No. 649,737. Patented May 15, 1900.

J. E. MARTIN.

VENDING MACHINE.

(Application filed Sept. 20, 1899.)

(No Model.) 2 Sheets—Sheet 1.

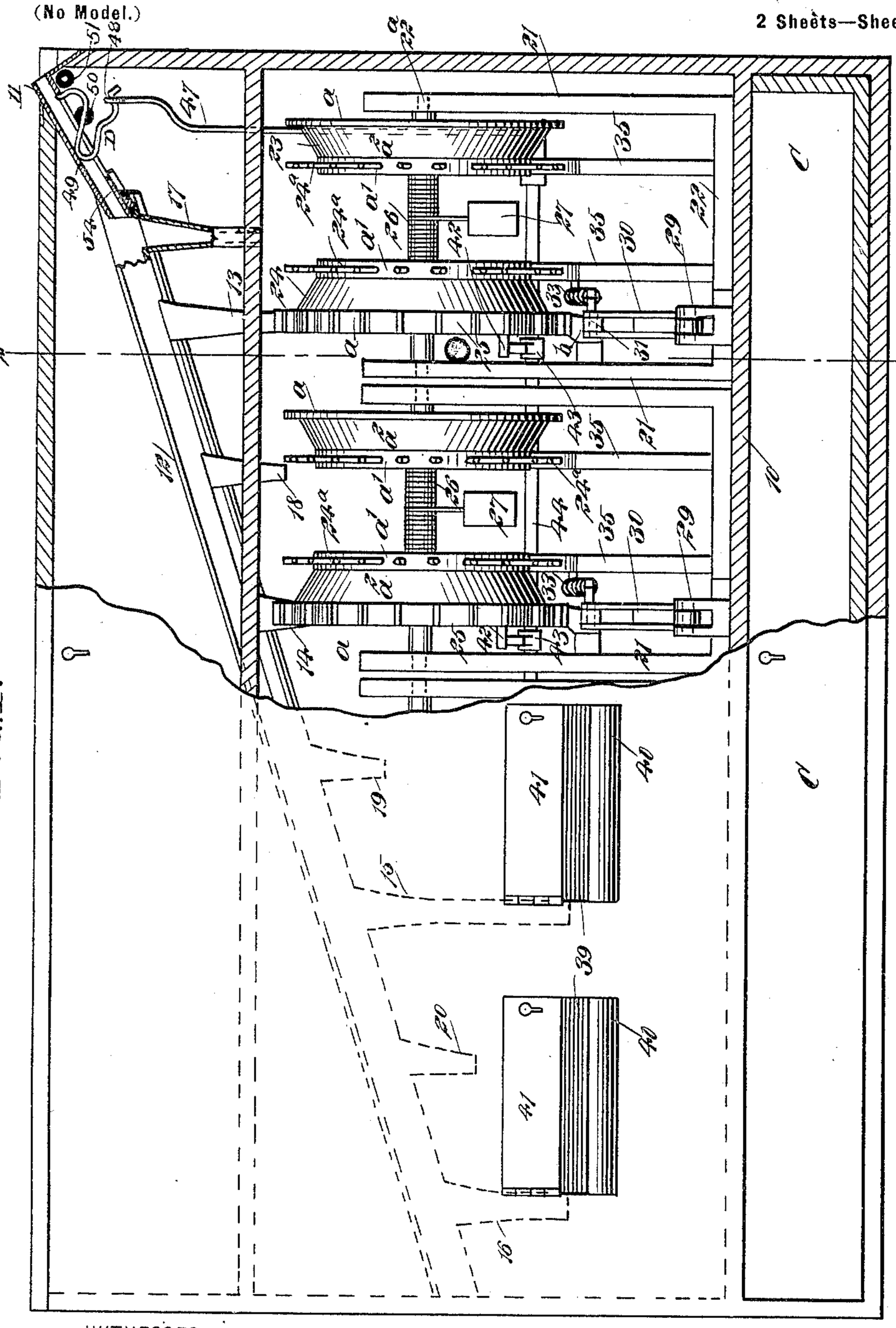

FIG. 1.

WITNESSES:

Donn Twitchell

J. Fred Acker

INVENTOR

J. E. Martin

BY Munn & Co

ATTORNEYS

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FIG. 3.

