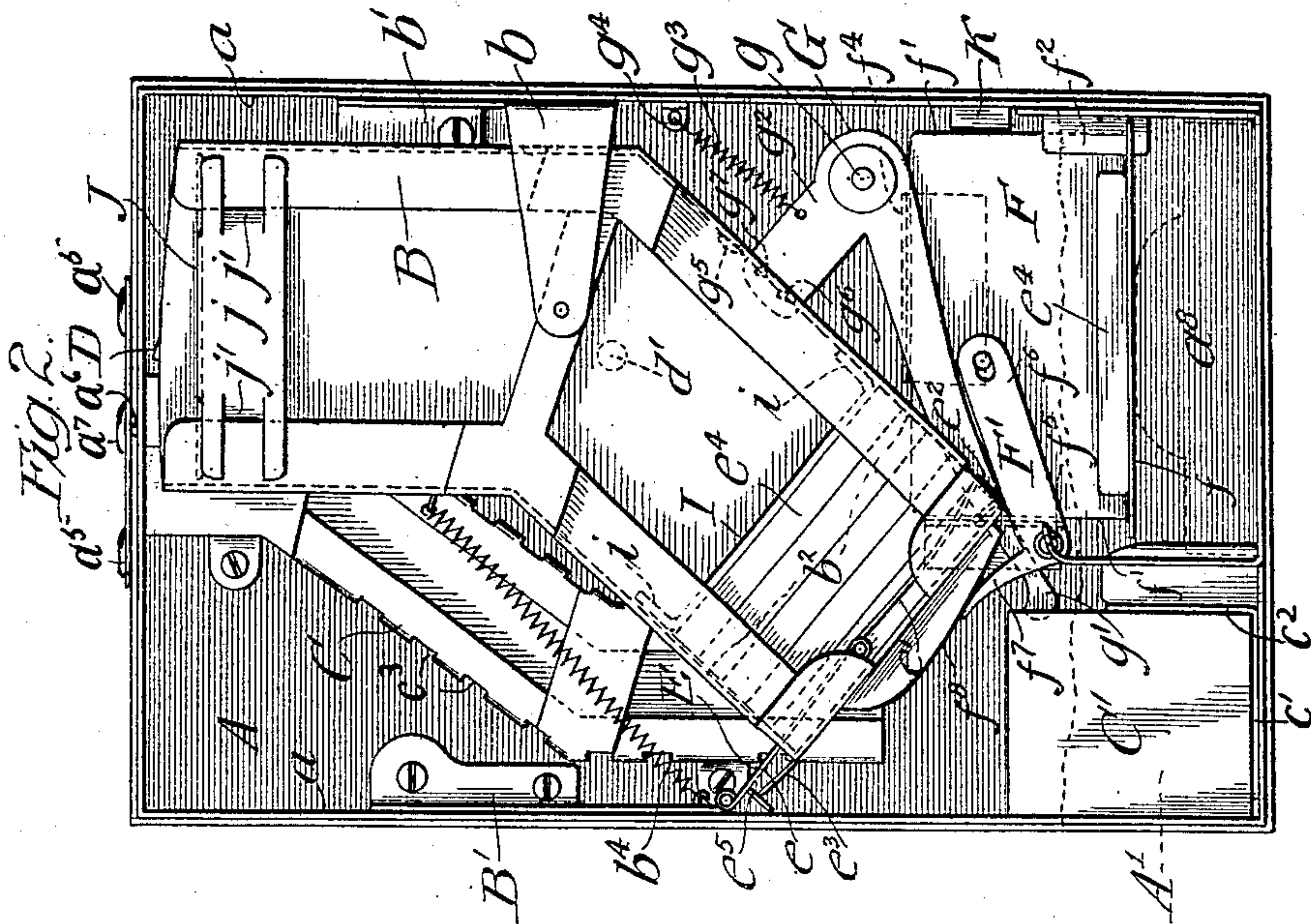


C. A. DIES.
 VENDING MACHINE.
 APPLICATION FILED MAR. 16, 1908.

910,513.

Patented Jan. 26, 1909.

