No. 676,145. Patented June 11, 1901.

H. S. MILLS.

VENDING MACHINE.

(Application filed Sept. 24, 1900.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

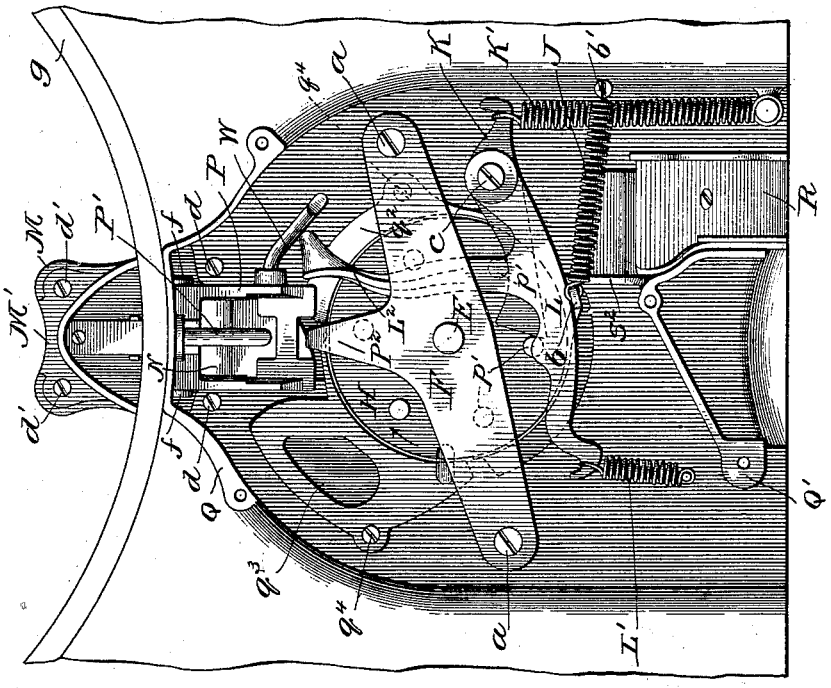

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Fig. 3.

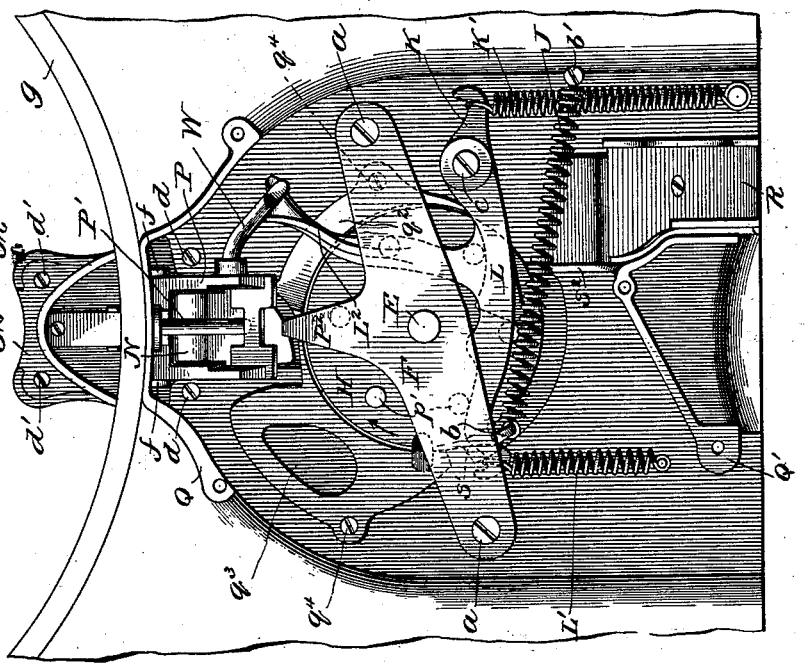
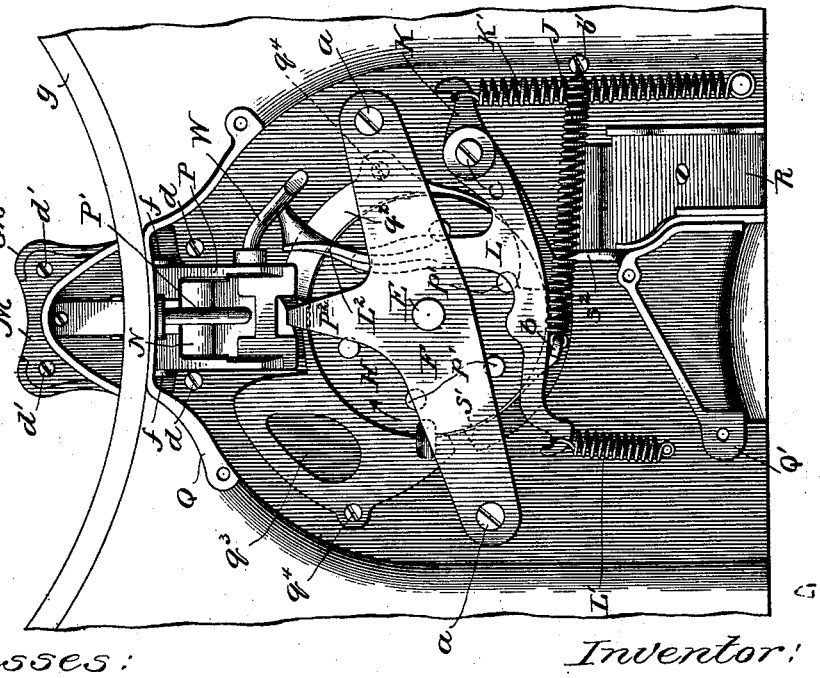


