

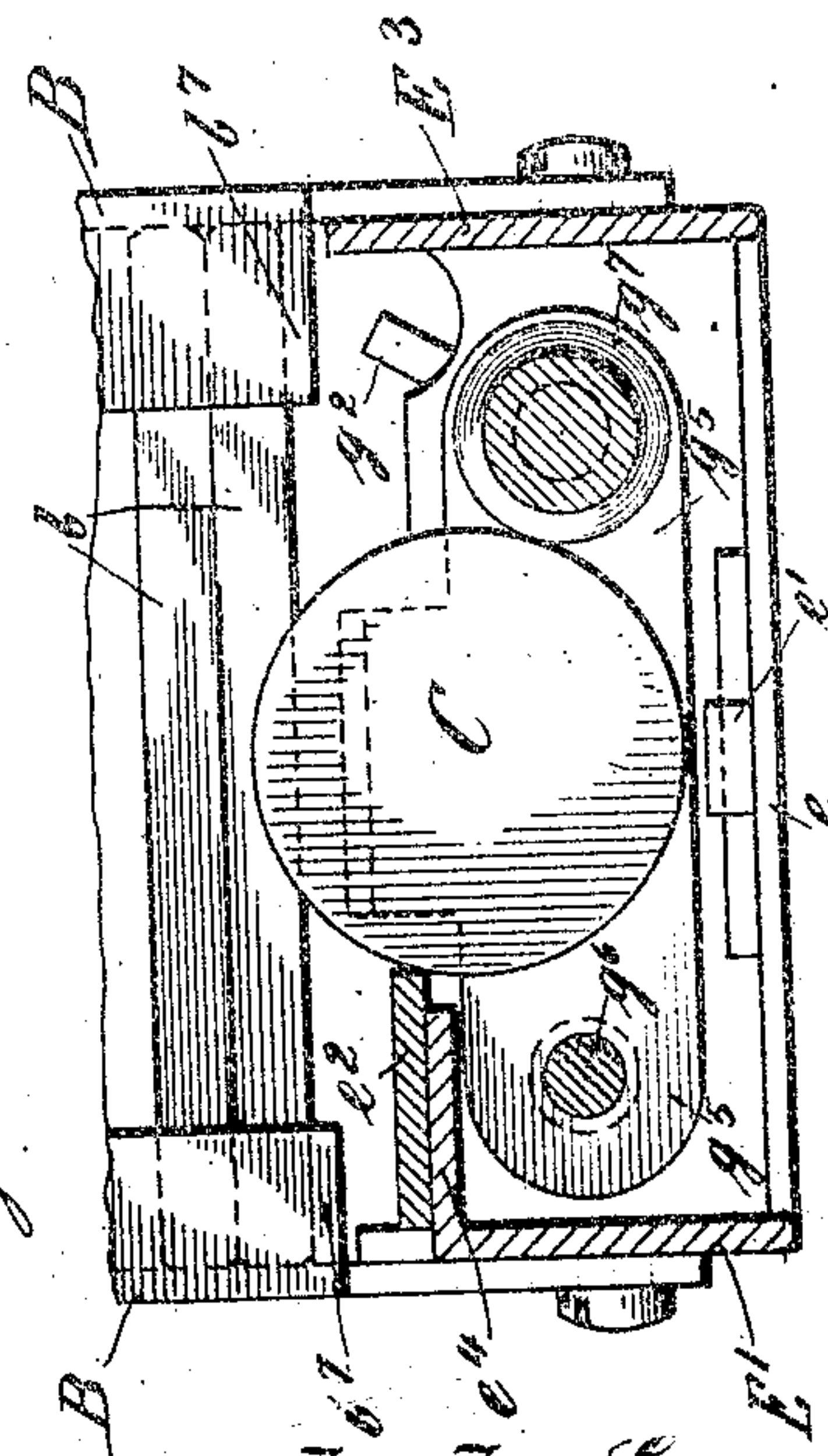
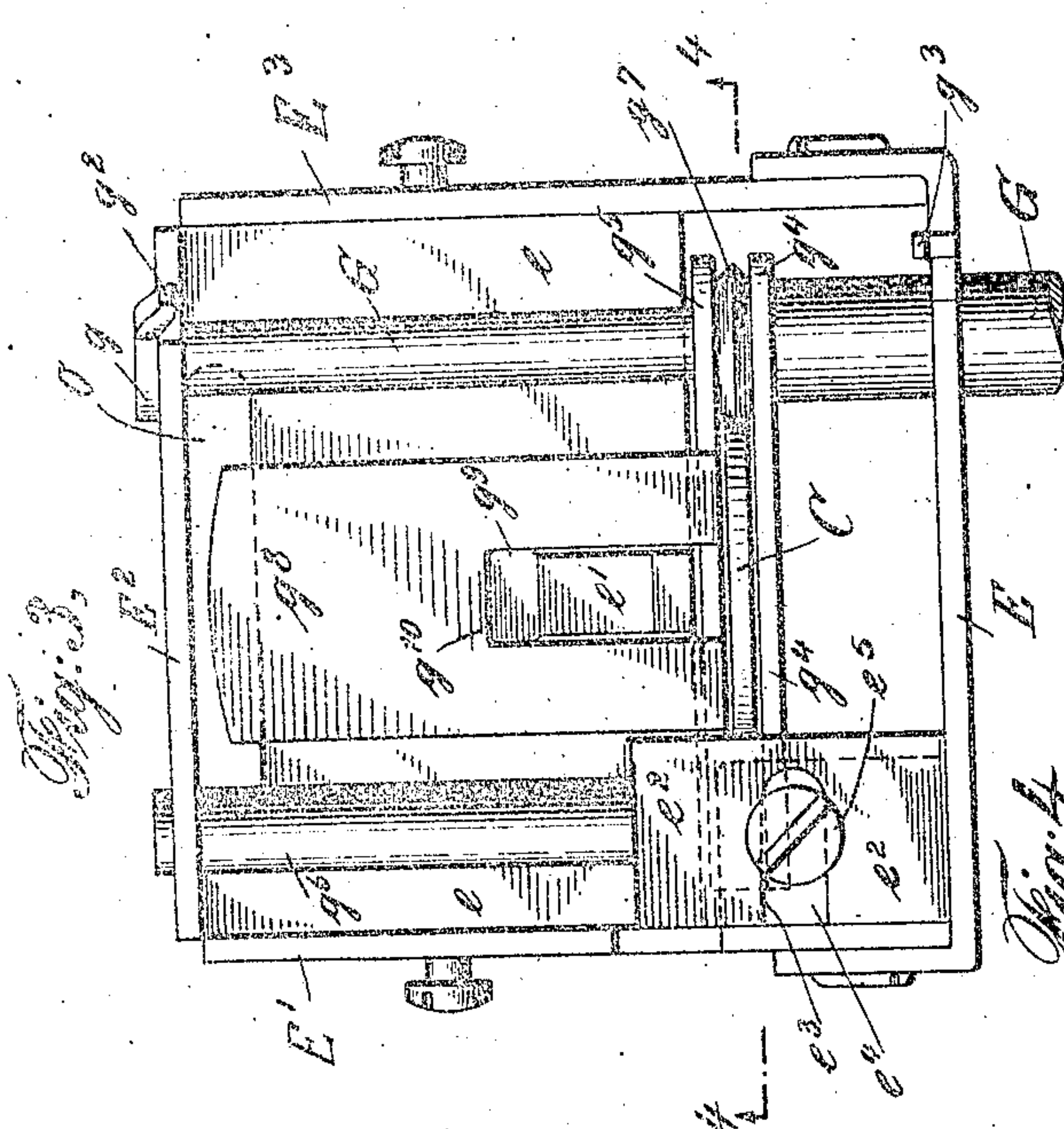
