

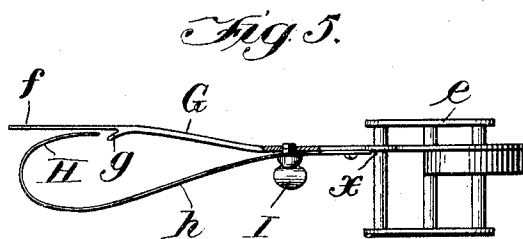
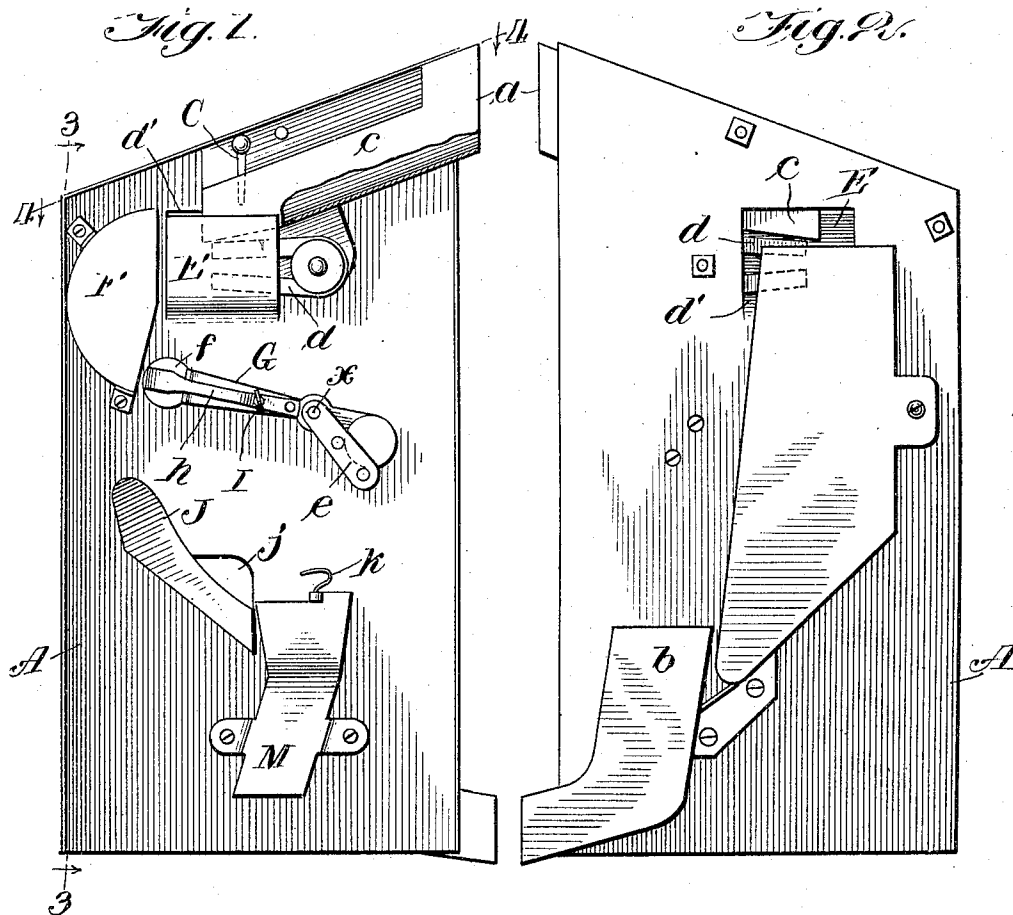
No. 794,483.

PATENTED JULY 11, 1905.

C. BIGELOW.
COIN DETECTOR FOR VENDING MACHINES.

APPLICATION FILED NOV. 4, 1903.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

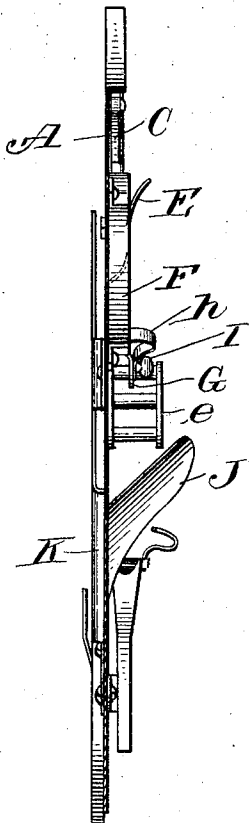


Fig. 4.

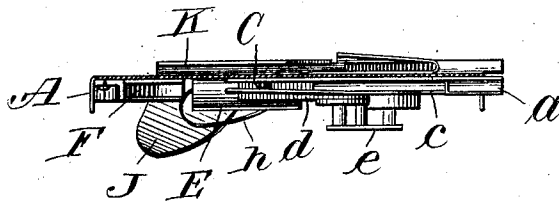


Fig. 6.