Fig. 2.



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(No Model.) 4 Sheets—Sheet 3.

Fig. 3.

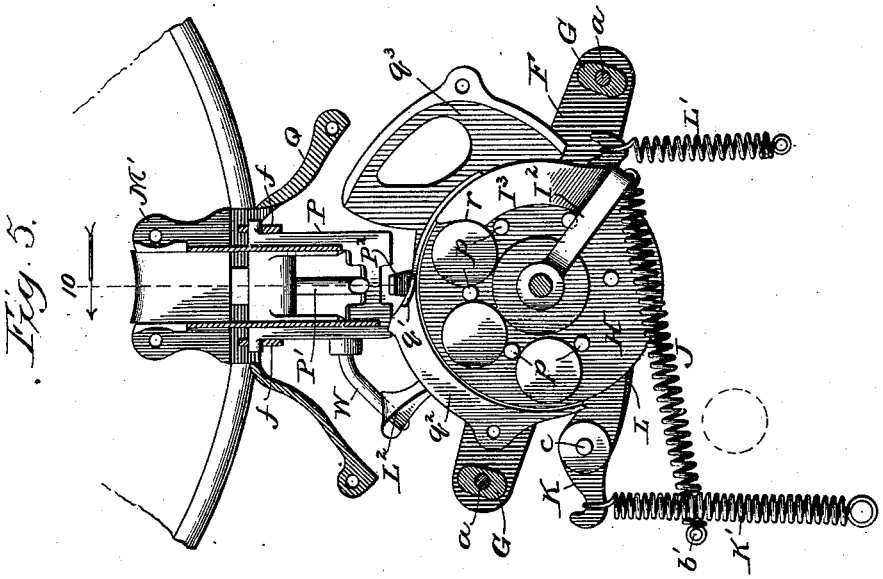
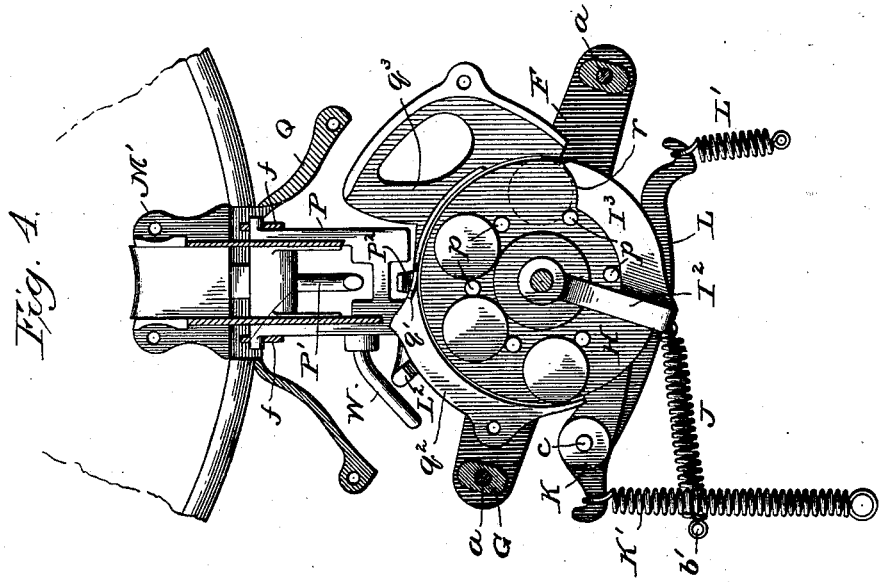


