c$ , provided with perforations  $c'$ , said plate being provided at its opposite ends with downwardly-projecting ways or guides  $c^2$ , in which is caused to slide beneath said plate  $c$  the delivery slide or shelf  $d$ . Said slide or shelf  $d$ , as will be seen more especially from Figs. 2 and 3, is made up of several sliding sections  $d'$ ,  $d^2$ , and  $d^3$ , whereby by dropping a coin of a certain size and denomination into the proper chute and operating the proper lever one, two, or five packages or tickets can be delivered upon a shelf  $a^4$  through perforation or perforations  $a^5$  in the shelf  $a^2$  and presented in front of the casing to the person having operated the machine.

Within the case A, as will be seen from Figs. 2 and 3, I have placed three coin-chutes  $e$ ,  $e'$ , and  $e^2$  in any suitable positions, chute  $e$  being for ten-cent pieces, chute  $e'$  for five-cent pieces, and chute  $e^2$  for twenty-five-cent pieces. Beneath each of said chutes is a pivoted lever  $e^3$ , arranged in journals  $e^4$ , which are secured in any convenient manner either to the bottom of the chute, or to the back of the case, or directly upon the shelf  $a^2$ , the free ends  $e^5$  of each lever acting as a stop to a second set of levers or arms  $f$ ,  $f^x$ , and  $f^{xx}$ , pivoted upon the shelf  $a^2$  or upon a board  $a^6$  on said shelf and being adapted to be operated by means of push-arms  $f'$ ,  $f''$ , and  $f'''$ , which when any one of the levers  $e^3$  have become tilted by the dropping of a coin in a chute causes the said arms  $f$ ,  $f^x$ , or  $f^{xx}$  to swing upon their pivotal pins  $f^2$  and the end  $f^3$  of the arm operated to engage with the back of the proper delivery-section in the slide or shelf  $d$ , as will be evident from Fig. 3.

The tube-holding plate  $c$ , as has been stated in the above, is provided with the perforations  $c'$ , and into these perforations, which are provided with recesses  $c^3$ , are set the tubes  $g$ , which are of any desirable shape in cross-section, containing the packages or tickets to be vended, said tubes being held at the top in perforations in a cross-bar  $g'$ , as will be seen from Figs. 2 and 4.

I will now proceed to describe the operation of the device. Each tube  $g$ , as will be seen from Fig. 12 on Sheet 4, is provided with two small holes  $g^2$ , the tube being left open in the front, as shown. Into these holes  $g^2$  I insert the free ends of a small pair of spring-actuated and pivoted arms  $h$ , forming a holding or supporting device in the bottom of the tube, as shown in Fig. 13. I now fill the tube with the merchandise, such as squares of candy, chewing-gum, or tickets, and when a tube is placed in position on the recess  $c^3$  in the perforation  $c'$  in the plate  $c$  I press the ends of the arms  $h$  together and remove the holder from the tube, which allows the lower package or ticket to rest upon a raised portion  $a^7$ , directly beneath the perforation or opening

$c'$ . In this manner I place a tube in each perforation in the plate  $c$ . Now, for instance, a person desiring to buy one ticket or package drops a nickel or five-cent piece into the slot  $E'$  in the front of the case, which delivers the coin into chute  $e'$ , where it is conducted down upon the coin-receiving lever at the bottom of the chute, which is tilted, as indicated in Fig. 6, being held in that position by a spring-finger  $e^6$ , and the coin being retained upon the lever on its end  $e^7$  by resting against the inner surface  $e^8$  of the chute. The push  $f'$  can then be pushed in, causing the arm  $f$  to swing on its pivotal pin, whereby the chamfered end  $f^4$  of said arm forces the tilted coin-lever upward, thereby lowering the end  $e^7$  still further and causing the coin to be deposited into the receptacle B, while the opposite end of said arm  $f$  is forced against a raised portion  $d^4$  on the end of the section  $d'$  in the slide, which is thereby pushed outward and forces the lower package or ticket directly out above the perforation or opening  $a^5$  in the shelf  $a^2$  upon the shelf  $a^4$ , as will be evident from Fig. 4. A spring  $i$ , attached to the back of said section, causes the shelf and the operating mechanism to return to their normal positions.