3 SHEETS—SHEET 1.

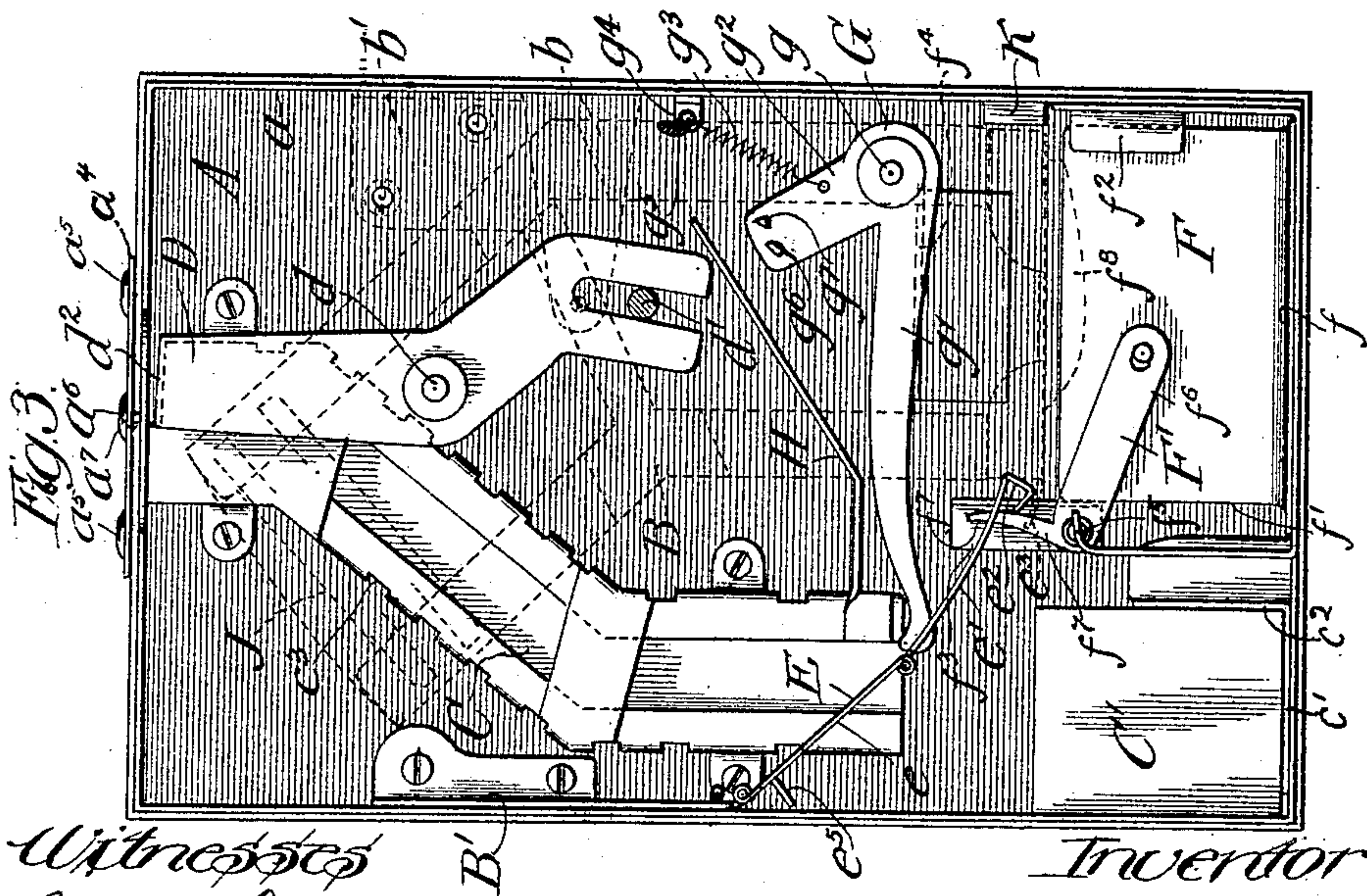