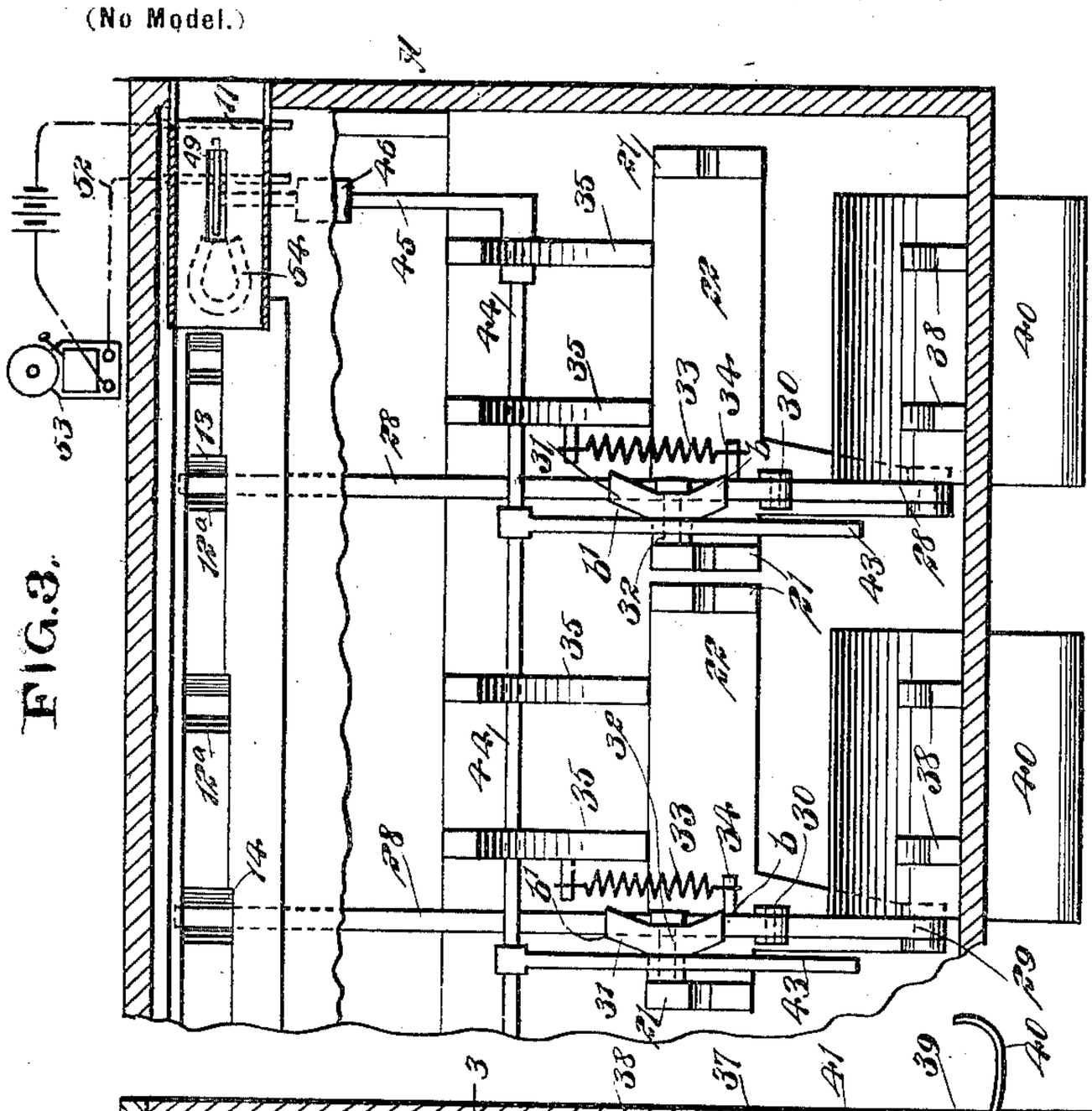


FIG. 5.