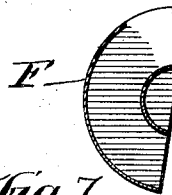
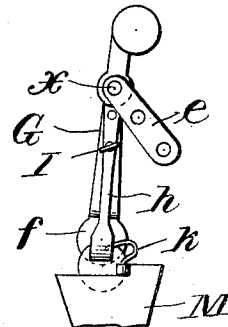
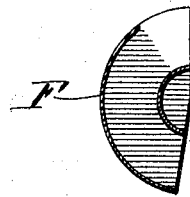
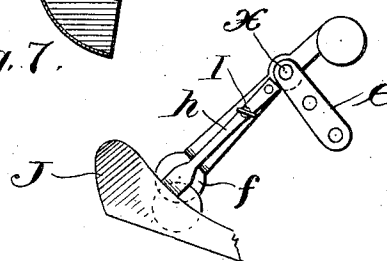


Fig. 7.



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UNITED STATES PATENT OFFICE.

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COIN-DETECTOR FOR VENDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 794,483, dated July 11, 1905.

Application filed November 4, 1903. Serial No. 179,777.

To all whom it may concern:

Be it known that I, CLAUDE BIGELOW, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Detectors for Vending-Machines, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simply-constructed and effective device for coin-operated machines which will invariably distinguish between the coin it is adjusted to select and the many and various substitutes which it is so frequently sought to impose on such machines. This I accomplish by the means hereinafter fully described and as particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the false side of a coin-operated vending-machine to which my improvements are applied looking at it from the inside. Fig. 2 is a side elevation thereof looking at it from the opposite side. Fig. 3 is a vertical section thereof taken on dotted line 3 3, Fig. 1, looking in the direction indicated by the arrows. Fig. 4 is a horizontal section taken on dotted line 4 4, Fig. 1, looking in the direction of the arrows. Fig. 5 is a plan view of the tilting detector-bar, separated from the remainder of the mechanism. Figs. 6 and 7 are diagrammatical views illustrating in side elevation the different positions assumed by the tilting bar during its operation.

Referring to the drawings, A represents the case of a coin-operated machine, which is provided with a slot *a* in its front wall for the insertion of the coin and has a suitable discharge-chute located below slot *a*, out through which the heavier substitutes for the preferred coin will roll on edge into the pocket or tray *b*, secured to the outside of the case and forming a terminal for the lower end of the discharge-chute. Slot *a* is located near the top and near one side of the machine, and the coin-chute *c*, leading in a downwardly-inclined direction toward the rear therefrom, is secured to a false side, which is made, pref-

erably, of sheet-steel. This chute *c* is of the usual gutter shape, and extends a distance corresponding to about two-thirds of the depth of the case of the machine. Its bottom is cut away for a suitable distance back from its lower end, and a permanent horseshoe-magnet *d* is so placed beneath the same that the edge of the upper arm of the same takes the place of this removed portion of the bottom of the trough. Just above the discharge end of chute *c* a retarding-arm C is pivoted, so that its pendent end will be in the way of and must be swung out of the way in the direction in which the coin or its substitute is traveling. If the substitute for the coin be of steel, its progress is retarded by the magnet, and if of a very light material which the magnet will not attract its progress will be materially retarded by the drag thereon of the arm C. The substitutes thus retarded drop from the end of the chute, and, descending, come in contact with and are deflected sidewise through an opening *d'* in the false side by a wing E, which latter simply consists of a rectangular piece of metal which is cut on three sides and punched sidewise from the lower sill thereof to form opening *d'*. Secured to the false side at the rear of opening *d'* and at such distance from said chute that the coin or any substitute therefor which is unaffected by the magnet or the retarding-arm can leap from the end of said chute into its mouth is a suitably-constructed segmental chute F, which is disposed in a vertical position and reverses the direction of travel of the coin or substitute and discharges the same from its lower end in every instance with the same degree of force into the grasp of the tilting bar G. This tilting bar is fulcrumed at *x* in the upper end of an open frame *e*, which is secured to and projects laterally from the false side slightly below the plane of the delivery end of chute F, and it is maintained in a normally horizontal position by means of a suitable weight on its forward shorter arm, which in a state of rest comes in contact with the cross-bars of frame *e*, substantially as

shown. The lower arm of the tilting bar is of such length as to extend from its fulcrum to the discharge end of the segmental chute, and the extremity of this longer arm has a flat pan *f* made integral therewith and of such construction that the coin cannot pass through the same. The flat surface of this pan *f*, which is imperforate, is in the same vertical plane as one of the sides of the segmental chute, and the side thereof opposite the extremity is provided with a lateral flange *g*, which may, if desired, be undercut.