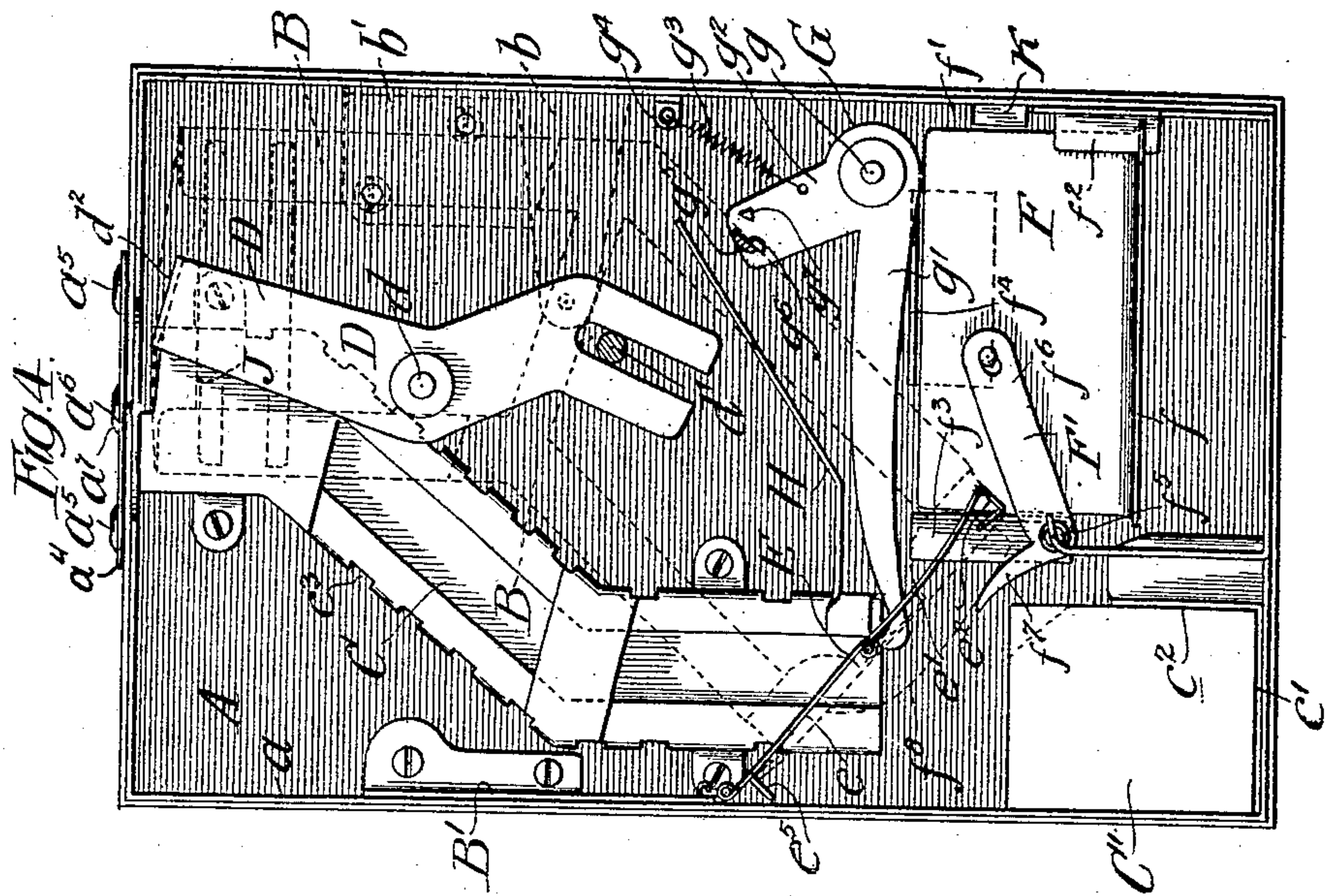