As will be noticed from Figs. 3 and 4, each section is provided on its under side with a chamfered or recessed portion  $d^5$ , the back edge  $d^6$  of which engages with the raised portion  $a^7$  in the shelf  $a^2$ , which limits the forward movement of each delivery-section.

Now when a ten-cent piece has been dropped into the slot E in the front of the case the operation of the coin-operated releasing mechanism is similar to that just described; and by pushing upon an arm  $f''$  I operate the arm  $f^x$ , the opposite end of which engages with a raised portion  $d^7$  on the section  $d^2$ , which causes said section to move outward, at the same time forcing section  $d'$  in the same direction by the action of the portion  $d^7$  upon the portion or bar  $d^4$  in the section  $d'$ , whereby two packages or tickets are delivered to the person operating the machine. The sections  $d'$  and  $d^2$  and the mechanism are returned to their normal positions by the joint action of the springs  $i$  and  $i'$ . By the dropping of a quarter or a twenty-five-cent piece into the slot  $E^2$  the arm  $f^{xx}$  can be operated by means of the push-arm  $f'''$  in a like manner, and its slotted end  $f^5$ , which can be directly secured to the back end of the shelf  $d$ , causes the three sections  $d'$ ,  $d^2$ , and  $d^3$  to be operated at one time, an arm  $d^8$  on the section  $d^3$  acting upon the raised portion or bar  $d^7$  on section  $d^2$ , and this in turn acting upon the bar  $d^4$  on section  $d'$ , which causes five packages or tickets to be presented to the person operating the machine.

Of course it will be evident that this machine can be used for making change also. In that case I place the packages or tickets in the tube directly above the sliding section  $d'$  and fill the other tubes with five-cent



pieces. Now when a nickel has been dropped into the slot  $E'$ , I receive a package or a ticket, as the case may be. If I drop a ten-cent piece into slot  $E$ , I receive a ticket and one  
5 five-cent piece, and when I drop a quarter into slot  $E^2$ , I obtain one package or ticket and four five-cent pieces.

Of course the manner of operating and the operation of the mechanism are the same in  
10 both cases.

I will now proceed to describe the operation of my coin-separating chute, which discriminates between one coin of the proper size and denomination and between smaller  
15 coins, which it will deposit into the money-receptacle without causing the machine to deliver a package or ticket.

As will be seen from Fig. 4, the coin-chute—as, for instance, chute  $e'$ —may be formed  
20 with three passages  $e^6$ ,  $e^7$ , and  $e^8$ . The coin, of the proper denomination and size, which is to tilt the lever  $e^3$  at the bottom of the chute rolls down along the inclined passage-way  $e^6$  until it strikes the projection  $e^9$  in the  
25 top of said way, which causes the motion of the coin to be retarded and the coin thrown down into the opening  $e^{10}$  in the passage  $e^7$  and operate the lever. When a coin of smaller size is inserted into the slot, it will  
30 pass along the passage  $e^6$ , and, meeting no obstruction, will be caused by its accelerative force to jump the opening  $e^{10}$  and land upon the surface  $e^{11}$ , which is slightly lower than the upper surface  $e^{12}$ , and the coin is thus directed  
35 into the passage  $e^8$  and drops into the receptacle  $B$  without operating the shelf-releasing mechanism.

In Figs. 7 and 8 I have illustrated my coin-separating chute provided with a rotating  
40 plate  $j$ , which separates the coins, being positive in its action. Said plate is made from sheet metal, as shown in Fig. 9, being formed with the guides  $j'$  and  $j^2$  and perforated at  $j^3$  for pivotally securing said plate in the chute, being perfectly balanced, so that it assumes  
45 the position shown in Fig. 7. A coin of the proper size dropped into the chute will strike the edges  $j^4$  and  $j^5$  of the guides  $j^2$  and  $j^3$ , bearing upon the lip  $j^6$ . The coin overbalances the  
50 said plate, which rotates on its pivotal bearing and causes the coin to be deposited into the opening  $e^{10}$  and into the proper passage  $e^7$ , where it will operate the releasing-lever, as indicated in Fig. 8; but a coin of a smaller size  
55 can pass entirely between said guides  $j^2$  and  $j^3$  without overbalancing the plate  $j$ , and the coin will be directed into the passage  $e^8$  without releasing the mechanism, as will be evident.

