

No. 888,443.

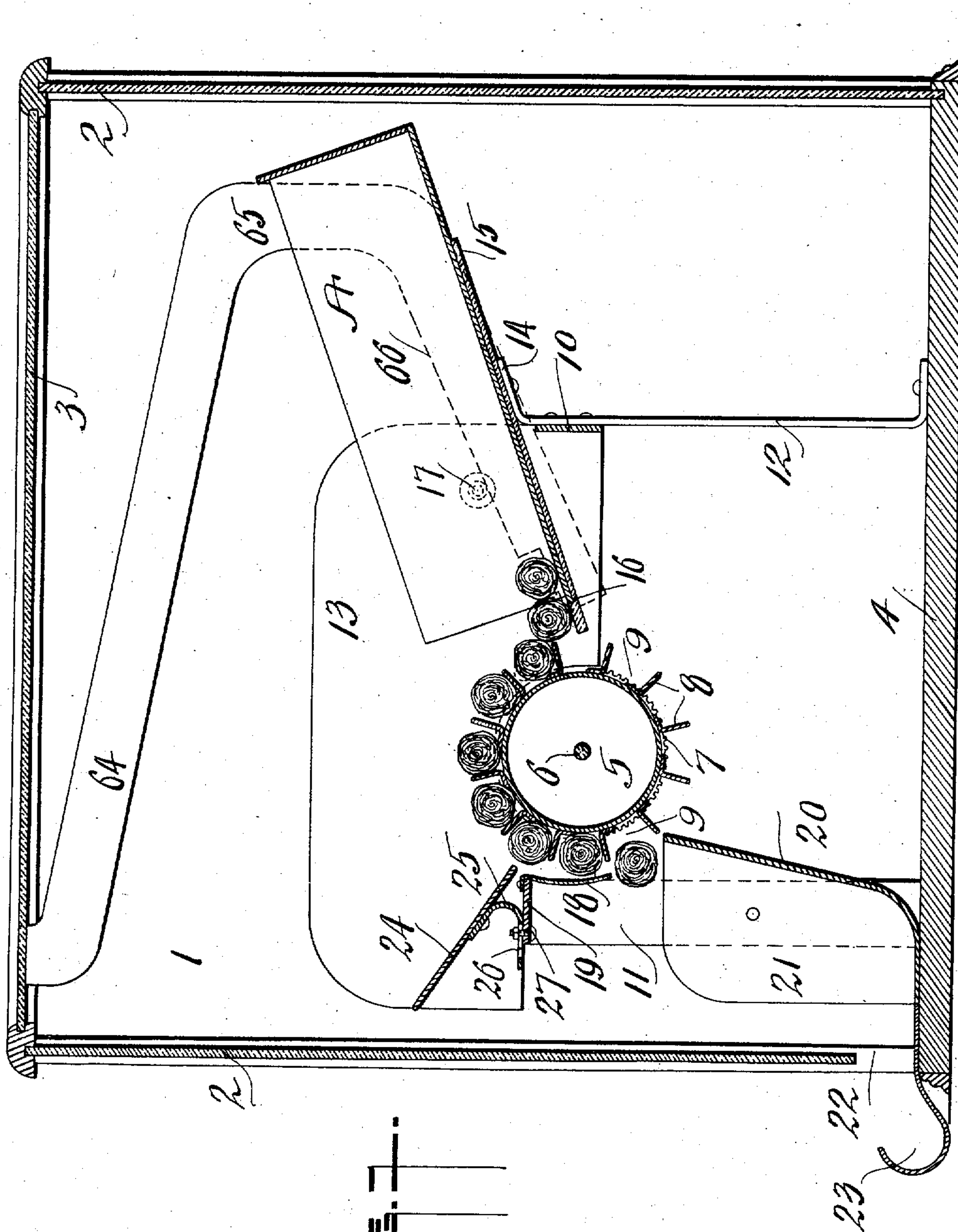
PATENTED MAY 19, 1908.

L. U. KENT.

AUTOMATIC VENDING MACHINE.

APPLICATION FILED SEPT. 25, 1905.

