

(Model.)

2 Sheets—Sheet 1.

J. H. VOLKMAN.

COIN CONVEYER AND TESTER FOR AUTOMATIC VENDING MACHINES.

No. 483,188.

Patented Sept. 27, 1892.

Fig. 1.

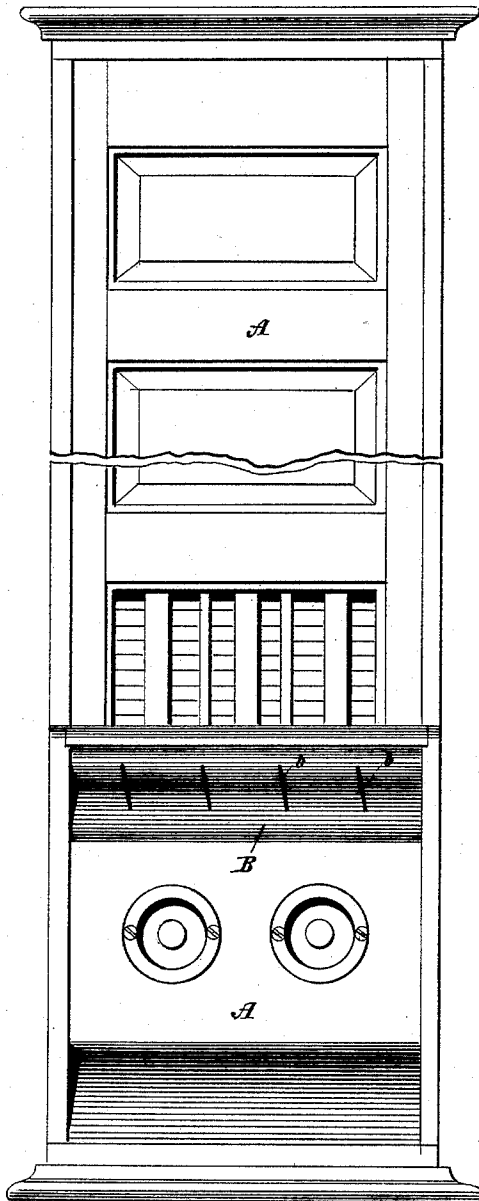


Fig. 1.^a

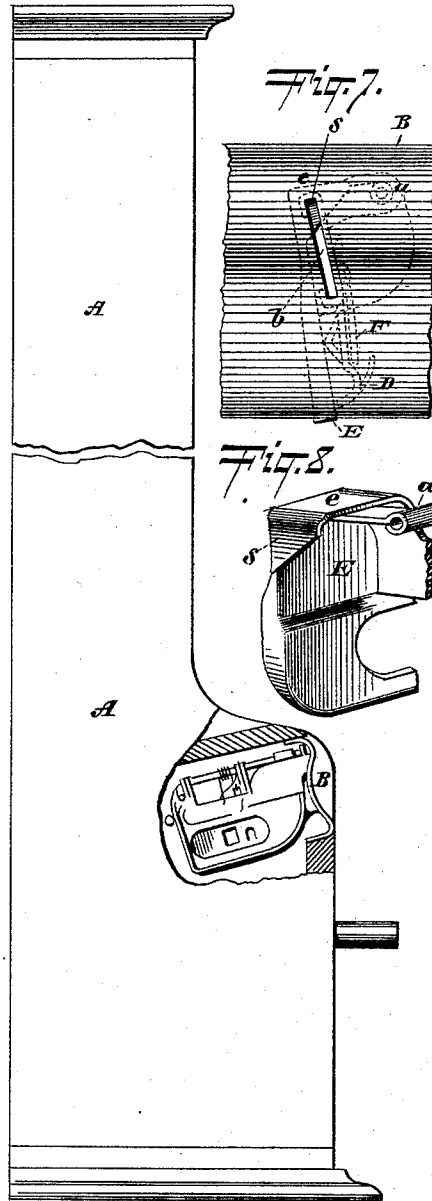


Fig. 7.

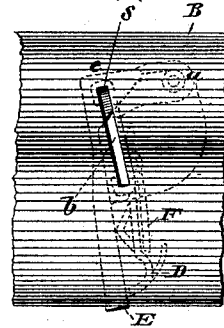


Fig. 8.

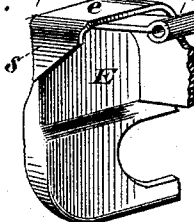


Fig. 9.



WITNESSES:

WITNESSES:
Gustave Dietrich.
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INVENTOR

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(Model.)