In Figs. 10 and 11 I have shown a modified  
60 form of construction of a machine adapted for the vending of lead-pencils or sticks of candy. In this construction, in which the principle involved is the same as that described in connection with the other figures,  
65 I employ but one chute and one sliding section, which is provided with a longitudinal

slot or opening  $c^1$ , and the slide  $d$  being formed with a corresponding opening  $d^2$ , while in the shelf  $a^2$  I have arranged a similar opening  $a^7$ .  
70 Otherwise the operation and construction of the machine is similar to that described hereinbefore.

Of course I do not wish to be understood as limiting myself to the use of the round holes  
75 shown in connection with Fig. 3, nor to the exact form of tube herein shown, and I may make such openings of any desirable shape or form, the tubes to correspond therewith in cross-section.  
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Having thus described my invention, what I claim is—

1. In a vending-machine, the combination, with a delivery-shelf provided with one or more openings therein and a coin-chute provided with two passage-ways and a coin-separator within said chute, of a lever adapted to be partially tilted by the weight of a coin, and means for tilting said lever still farther and depositing the coin and operating the delivery-shelf, as and for the purposes set forth.  
85

2. In a vending-machine, the combination, with a delivery-shelf provided with one or more openings extending entirely through said shelf, and a goods-holding tube above  
90 each opening, each tube being removably arranged on a recess in each perforation, of a coin-operated locking or holding mechanism, as and for the purposes set forth.

3. In a vending-machine, the combination, with a delivery-shelf provided with one or more openings extending entirely through said shelf, and said shelf being made up of sliding sections, of coin-operated locking or holding mechanism adapted to operate either  
100 one, two, or all of said sections, according to the denomination of the coin deposited, as and for the purposes set forth.

4. The combination, with a delivery-shelf provided with one or more openings extending entirely through said shelf, and said shelf being made up of sliding sections, of arms  $f$ ,  $f^x$ , and  $f^{xx}$ , each acting upon the back of a section, each arm being in locked engagement with a coin-controlled lever, and means for  
110 operating said arms when released by a coin, and a coin-chute above each lever, as and for the purposes set forth.

5. The combination, with a delivery-shelf provided with one or more openings extending entirely therethrough, and said shelf being made up of sliding sections, of arms  $f$ ,  $f^x$ , and  $f^{xx}$ , each acting upon the back of a section and each arm being in locked engagement with a coin-controlled lever arranged in  
115 bearings beneath the opening of a coin-chute and each provided with a spring-finger to arrest the motion of the lever when a coin has dropped upon its end, but which allows the free end of the released arm to be forced under the raised portion of the tilted lever, and thereby tilt the lever still farther and operate the delivery-shelf, as and for the purposes set forth.  
120  
125  
130



6. In a vending-machine, the combination, with a delivery-shelf provided with one or more openings extending entirely through said shelf, and said shelf being made up of sliding sections, and a goods-holding tube above said opening, each tube being removably arranged on a recess in each perforation, of a coin-operated locking or holding mechanism adapted to operate either one, two, or all of said sections, according to the denomination of the coin deposited, as and for the purposes set forth.

7. In a vending-machine, the combination, with the case and a fixed shelf  $a^2$ , having openings therethrough, and a goods-receiving shelf  $a^4$ , of a tube-holding plate also provided with a corresponding number of openings, and a slide between said shelf  $a^2$  and the tube-holding plate, made up of sliding sections provided with openings extending entirely through the same, and a coin-operated releasing mechanism consisting, essentially, of arms  $f$ ,  $f^x$ , and  $f^{xx}$ , each acting upon the back of a section and each arm being in locked engagement with a coin-controlled lever, and means for operating said arms when released by a coin, and a coin-chute above each lever, as and for the purpose set forth.