2 SHEETS—SHEET 1.



Witnesses:-
H. V. Gibson.
H. B. Ramsey

Inventor.
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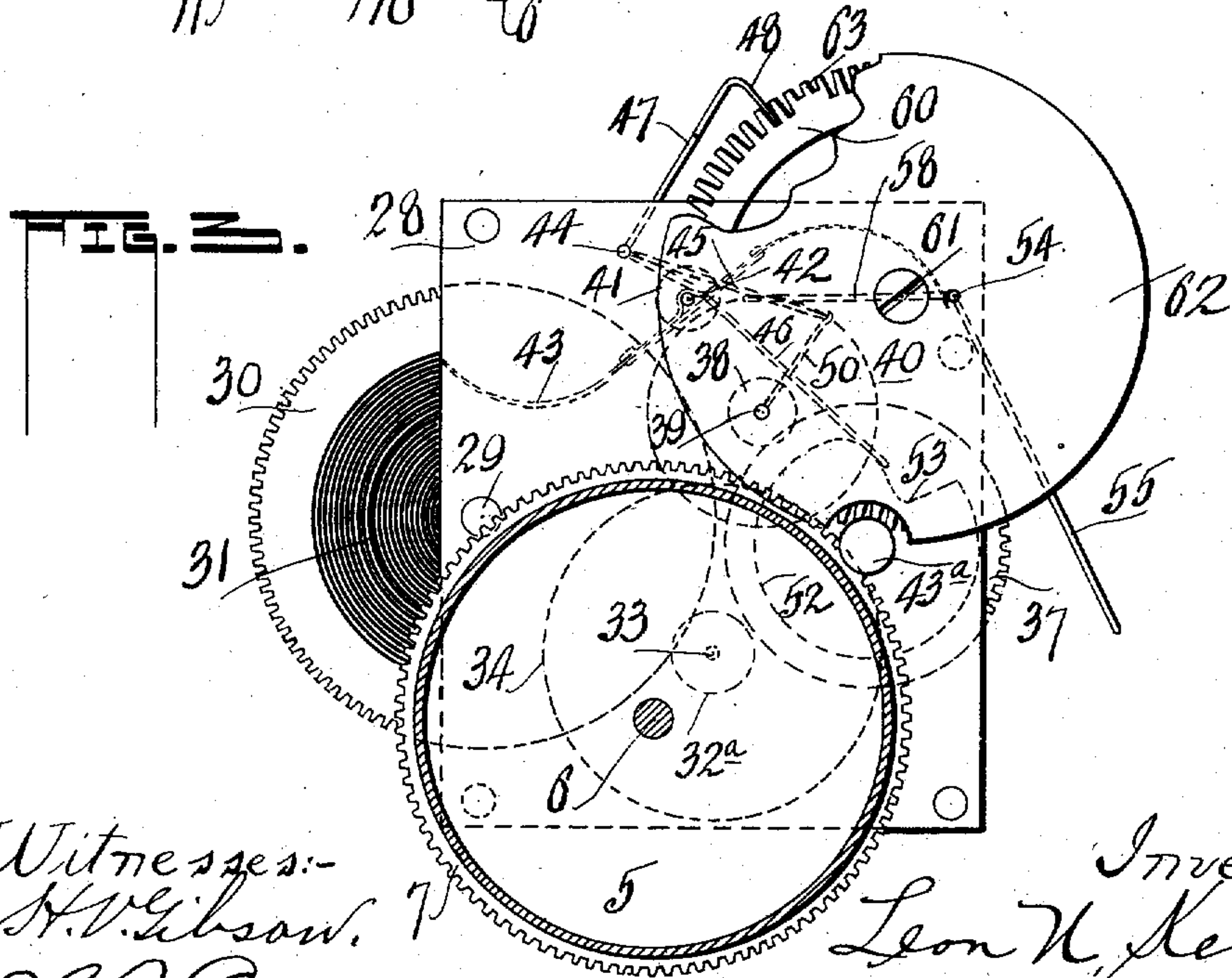
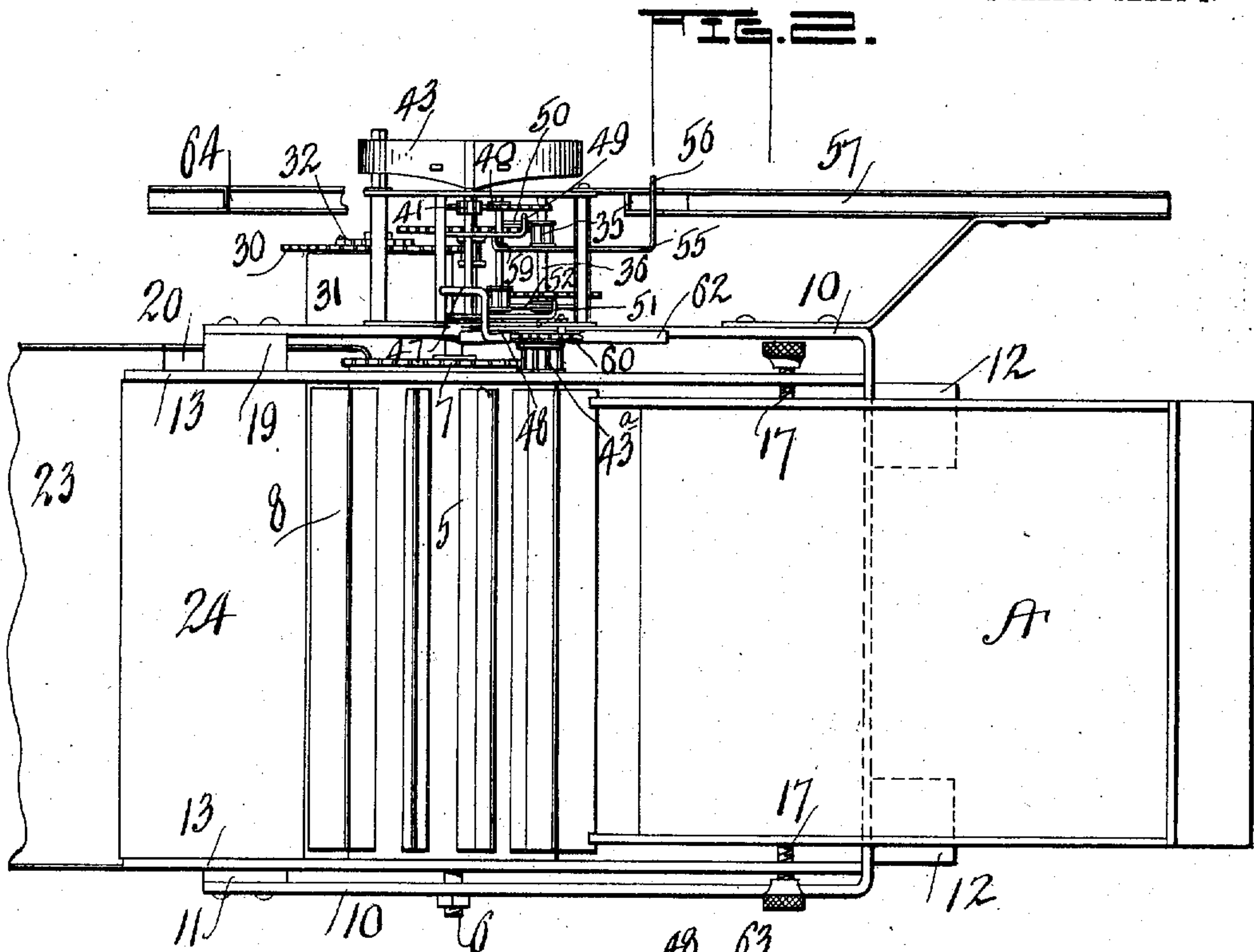
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PATENTED MAY 19, 1908.