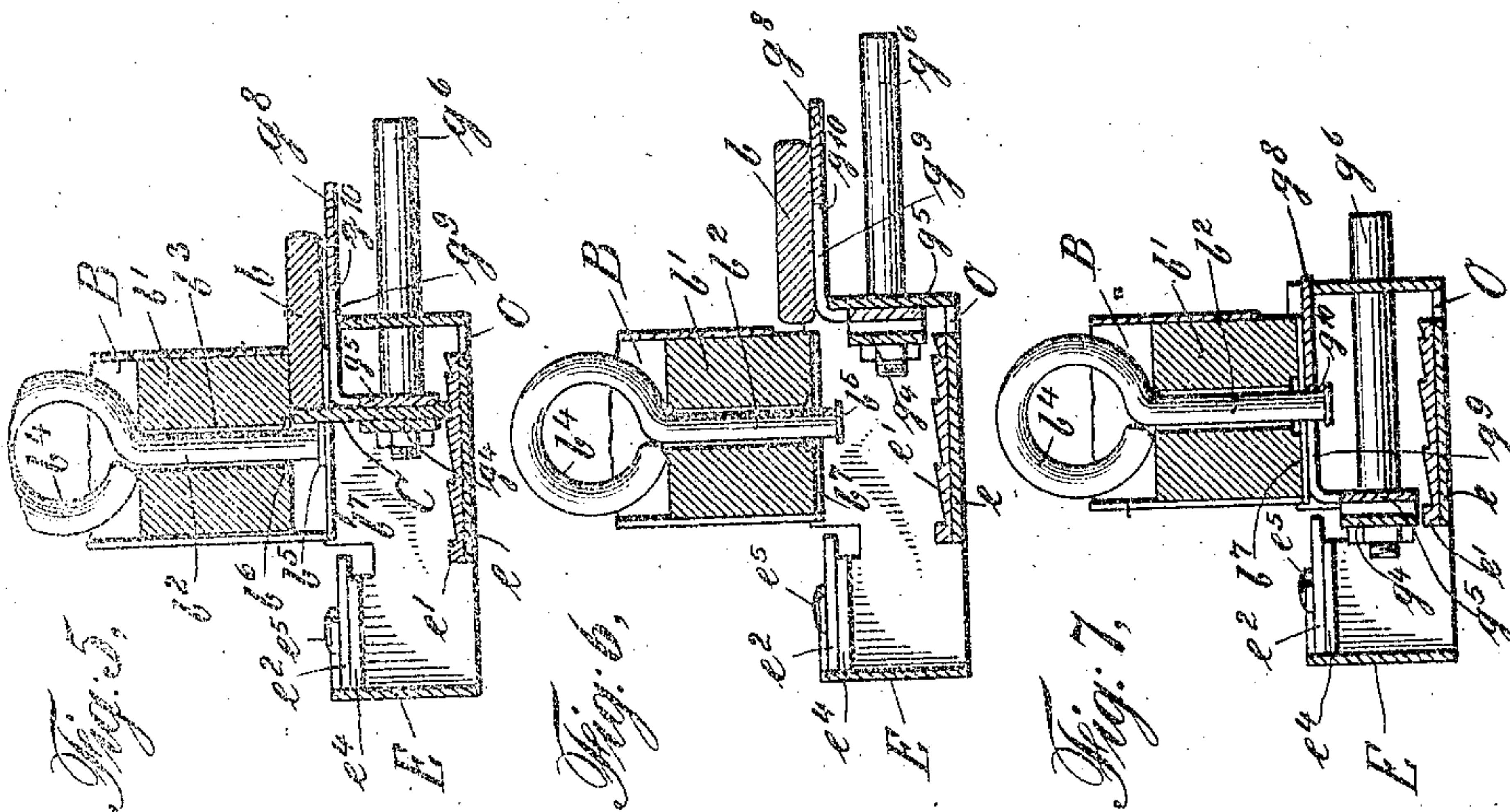
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PATENTED MAY 1, 1906.