Fig. 4.



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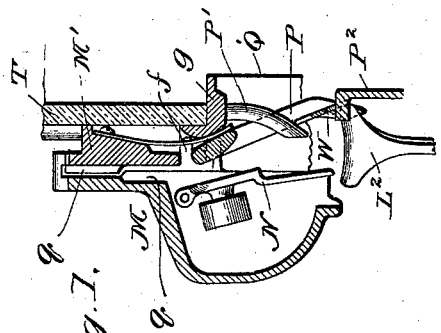

Fig. 1.

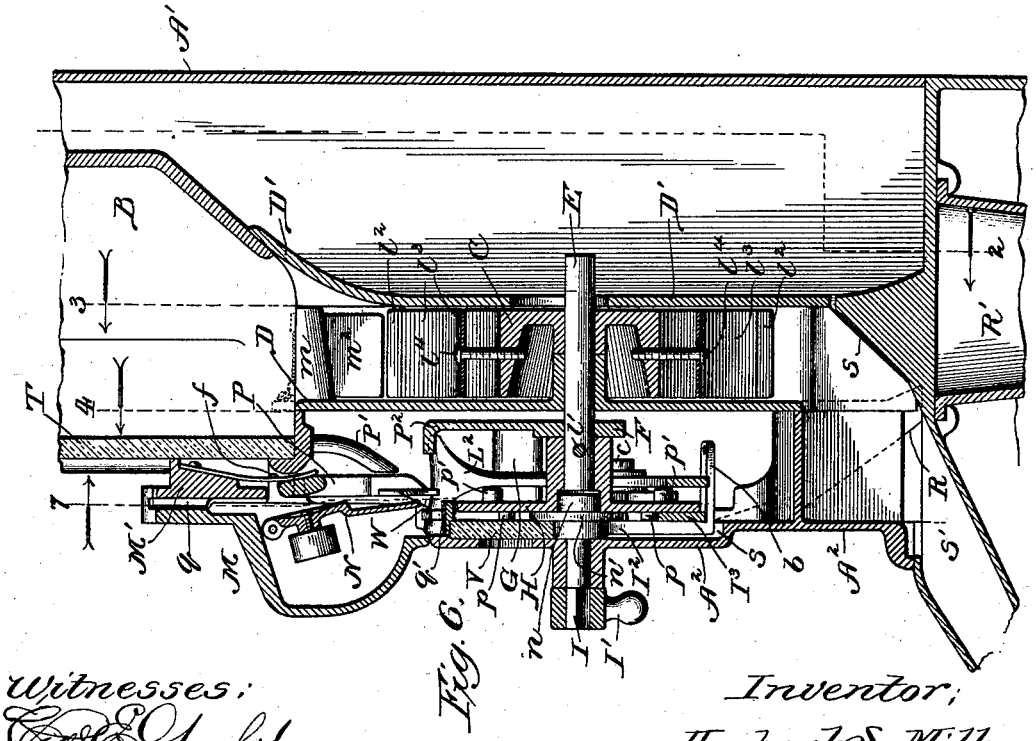

Fig. 6.