L. U. KENT.
AUTOMATIC VENDING MACHINE.

APPLICATION FILED SEPT. 26, 1905.

2 SHEETS—SHEET 2.



Witnesses:-
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UNITED STATES PATENT OFFICE.

LEON U. KENT, OF ELMWOOD, ILLINOIS, ASSIGNOR OF ONE-HALF TO JAMES D. PUTNAM, OF ELMWOOD, ILLINOIS.

AUTOMATIC VENDING-MACHINE.

No. 888,443.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed September 25, 1905. Serial No. 279,948.

To all whom it may concern:

Be it known that I, LEON U. KENT, a citizen of the United States, residing at Elmwood, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Automatic Vending-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference to an automatic vending machine, particularly for use in connection with the vending of cigars from the original packages, such as cigar boxes. The machine has been devised with special reference to the requirements of the Internal Revenue Department of the United States Government, wherein the cigars may be vended from the cigar box in which they are packed, which is supported within a transparent case in such a manner that an inspector when inspecting the machine, can readily see the factory number contained on the cigar box and also the caution notice, which is one of the requirements of the department in approving a machine of this character.

The invention has for its principal object to produce a machine of the type referred to that automatically delivers a cigar or cigars directly from the original package or box containing them, without the use of any force feed conveying means for conveying the cigars from the box to the discharging device; the same consisting of an intermittently traveling member, preferably a revoluble drum provided with pockets adapted to receive cigars from the cigar box and discharge the same, the said member adapted to be actuated by an automatic coin controlled mechanism.