J. J. GREEN.
COIN ACTUATED VENDING MACHINE.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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COIN-ACTUATED VENDING-MACHINE.

No. 819,422.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed December 6, 1904. Serial No. 235,669.

To all whom it may concern:

Be it known that I, JOHN JAY GREEN, a citizen of the United States, and a resident of Boonton, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Coin-Actuated Vending-Machines, of which the following is a specification.

My invention relates to coin-actuated vending-machines; and it consists in the hereinafter described and claimed improvements in construction and method of operation thereof, resulting in increased economy of construction, certainty of operation, and prevention of imposition both by and upon the vendee.

The accompanying drawings illustrate my improvements.

Figure 1 is a detail top view of the coin carrying and actuating devices; Fig. 2, a central vertical section of essential parts of my machine, taken on the line 2 2 of Fig. 1 seen in the direction of the arrows; Fig. 3, a detail top view of the coin carrying and actuating devices on an enlarged scale; Fig. 4, a transverse section taken on the line 4 4 of Fig. 3 and seen in the direction of the arrows; Figs. 5, 6, and 7, details illustrating part of my receipts-stopping device and its operation.

A is the case containing and supporting chute B for articles *b b*, till T, and other mechanism and devices hereinafter described. A is provided with an openable face portion *a*², hinged to A on rod *a*³, on which it is partially rotatable sufficiently to afford access to till T and other contained portions of case A and with a door *a*¹ overlapping *a*², and which when closed and locked prevents in the usual way the undesired opening of the case. The upper portions of case A, door *a*¹, chute B, &c., are not shown, these being unnecessary to an understanding of my invention. Chute B, as shown, is vertically disposed and of such dimensions as to afford storage and passage room for the articles *b b* to be sold. These articles are stored and carried in the chute, as shown in Fig. 2.

*b*¹ is a weight or follower supported by resting on top of said articles within said chute.

*b*² is a cylindrical stop-pin, likewise normally supported by said articles and passing loosely through a centrally and vertically disposed perforation *b*³ in *b*¹.

*b*⁴ is a handle to *b*¹.

*b*⁵ is a flange at the bottom of *b*².

*b*⁶ is a countersunk portion of *b*¹ to accommodate flange *b*⁵.

The articles *b* are normally supported by resting at both ends upon flanges *b*⁷ *b*⁷, projecting inwardly from sides of chute B. (See Figs. 2, 4, and 5.) *a*² is provided with a slot *a*⁴ for insertion of coin C. Within casing A is rigidly supported a horizontally-disposed floor D. Said floor supports the coin-actuating mechanism, top view of which separated from the remainder of the machine is shown in Figs. 1 and 3. Said coin-actuating mechanism comprises a rectangular frame having vertically-disposed and rigidly-connected sides E E' E² E³ and rigidly connected with said sides a floor or bottom portion *e*, to which is secured a horizontally-disposed ratchet *e*¹.

*e*² is an adjustable gage-piece provided with slot *e*³ and adjustably secured to flange *e*⁴ of the frame E by set-screw *e*⁵.

G is a cylindrical operating-rod which passes through face portion *a*² of case A, a portion thereof projecting outwardly therefrom, so as to be pushable inwardly from the exterior thereof in direction of the arrow *x*, (shown in Fig. 1,) the location of G relatively to the exterior of the machine being indicated by the dotted lines so lettered in Fig. 2. G passes through circular slots in E E² of diameter such as to support and guide the rod without unduly hampering its reciprocating movements. A head *g* on rod G limits outward movement of latter by abutting against E². A spiral spring *g*¹ is secured at one of its extremities to stud *g*² on *g* and at the other to stud *g*³ on E. Said spring retracts G to normal position when released from inward pressure by the vendee.

*g*⁴ is a vertically-disposed brace rigidly secured to and carried by rod G. *g*⁵ is another brace similar to *g*⁴ and likewise rigidly secured to G. *g*⁶ is a cylindrical auxiliary operating-rod to which braces *g*⁴ *g*⁵ are also rigidly secured. *g*⁶, like G, passes through E² in a circular slot in the latter, having a diameter sized to support and guide *g*⁶ without impeding its reciprocating movement. Braces *g*⁴ *g*⁵ are spaced apart approximately a little more than the thickness of the actuating-coin C or preferably, as shown in Fig. 3, a little less than twice the thickness of such coin,

