(No Model.) 3 Sheets—Sheet 1.

C. S. BATDORF.

COIN OPERATED VENDING MACHINE.

No. 424,592. Patented Apr. 1, 1890.

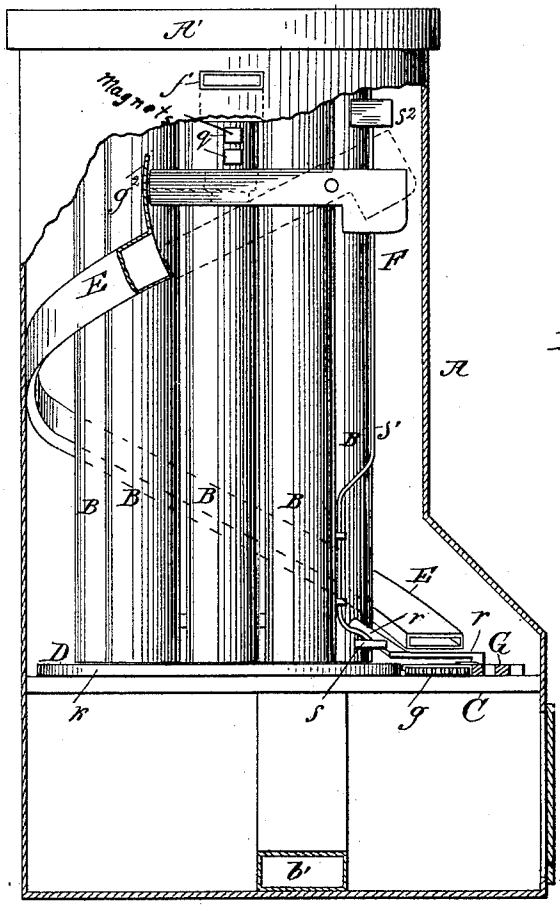

Fig. 1.

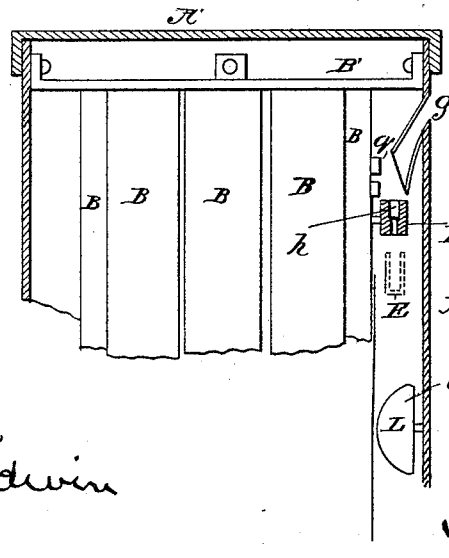

Fig. 2.

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Fig. 3.

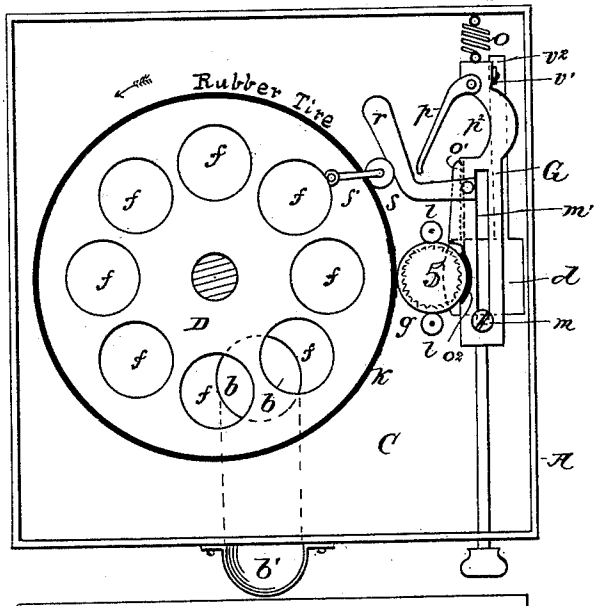


Fig. 4.

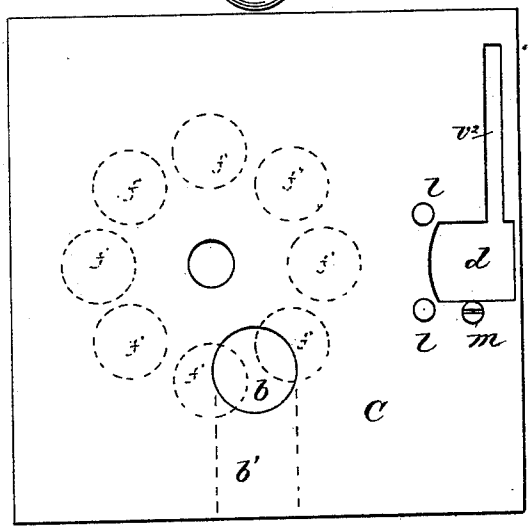
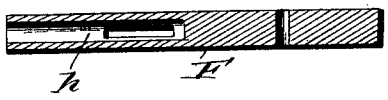


Fig. 7.



