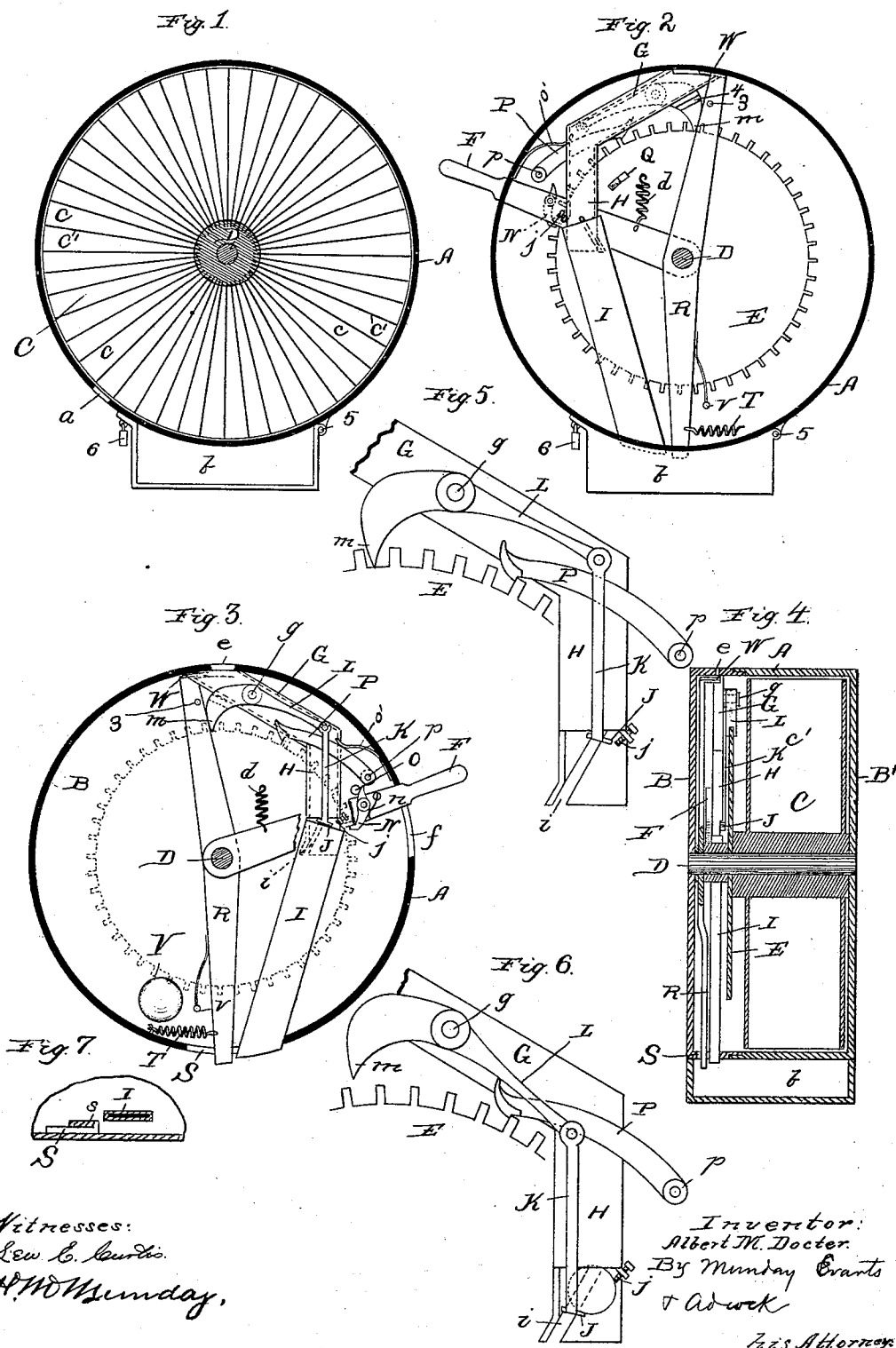


(No Model.)

A. M. DOCTER.
VENDING MACHINE.

No. 477,356.

Patented June 21, 1892.



Witnesses:
Lew C. Lewis.
A. W. Munday,

Inventor:
Albert M. Docter.
By Munday Evans
& Adcock
222 Attorney

UNITED STATES PATENT OFFICE.

ALBERT M. DOCTER, OF CHICAGO, ILLINOIS, ASSIGNOR TO SAMUEL C. ROSENBERG, OF SAME PLACE.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 477,356, dated June 21, 1892.

Application filed October 1, 1891. Serial No. 407,391. (No model.)