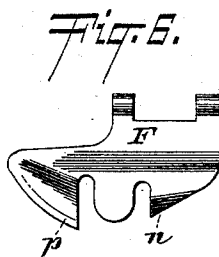
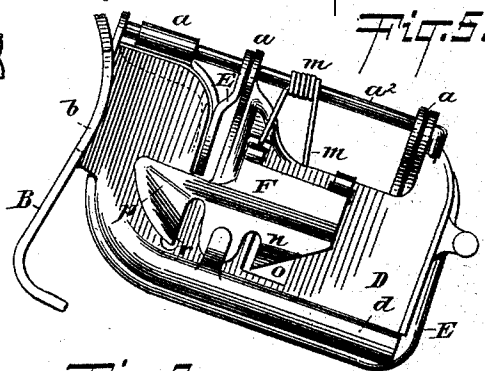
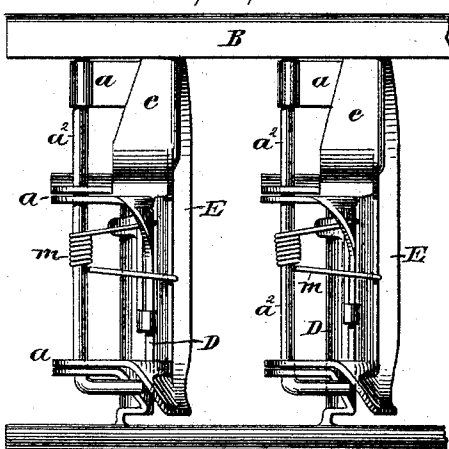
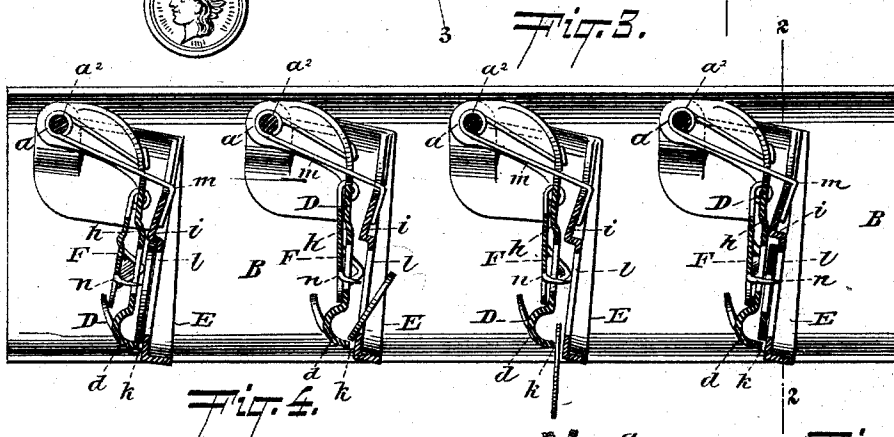
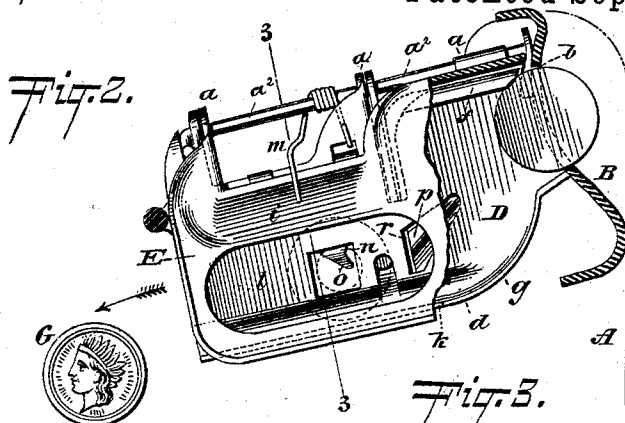
2 Sheets—Sheet 2.

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WITNESSES:
Gustav Dietrich
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UNITED STATES PATENT OFFICE.

JOHN H. VOLKMANN, OF NEW YORK, N. Y.

COIN CONVEYER AND TESTER FOR AUTOMATIC VENDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 483,188, dated September 27, 1892.

Application filed April 19, 1892. Serial No. 429,760. (Model.)

To all whom it may concern:

Be it known that I, JOHN H. VOLKMANN, a resident of the city, county, and State of New York, have invented an Improved Coin Con-
veyer and Tester for Automatic Vending-Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in coin-controlled vending apparatus, particularly that part of the apparatus into which the coin is placed and through which it must pass before actuating the apparatus; and it consists, essentially, of certain new mechanism constituting a coin tester or
detector, whereby worthless and improper coins and similar articles are rejected and prevented from operating said apparatus.