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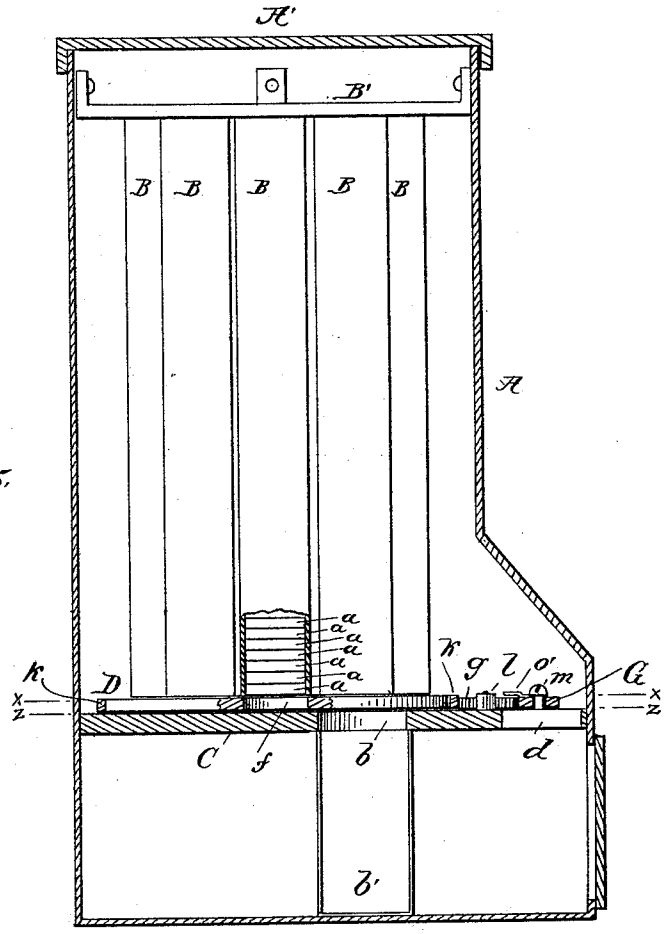

Fig. 5.

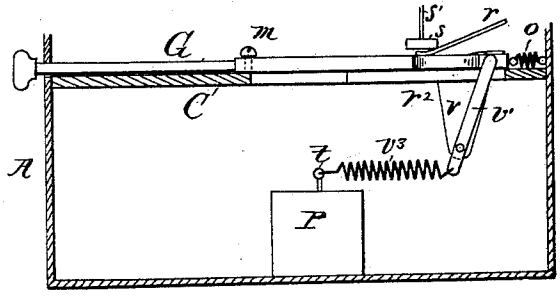

Fig 6

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UNITED STATES PATENT OFFICE.

CHARLES S. BATDORF, OF BROOKLYN, NEW YORK, ASSIGNOR TO HELEN G. BATDORF, OF SAME PLACE.

COIN-OPERATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 424,592, dated April 1, 1890.

Application filed August 22, 1889. Serial No. 321,644. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. BATDORF, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Coin-Operated Vending Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of this invention is to provide an improved coin-operated vending apparatus; and the invention consists of a revoluble perforated plate or disk horizontally adjustable beneath the delivery ends of a group of vertical tubes to receive therefrom and to deliver the goods to be vended; in converting each coin dropped into the apparatus into a temporary friction-wheel for revolving the said perforated disk; of mechanism for applying and operating said coin as a friction-wheel; in devices for preventing the full operation of the apparatus excepting when the proper coin is introduced; in devices for detecting and announcing the introduction of spurious coin, buttons, or metal disks with intent to defraud, and in a musical attachment, and novel mechanism for keeping it in operative condition, all of which will be hereinafter fully set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a partly-sectional front elevation of my improved apparatus with parts removed. Fig. 2 is a sectional side elevation of a portion of the same. Fig. 3 is a cross-section on line X X, Fig. 5. Fig. 4 is a cross-section on line Z Z, Fig. 5, with the relative positions of the apertures in the superimposed disk indicated in dotted lines. Fig. 5 is a partly-sectional front elevation with parts removed to better exhibit other parts. Fig. 6 is a sectional side elevation of the lower portion of the apparatus, showing the music-box and mechanism for putting it in operative condition. Fig. 7 is a longitudinal sectional view of a lever detached.