g^7 is a circular bevel-edged gage-plate rigidly secured to G between braces g^4 g^5 . The bevels on g^7 are extended so as to meet, thereby imparting a sharp or knife edge to g^7 at its greatest diameter. Brace g^5 has integral therewith or rigidly attached thereto a raised horizontally-disposed carrier projection g^8 , provided with a slot g^9 . G and its connected comovable parts as above enumerated are when in normal position located as shown in Fig. 2, so as to bring the space between g^4 and g^5 directly under chute a^4 . Gage-plate e^2 is accurately adjusted so as to intercept and hold coin dropped through chute a^4 by reason of the peripheral edge of said coin contacting with inner edge of said guide-plate e^2 and knife-edge of g^7 . The coin thus passes from the coin-chute in the first instance partially into the space between g^4 and g^5 and is held from falling through said space between said braces by its said impact against said operative edges of e^2 and g^7 . It follows that a coin whose diameter is even a trifle less than the space between g^4 and g^5 will fall through and fail to operate the machine, while when the space between g^4 and g^5 is, as in the preferred construction shown in Fig. 3—i. e., but little less than twice the thickness of the coin—a coin whose thickness is somewhat less than that required will likewise fall through, passing in this instance between g^7 and g^4 or g^5 . Inward pressure being now applied to outer extremity of operating-rod G, the latter, with its connected parts, carries the coin inwardly until the latter becomes superimposed over floor e . As the inward movement continues the edge of the coin is carried beyond edge of gage-plate e^2 , whereupon the coin drops slightly between braces g^4 g^5 until its lower edge rests upon ratchet e' . As the inward movement continues the coin, loosely supported in a substantially vertical on-edge position between coacting braces g^4 g^5 , pushed forward by g^4 and bearing at the lower portion of its periphery upon ratchet e' , rides upwardly over the incline of each ratchet-tooth and drops in front of each tooth in succession, whereby its forward movement once commenced withdrawal of the coin is rendered impossible. The front of the coin near its upper edge or periphery during its said forward movement contacts with and pushes forward the then undermost of the articles b , as shown in Fig. 5, and the alternate rises and falls of the coin as it passes over the ratchet tend to prevent jamming. As the article is thus forced forward and away from the support afforded by the flange b^7 , it passes progressively and proportionately horizontally, without tilting, onto carrier-plate g^8 until it is wholly supported and carried by the latter, as shown in Fig. 6. When this stage is reached, the space between braces g^4 and g^5 will have been carried beyond floor e and its ratchet e' and the coin will drop through slot

O in floor e and be banked in till T. Pressure on rod G being now withdrawn, spring g' retracts latter with its connected comovable parts above described, with the result that carrier-plate g^8 is withdrawn from beneath article b , one end of the latter being abutted against its next succeeding article or weight b' , which has in the meantime taken in the chute the place last previously occupied by the article from beneath which carrier-plate g^8 is, as aforesaid, being withdrawn. When spring g' has retracted rod G with its said connected parts to normal or first position, as aforesaid, the article b will be left without support and will fall into delivery-chute S of the machine within reach of the purchaser.

While the articles are passing through the chute B, weight b' rests upon them and operates as a follower. When the last article has been delivered as aforesaid, b' fills its place within the chute, whereupon stop-pin b^2 drops first into the position indicated by Fig. 5 and finally attains relatively to operating-rod G and its connected parts the position illustrated in Figs. 6 and 7. This brings the lower extremity of the stop-pin b^2 below the level of the carrier-plate g^8 and within the slot therein g^9 , which relation of the parts causes stop-pin b^2 to abut against edge g^{10} of carrier-plate g^8 within slot g^9 and locks operating-rod G, with its connected parts, into the position shown in Fig. 7, in which it will be understood that the coin-receiving space between braces g^4 g^5 is no longer located beneath the coin-chute a^4 , the result being that a coin dropped through the latter finds no support and passes downward between a^2 and till T into delivery-chute S, where it is accessible to be recovered by the intending purchaser.

Among the numerous features of my organized machine as above described which I deem particularly noteworthy attention is directed to the particular accuracy of gage accomplished by the combination of adjustable gage-plate e^2 and circular knife-edged gage-plate g^7 in their particular locations relatively to each other, as shown, the coaction of the said knife-edge with the adjustable edge of the horizontally-disposed gage-piece e^2 bearing against the periphery of the coin at different levels, as shown, increasing the accuracy of the adjustment possible in its relation to the coin, and the knife-edge formation preventing spurious coins of undue thickness from being supported by the parts on their introduction thereto through the slot of the machine. The coin after being dropped into coin-chute a^4 attains considerable momentum before striking the superiorly-disposed angular edge of the adjustable gage-plate e^2 , from which it rebounds slightly in a direction angularly to that of its first descent, to fall again with some rotary movement in a path which causes it to impinge knife-edge of cir-

