

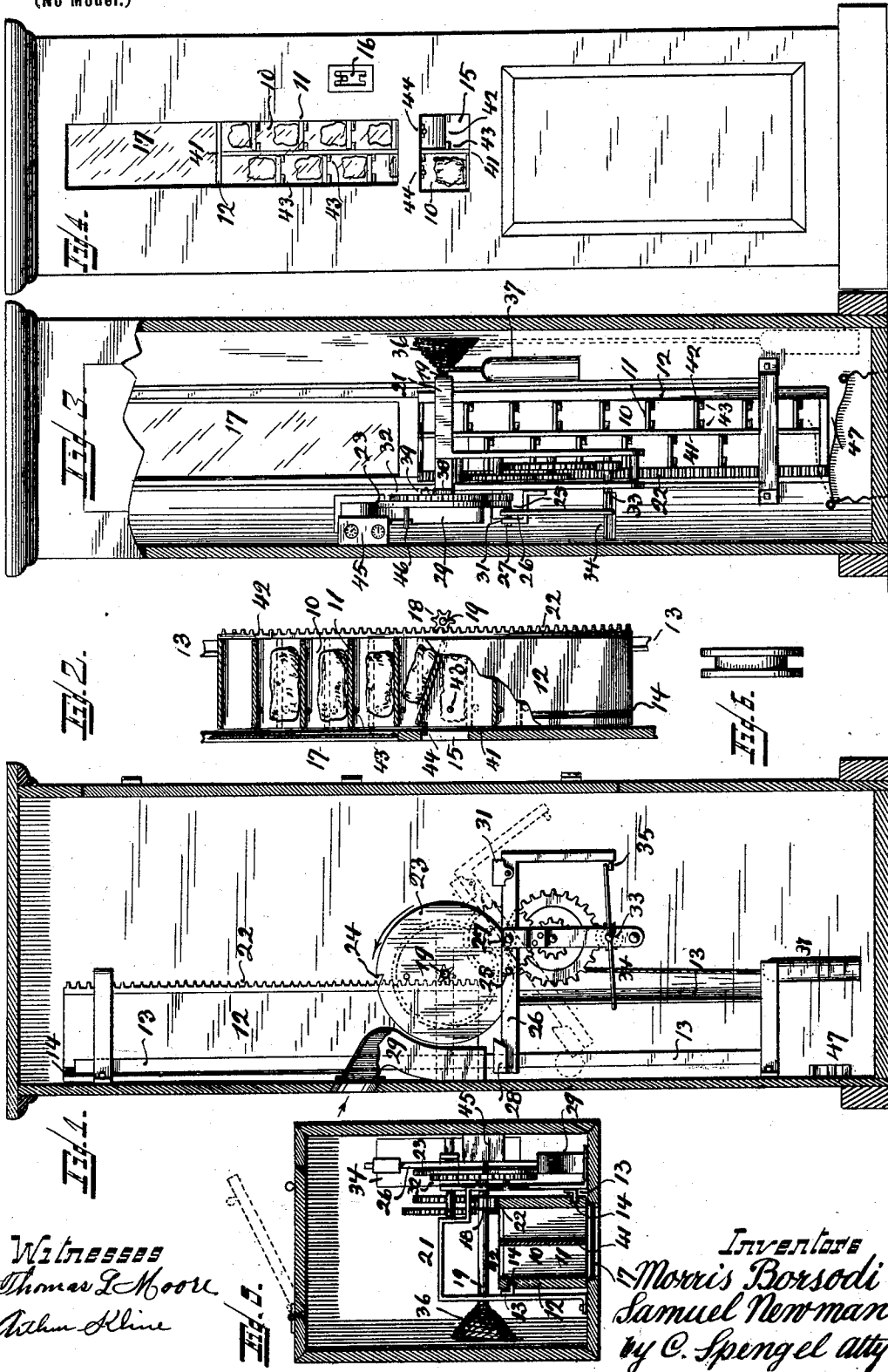
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Patented Jan. 21, 1902.

S. NEWMAN & M. BORSODI.
COIN CONTROLLED VENDING APPARATUS.

(Application filed Jan. 28, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 691,564, dated January 21, 1902.

Application filed January 26, 1901. Serial No. 44,791. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL NEWMAN and MORRIS BORSODI, citizens of the United States, and residents of Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Automatic Vending Apparatus; and we do hereby declare that the following is a clear, full, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form also a part of this specification.

This invention relates to improvements in automatic vending apparatus of the kind where against deposit of a certain coin in a designated place a certain commodity is obtained. In this particular case this latter is intended to comprise articles of food suitable for lunch, relishes, &c.; and put up in form of sandwiches or otherwise.

The invention consists of certain features of construction and arrangement of parts, all as more fully set forth hereinafter, and pointed out in the claims.

The following specification contains a description thereof, together with the operation, parts, and construction, which latter is also illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the device with part of the outer case nearest the spectator removed. Fig. 2 is a sectional view taken from the same side, showing parts lying behind the parts illustrated in the preceding figure. Fig. 3 is a rear view of the device with parts of the rear side of the case removed. Fig. 4 is a front elevation of the device. Fig. 5 is a horizontal section of the same. Fig. 6 is an edge view of a weight or chip which may be used for actuating the mechanism.