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UNITED STATES PATENT OFFICE.

HERBERT S. MILLS, OF CHICAGO, ILLINOIS.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 676,145, dated June 11, 1901.

Application filed September 24, 1900. Serial No. 30,899. (No model.)

To all whom it may concern:

Be it known that I, HERBERT S. MILLS, 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 specification.

My invention relates particularly to a bogus-coin detector for coin-controlled or coin-operated mechanism.

My primary object is to provide improved means for removing metallic disks, pasteboard disks, or the like which may be fed into the machine in lieu of coins by unscrupulous or mischievous persons.

My invention is illustrated in its preferred form in connection with a peanut-vending machine in the accompanying drawings. The vending-machine is fully illustrated for the sake of clearness; but the novel features relating thereto are claimed in a divisional application, Serial No. 52,369, filed March 22, 1901.

In the drawings, Figure 1 is a broken view taken as indicated at line 1, Fig. 6, and showing certain of the operative parts in one position; Fig. 2, a view similar to Fig. 1, but showing said parts in a different position; Fig. 3, a view similar to Fig. 2, but showing a still different position of the parts; Fig. 4, a broken sectional view taken as indicated at line 4 of Fig. 6; Fig. 5, a view similar to Fig. 4, but showing the parts located at different relative positions; Fig. 6, a broken central vertical section, and Fig. 7 a broken vertical section taken as indicated at line 7 of Fig. 5 and showing one position of the parts of the bogus-coin detector.

A represents the frame of the machine, comprising a casing A′ and a swinging door or front A^2; B, a commodity-chamber supported on the inner side of the door A^2 and within the casing A′; C, a rotatable measuring device provided with peripheral pockets; D, a casing for the same having a removable rear face-plate D′; E, a stud upon which the measuring device C is supported; F, a support for the stud E, which is itself rigidly attached to lugs G on the inner face of the door A^2 by screws *a*; H, a coin-operated disk rigidly secured to the front of the stud E on the front side of the support F; I, an operating shaft or stud journaled in the casing-front A^2 and provided at its outer end with an operating-knob I′ and at its inner end with a rigid transverse arm I^2, bearing a coin-actuating curved arm I^3; J, a spring connected with a rearwardly-extending lug or arm *b* at the outer end of the arm I^2 and connected also to a screw or stud *b*′, rigid with the case-front; K, a pawl pivoted on a stud *c*, projecting from the inner face of the casing-front and connected to the frame-front by a spring K′; L, a magnet-actuating device pivotally connected with the stud *c* and connected with the frame-front by a spring L′, said device being provided with an upwardly-extending magnet-actuating arm L^2; M, Fig. 1, a portion of the bogus-coin-detector chamber secured to the front frame by screws *d*; M′, a supplemental portion of said chamber, secured to the part M by screws *d*′; N, a device which serves to prevent disks of cardboard or the like from passing to the coin-operated wheel H; P, a magnet pivotally supported in slotted lugs *f*, with which the part M′ is provided; P′ P^2, stationary prongs which serve to remove bogus coins from the magnet P; Q, an upper rearwardly-projecting flange connected with the casing-front and serving as a portion of the supporting means for the casing D; Q′, a lower flange with which the casing D is connected; R, a coin-discharge tube leading to the coin-receptacle R′ in the base of the main casing; S, an inclined way for the material delivered thereto by the measuring device; S′, a discharge-tube to which the material gravitates from the inclined part S; T, a glass plate forming a front for the chamber B and itself supported in an annular rim *g*, and V a sight-glass located in front of the coin-actuated wheel H and serving to expose to view coins which are in contact with the front face of the wheel or disk H.