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Witnesses
 Harry R. L. White
 R. A. White.

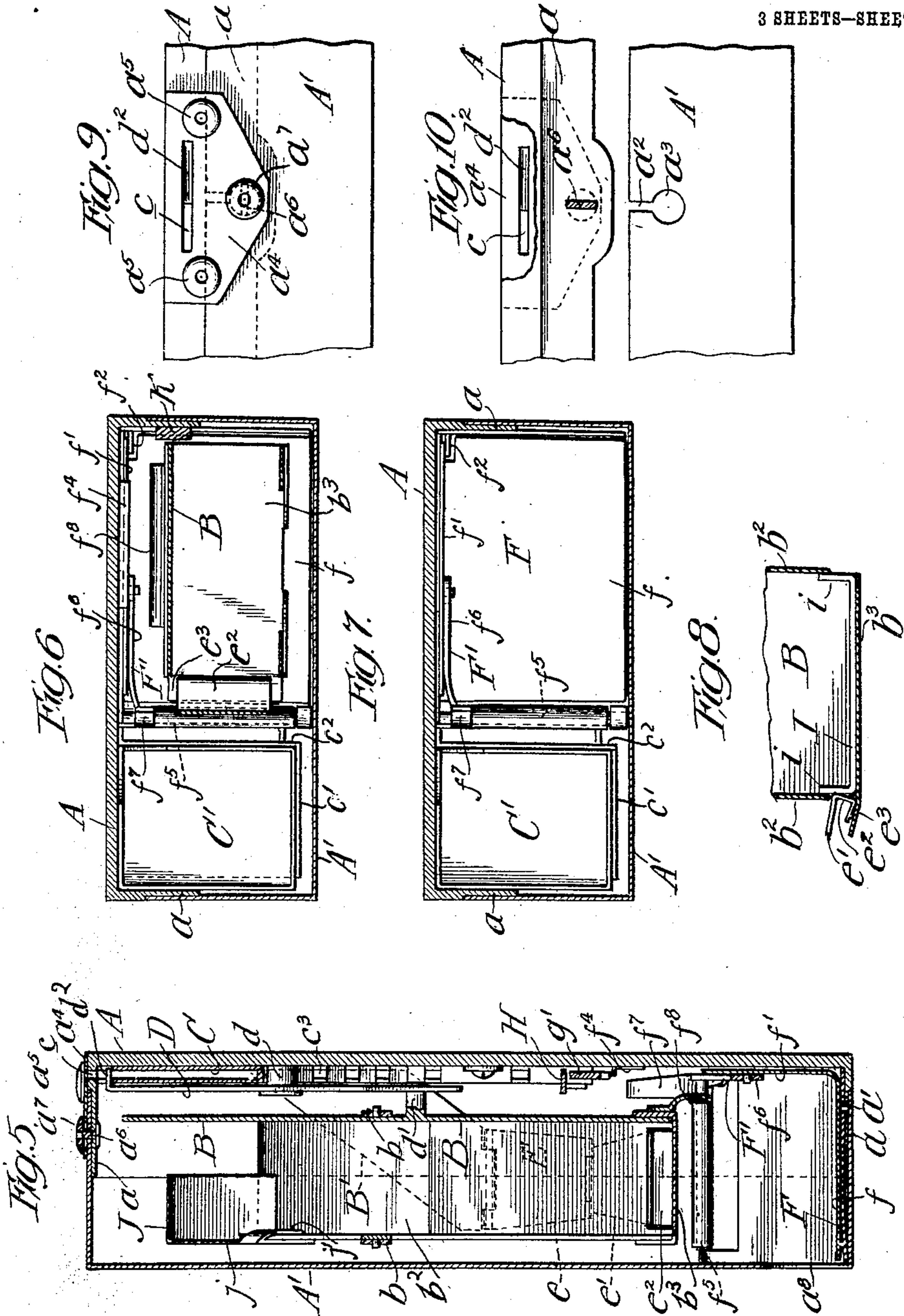
Inventor
 Charles A. Dies.
 By W. W. Withersburg. Atty.

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3 SHEETS—SHEET 3.



Witnesses
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Inventor
 Charles A. Dies
 By W. W. Withenbury, Atty.

UNITED STATES PATENT OFFICE

CHARLES A. DIES, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO BENJAMIN S. McCLELLAN, OF CHICAGO, ILLINOIS.

VENDING-MACHINE.

No. 910,513.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed March 16, 1908. Serial No. 421,393.

To all whom it may concern:

Be it known that I, CHARLES A. DIES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Vending-Machines, of which the following is a complete specification.

This invention relates to improvements in vending machines and more particularly to a coin operated machine adapted to deliver packages or the like to the purchasers.

Heretofore various kinds of vending machines have been devised for vending confections and the like, and one of the principal difficulties which has been encountered in such devices is to absolutely lock the mechanism against operation when the machine is empty or out of order. In most constructions of this character the coin passes into the machine and out of the control of the purchaser before it can start the mechanism, and while most machines are intended to return the coin if the machine is empty or out of repair, it oftentimes happens that through the failure of the coin return mechanism to operate, the coin is retained, and the purchaser must report his loss to the proper parties or sustain the loss.