The invention consists, also, in the novel arrangement and combinations of parts hereinafter set forth and claimed.

In the drawings, Figure 1 is a front view of a coin-controlled vending apparatus, showing the position of the slotted front plate through which the coin is passed prior to actuating the apparatus. Fig. 1^a is a side view of the same, partially broken away to show the position of my improved coin-tester in the completed box. Fig. 2 is a longitudinal section taken on the line 2 2, Fig. 3, of the coin-tester detached from the apparatus. Fig. 3 is a cross-section on the line 3 3, Fig. 2, of the same, showing four of the testers side by side. Fig. 4 is a plan view of the same. Fig. 5 is a side view looking toward the left of Fig. 4. Fig. 6 is an outer side or back view of the washer-detaining mechanism. Fig. 7 is an enlarged face view of the slotted front plate of the vending apparatus, showing the inclined toe of the tester directly behind the slot. Fig. 8 is a perspective view of part of the movable jaw of the tester with said inclined toe. Fig. 9 is a bottom view of the detector.

A is the casing of the vending-machine, in the front of which the slotted plate B, covering the coin conveying and detecting mechanism, is placed. The slots *b* in this plate are of a size sufficient for the introduction of a coin of predetermined denomination and size and they are, by preference, slightly inclined. Behind each slot of this front plate B is placed the coin-detector, consisting, mainly, of two substantially parallel plates D and E, one of

which D is fixed and the other movable. The movable plate E is hinged at its upper end by lugs *a* to a pin *a*², which has its supports in the plates B and D or otherwise. The hinged plate E is on that side of the slot *b* toward which the coin when leaving the slot will lean. The movable plate E is parallel to the stationary plate D and in its normal position impinges against the edge of a rail *d*, formed on the bottom of said stationary plate D. A spring *m* or analogous weight holds the lower part of the plate E in contact with the said rail *d*. The movable plate E and stationary plate D have concave roof-like lips *e* and *f* at their forward ends—i. e., nearest the plate B—to guide the inserted coin forward and downward from the slot to the rail *d*. The stationary plate D has also a concave continuation *g* of the rail *d* below the concave roof *f* to receive and give impetus to the coin in its passage from the slot *b* to the receptacle in which it is designed to enter after leaving the coin-conveyer. The stationary plate D and movable plate E are provided near their upper parts with inwardly-extending beads or projections *h* and *i*, which will serve, under certain conditions hereinafter explained, to clamp coins and prevent their passage through the conveyer. The bottom rail *d* of the stationary plate D has part of it cut away to form a slit, as at *k*, for a purpose hereinafter to be explained.

In the middle portion of the movable plate E is cut an elongated opening *l*, the height of which is slightly less than the diameter of the coin. At the central portion of the outer side of the stationary plate D is loosely hinged the washer-arresting mechanism, which consists, by preference, of a substantially flat sheet F, having near the end which is farthest from the plate B a pin or projection *n*, which passes through a suitable slot *o* of the stationary plate D. At or near its other end the plate F has a bevel-edged toe *p*, also passing through a suitable slot *r* in the stationary plate D. The plate F is by gravity held in contact with the face of the plate D. The plate E has nearest the upper part of the slot *b* a bevel-edged projection *s*, which lies part way across said slot *b*, as in Fig. 7.

The operation is as follows: Upon the introduction of a coin G into the slot *b* the