As appears particularly from a view of Figs. 2 and 6, the lower portion of the casing-front is bowed or bulged outwardly to afford a housing for the coin-actuated wheel and the attendant parts. As shown in Fig. 6, the casing D affords virtually a removable cover for the depression wherein are housed the parts H and the attendant parts. The casing D has rearwardly-projecting curved flanges *h*′, to which is secured a removable

rear face-plate D′ of said casing. The upper portion of the casing D is in communication with the lower portion of the chamber B, as best appears from Fig. 6. The chamber B is secured to the inner face of the frame-front.

The measuring device C comprises a hub portion l, secured to the shaft or stud E by a set-screw l' and provided with radial arms l^2 and adjustable bottoms for the pockets between said radial arms comprising spring-metal pieces l^3, having outturned ends contacting with said arms, and central screws l^4, extending into the hub l. Thus the depth of the pockets can be readily regulated by adjustment of the screws l^4. As shown in Fig. 6, the entrance to that pocket of the measuring device which chances to be uppermost is adjacent to a lug m and a spring-held piece m^2, which serves to regulate the level of the material which is permitted to pass during the revolution of the measuring device. The device m^2 is yielding to prevent hard particles from becoming wedged between the same and the measuring device. The lower end of the casing D is open and in communication with the inclined surface S, as shown in Fig. 6.

As shown in Fig. 6, the disk or wheel H is recessed centrally of its front face to receive a central boss or stud n in the rear of the flange n', with which the stud or shaft I is provided. The wheel or disk H is provided on its front surface with lugs p and on its rear surface with lugs p'. A passage q for coins is provided through the bogus-coin detector, and a flange q' is provided on the inner surface of the casing-front for the coin to drop upon after it passes through said coin-detector. Fig. 4 shows the flange q' as formed integral with a removable piece q^2, recessed to afford a channel q^3, the front wall of which is provided by the casing-front when the piece q^2 is secured in place, as by screws q^4. The end of the curved arm I^3 is concaved at r, and the said arm is of a thickness corresponding to the width of the channel q^3, so that when the arm I^3 is at rest a coin passing through the channel q^3 will be supported by the end of the arm I^3 and that lug p of the coin-actuated wheel H which happens to be adjacent to the end of the arm I^3.

It will now be understood that when the coin passes through the channel q^3 to the front face of the wheel H and rests in contact with the free end of the arm I^3 movement of the arm I^3 against the force exerted by its spring will serve, through the medium of the coin and one of the lugs p, to impart movement to the coin-wheel. The measuring device C rotates to the right and downward, and as each pocket passes beneath the lower portion of the chamber B it is charged with a quantity of the commodity or material from said chamber. With the construction shown a plurality of pockets are kept charged at one time, and a rotation of the device C through a given fraction of a revolution is sufficient to cause the contents of the lowermost charged pocket to be discharged. As explained, the device C is rigid with the shaft E, and as the shaft E rotates with the disk or wheel H the effect of moving the disk H through the medium of the coin is to cause the material held in one of the pockets of the measuring device to be delivered to the purchaser.

The arm I^2 moves in a curved recess d and is limited in its movement by stops s' s^2. The device L is provided with an arm which bears upon the branch arm or lug b of the arm I^2, and the device L is actuated by said lug b. In Fig. 1 the pawl K is shown in its normal position, with its end bearing against one of the lugs p' of the wheel H and the upper concave edge of the pawl bearing against another of the lugs p' on said wheel. As the wheel H rotates in the direction indicated by the arrow in Fig. 2 the lug which is in contact with the upper edge of the pawl moves toward the end of the pawl, and by the time the arm I^3 is moved the length of its stroke said pawl slips past said lug and the end of the pawl engages the lug, thereby preventing retraction of the wheel during the reverse movement of the actuating-arm.