Another difficulty which has been encountered is to provide against the possible delivery of the articles to be vended before a coin of the proper denomination has been deposited in the machine and has passed out of the control of the purchaser.

The object of this invention is to provide a vending machine in which the operating mechanism is absolutely locked against operation when the machine is empty or when it is out of order, and into which, when such conditions prevail, it is impossible to insert an operating coin, thereby leaving the intended purchaser in possession of the coin and avoiding considerable annoyance.

It is also an object of the invention to provide a device in which the coin must have passed into the machine and out of the control of the purchaser before the article to be purchased will be delivered, so that it is impossible to start the mechanism to operate and receive the article by simply inserting the coin and then withdrawing it from the machine.

Another object of the invention is to provide a device in which it is impossible to operate the delivery mechanism to its delivery

position by the insertion of any instrument other than a coin of the intended denomination or a slug of like dimensions and weight.

A still further object of the invention is to provide a device in which the discharge or delivery passage is closed as soon as the operating mechanism is set in motion and which remains closed until the coin has passed to the coin box, so that if the mechanism is set in motion by the insertion of a coin or other article which does not pass into the machine and out of the control of the purchaser, the article will not be delivered until the machine is again operated in the proper manner.

The invention consists of the matters hereinafter described in the specification and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a front elevation of the device with the cover removed, and showing the mechanism in normal position. Fig. 2 is a similar view but showing the position the mechanism assumes as the coin leaves the coin chute. Fig. 3 is a view similar to Fig. 1, but showing the package tube in dotted lines. Fig. 4 is a view similar to Fig. 2 but showing the package tube in dotted lines with the locking lever therefor in locking position. Fig. 5 is a section taken on line 5—5 of Fig. 1. Fig. 6 is a section taken on line 6—6 of Fig. 1. Fig. 7 is a section taken on line 7—7 of Fig. 1. Fig. 8 is a fragmentary, vertical section of the package tube. Fig. 9 is a fragmentary, plan view of the receptacle showing the cover in locked position. Fig. 10 is a similar view showing the cover unlocked, and the lock plate removed.

As shown in said drawings: A indicates a receptacle of any desired construction and material, which opens at its front and is provided with a cover A' adapted to fit closely over a flange a about the opening. Said cover may be locked in place in any preferred manner but, as shown more clearly in Figs. 5, 9 and 10, the cover is provided in its lower end with a lug or pin a' adapted to engage in an aperture in the flange a , and at its top is provided with a slot a^2 opening into an aperture a^3 . A lock plate a^4 is riveted on the top of the receptacle by means of rivets a^5 , and at the forward edge of said plate is the locking bolt a^6 , which extends downwardly through the plate and flange and is provided with a head both above the plate

and below the flange to prevent its removal. Said bolt a^6 as shown, is flat between the plate a^4 and the flange a , and when turned to the position shown in Fig. 10, will pass
 5 through the slot a^2 in the cover into the aperture a^3 and when partially rotated in said aperture to bring it transversely of the slot the cover will be locked to the receptacle. The head a^7 of said bolt is provided with a
 10 suitably shaped aperture for the reception of a key, and if preferred the heads of the rivets a^5 may likewise be apertured for the purpose of confusing the identity of the lock.

A package tube B of any preferred form
 15 and construction is pivoted in said receptacle by means adapting it to be oscillated. As shown however said tube is curved and is pivoted centrally between the arms b of a fork b' which is rigidly engaged to the wall of
 20 the receptacle. The side walls b^2 of said tube terminate a short distance from the bottom b^3 to provide an opening in each side of the tube, through one of which the package is discharged. For the purpose of holding
 25 said tube in normal position when not in operation or returning it to normal position after being operated, as shown in Fig. 1, a coiled spring b^4 is attached at one end to the tube above its pivotal point and at the other
 30 end is attached to a bracket B' , supported on the rear wall of the receptacle, or to any other convenient place of anchorage.

Rigidly engaged on the back of the receptacle is the coin chute C, which is curved or
 35 offset centrally to provide a tortuous course or channel and leads from the coin slot c in the top of the receptacle downwardly and laterally to a point above the coin box C' , which is supported on the bottom of the re-
 40 ceptacle and on a shelf c' extending from a partition c^2 at one side of the box. Said chute as shown is provided in its edges with apertures c^3 through which a wire or like ar-
 45 ticle would pass if it were attempted to operate the mechanism by the insertion of such means.