upper end of the coin actuates the beveled projection *s* on the movable plate *E*, and thereby swings said movable plate on its hinge away from the stationary plate *D*. The coin after passing the slot *b* is then projected downward and forward by the overhanging roof *f* and lower concave *g*, being guided in its passage between the movable plate *E* and the rail *d* of the stationary plate *D*, the movable plate *E* resuming its normal position, under the influence of spring *m*, immediately after the coin *G* passes the projection *s*. In its passage through the conveyor the coin strikes the beveled toe *p* of the plate *F*, pressing the plate *F* outward and withdrawing the pin or finger *n*. The distance between said toe *p* and pin *n* is less than the width of the coin, so that the toe *p* will continue to be pressed inward until the forward end of the coin has reached the point where the pin *n* projects. In the case of a solid or unperforated coin, therefore, the plate *F* and its toe *p* and pin *n* will be held outward away from the plate *D* until the coin has passed the perforation *o* of said plate *D*. In the case of perforated coins, washers, &c., however, when the perforation comes into alignment with the aperture *o* and finger *n* the rear end of the coin has cleared the toe *p* and the plate *F* will swing inward, its finger *n* piercing the perforated coin and arresting it at that point. Thus a perforated washer will be arrested, as on the right-hand section, Fig. 3. A coin too thin will drop through or be wedged in the slit *K*, as on the second section from the right, Fig. 3. A coin too large will be clamped by the projections *h* or *i*, or both. A coin too small in diameter will drop out through the slot or opening *l*, as on the second section from the left of Fig. 3. Hence no coin, except that for which the machine is calculated, will roll off the detector (see left-hand section, Fig. 3) into that part of the machine within which it will actuate the package. Any coin detained in the detector, either by the prong *n* or by clamping or wedging, will be discharged by the action of the coin next introduced, when said next coin by striking the incline *s* moves the plates *D* and *E* apart. Pieces of paper or tin-foil stuffed through the slots *b* will be arrested by the roof-like ledges *e f*, so that they cannot clog the mechanism any longer than the introduction of the next coin and the consequent spreading of the plates *D E*. The slope of the rail *d* and the practically upright drop thereto serve to impel a properly-shaped coin through the detector and to keep all improperly-shaped insertions away from the mouth of the detector and to prevent a bad coin from being forcibly projected through the conveyor. As everything passing between the plates *D E* must lean against the inclined movable plate *E*, the discharge from the detector of matter caught therein is assured as soon as the plates are separated.

Having described my invention, what I claim is—

1. A coin-detector constructed mainly of a fixed plate *D* and of a movable plate *E*, so inclined that the coin in traveling through the space between said plates will lean against the movable plate, and means, substantially as described, for operating said movable plate, substantially as and for the purpose herein shown and described.

2. The combination of the front plate *B*, having slot *b*, with the coin-detector, consisting of plates *D* and *E*, the plate *E* being movable away from the plate *D*, and with the toe *s* on said movable plate *E* in proximity to the plate *B*, all arranged so that a coin inserted through the slot *b* will on striking the toe *s* cause the plates *D* and *E* to separate, substantially as herein shown and described.

3. In a coin-detector, the combination of the plate *D*, having a rail *d* and rib *h* on the lower portion thereof above said rail *d*, with the spring-pressed movable plate *E*, having rib *i* facing rib *h*, substantially as herein shown and described.

4. The combination of the plate *D*, rail *d* on the lower portion thereof, movable plate *E*, and spring *m*, adapted to hold said plate *E* in contact with the plate *D*, the said plate *E* having the opening *l* above the rail *d*, substantially as herein shown and described.

5. The coin-detector consisting, mainly, of two plates *D E*, and the rail *d*, formed on one of said plates, combined with the movable washer-arrester *F*, having prongs *n* and *p*, that project through holes in one of said plates, substantially as herein shown and described.

6. The combination of the plates *D E*, one of said plates carrying the intervening rail *d*, having slit *K*, with the spring *m*, adapted to hold said plate *E* in contact with the plate *D*, and means, substantially as described, for moving said plate *E*, all as specified.

7. The plate *D*, having rail *d* on the lower portion thereof, and concave forward extension *g* of said rail, combined with the movable plate *E*, having overhanging roof-like lip *e*, the plates *E* and *D* facing each other, substantially as herein shown and described.

8. The plate *D*, having rail *d* on the lower portion thereof, and concave forward extension *g* of said rail, and upper roof-like lip *f*, combined with the movable plate *E*, having roof-like lip *e*, substantially as herein shown and described.

9. The combination of the plates *D E*, the plate *E*, having slot or opening *l*, with the washer-arrester *F*, having prongs *n p*, and with the spring *m*, adapted to hold the said plate *E* in contact with the plate *D*, substantially as herein shown and described.

10. The coin-detector consisting of the fixed plate *D*, having rail *d* and slit *K* thereon and having the projection *h* and apertures *o* and *r*, the plate *E*, having aperture *l*, toe *s*, and projection *i*, the spring *m*, pivot-pin *a*², and the washer-arrester *F*, having prongs *n* and *p*, all combined and arranged for opera-

tion substantially as herein shown and described.

11. A coin-detector comprising plate D, movable plate E, means for operating said
5 movable plate E, and a rail *d* for the coins to roll on, and a face-plate B, with coin-slot *b*, said parts being so arranged that the said rail is below said slot, so that the coin after

passing said slot must descend vertically before it reaches the rail *d*, substantially as is herein shown and described.

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Witnesses:

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E. L. SHERMAN.