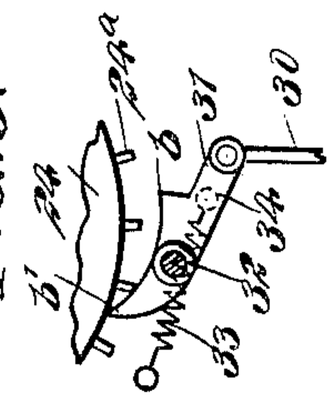


FIG. 4.

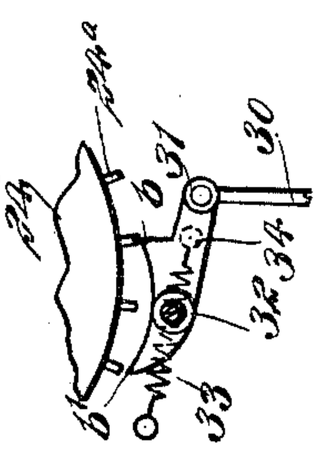
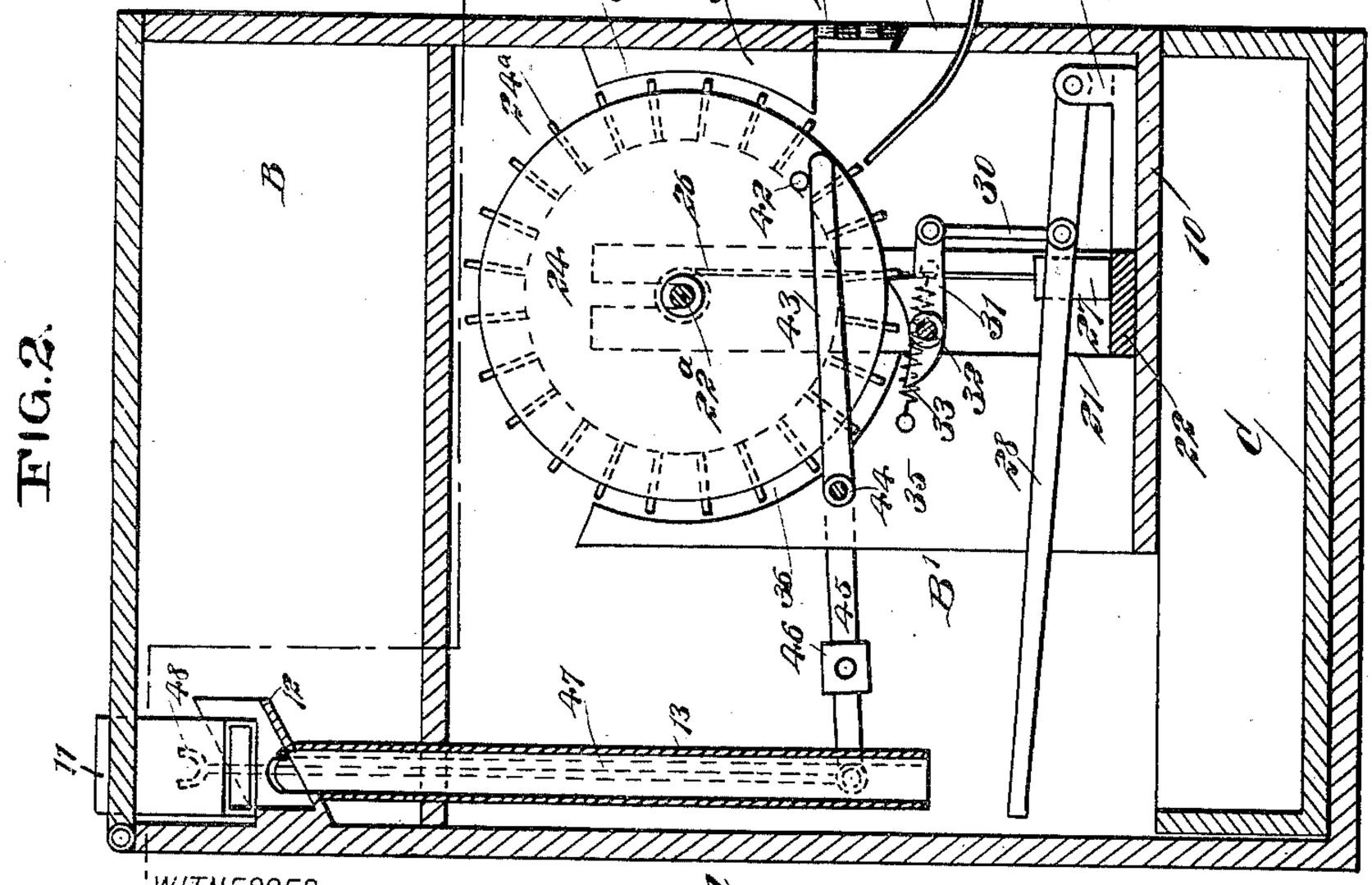