For the purpose of operating the package tube an operating lever D is pivoted on a pin
 50 d projecting inwardly from the back of the receptacle and is forked at its lower end and engages a pin d' projecting from the back of the tube a short distance below its pivotal point. The upper end d^2 of said operating lever is bent rearwardly and projects over a
 55 portion of the upper end of the coin chute, beneath the coin slot which it partially closes when in normal position, as shown more clearly in Figs. 3, 4, 5 and 9, so that a coin passing through said slot must force said end
 60 d^2 off from the coin chute and thereby force the lower end of the lever oppositely and move the tube to the discharge position shown in Fig. 2.

Hinged on the bracket B' is the plunger or
 65 ejector E, comprising an upper section e to

which is hinged a lower section e' having an enlarged or downturned portion e^2 which normally rests on a shelf e^3 on the side of the tube B adjacent the opening in the side of the tube. Said downturned end e^2 is of a
 70 height equal to the thickness of one of the packages e^4 in the tube, and when the tube is forced to discharge position the ejector forces the lowermost package from the tube through the discharge aperture in the side of
 75 the tube opposite from said ejector. Owing to the fact that the ejector is jointed the end e^2 will always travel on the bottom of the tube and insure the ejection of a package. To prevent the ejector from dropping off the
 80 shelf e^3 a flange e^5 is provided on its under side and near its upper end, which engages the side wall of the receptacle A and holds the ejector in position.

The cover A' is provided near its lower end,
 85 and at a point beneath the lower end of the package tube, when the latter is in its normal position, with a delivery orifice a^8 , and for the purpose of preventing a package from dropping down to said orifice before the coin
 90 has passed to the coin box, a gate F is provided to control said orifice. Said gate may be of any preferred construction but, as shown, it comprises a horizontal bottom plate f adapted to seat on the bottom of the
 95 receptacle when the gate is down, and a back plate f' which extends upwardly adjacent the rear wall of the receptacle. A guide f^2 is engaged on the side wall of the receptacle and overlaps the adjacent edge of the back plate
 100 f' , and a guide f^3 projects from the rear wall of the receptacle at the opposite end of said plate. A stop f^4 projects from the rear wall of the receptacle above said gate and acts to limit its upward movement when the bottom
 105 plate has passed above the orifice a^8 .

For the purpose of elevating said gate to receive the package from the package tube when the latter is thrown to discharge position, a bell crank lever F' is pivoted on a shaft
 110 f^5 projecting from the rear wall of the receptacle, and one arm f^6 thereof is pivotally engaged to the back plate f' . The other arm, f^7 , of said lever projects upwardly into position to be engaged by a cam f^8 on the lower
 115 end of the package tube. As the tube is swung to discharge position said cam engages the arm f^7 and forces it laterally of the tube, thereby lifting the gate above the delivery orifice a^8 into position to receive the
 120 package as it is ejected from the tube, as shown more clearly in Fig. 2.

Means are provided to lock the tube from backward movement as soon as the package has been ejected therefrom onto the gate, so
 125 that should anyone throw the tube to discharge position without depositing the proper coin in the machine, the gate will remain elevated above the delivery orifice and it will be impossible to obtain the package
 130

therefrom until the proper coin is deposited in the machine. For this purpose a locking lever G is pivoted on a pivot *g* on the back wall of the receptacle, and one arm thereof, *g'*, normally extends beneath the lower end of the coin chute in the path of the coin, as shown more clearly in Figs. 1, 2 and 3. The other arm, *g''*, of said lever extends upwardly and laterally behind the package tube, and a coiled spring *g'''* is connected therewith and to a suitable lug *g''''* on the side wall of the receptacle and acts to normally hold the arm *g'* at the upper limit of its movement beneath the coin chute. On the rear side of said tube is a lug *g''''''*, and a lug *g''''''''* is provided on the arm *g''* in position to be engaged by the lug *g''''''*, and as said tube nears its discharge position the lug *g''''''* engages the lug *g''''''''* and, forcing it downwardly, moves in behind it and locks the tube against return movement until the arm *g'* is depressed sufficiently by the passage of the coin through the chute to move the lug *g''''''* out of the path of the lug *g''''''''*. A safety lug *g''''''''''* is provided on the arm *g''* adjacent the lug *g''''''''* and over which the lug *g''''''* must pass before the tube reaches its discharge position, but after the gate F has been raised, so that in case an article should be placed in the coin slot and the tube operated violently enough to throw a package onto the gate before the lugs *g''''''* and *g''''''''* interlock, the tube will be prevented by the lug *g''''''''''* from returning. When, however, the tube is operated to discharge position and is locked by the lugs *g''''''* and *g''''''''*, the passage of the coin through the chute holds the lever down a sufficient interval to permit the lug *g''''''* to pass both the lugs *g''''''''* and *g''''''''''*.