The merchandise (sandwiches) to be sold is contained in compartments 10 and rests upon horizontal shelves 11, which form the partitions whereby said compartments are horizontally divided from each other. There are a number of such compartments, one above the other and all contained in a box-shaped structure or frame 12, open on two opposite sides, the front and rear one. Compartments

10 are thus likewise rendered open in front and rear. This frame is supported in a manner to be capable of movement in a vertical direction, it being confined for such purpose between vertical guides 13, which engage grooves 14 in the sides thereof. The movement downwardly is by its own weight and is a limited one, the drop being not more than the height of one of the compartments 10 at the time. In the front of the case there is an opening 15, and the drop and position of frame 12 after such drop are so arranged that one of compartments 10 is always opposite said opening, so that access to such compartment may be had through its open front side, permitting removal of the contents resting therein upon shelf 11. This opening 15 is limited and is not larger than the open front of the particular compartment 10 behind it, so that such access is limited to such compartment. The frame is normally held in such position by certain mechanism until such mechanism is caused to operate in a certain manner, after which frame 12 is permitted to drop to an extent equaling the height of a compartment, so that the next compartment above appears now behind an opening 15. The contents of the other compartments above are visible through a window 17, so that the nature of the goods to be sold may be ascertained.

The suspension of frame 12 at the proper point and its drop to the proper distance are controlled by a pinion 18, mounted upon a shaft 19, supported in a frame 21 and engaging a rack 22 on one of the rear sides of frame 12. This pinion is normally locked against rotation by certain mechanism, and when released thereby it is permitted to rotate until frame 12 has dropped the proper distance to bring another compartment 10 behind opening 15, after which said rotation ceases, and the pinion is locked again, to remain so until released once more. The mechanism for so locking the pinion consists of a disk 23, connected to shaft 19 and provided with one or more notches 24. Normally this disk is prevented from rotating by a pin 25, occupying said notch, or one of them if there are more, and by reason of its connection to shaft 19 rotation of pinion 18 is also prevented. This pin is carried by a lever 26, pivoted at 27 and provided at

one end with a basket 28. It may be depressed by any means or by the weight of an inserted metal disk or a coin, in which latter case a chute 29 is provided, guiding the inserted article into basket 28. The lever is then so balanced that it descends under the weight of the inserted article when the same arrives in basket 28, which descent continues until the former is sufficiently tilted to cause the basket to spill its contents, after which the lever returns to its normal position. This descent of the lever causes pin 25 to move out of the notch it occupied in disk 23, whereby this latter, together with pinion 18, is set free to rotate, permitting frame 12 to drop. The balancing of the lever is very close, the adjustment being obtained by the aid of a suitable sliding weight 31, so that both the descent, as well as return of it, are rather slow, thus giving sufficient time before the rotating parts are locked again. The engaging parts are so arranged and adjusted that pin 25, moving with the returning lever, arrives again at the edge of disk 23 in time to drop into the same or a similar notch at the proper time—that is, when frame 12 has dropped the distance required to bring the next one of compartments 10 in position behind opening 15. In order to retard this drop sufficiently to give lever 26 after depressed the time necessary to so return for engagement of pin 25 with disk 23, we provide a speed retarding and controlling device, consisting, substantially, of a gear-train formed of a number of sets of engaging cog wheels and pinions, all taking their initial start of motion from a cog-wheel 32 on shaft 19 and ending in a shaft 33, mounting and driving a fan 34. This fan is also locked against rotation by a stop 35 on a downward extension of lever 26 and released by the oscillation of this latter in consequence of depression by a coin when said stop moves out of the way. As stated before, frame 12 drops by its own weight, which weight decreases after every operation by reason of the successive removal from the compartments of their contents. In order to remove this inequality, so as to have as near as possible a constant weight to operate the apparatus, we provide a compensating device consisting of a conical pulley 36, having a spirally-disposed ropeway around its face and a rope and weight 37 attached to it. This pulley is also connected to shaft 19, and as this latter is rotated by the successive drops of frame 12 it rotates in turn this cone-pulley. This causes the rope to wind around the face thereof, whereby weight 37 is raised proportionally to the descent of frame 12. This winding is started from the larger end of the cone-pulley, so that the heavier weight of the loaded shelf-frame must overcome the likewise larger resistance of weight 37 while lifting the same. This resistance decreases as the winding of the rope proceeds upon the decreasing diameter of cone-pulley 36, thus constituting a constant equivalent for the weight of frame

12 as it decreases by reason of the successive reductions of its contents. When fully run down and empty, this frame is simply raised up by hand, and the compartments are filled again through their open rear ends, access being had from behind through a door in the casing thereat.