FIG. 2.



WITNESSES:

Donn Twitchell

J. Fredericks

INVENTOR

J. E. Martin

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES ELMER MARTIN, OF BRADDOCK, NORTH DAKOTA.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 649,737, dated May 15, 1900.

Application filed September 20, 1899. Serial No. 731,120. (No model.)

To all whom it may concern:

Be it known that I, JAMES ELMER MARTIN, of Braddock, in the county of Emmons and State of North Dakota, have invented a new and Improved Vending-Machine, of which the following is a full, clear, and exact description.

One object of this invention is to provide a simple and durable machine especially adapted for dispensing cigars or other material capable of being carried in circular racks; but the machine is especially designed for dispensing cigars of various prices and to provide a means whereby coins of required dimensions may be placed in the same chute and will find their way to the compartments designed to receive them, the coins acting to automatically set in motion the mechanism to deliver one or more pieces of merchandise.

A further object of the invention is to so construct the machine that the various repositories may be conveniently filled when emptied, and also to provide a means whereby when any repository is empty an alarm will be sounded, notifying the attendant of such fact.

Another object of the invention is to provide for the closing of the coin-receiving chute while any one repository is empty, and also to provide a means whereby an alarm will be sounded when a washer or similar device has been introduced into said coin-receiving chute.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a front elevation of the improved machine, a portion of the front of the casing being broken away. Fig. 2 is a vertical transverse section taken practically on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section taken substantially on the line 3 3 of Fig. 2, and Figs. 4 and 5 are detail views of one of the governing-pawls for a drum adapted to carry the merchandise.

A represents a casing of any desired construction and of any desired shape, which is provided with an upper chamber B and a lower chamber B′. The upper chamber B is used for the storage of cigars, while the lower chamber B′ contains the mechanism for dispensing the cigars. A horizontal partition 10 is located near the bottom portion of the lower chamber B′, which partition extends from the front to a point near the rear, and the space between the bottom of the partition 10 and the bottom of the casing is adapted to receive a money-drawer C, as shown particularly in Fig. 2. The money-drawer is provided with a suitable lock, and the top of the casing is hinged and is also provided with a lock.

A short coin-receiving chute 11 is introduced at the top of the casing near one of its ends, as shown particularly in Figs. 1 and 2, and this small chute 11 connects with a main chute 12, which, as shown in Fig. 2, is given an inclination downwardly in direction of one side of the casing. This main chute 12 is provided with a series of openings 12^a in its bottom, and one of the openings near the top is provided with a downwardly-extending conductor 13, adapted to receive a dime, for example, another opening lower down being provided with a conductor 14, adapted to receive a cent, for instance, while other conductors 15 and 16 are provided also lower down, one adapted to receive a nickel and the other a quarter of a dollar; but it will be understood that the number of conductors may be varied as occasion may demand.

At the upper end of the main chute 12 a conductor 17 is located at one of the openings 12^a, adapted to receive a coin of less size than a dime, and a similar conductor 18 is provided in front of the conductor 14 for the cents, and conductors 19 and 20 of like character are also provided in front of the main conductors 15 and 16 for nickels and quarters.

The chamber B′ is divided into a number of compartments by parallel uprights 21, mounted on a suitable base 22, and the mechanism in each compartment for the delivery of merchandise is identical. Therefore the description will be confined to the construction in one compartment.