A guard H, comprising a strip of metal, is engaged to the rear wall of the receptacle and extends from the coin chute laterally of the receptacle above the lever G to protect said lever from being operated by the insertion of a wire or like article into the coin slot and through one of the apertures in the chute.

A weight I which, as shown, comprises a sheet or block of metal, is adapted to be placed in the package tube on the packages and prevents the lowermost package from tilting downwardly when it is partly ejected, so that if the tube should be returned to normal position after the package has been partly ejected, the package will abut against the side of the receptacle and be forced back into the tube. Said weight may, if preferred be of a thickness to prevent it passing out of the discharge opening in the tube, but as shown it is provided with upturned ends *i* which are higher than the width of the openings in the tube through which the ejector enters and from which the package passes, so that when the last package has been ejected the weight falls in front of the ejector, and locks the tube from movement, as shown more clearly in Fig. 8.

If preferred a closure of any desired construction may be provided for the top of the tube, but as shown, it comprises a plate J of any desired material, having a downwardly turned flange *j* which is severed from the plate at its ends to engage on the outer side of the front wall of the tube, which is slotted centrally, and tongues *j'* are cut from said flange and engage within said wall.

To reduce the jar on the mechanism when the tube returns to normal position a piece of rubber K or other resilient material is carried on the side wall of the receptacle in position to be engaged by the tube as it returns to such position.

The operation is as follows: The package tube is filled with packages and the weight I is placed on the top of the stack. The cover A' is then locked in place and when a coin of the proper size is inserted through the coin slot into the machine it engages the end *d''* of the lever D and forces it laterally. The lower end of said lever swings the tube B on its pivot to its discharge position shown in Fig. 2, where it is locked from return movement by the engagement of the lug *g''''''* with the lug *g''''''''* on the locking lever G, until the coin passes through the coin chute and trips the lever. As said tube is being swung to discharge position the cam *f''* engages the lever arm *f'''* and raises the gate F above the delivery orifice *a''* in the cover. Said gate reaches its upper limit of movement in time to receive the package as it is ejected from the tube by the ejector E, and as the tube returns to normal position the gate is lowered in front of the orifice and the package may be removed.

Should anyone attempt to obtain a package by throwing the tube to discharge position by the insertion of a coin or other object in the coin slot and then withdrawing such coin or object, the tube will be locked from return movement as before described, and the gate with its package thereon will be prevented from returning to delivery position. Furthermore, in case the tube should be operated with such violence as to throw out a package before the lug *g''''''* passes behind the lug *g''''''''*, the safety lug *g''''''''''*, which is so placed that the lug *g''''''* must pass it before a package is ejected from the tube, will engage the lug *g''''''* and prevent the tube from returning.

The weight I acts to hold the free end of a partly ejected package from tilting downwardly, so that in the event the tube does not reach its locking position before the package is ejected, the latter will be forced into the tube by its contact with the side wall of the receptacle when the tube returns to its normal position.

When the tube is empty the weight rests on the bottom thereof and inasmuch as it cannot pass out of the discharge opening of the tube, the ejector will abut against it and

the tube cannot be moved. In consequence the end d^2 of the operating lever D partially closes the coin slot and a coin cannot be inserted in the machine.

Obviously the package tube may be straight if preferred, and the gate may be operated in any desired manner, and obviously many details of form and construction may be varied without departing from the principles of my invention.

I claim as my invention:

1. The combination with a receptacle of means pivoted therein adapted to contain articles to be vended, an operating lever for said means, means adapted to lock said containing means in discharge position, and movable means adapted to deliver an article from said containing means.