In order to remove the resistance of the speed-controlling gear-train when the frame is so raised, the rotation of shaft 19 is not transmitted to the former, by reason of its connection to cog-wheel 32 being not operative at the time, said cog-wheel being loosely mounted. When rotating, however, in the other direction, such rotation is transmitted by reason of a ratchet-wheel 38 on shaft 19 engaging a pawl 39 on cog-wheel 32, thus transmitting the rotation.

As weights to depress lever 26 to induce an operation of the device counters or chips may be used, and the arrangement is preferably such that they must be of a certain size, shape, and weight; otherwise they will not affect the mechanism. In Fig. 6 such a counter is shown in edge view and is provided with a groove around its edge. The opening intended to receive it is of course shaped correspondingly, so that nothing except the shape shown will enter, thus rendering cheating of the device difficult. Arrangements are to be made whereby these counters are obtained and may be purchased in a proper way.

There may be more than one frame 12 contained in one outer casing, all arranged side by side, each behind a window 17 in the front of the casing and each having its own controlling and operating mechanism. Again, these frames or the one shown may have each two or more columns of vertically-disposed compartments, arranged side by side, frame 12 being for such purpose vertically divided by the necessary upright partitions.

As shown, we provide two columns, obtained by dividing frame 12 by a vertical partition 41. The compartments are so arranged that a horizontal shelf in one column is at a height midway between the shelves of the other column. All shelves are pivotally hinged at 42 at their rear or inner ends, and there are supports 43 below them near their front ends, supporting them in a horizontal position, beyond which they cannot drop, leaving them free, however, to yield upwardly. There are stops 44, projecting inwardly from the upper edge of opening 15, engaging the front edges of these shelves as they descend with frame 12, operating to raise them off of their supports 43. It will be remembered that opening 15 equals the height of one compartment, while the drop of frame 12 in this case is only half this distance. Stops 44 project in sufficiently to hold back shelves 11 while they drop through the distance behind the upper half of opening 15, but releases them on the following movement while dropping through the lower half. While so held back in this tilted position, the particular com-

partment remains inaccessible, but by reason of the arrangement of shelves 11 at alternate heights there is one rendered accessible by each operation—that is to say, a drop of frame 5 12 which tilts one shelf on one side, rendering its compartment inaccessible, releases the previously-tilted shelf on the other side, permitting access to it. The succeeding drop renders the shelf previously tilted accessible 10 and renders one inaccessible on the other side. Thus while both shelves drop with the frame only one compartment is accessible at the time. The effect of this arrangement is that we increase the capacity of the device 15 and have a large and convenient opening to permit access to the compartments.

45 is a counter registering the operation of the mechanism. It may be placed in any convenient position, so as to be operated by the mechanism. As shown, we place it so 20 that a pin 46 on disk 23 may operate it.

47 represents contact-pieces located so as to be in the path of frame 12 when the same arrives in its lowest position, at which time 25 an electrical current is closed, producing an electric signal, which may be a lamp, located so as to be visible.

Having described our invention, we claim as new—

30 1. In an automatic vending apparatus, the combination of an outer case, a frame 12 behind the front thereof, free to move in a vertical direction and provided with two columns, side by side, of compartments, one above 35 the other, said compartments all open toward the front, the partitions or shelves horizontally dividing them from each other, being arranged at alternate heights and pivotally connected at their rear ends, supports to hold 40 them in a horizontal position, but permitting them to yield upward, an opening in the front of the case equal to the height of a compartment and of a width extending across the front thereof, means to normally hold this 45 frame in a position behind this opening, whereby always one compartment is fully behind the same, and of the other compartment in the other column the lower half only, mechanism operating when released to permit the frame to drop a distance sufficient to

bring the compartment previously only half behind the opening now fully in such position and of the other compartment in the adjoining column only the lower half, and stops projecting into the path of the front edges of 55 the shelves and raising them successively to prevent access to the compartments above them and releasing the raised shelf on the next drop of the frame to permit such access, the operation being such that while one shelf 60 in one column is thus held back and tilted, the other shelf in the adjoining column is simultaneously released, and rendered accessible.

2. In an automatic vending apparatus, the 65 combination of an outer case, a window 17 in its front, an opening 15 below the same, a frame 12 behind these two and provided with horizontal partitions, forming compartments 70 between them, one above the other and open toward the front, the open side being equal in area to opening 15 so that the contents of all of said compartments are visible through window 17 and one compartment becomes at the same time accessible through opening 15, 75 said frame capable of movement in a vertical direction behind window 17 and opening 15 and free to drop, a rack 22 on this frame, a pinion in engagement therewith, a shaft on 80 which this pinion is mounted, a notched disk 23 on this shaft, a lever 26 having a pin 25 normally in engagement with one of these notches, thereby preventing rotation of disk 23, but releasing the same when one of its 85 ends is depressed, thereby permitting the disk and its shaft to rotate as impelled by the weight of frame 12 while descending, a speed-controlling gear-train operatively connected to the pinion-shaft, a fan driven thereby and a stop supported on lever 26 and projecting 90 into the path of said fan permitting rotation of the same only at such times when the other end of said lever is depressed.

In testimony whereof we hereunto set our hands in the presence of two witnesses.

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MORRIS BORSODI.

Witnesses:

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