The invention herein has reference to and is an improvement upon the vending machine on which application was filed Sept. 5, 1905, bearing Serial Number 277,000. The difference in the machine being, that the cigar delivering device herein is a revoluble drum, while in the application referred to there is provided a reciprocating cigar lift. But substantially the same coin controlled mechanism is employed.

For a further and full description of the invention herein and the merits thereof, also to acquire a knowledge of the details of con-

struction of the means for effecting the result, reference is had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical transverse section through my improved vending machine. Fig. 2 is a plan view showing the operative parts of my machine detached from its casing, and Fig. 3 is an enlarged side elevation of the means which I employ for operating the drum.

Like numerals of reference indicate corresponding parts throughout the figures.

In the drawings, 1 denotes a casing having transparent sides 2 and top 3 supported by a base 4. No means is here shown by which access may be had to the interior of the case, as any suitable arrangement with a locking device may be provided.

At a suitable point in the case is supported a revoluble drum 5 carried by a shaft 6; the said drum is preferably closed at its opposite ends, and on one end thereof is provided with a gear 7. The surface of the drum is broken by a series of longitudinal flights or projections 8 projecting laterally therefrom and spaced apart to form the cigar pockets 9. The drum shaft 6 is journaled in frame parts 10, which are connected with the front and rear vertical standards 11 and 12, and also supported by said standards are the shields or side frames 13.

Supported in a suitable incline upon shelf portions 14 of the standards 12 is a rest 15 which is preferably transparent, or if made of other material will be sufficiently cut away to enable a person looking into the case to see the bottom of any receptacle supported thereon to note anything that may be stamped, impressed or pasted on the bottom of such receptacle. As shown, the rest is cut away to form an offset as at 16, whereby the rear and greater portion of the said rest is lower than the forward portion thereof, the purpose of which will be further explained. The forward and lower end of the rest is positioned in close proximity to the outer edges of the flights 8 of the drum in the movement thereof for the purpose of permitting the cigars as they move downwardly on the rest to be picked up by the pockets of

the drum in its rotation for discharging the said cigars from the casing.

In the drawings, A denotes a cigar box which is adapted to be supported on the rest 5 15 with its lower end engaging the offset 16; the end of the cigar box from which it is aimed to discharge the cigars, being removed prior to placing the box in the case, and the offset 16 of the rest will be in depth to correspond to the thickness of the bottom of the 10 box, so that cigars, by reason of the incline at which the rest and box are carried, in rolling out of the box to subsequently seat themselves in the pockets 9 of the drum, 15 will meet with no obstruction or resistance, and further obviates the engagement of the cigars with any obstruction or the edge of the box as they move backwardly or are pushed out of the way in the rotation of the 20 drum, and as the cigars drop into the pockets thereof. The offset 16 not only eliminates any obstruction but holds the box against any forward movement and to hold the same against lateral movement, I provide the adjusting screws 17 adapted to engage the sides 25 of the box, which have a threaded connection with the frames 13. In this way I position the box so as to insure a uniform feed from the box to the drum. The box or receptacle may thus be adjusted laterally to 30 adapt the cigars or other product to the drum, and thus materially increase the efficiency of the improved device.

Disposed in front of the drum is a guard 35 plate or shield 18 supported by and depending from a cross piece 19 connecting the standards 11, and disposed beneath the parts 18 is a receiving feed way consisting of the incline and forwardly carried wall 20 having 40 the sides 21 attached to the standards 11. The position of the guard or shield 18 and the receiving feed way relative to the drum is, that cigars which are deposited in the pockets of the drum will be carried forwardly until the spaced walls which form the sides of 45 the pockets of the drum coincide respectively with the lower edge of the shield 18 and the upper edge of the wall 20, when the cigar which is contained in the pocket formed 50 by the walls coinciding with the part just described, will drop from the pocket into the receiving feed way and rolling forward will pass out through an opening 22 through the transparent side 2 into a receiving pocket 23.

24 denotes an inclined shelf or partition 55 which is supported by an adjustable bracket 25 secured to the cross piece 19 of the standard 11; said bracket being slotted at 26 to enable the same together with the inclined 60 partition 24 to be moved towards or from the drum when a bolt 27 which secures the said bracket is loosened.