2. The combination with a receptacle of an article holder pivoted therein, an operating lever adapted to swing said holder on its pivot, and vertically movable means adapted to carry an article from the holder to a point of delivery.

3. The combination with a receptacle having a delivery orifice therein, of means controlling said orifice, and a package tube pivoted in said receptacle and adapted when moved in one direction to operate said means and close orifice.

4. The combination with a receptacle having a delivery orifice therein, of a tube pivoted in said receptacle and adapted to contain articles to be vended, means for operating said tube, a gate controlling said orifice, and means for raising and lowering said gate when the tube is operated.

5. The combination with a receptacle of a tube pivoted therein and adapted to contain packages, means adapted to swing said tube laterally, a gate, and means adapted to elevate the gate to receive a package from the tube when the latter is operated.

6. The combination with a receptacle having a delivery orifice therein, of a package tube pivoted in said receptacle, means adapted to operate said tube, a movable gate controlling said orifice and adapted to receive an article from said tube, and means adapted to prevent the gate from delivering the article to said orifice.

7. In a device of the class described the combination with a receptacle having a delivery orifice therein, of a package tube in said receptacle, a vertically movable gate adapted to control said opening and means adapted to eject a package from said tube onto said gate.

8. In a device of the class described the combination with a receptacle of a package tube pivoted therein and having oppositely disposed openings at its lower end, a shelf on the tube adjacent one of said openings, and a centrally jointed ejector hinged at one end on the receptacle and normally resting at its other end on said shelf and adapted to enter

one of said openings and force a package from the other.

9. In a device of the class described the combination with a receptacle having a delivery orifice therein of a gate adjacent said orifice, an article holder pivoted in said receptacle above said orifice, means adapted to move the gate to closed position when the holder is operated, means adapted to eject an article from said holder onto said gate and means adapted to prevent the delivery of the article to said orifice.

10. In a device of the class described the combination with a receptacle of a package tube pivoted therein, means adapted to swing said tube laterally, a gate, a lever connected therewith and adapted to elevate the gate when the tube is swung in one direction, and means adapted to eject a package from said tube onto said gate.

11. In a device of the class described the combination with a receptacle having a delivery orifice therein, of an article holder pivoted in said receptacle, a gate adjacent said orifice, a lever adapted to throw said holder to discharge position, means adapted to close the gate when the holder is operated, means adapted to eject an article from said holder onto said gate when the latter is in closed position, a lever pivoted in the receptacle, and means on the holder adapted to engage said lever and control the return movement of the gate.

12. In a device of the class described the combination with a receptacle having a delivery orifice therein, of an article holder pivoted in said receptacle, a lever pivoted in said receptacle and adapted to throw the holder to discharge position, means adapted to eject an article from said holder, a gate, means adapted to raise the gate to receive said article, means adapted to lock the holder in discharge position, and a lever connected therewith and adapted to release the holder and deliver the article on said gate to said orifice.

13. In a device of the class described the combination with a receptacle having a delivery orifice therein, of an ejector hinged in said receptacle, an oscillating package tube pivoted in said receptacle and adapted to move to and from said ejector, and a movable gate controlling said orifice and adapted to deliver a package from said tube to said orifice.

14. In a device of the class described the combination with a receptacle having a delivery orifice therein, of an oscillatory package tube pivoted in said receptacle, an ejector supported in said receptacle in the path of the tube and adapted to eject a package from the tube when the latter moves towards it, and means adapted to travel from said tube to said orifice and deliver a package to said orifice.

15. In a device of the class described the combination with a receptacle of a package tube pivoted therein, means adapted to swing said tube to discharge position, means
5 adapted to discharge a package from said tube, means adapted to lock the tube in discharge position and means adapted to release said tube from such position.

16. In a device of the class described the
10 combination with a receptacle having a delivery orifice therein, of a fork in said receptacle, a package tube pivoted in said fork, a lever pivoted in the receptacle and

engaged to the side of said tube, a gate controlling said discharge orifice, a lever pivoted 15 in the receptacle and engaged at one end to said gate, and means on the tube adapted to engage the opposite end of said lever and operate the gate.

In testimony whereof I have hereunto 20 subscribed my name in the presence of two witnesses.

CHARLES A. DIES.

Witnesses:

BENJ. S. McCLELLAN,
W. W. WITHEMBURY.