The magnet P is provided with an arm W, which is engaged by a cam on the upper end of the arm L^2 during the movement of the device L, thereby swinging the magnet rearwardly. Should a coin be employed which contains iron, the same is attracted by the magnet, and as the magnet swings rearwardly it carries the bogus coin with it until the coin is engaged by the stationary prongs P′ P^2, where it is disengaged from the magnet and caused to fall within the casing and clear from the channel q^3 leading to the coin-actuated wheel. The device N is pivotally supported, as shown, and is provided with an adjustable weight on its front side, so as to be caused to project normally into the path of a coin introduced from the channel q. Should a pasteboard disk or a disk of other light material be employed in lieu of a coin, the weight thereof would be insufficient to move the device N and the disk would be thrown from the channel leading to the coin-actuated wheel.

In operation, assuming the receptacle B to have been charged and the measuring device C to have been rotated in any suitable manner to have three of its pockets charged, a coin may be dropped into the slot q, from whence it will drop upon the flange q' and be directed to the channel q^3. Rotation of the handle I′ in the proper direction will cause the arm I^3 to move the coin which has passed into contact therewith against the lug p', which is close above the coin, and through the medium of said lug the wheel H will be turned and therewith the shaft E will be rotated, causing a movement of the device C and the emptying of one of the pockets thereof in the manner already described. At each movement of the actuating-arm I^3 the arm b causes a movement of the magnet-

actuating device L. A coin of the proper nature acquires sufficient momentum to move the device N, but any disk which is too light will be thrown out of the coin-chute by said device. Should the coin contain iron, it would be attracted by the magnet and removed in the manner already described.

Changes in details of construction within the spirit of my invention may be made.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with coin-controlled or coin-operated mechanism, of a manually-actuated magnet located adjacent to the path of the coin, and a stationary point against which the attracted disk is carried during the movement of the magnet, and by which the magnet is relieved of its load, substantially as described.

2. The combination with coin-controlled mechanism having a rock-shaft, of a movably-supported magnet located adjacent to the coin-passage, and magnet-actuating means actuated from said rock-shaft, substantially as described.

3. The combination with coin-controlled mechanism having a rock-shaft, of a pivotally-supported magnet located adjacent to and parallel with the coin-passage, a pivoted magnet-actuating device having its pivot substantially perpendicular to the plane of said magnet, and means connected with said rock-shaft for moving said magnet-actuating device at each operation of the machine, substantially as and for the purpose set forth.

4. The combination with coin-controlled mechanism, including a rock-shaft and a coin-wheel, of an arm carried by said rock-shaft, a movable magnet supported adjacent to the coin-passage on the rear side of the wheel, a magnet-actuating device mounted to swing in a plane substantially perpendicular to said rock-shaft, and means through the medium of which said device is operated from said arm, substantially as described.

5. The combination with coin-controlled mechanism having a rock-shaft and a coin-passage above said rock-shaft, of a magnet pivoted to lie adjacent to said coin-passage, a spring-held magnet-actuating device mounted to swing in a plane perpendicular to said shaft and provided with an arm for moving the magnet, and means carried by said rock-shaft for moving said magnet-actuating device, substantially as described.

6. The combination with coin-controlled mechanism having a rock-shaft, and a coin-actuated wheel at the rear end of and perpendicular to said rock-shaft, of an arm on said rock-shaft on the front side of said coin-actuated wheel, a rearwardly-projecting lug adjacent to the periphery of the wheel, a rearwardly-swinging magnet suspended adjacent to the rear side of said coin-passage, and a magnet-actuating device at the rear side of said wheel and engaged by said lug, said device being mounted to swing in a plane parallel to said wheel, substantially as described.

HERBERT S. MILLS.

Witnesses:
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ALBERT D. BACCI.