cular bevel-edged gage-plate g^7 , from which again it slightly rebounds toward inferiorly-disposed angular edge of e^2 , and thus after a series of progressively-diminishing bounds from latter to knife-edge and back is finally stopped by contacting tangentially simultaneously again said inferior edge of e^2 and at a single point against said knife-edge, owing to the distance between these points being a trifle less than the diameter of the required coin. The rebounds mentioned tend to impart to the coin irregular oscillatory movements, which usually result in throwing the center of its edge to one side of the knife-edge. Now in the preferred construction shown in Fig. 3, the width of the space between g^4 and g^5 being but little less than twice the thickness of the coin, a coin of substantially less than required thickness will work in between the knife-edge and either g^4 and g^5 and drop clear through the coin-chute without actuating the machine. Note also the effect of the ratchet upon the coin, whereby with the assistance of the braces g^4 g^5 the withdrawal of the coin is prohibited after its actuating function upon the article has been commenced; also, the action of stop-pin b^2 with slot g^6 , whereby after the last article within the chute has been delivered the movable parts are locked in a position which prevents the coin dropped into the receiving-chute from actuating them or being retained in the machine, thus effectually preventing all imposition upon purchasers.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is the following, viz:

1. In a coin-actuated vending-machine, the combination of a vertically-disposed chute for a coin, a stationary gage-plate having a horizontally-extended operative edge projecting into, beyond, and transversely of the path of said chute at a given level, a movable gage-disk disposed in a vertical plane rectangularly disposed toward and at a lower level than said edge of said gage-plate, said operative edges being spaced to sustain said coin between them, coacting braces horizontally movable in a direction parallel with said operative edge of said gage-plate and disposed to support the coin in edgewise presentation to said operative edges and means to move said braces and gage-disk relatively to said operative edge of said gage-plate, whereby the coin is supported by said braces and operative edges until moved beyond the operative edge of said gage-plate.

2. In a coin-actuated vending-machine, the combination of a vertically-disposed chute for a coin a stationary gage-plate having a horizontally-extended operative edge projecting into, beyond, and transversely of the path of said chute at a given level, a movable knife-edge gage-disk disposed in a vertical plane rectangularly disposed toward and at

a lower level than said edge of said gage-plate, said operative edges being spaced to sustain said coin between them, coacting braces horizontally movable in a direction parallel with said operative edge of said gage-plate and disposed to support the coin in edgewise presentation to said operative edges and means to move said braces and gage-disk relatively to said operative edge of said gage-plate, whereby the coin is supported by said braces and operative edges until moved beyond the operative edge of said gage-plate.

3. In a coin-actuated vending-machine, the combination of a vertically-disposed chute for a coin, a stationary gage-plate having a horizontally-extended operative edge projecting into, beyond, and transversely of, the path of said chute at a given level, a movable gage-disk disposed in a vertical plane rectangularly disposed toward and at a lower level than said edge of said gage-plate, said operative edges being spaced to sustain said coin between them, a chute for an article, a floor extending beneath the bottom of said article-chute to sustain the weight of said coin, coacting braces movable relatively to said floor and chute and arranged to loosely hold said coin in substantially upright, on-edge, presentation relatively to and while sustained first by said operative gage-edges and afterward by said floor and means to move said guide-disk and braces past said operative edges of said guide-plate, over said floor, and past the bottom of said article-chute.

4. In a coin-actuated vending-machine, the combination of a vertically-disposed chute for the coin, open at top and bottom, a stationary gage-plate having a horizontally-extended operative edge projecting into, and transversely of, the path of said chute at a given level, a movable gage-disk having a peripheral knife-edge in a vertical plane rectangularly disposed toward and at a lower level than said edge of said gage-plate, said edges being spaced apart less than the diameter of said coin, and a pair of braces, parallel with each other and with said plane of said knife-edge, spaced apart less than double the thickness of said coin and each equidistantly disposed on opposite sides of said knife-edge, whereby a coin of required diameter and thickness is arrested and held within said chute, while a coin of deficient diameter or thickness falls through.

5. In a coin-actuated vending-machine, the combination of a vertically-disposed continuous coin-chute, open at top and bottom, a horizontally-movable coin-carrier normally interposed medially in the path of said chute, a chute for an article, means to move said carrier horizontally out of said path of said chute to bank said coin and to deliver said article, in said article-chute a follower nor-

5 mally supported by said article, means in said article-chute to support said follower after said article is delivered, a stop-pin loosely supported in said follower and adapted to project below the bottom thereof after said article is delivered, a part connected and moving with said carrier and disposed to abut against said stop-pin to prevent retraction of said carrier into normal position in

said coin-chute, whereby a coin deposited in said chute after delivery of said article falls through the chute and is returned to the depositor.

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