In the drawings, A represents the outer case of the apparatus, in the upper part of which is a fixed group of tubes B, held in upright position by means of a ring or collar B′, that is secured to the inner side of the case, as shown in Fig. 2. The case-cover A′ is to be removed when it is desired to fill the tubes B with the articles to be vended—in this case with boxes *a a*, containing the articles to be sold, the diameter of each box being that of a tube interior.

Fixed in the case A, and separating the lower from the upper portion thereof, is a bed-plate C, provided with a circular aperture *b* and a nearly-rectangular opening *d*. Centrally pivoted upon the upper face of this bed-plate C, and directly under the group of tubes B, is a circular disk D, provided with circular openings *f*, in number equal to the number of the said tubes, and each one of the diameter of a tube. This disk D is designed to be of the thickness of one of the boxes *a*, so that it can readily be revolved when each of its apertures contains a box.

When a suitable coin, as *g*, is introduced into the opening *g′* in the case A, it falls edgewise into the gaging-slot *h*, Fig. 2, of the lever F, that is pivoted to a tube in the upper part of the case A and rests normally in a horizontal position, as shown in Fig. 1. The upper part of this lever-slot *h* is designed to be just of a width to easily admit the coin designed to be used, and the lower half of said slot is contracted, as shown in cross-section in Fig. 2, so that the proper coin cannot engage in it, but is wide enough to permit a thinner coin than the proper one to fall through. The weight of the coin causes the long arm of said lever to tip toward the mouth of the coin-chute E, which is fixed spirally about the group of tubes, and has an upward-projecting curved guard g^2 at its mouth opposite the end of the lever F to prevent the premature delivery of the coin from said lever. When the said lever F has tipped sufficiently, as indicated by dotted lines, Fig. 1, the coin rolls from it into the chute E, and is thereby delivered flat upon the bed-plate C and in edge contact with the disk D, which latter is tired with a rubber band *k*, for the purpose of increasing the friction between the said coin and disk, when the former is

practically converted into a friction-wheel, as hereinafter set forth. When the coin has been discharged from the lever F, the latter returns to its normal position, as shown in full lines, Fig. 1.

Falling from the chute E, as above stated, the coin falls flat upon the bed-plate C between two guide-rolls *l l*, that are fixed on vertical pins set in said plate C, so that the edge of said coin is at one point in contact with the periphery of the disk D and at two opposite points with the rolls *l l*, and having the edge opposite the said disk near or projecting over the opening *d* in the bed-plate C and in contact with an edge of the pull-bar G. Held upon the face of the bed-plate C by a screw *m*, that is passed down through its slot *m'* into said plate, is a spring-retracted pull-bar G, Figs. 1, 3, and 6, that extends out through the case A, and is provided with a knob for the convenience of the operator. A coiled spring *o*, secured on the plate C, has one end attached to the inner end of said bar and operates to retract it after the operator has pulled and released the same. Along the edge of the bar G which is nearest to the disk D, and on a plane with its superior face, is a thin projecting flange or lip *o'*, that is designed to extend over the coin *g* to hold it down in place when said bar is pulled and said coin is operating as a temporary friction-wheel. A curved segment, as at o^2, is cut out of said lip, so that the coin *g* may freely fall from the chute E to its place on the bed-plate C, and the under face of this flange or lip, as well as the contiguous edge of the bar G, is preferably covered with rubber to increase the friction on the coin *g*. The coin *g* and the parts described being in position, as shown, the operator will pull out the bar G, with the effect of revolving the said coin, thereby converting it temporarily into a friction-wheel in contact with the disk D, which latter then will be revolved in the direction of the arrow, Fig. 3, until one of its openings *f* is brought directly over the discharge-opening *b* in the bed-plate C, and then the box or package that may be in said opening *f* will fall down through the opening *b* into the pocket of the discharge-chute *b'* within reach of the operator. When the disk D is revolved to this extent, the spring-dog *p*, pivoted on the inner and curved end of bar G, is by the pull on the said bar inserted between the coin and the disk D, and breaks the contact between the two. The coin then ceases to operate as a friction-wheel, and at the same moment the inward curve p^2 of the bar G is brought opposite the coin and over the aperture *d*, and being thus released from the action of the bar G the said coin is, by the action of the dog *p*, pushed from between the rolls *l l* and down through the opening *d* of the bed-plate C into the lower part of the case A, and on the release of the bar G by the operator the apparatus is again in condition for another operation.