A shaft 22^a is journaled in the uprights 21

in a removable manner, and on the said shaft between the said uprights two drums 23 and 24 are secured, each drum consisting of an outer circular section a, an inner reduced circular section a', and an intermediate tapering or conical section a^2, the inner circular section a' being provided with a series of pins 24^a, the pins on both drums being in transverse alinement; but the periphery of the outer circular portion a of one of the drums is provided with a series of teeth 25. A cord 26 is attached to and wound upon the shaft 22 between the drums, and at the free end of this cord a weight 27 is secured. A trip-lever 28 extends from a point below the coin-conductor for the compartment, as shown in Fig. 2, to the front of the casing beneath the toothed portion of the drum, as shown in Figs. 1 and 2, and this lever 28 is fulcrumed at its forward end in suitable uprights 29. Links 30 are pivoted to this lever and extend upward therefrom, and the forward end of a pawl 31 is pivoted between the upper ends of said links, the said pawl being fulcrumed upon a pin 32, secured to one of the said standards or uprights 21, as shown in Fig. 2. The pawl is provided with two contact-points—namely, one point b between its ends and a second point b' at its rear terminal. Both points are adapted to engage under certain conditions with the teeth 25 on one of the drums of a repository for the merchandise, as shown in Figs. 1 and 2, the point b of the pawl engaging with said teeth when the repository is inactive and serves to hold said repository in such position, while the point b' of the pawl serves to check the rotation of the repository when released from the point b and allows the said repository to turn a distance only corresponding to the distance between the pins 24^a on the drums.

A spring 33 is attached to a pin 34, which is projected from a side of the pawl 31, and this spring in the normal position of the pawl crosses its pivot at a point slightly above the center, the opposite end of the spring being attached to one of two guide-posts 35, that are attached to the base 22 and extend upward at the rear of the pin portions of the drums 23 and 24. The said posts 35 are provided with concaved surfaces 36 where they face the pin-surfaces of the drums, as shown in Fig. 2, so that the cigars placed between the pins at the ascending portion of the drum will not drop out from their seats, and blocks 37 are secured to the front of the casing A opposite the pin portions of the drums, as is also shown in Fig. 2, and these blocks have concaved faces 38, which face the drums. The said blocks 37 serve to prevent cigars dropping from their seats between the descending pins on the drums.

An opening 39 is made in the front of the casing at each of the compartments therein, and a receiving-tray 40 extends out through each opening 39 and upward within the compartment to such a position that the said trays at their inner ends receive the merchandise released from the repository. Above each opening 39 a door 41 is preferably placed, in order that access may be obtained to the repositories for the purpose of filling the same.

A pin 42 is projected from the outer face of the drum 24, carrying the teeth 25, and the said pin when the repository has been emptied is adapted to engage with a lever 43 and press said lever down, which lever at that time will rock a shaft 44, with which it is connected, the said shaft being journaled in the posts 35, and at one end of the shaft 44 a rearwardly-extending arm 45 is attached, having an adjustable weight 46, and said weight tends to hold the lever 43 in position to be engaged by the pin 42, as aforesaid. It will be understood that the levers 43 for all of the compartments are attached to the same shaft 44. The rearwardly-extending arm 45 of the shaft 44 is attached to an upwardly-projecting rod 47, which rod is provided with a fork 48 at its upper end, and said fork is adapted for engagement with a retarding device D, made preferably of non-magnetic wire 49, bent substantially to an **S** shape, and this device is pivoted at or about the central portion of its central member on a pin 50, which is insulated and extends beyond the insulation, the rod 47 engaging with the lower member of the said retarding device, while the upper member is in the form of a hook and is adapted to enter the small chute 11 through a suitable opening made in the said chute; but normally the connecting member between the intermediate and lower member of the retarding device is within the said smaller chute 11, and a coin cannot pass down said chute without pressing said connecting member downward, and in so doing the upper member will be carried into the said chute. Thus should a washer be placed in the chute 11 the upper member of the retarding device will enter the opening in the washer and hold it from passing farther. When a washer or the like is held by a magnet, to be hereinafter described, or other retarding device, a coin cannot pass through to the trip device; but the retarding device is so close to the entrance of the chute 11 that a coin at such time partly projects from the chute. Therefore the person placing the coin in the chute 11 may readily take it out, and an electric alarm, also to be hereinafter described, will operate until the washer is removed by a fine bent wire or similar device. The lower end of the retarding device is adapted for engagement with a pin 51, insulated for a portion of its length and located near the upper end of the smaller chute 11, and the pins 50 and 51 are in circuit connection with a battery 52 and an alarm device 53, as illustrated in Fig. 3, when a washer or the like blocks the chute or when one or more of the repositories are empty. A magnet 54 is placed in the smaller chute at the lower portion of the slot through which the re-