The shield 24 is provided in connection with the frames 13 to prevent cigars which 65 may roll freely from the cigar box or move

forward through the movement of the drum, from being accidentally discharged or displaced, and insures their returning to a position where they will drop into the pockets of the drum and be carried forward through 70 the movement thereof. There is a probability, as the cigars crowd down towards the drum, of their being carried forward through the movement thereof, and while the shield 24 retards the movement of any cigars which 75 might overlie those in the pockets, the member 24' also serves as a cut off and prevents more than one cigar being discharged at a time unless the mechanism which actuates the drum is so operated that more than one 80 cigar will be discharged at a time.

The coin actuated mechanism which I have made mention of may be any suitable clock mechanism adapted to the uses of an 85 apparatus such as I show, but for the purpose of showing the manner of intermittently actuating and controlling the drum, I will describe the mechanism which I have adopted and the manner of controlling the same by a coin. 28 indicates front and rear 90 walls or plates which are suitably connected and spaced apart and supported by one of the frame parts 10, and between the walls 28 is revolubly mounted a train of gearing actuated through a spring controlled shaft 29 on 95 which is carried a gear wheel 30 containing the requisite number of teeth. The shaft carries the spring 31 and is provided with the usual ratchet wheel 32, see Fig. 2, engaging a ratchet pawl (not shown) on the gear wheel 100 30, so that upon the release of the mechanism for controlling the shaft 29, the spring 31 will unwind, and impart a movement to the ratchet wheel 32, which in turn will rotate the wheel 30. The wheel 30 meshes with a 105 pinion 32^a carried by a shaft 33, which also carries a larger gear wheel 34. The gear wheel 34 meshes with the pinion 35 carried by a shaft 36, which said shaft also carries a larger gear wheel 37 in mesh with a pinion 38 110 on a shaft 39. And the shaft 39 carries a larger gear wheel 40 in mesh with a pinion 41 on a governor shaft 42, the latter having a fan governor thereon, indicated at 43.

Referring to the gear 7 carried by the 115 drum, the same is on that end of the drum adjacent to one of the plates 28 of the driving mechanism, and is in mesh with a suitable pinion 43^a carried by the shaft 36 referred to. It is intended that when the shaft 36 is rotated it will make one complete revolution, 120 and the pinion 43^a thereon together with the gear on the drum, are of such proportions and so timed, that during one revolution of the shaft 36 the drum here shown will make approximately a one-twelfth revolution, or just 125 sufficient movement will be imparted thereto to expose one of the pockets thereof containing a cigar, to insure its discharge into the pocket 23 herein before described. How- 130

ever, there will be described a controlling device in connection with the gearing just referred to, for regulating the operation of the gearing described, for the purpose of discharging a series of cigars at one operation, that is, at predetermined intervals, and in the operation of the mechanism the drum will have such movement imparted thereto as to expose a series of pockets to the receiving feed way and drop therein a corresponding number of cigars.

Journalled in the walls 28 at a suitable point therein, is a rock shaft 44 to which is attached the rods 45, 46 and 47, the latter provided with a finger 48. The rod 45 has a lateral extension 49 at its outer end, which is adapted to be engaged by a stop finger 50 carried by the shaft 39; and the rod 46 is provided with a lateral extension 51 which is adapted to ride on a cam wheel 52 and drop at intervals into a depression or cam seat 53 therein.

54 denotes a second rock shaft to which a coin engaging rod 55 is connected and extending downwardly and outwardly and provided at its lower end with a lateral extension 56 overlying the lower end of a coin chute, runway or trough 57. Also connected with the rock shaft 54 is a rod 58 having a lateral extension 59 which is carried beneath and adapted to engage with the rod 45 on the shaft 42. A coin engaging the rod 55 will move the same inwardly, rocking the shaft 54 and raising the rod 58 which, through the projection 59 thereof engaging the rod 45, will raise the latter and relieve it from the stop finger 50, when the spring driving shaft 29 will be automatically set into motion, and through the train of gearing connected therewith and the drum, rotate the latter.

The arrangement of the parts is such that the cam shaft 36 will make one complete rotation when the rod 46 will drop into the seat of the cam thereof, operating as it does so the rock shaft 44, and thus place the rod 45 in a position to be engaged by the stop finger 50, which will place the parts and retain the same in the inoperative position seen in the figures, and until the coin engaging rod 55 is again actuated.