My devices for preventing fraudulent operation of this apparatus consist of a series of magnets *q q*, Figs. 1 and 2, fixed upon one of the tubes B, just above the slot in the lever F, and beneath the lower end of the coin-opening *g'*, so that when a disk or other small piece of iron is introduced it is attracted and held by said magnets. If pieces of other metal than iron, or articles or coins of weight or thickness unlike those of the coin for which the apparatus is adapted be introduced, they falling upon the lever F will remain there, for if of less weight they will not sufficiently tip the lever, and if of greater dimensions they cannot enter the lever-slot, and the lever could not be tipped low enough to deliver from its upper face into the coin-chute. An exceptional case, however, would be when a thinner coin than the proper one was dropped into the lever-slot, for in that case the said coin would pass entirely through the said slot, and, falling, would strike upon the gong L.

The person attempting the fraud would, counting on a successful issue, pull out the bar G with the design of operating the package-delivery devices; but, there being then no coin in place to operate as a temporary friction-wheel, the inclined arm *r*, fixed on the bar G, would then be brought along beneath the foot *s* of the upright rod *s'*, that is movably held to the tubes B by suitable eyes or the like and carries a heavy block s^2 on its upper end above the short arm of the lever F, and said rod *s'* would be gradually elevated until the free end of the arm *r* was pulled clear from beneath the rod-foot *s*, and then the said rod would fall, and consequently the block s^2 would strike heavily upon the short end of lever F and jerk up the long arm thereof, so as to displace any spurious coin or the like therefrom, or to displace any bits of iron that may be on the magnets, and such spurious articles would then fall directly into the base of the case A upon a bell or gong L placed therein, and give an alarm that would lead to the immediate detection of the person attempting the fraud.

I propose to combine with my apparatus a music-box *p*, to be operated by a lever *v'*, connected with the pull-bar G; but as no claim is here made to this musical device or its mode of operation it is unnecessary to further describe the same.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A coin-operated vending apparatus constructed substantially as herein shown and described, with a group of vertical tubes fixed within a suitable case, a bed-plate provided with coin-delivering and package-delivering openings horizontally within the case below the lower ends of the tubes, a revoluble disk provided with package-receiving apertures, said disk pivoted on the upper face of said plate directly beneath the tubes and adapted to be revolved by a coin, which may be forced in edge contact with it and said coin rotated

by a pull-bar that is secured on the said plate, all arranged and operated substantially as set forth.

2. In a coin-operated vending apparatus, the combination, with a group of fixed vertical tubes arranged within a suitable case, of a plate fixed horizontally within said case, provided with openings for the discharge of the coin and articles vended, and separating the case into upper and lower sections, and a revoluble disk provided with circular openings corresponding with the tubes in number and diameter, said disk pivoted on the surface of said plate directly below the tubes, substantially as herein shown and described.

3. In a coin-operated vending apparatus, as a means of discharging the articles to be vended, the combination, with the revoluble device carrying said articles, of means, as the rolls *l*, for holding the introduced coin in position, and a pull-bar for rotating said coin, which is adapted to be operated as a friction-wheel, substantially as herein shown and described.

4. In a coin-operated vending apparatus, the combination of a carrier for carrying the articles to be vended and a device for operating the same, constructed and adapted to use the introduced coin as a temporay revoluble friction-wheel, substantially as described.

5. In a coin-operated vending apparatus, as a means for dislodging spurious coin from the coin-receiving lever, the combination of the inclined arm *r*, attached to the pull-bar, and rod *s'*, provided with foot *s* and head-block s^2, all arranged and operating substantially as herein shown and described.

6. The combination, with the bed-plate C, of the spring-retracted pull-bar G, secured thereon and provided with flange *o'* and dog *p*, and having curved inner end p^2, substantially as and for the purpose described.

7. In a coin-operated vending apparatus, a perforated revoluble disk adapted to receive and deliver the articles to be vended, provided with a rubber tire, substantially as herein shown and described.

8. The combination of the pivoted revoluble disk and the pull-bar for rotating the introduced coin, which is adapted to operate as a friction-wheel, substantially as and for the purpose described.

9. In a coin-operated vending apparatus, as a means for detecting spurious coin and attempted fraud, and in combination with a spurious-coin gage, a bell or gong fixed within the case in position for the spurious coin to make contact with, substantially as herein shown and described.

In testimony that I claim the foregoing I have hereunto set my hand, in the presence of two witnesses, this 19th day of August, 1889.

CHARLES S. BATDORF.

Witnesses:
JACOB J. STORER,
CHAS. H. LOTT.