When the coin is discharged edgewise from the segmental chute, it goes flatwise against the side of the pan until its further progress is stopped by coming in contact with flange *g*, and is held against said pan by the pressure of the adjacent end of a longitudinally-disposed leaf-spring *h*. This spring *h* is of any desirable length and has its secured end rigidly fastened to the side of the longer arm of the tilting bar near its fulcrum, substantially as shown. It is so shaped that as it extends toward the pan it is sprung out from the side of the bar and has its rear end *H*, which is in front of the concave side of the pan, bent toward said tray and then back, like the crook of a shepherd's staff. At a suitable point between its ends a gage-screw *I* is extended through a suitable opening in said spring and is tapped into the body of the bar *G*, and by properly manipulating this screw the pressure of the unsecured end of spring *h* against the pan is regulated.

In operation the coin or substitute is introduced into the machine through the slot *a* of the case *A* and rolls on edge down the inclined chute *c*. If not made of steel or of a very light material and it is not retarded by the magnet *d* or retarding-arm *C* to such an extent as to seriously affect its momentum, it will leap the space between the end of the inclined chute *c* and the segment-chute *F*, and the coin will be delivered to the pan of the tilting bar with an equal force every time, thus making it possible to regulate the pressure of the spring *h* against the pan until the tilting bar has performed its duty. When the coin or its substitute is thus fed to the tilting bar, the longer arm thereof moves downward. If the substitute is heavier than the coin, or if of the same weight its sides be smooth, it will slip out of the grasp of the spring *h* before the tilting bar has reached the limit of its downward movement, as shown in Fig. 6 of the drawings, and falling will strike against and be deflected by a wing *J*, through a suitable opening *j* in the false side into the same, or a continuation of the same downward passage or chute *K*, located on the opposite side of the false wall into which the substitute failing to make the leap from the inclined chute *c* into the segmental chute falls and will be expelled from its lower forwardly-turned

end into the tray *b*. Should the preferred coin be fed to the pan of the tilting bar, the spring *h* will hold it against the same until the bar is in an almost perpendicular position, as shown in Fig. 7 of the drawings, whereupon its farther downward movement is arrested by an arm *k*, projecting upward from the side of the mouth of the coin-chute *M*, and then curved laterally, which comes under the outward sweep of the curved end of spring *h* and slightly moves its point away from the pan sufficient to release the coin. The coin thus released falls into the coin-chute and is conveyed thereby to the actuating mechanism of the machine.

What I claim as new is—

1. A coin-detector comprising an independent automatically-returnable fulcrumed arm, a flat imperforate tray on the end thereof, and adjustable yielding means for pressing a coin against said tray.

2. A coin-detector comprising an independent automatically-returnable fulcrumed arm, a flat imperforate tray on the end thereof, and adjustable yielding means carried by said arm for pressing a coin against said tray.

3. A coin-detector comprising an independent automatically-returnable fulcrumed arm, a tray on the end thereof, the pan of which is in a vertical plane, and yielding means for pressing a coin laterally against said tray.

4. A coin-detector comprising an independent automatically-returnable fulcrumed arm, a tray on the end thereof, the pan of which is in a vertical plane, and yielding means carried by said arm for pressing a coin laterally against said tray.

5. A coin-detector comprising an independent variably-movable automatically-fulcrumed returnable arm, a flat imperforate tray on the end thereof, and adjustable yielding means for pressing a coin against said tray.

6. A coin-detector comprising an independent variably-movable automatically-returnable fulcrumed arm, a tray on the end thereof the pan of which is in a vertical plane, and yielding means for pressing a coin laterally against said tray.

7. A coin-detector comprising an independent suitably-fulcrumed balanced tilting bar movable in a vertical plane, a tray on the end of the longer arm thereof the pan of which is in a vertical plane, and yielding means for pressing a coin laterally against said tray.

8. A coin-detector comprising an independent suitably-fulcrumed balanced tilting bar movable in a vertical plane, a tray on the end of the longer arm thereof the pan of which is in a vertical plane, and a leaf-spring for holding a coin laterally against said tray.

9. A coin-detector comprising an independent suitably-fulcrumed balanced tilting bar movable in a vertical plane, a tray on the end of the longer arm thereof the pan of which is

in a vertical plane, a leaf-spring for holding a coin laterally against said tray, and means for regulating the pressure of said spring.

10. A coin-detector comprising an independent suitably-fulcrumed balanced tilting bar movable in a vertical plane, a tray on the end of the longer arm thereof the pan of which is in a vertical plane, and a leaf-spring whose forward end is crooked for holding a coin laterally against said tray.