To all whom it may concern:

Be it known that I, ALBERT M. DOCTER, a citizen of the United States, residing in 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.

This invention relates to a construction of machine for vending envelopes and other articles of merchandise. It is provided with a wheel divided into peripheral recesses adapted each to hold one of the articles to be sold, and this wheel is placed in a surrounding case, which at one point is slotted to allow the article being vended to be taken out. The movements of the wheel are controlled by mechanism which will not allow it to turn, except a coin of the proper size be put into the slot of the machine. A lever projects to the outside of the case and is operated by the purchaser and serves to move the wheel to the extent necessary to bring to the discharge-slot one of the merchandise-holding receptacles of the wheel.

The nature of my improvements will be fully understood from the accompanying drawings, wherein—

Figure 1 is a vertical section of the merchandise-carrying wheel. Fig. 2 is an elevation of the wheel actuating and controlling mechanism, the side of the inclosing case being removed. Fig. 3 is a like view to Fig. 2, showing the reverse side of the mechanism. Fig. 4 is a central transverse section of the wheel and case. Figs. 5 and 6 show a portion of the controlling mechanism in different positions. Fig. 7 is a section of the under side of the case, showing the manner of locking the machine when the contents of the wheel have all been sold.

In the drawings, A represents the periphery of the case, such periphery conforming to the circle and diameter of the wheel, so as to confine in the receptacles of the latter the articles to be sold. The periphery is slotted at *a* for the discharge of the merchandise.

B and B' are the sides of the case, and *b* is the money-receptacle at the bottom.

C is the vending-wheel provided with receptacles *c*, which may be the spaces formed between radiating wings *c'*, as shown. The re-

ceptacles are intended to receive and hold the articles to be sold. Of course I do not wish to be limited to any particular construction of the wheel C, as the invention lies mainly in the construction of the holding and operating devices. The form of wheel shown, however, is specially adapted to certain classes of articles, such as envelopes and the like. The wheel is supported upon a central shaft D, having bearings in the side plates of the case, and rigidly mounted upon said shaft is a ratchet-wheel E, adapted to be actuated in turning the wheel C.

F is a hand-lever projecting through the slot *f* of the casing A and having a limited range of movement determined by the length of the slot. It is loosely journaled upon shaft D, and its normal position is that shown at Fig. 3, a spring *d* being employed to maintain it in this position and also to retract it after it has been actuated by a purchaser.

e is a slot in the casing A for the insertion of the coin, and said slot opens into a chute G H I. This chute is preferably made with the part G inclined, the part H nearly vertical, and the part I reversely inclined, as shown. Projecting to the interior of the part I of the chute is a foot or stop J and also a set-screw *j*, serving to contract the passage and co-operate with the foot J in detaining the coin. The foot J is supported upon the end of an arm K, joined to a swinging or pivoted detent L, supported upon the part G of the chute. The detent L is nearly balanced upon the supporting-pivot *g*, so that when a coin is put into the machine it will fall upon the foot J, and by its gravity cause a swinging movement of the detent L. The foot J projects through the transversely-inclined slot *i* of the part H of the chute, and when the coin falls upon it it drops from the position shown in Fig. 5 to that shown in Fig. 6 and detains the coin in the latter position. This downward movement of the foot raises the operating-point *m* of the detent-lever from between the teeth of the ratchet-wheel E, so that the wheel is then at liberty to turn. Upon the lever F is a pawl N and a spring *n*, pressing said pawl in a direction to keep it in engagement with the ratchet-wheel, and through this pawl the purchaser, when he de-

presses lever F, moves the wheel to expose a fresh merchandise-receptacle at the discharge-opening *a*. The wheel, however, is held rigidly against actuation by the lever by the detent-point *m* until a proper coin is inserted and said point is lifted out of the wheel, as already described. After the lever has been depressed the pawl N slips over a tooth of the ratchet-wheel, when the lever returns automatically to its normal position with the pawl in position to actuate the succeeding tooth. A stop-pin O, stationarily supported, may be employed to insure the proper positioning of the pawl for the next operation should the spring *n* fail to do its duty in this regard, the pawl being provided with an upward extension adapted to come in contact with said stop-pin, as fully illustrated.