8. In a vending-machine, the combination, with the case and a fixed shelf  $a^2$ , having openings therethrough, and a goods-receiving shelf  $a^4$ , of a tube-holding plate also provided with a corresponding number of openings, and a slide between said shelf  $a^2$  and the tube-holding plate, made up of sliding sections provided with openings extending entirely through the same, and a coin-operated releasing mechanism consisting, essentially, of arms  $f$ ,  $f^x$ , and  $f^{xx}$ , each acting upon the back of a section and each arm being in locked engagement with a coin-controlled lever arranged in bearings beneath the opening of a coin-chute and each provided with means to arrest the motion of the lever when a coin has dropped upon its end below the opening in the chute, but which allows the free end of the released arm to be forced under the raised portion of the tilted lever, and thereby tilt the lever still farther and operate the delivery-slide, as and for the purposes set forth.

9. In combination with a goods-holding tube  $g$ , a fastener consisting of spring-actuated arms  $h$ , adapted to be inserted in perforations in said tube and act, as and for the purposes set forth.

10. In a vending-machine, the combination, with a case, the coin-chute, and a fixed shelf  $a^2$ , having an opening directly beneath the chute and having one or more goods-receiving openings in said shelf, and a shelf  $a^4$ , connected with said fixed shelf and extending on the outside of the case, of a holding-plate arranged above said shelf, provided with a corresponding number of openings and provided with downwardly-projecting guides secured

to the fixed shelf  $a^2$  and the holding-plate, said delivery-slide being normally arranged back of said openings in the holding-plate, and one or more raised portions  $a^7$  in the shelf  $a^2$  directly beneath said openings in the holding-plate, upon which the lowermost article rests and is brushed therefrom by the movement of the delivery-slide onto the shelf  $a^4$ , and mechanism for operating said slide, as and for the purposes set forth.

11. In a vending-machine, the combination, with a case, the coin-chute, and a fixed shelf  $a^2$ , having an opening directly beneath the chute and having one or more goods-receiving openings in said shelf, and a shelf  $a^4$ , connected with said fixed shelf and extending on the outside of the case, of a holding-plate arranged above said shelf, provided with a corresponding number of openings and provided with downwardly-projecting guides secured to the fixed shelf  $a^2$  and the holding-plate, said delivering-slide being normally arranged back of said openings in the holding-plate, and one or more raised portions  $a^7$  in the shelf  $a^2$  directly beneath said openings in the holding-plate, upon which the lowermost article rests and is brushed therefrom by the movement of the delivery-slide onto the shelf  $a^4$ , and mechanism for operating said slide, consisting, essentially, of arms  $f$ ,  $f^x$ , and  $f^{xx}$ , each acting upon the back of said slide and each arm being in locked engagement with a coin-controlled lever, and means for operating said arms when released by the coin, and a coin-chute above each lever, as and for the purposes set forth.

12. In a vending-machine, the combination, with a casing and an operating mechanism, a coin-chute with one entrance-passage and two coin-passages, as  $e^7$  and  $e^8$ , extending therefrom, and a projection  $e^9$ , formed in the entrance-passage for retarding the coin of the proper denomination and delivering said coin into the passage-way  $e^7$ , for the purposes set forth.

13. In a vending-machine, the combination, with a casing and an operating mechanism, a coin-chute with one entrance-passage and two coin-passages, as  $e^7$  and  $e^8$ , extending therefrom, a projection  $e^9$ , formed in the entrance-passage for retarding the coin of the proper denomination and delivering said coin into the passage-way  $e^7$ , and a delivery-shelf comprising therein a number of sliding sections adapted to be operated separately or together, according to the denomination of the coin deposited, as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 9th day of February, 1891.

FRANKLIN J. WOOD.

Witnesses:

FREDK. C. FRAENTZEL,  
MILTON ELVIN BLANCHARD.