tarding device, which is non-magnetic, extends, the said magnet being adapted to attract and retain any plugged or plain iron or steel disk that may be introduced into the said chute 11, and which the retarding device would not retain, the disk holding the retarding device so that it touches the pin 51, thus closing the electric circuit and causing the bell 53 to ring and blocking the chute at this time.

When a coin slides down the small chute 11, in passing the retarding device it presses down its front portion and closes the electric circuit for the length of time it is passing over; but such time is so short that the bell will ring for an instant only, and, if noticed at all, signifies that a coin has slid down the chute. The weight of the lower portion of the retarding device is sufficient to normally hold it in position to break the electric circuit.

In operation, supposing a repository to have been practically filled with cigars, one side will substantially balance the other, but the weight 27 will tend to turn the repository in direction to discharge an article the moment the repository is released from its pawl 31, which is effected at the time a coin strikes the trip-lever 28, connected with the pawl. When the weight has descended, the merchandise upon the rear side of the repository will have been exhausted and the forward side only will be filled, and the repository will then operate through gravity, the weight not being needed. When the last piece of merchandise has been discharged from the repository, the pin 42 of the repository will engage with the lever 43, which in its turn will operate the shaft 44 and connected rod 47, and will carry the lower end of the retarding device in engagement with the pin 51, closing the circuit and sounding an alarm, thus announcing that the repository is empty. The attendant may now readily fill the empty repository by opening the door 41 and passing the cigars through the opening thus provided into the front lowermost pocket formed by the pins 24^a and turning the repository rearward as each pocket is filled. As the repository moves rearward the forward point *b* of the pawl 31 will disengage from the teeth 25 of the repository.

The spring of the pawl is so arranged as not to pass the center of the pivot until the front point *b* of the pawl has moved slightly farther than to disengage the teeth 25. The goods being placed in the repositories, the weight on the journals will hold the repository from revolving rearward any farther than the attendant turns it, the front point *b* of the pawl preventing the repository from rotating frontward when the attendant removes his hand.

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

1. In a vending-machine, the combination with a coin-receiving chute, of a retarding device pivotally mounted adjacent said chute, and adapted to enter and obstruct said chute, means for rocking said retarding device by the insertion of a coin, and an alarm arranged for connection with said retarding device when it is rocked, as set forth.

2. In a vending-machine, the combination with a repository, and a coin-chute, of an alarm device, a retarding device mounted adjacent said chute and arranged to obstruct the chute and actuate the alarm device, a rocking lever operated by the repository when the latter is empty and a connection between the lever and retarding device, as and for the purpose set forth.

3. In a vending-machine, a coin-receiving chute having an opening near its receiving end, and a retarding device pivotally mounted adjacent said chute with a portion normally lying in the said opening and an upper end adapted to enter said opening when such portion is depressed, and an alarm sounded by said retarding device, as and for the purpose set forth.

4. In a vending-machine, a coin-receiving chute, a retarding device pivotally mounted adjacent to said chute on a pin connected with an electric alarm and consisting of an intermediate member normally lying within the chute, an upper member adapted to enter said chute when the intermediate portion is depressed, and a lower member adapted to close the circuit of the alarm apparatus, as and for the purpose set forth.

5. In a vending-machine, a series of revolving repositories, a rocking shaft extending transversely to said repositories, a series of levers secured on said rocking shaft adjacent said repositories each of said levers being arranged to be moved when its adjacent repository is empty whereby to rock the shaft, a coin-receiving chute, an **S**-shaped retarding device pivotally mounted on a pin connected with an electric alarm and having an upper end adapted to enter the chute to obstruct the same and a lower end adapted to close the circuit of the alarm mechanism, and a connection between the rocking shaft and said retarding device, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES ELMER MARTIN.

Witnesses:
ISAAC E. SHEPARD,
ANTON OLSON.