To discharge the coin from the position in which it is detained, as illustrated by Fig. 6, I provide a detent-lever P, pivoted stationarily at *p* and acted upon by a spring *o'*. The free end of this detent-lever is adapted by its construction to lock the ratchet-wheel against movement in the backward direction, as plainly illustrated, and upon its forward face it is rounded, so that when the wheel is turned by the lever the next tooth in order will lift the detent P. The rounded end is extended upward sufficiently so that the swinging detent-lever L rests upon it when said detent L is lifted out of the ratchet-wheel. It will now be seen that when the ratchet-wheel is turned by the purchaser the detent-lever P will be allowed to fall momentarily into the space between the teeth of the ratchet a somewhat farther distance than that illustrated in Fig. 6, thus allowing the detent L to swing still further under the gravity of the coin, and such further movement carries the foot J far enough to allow the coin to drop through the lower portion of the chute into the coin-receptacle *b*. The further movement of the wheel causes, also, a lifting of the detent-lever P, when the next tooth comes in contact with the rounded front thereof, and thereby also swings the detent L back to its normal position (given at Fig. 5) and locking the wheel against forward rotation, while the detent P engages with the tooth which has just lifted it and locks the wheel against backward movement. Should an inferior coin be inserted in the chute, it will carry the foot J down a sufficient distance to allow it to pass through, but will not be detained by the foot and the set-screw, as is a coin of the proper denomination. The detent L will thus only be momentarily raised and perhaps not far enough to free it entirely from the ratchet, so that there is no sufficient opportunity given for the imparting of any movement to the wheel of the machine.

It is very important that the detent L should be very nearly evenly balanced, so that the weight of the coin will insure its swinging and

overcome the gravity of its operating-point *m*, and in order that this slight power may not be prevented from moving the detent I cause the pawl N upon the lever F to return the ratchet-wheel, if it shall have moved too far, to a position which leaves the point *m* free of actual contact with the teeth between which it enters, so that the gravity of the coin is not handicapped by any friction between the point *m* and the teeth of the ratchet.

When the wheel has been emptied of all the merchandise placed in it, I provide means for the sounding of an audible signal, and also for the closing of the coin-slot, so that no more coin can be put into the machine. Upon the face of the ratchet-wheel is a cam Q, which at the proper time comes in contact with and moves a lever R, pivoted on shaft D, the normal position of which lever is shown in the drawings. One end of this lever projects through the bottom of case A, and is detained in a lateral enlargement *s* of the slot S in the case through which it projects. A spring T draws this end of the lever R and carries it to the end of the slot whenever it is dislodged from the lateral enlargement or notch *s*. The cam Q is adapted to effect this dislodgment by its contact with the lower end of the lever when the wheel has been rotated sufficiently to bring it in contact with the lever. A hammer *v*, carried by the lever, will now strike and sound the bell V. The lever R is also prolonged upwardly into the neighborhood of the coin-slot *e*, and it is there provided with a projecting guard W, adapted when the lever R is swung by its spring to close said coin-slot. This movement of the lever R is made to perform a still further function by the addition to it of a laterally-projecting pin 3 and the provision of laterally-projecting rib 4 upon the point *m* of detent L, said pin entering under the rib and lifting the detent from out of the ratchet-wheel whenever the lever R is swung by spring T, so that while this condition of things remains the wheel may be freely turned for refilling the box or receptacle.

In order to remove the coin, the wheel and its case are hinged to the money-receptacle *b*, as shown at 5, and at the farther side of the receptacle from such hinge a lock 6 may be employed to prevent the opening of the receptacle. By releasing the lock the wheel and case may be turned upwardly on the hinge, so as to give full access to the top of the money-receptacle.

I claim—

1. In a vending-machine, the combination, with the merchandise-conveying wheel, of a ratchet and detent for locking said wheel, means for positioning the ratchet so as to avoid contact between its teeth and the detent, and a coin-chute having a movable stop mechanically connected and releasing said detent and actuated by the weight of the coin, substantially as set forth.

2. In a vending-machine, the combination, with the merchandise-carrying wheel, of a ratchet and a nearly-balanced swinging detent for locking said wheel, means for positioning the ratchet so as to avoid contact between its teeth and the detent, and a coin-chute having a movable stop mechanically connected to and releasing said detent and actuated by the weight of the coin, substantially as set forth.

3. The combination, with a vending-machine, of an alarm-bell, a movable lever for sounding such alarm, the spring T, the case having the slot, and notch s normally detain-

ing said lever, and cam Q for dislodging the lever, substantially as set forth.

4. The combination, with the wheel, of the movable lever R, having a coin-slot-closing device and bell-hammer mounted thereon, the bell, means for releasing the lever R from its normal position, and means for actuating it to close the slot and sound the bell, substantially as set forth.

ALBERT M. DOCTER.

Witnesses:

EMMA HACK,
H. M. MUNDAY.