As in the application referred to I have provided a means for controlling the mechanism for operating the drum, whereby at predetermined intervals, with one operation of the device, one or more cigars will be discharged from the drum. This means consists of a regulating wheel 60 revolvably attached at 61 to one of the walls 28, and preferably inclosed within a casing 62, the latter provided with an opening (not shown because of the casing being broken away at this point) through which the finger 48 of the rod 47 operates to engage the teeth of the wheel 60. The wheel 60 is intermittently driven by means of a one-toothed pinion car-

ried on the shaft 36 at the rear of the pinion 43, although not shown. I have provided at intervals on the wheel 60 one or more short teeth, 63, as shown in Fig. 3. It is through the regulating wheel 60 and the short teeth 63 thereof that I am enabled at intervals to move the drum such a distance as to discharge therefrom more than one cigar at one operation. With each operation of the gearing heretofore described, upon the operation of the rod 55 for releasing the gearing, it is aimed to have the finger 48 of the rod 47 drop successively into the adjacent teeth of the wheel 60. But when the wheel 60 moves into a position where the short teeth thereof will coincide with the finger 48, when the rod 46 rides off into the cam depression of the cam wheel 52, by reason of such short teeth in the gear 60, the rod 47 will not drop far enough to permit the rock shaft 44 to rock sufficiently in its bearings to drop the end of the rod 45 into a position to be engaged by the stop finger 50; hence, the operation of the gearing will continue until the short teeth of the wheel 60 have passed beneath the finger 48 and presents a deeper tooth to be engaged by such finger of the rod 47, when the parts will be locked as heretofore described.

Referring again to the coin chute, 57 the same consists of the inclined upper portion 64 which has connected therewith the vertical portion 65 merging into the lower downwardly inclined portion 66. The portion 64 at its upper end communicates with an opening in the top of the case (not shown) through which it is adapted to slip a coin which will travel down the chute portions 64 and 65 to the lower portions 66, the outer end of which is provided with an opening 67 through which a coin will pass and drop upon the base of the case. Before passing out through the opening 67 the coin is caused to engage the extension 56 of the rod 55 for operating the drum controlling mechanism as described.

It is to be understood that the apparatus as here shown may be supported in any suitable case and of any design, and the case may be large enough to contain one or more such devices as shown in the figure, for vending different brands of cigars, and cigars that will retail at five cents (5c.) and upward; also, that it is intended to support the cigar box with the lid thereof attached and swung open; also, that the coin chute or runway may be positioned and supported in any suitable manner, so long as the same results are obtained as herein provided.

It will be obvious from the foregoing description that no limitation is to be placed on the size of the drum or the number of pockets which it shall contain.

In the operation of the machine it is preferable to see that a required number of pockets

are filled with cigars upon the starting of the machine, so that with each and every operation thereof a cigar will be discharged therefrom.

5 Having thus fully described my invention, what I claim and desire to secure by Letters Patent of the United States is:—

1. In a vending-machine, a rectangular frame having transverse end members, vertical side members spaced apart and connected to said end members and projecting above the same, standards supporting said frame, a drum having a plurality of spaced radial wings forming pockets longitudinally of the drum and extending between said side members and mounted for rotation therein, a receptacle rest of less width than the space between said side members and supported upon one of the standards supporting the frame in a position inclined to the horizontal, a guard plate depending from the forward transverse end member and curved to correspond to the paths of the terminals of said wings, a shelf adjustably supported on the said forward transverse end member and clamping screws operated through said side members and adapted to retain a receptacle upon said rest and adjust the same laterally.

2. In a vending-machine, a rectangular frame having transverse front and rear end

members, vertically disposed side plates forming shelves spaced apart and connected to said end members and extending above the same, a drum extending between said vertical side plates and mounted for rotation therein, said drum having a plurality of radial wings spaced apart and forming pockets extending longitudinally of the drum, standards supporting said frame, a receptacle rest connected to one of said standards and inclined to the horizontal with its lower end close to the paths of the terminals of the said wings, a plate depending from the forward end member of said frame and curved to correspond to the paths of the terminals of said wings, a bracket supported upon said forward end member of the frame and carrying an inclined guide plate with its lower end in close proximity to the paths of the terminals of said wings, means for adjusting said bracket, and clamping screws operating through said vertical plates and adapted to bear against a receptacle upon said rest and to adjust the same laterally.

In testimony whereof I affix my signature, in presence of two witnesses.

LEON U. KENT.

Witnesses:

CHAS. W. LA PORTE,
ALICE GILLIAM.