11. A coin-detector comprising an independent automatically-returnable tilting bar, a tray on the end of the longer arm thereof the pan of which is in a vertical plane and has its rear edge flanged laterally, and yielding means for pressing a coin laterally against said tray.

12. A coin-detector comprising an independent automatically-returnable tilting bar, a tray on the end of the longer arm thereof the pan of which is in a vertical plane and has its rear edge flanged laterally, and a leaf-spring for pressing a coin laterally against said tray.

13. A coin-detector comprising an independent automatically-returnable tilting bar, a tray on the end of the longer arm thereof the pan of which is in a vertical plane and has its rear edge flanged laterally, a leaf-spring for holding a coin laterally against said tray, and yielding means for regulating the pressure of said spring.

14. A coin-detector comprising an independent automatically-returnable tilting bar, a tray on the end of the longer arm thereof the pan of which is in a vertical plane and has its rear edge flanged laterally, and a leaf-spring the forward end of which is crooked for holding a coin laterally against said tray.

15. A coin-detector comprising an independent suitably-fulcrumed balanced tilting bar having a limited movement and provided with a suitable imperforate vertical tray on the end of the longer arm of said bar, and means for pressing a coin against the tray.

16. A coin-detector comprising an automatically-returnable arm, a flat imperforate vertical tray on the end thereof, means for delivering the coin longitudinally to the end of said arm, and yielding means for releasably pressing a coin against said tray.

17. A coin-detector comprising an automatically-returnable fulcrumed arm, a flat tray on the end thereof, a momentum-regulating means for delivering the coin longitudinally to the end of said arm, and a yielding device for releasably pressing a coin against said tray.

18. A coin-detector comprising an automatically-returnable fulcrumed arm, a flat tray on the end thereof, a momentum-regulating chute for delivering the coin longitudinally to the receiving end of said arm, and a yielding device for releasably pressing a coin against said tray.

19. A coin-detector comprising an automatically-returnable fulcrumed arm, a segmental momentum-regulating chute for delivering the coin longitudinally to the receiving end of the arm in a plane tangential to said segmental chute.

20. A coin-detector comprising an automatically-returnable fulcrumed arm, a coin-receiving downwardly-inclined chute, a momentum-regulating segmental chute delivering the coin to said arm in a plane tangential to said segmental chute, the entrance to which is in the path traveled by the coin but separated a suitable distance from the discharge end of said coin-receiving chute, in substantial alinement therewith.

21. A coin-detector comprising an automatically-returnable fulcrumed arm, a coin-receiving downwardly-inclined chute, a momentum-regulating segmental chute delivering the coin to said arm in a plane tangential to said segmental chute the entrance to which is in the path traveled by the coin but separated a suitable distance from the discharge end of the coin-receiving chute in substantial alinement therewith.

22. A coin-detector comprising an automatically-returnable fulcrumed arm, a coin-receiving downwardly-inclined chute, a momentum-retarding device at the discharge end thereof, a momentum-regulating segmental chute delivering the coin to said arm in a plane tangential to said segmental chute, the entrance to which is in the path traveled by the coin but separated a suitable distance from the discharge end of said coin-receiving chute, in substantial alinement therewith.

23. A coin-detector comprising an automatically-returnable fulcrumed arm, a coin-receiving downwardly-inclined chute, a loose pendent arm pivoted just above the discharge end thereof, a momentum-regulating segmental chute delivering the coin to said arm in a plane tangential to said segmental chute, the entrance to which is in the path traveled by the coin but separated a suitable distance from the discharge end of said coin-receiving chute, in substantial alinement therewith.

24. A coin-detector comprising a coin-receiving downwardly-inclined chute, a momentum-retarding device located in the path of the coin as it passes through said chute, a momentum-regulating segmental chute the entrance to which is in the path traveled by the coin, but separated a suitable distance from the discharge end of said coin-receiving chute, and an automatically-returnable fulcrumed bar which receives the coin from said regulating-chute longitudinally into its end in a plane tangential to said segmental chute.

25. A coin-detector comprising a coin-receiving downwardly-inclined chute, a loosely-hanging arm the pendent end of which is in

the path of the coin as it passes through said chute, a momentum-regulating segmental chute the entrance to which is in the path traveled by the coin but separated a suitable distance from the discharge end of the receiving-chute, and an automatically-returnable fulcrumed bar which receives the coin from said regulating-chute longitudinally into

its end in a plane tangential to said segmental chute.

In testimony whereof I have hereunto set my hand this 12th day of October, 1903.

CLAUDE BIGELOW.

Witnesses:

E. K. LUNDY,

FRANK D. THOMASON.