

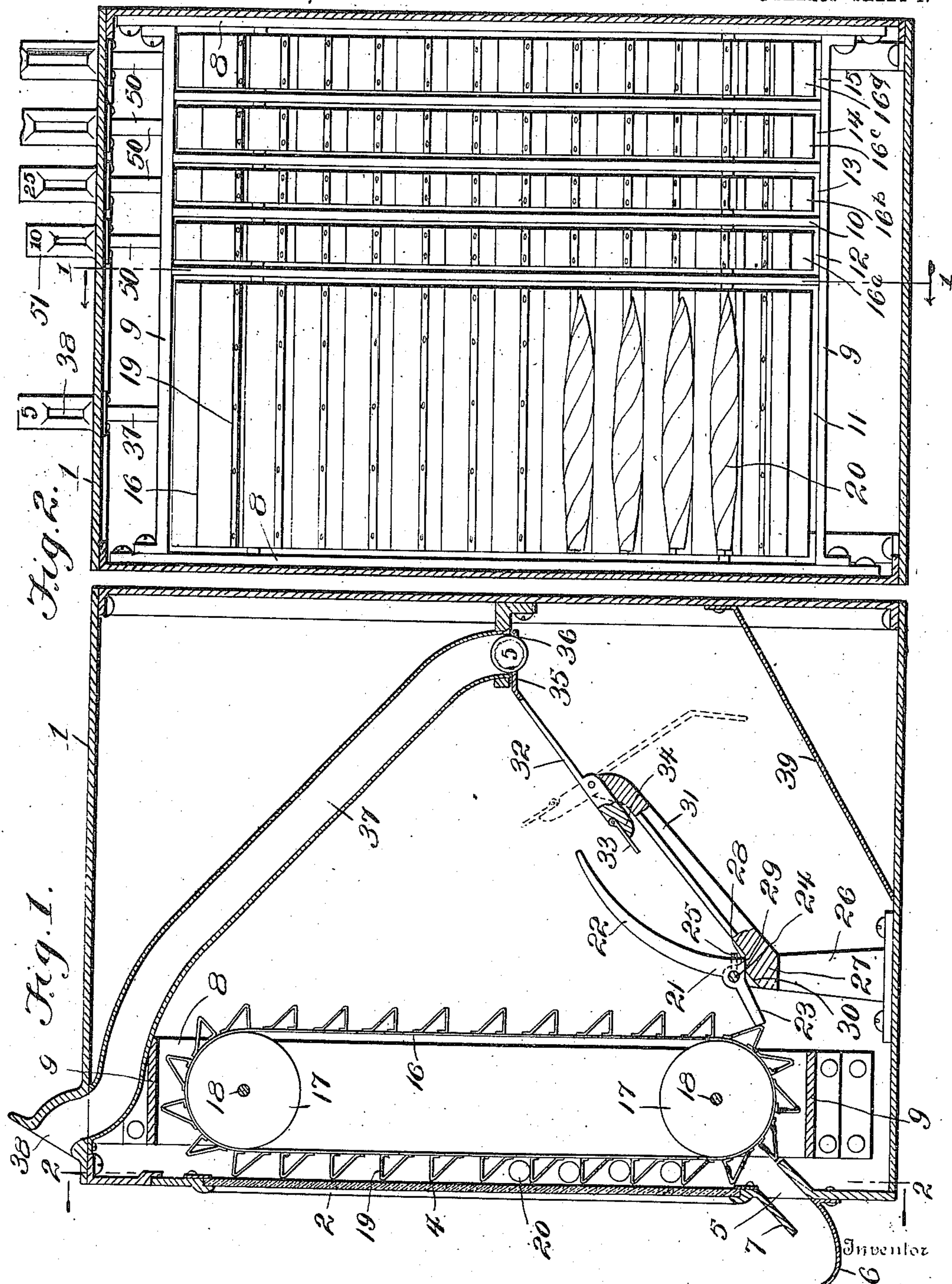
A. H. ARNOLD.  
VENDING APPARATUS.

948,914.

APPLICATION FILED MAR. 23, 1909.

Patented Feb. 8, 1910.

2 SHEETS—SHEET 1.



Witnesses

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Fig. 3.

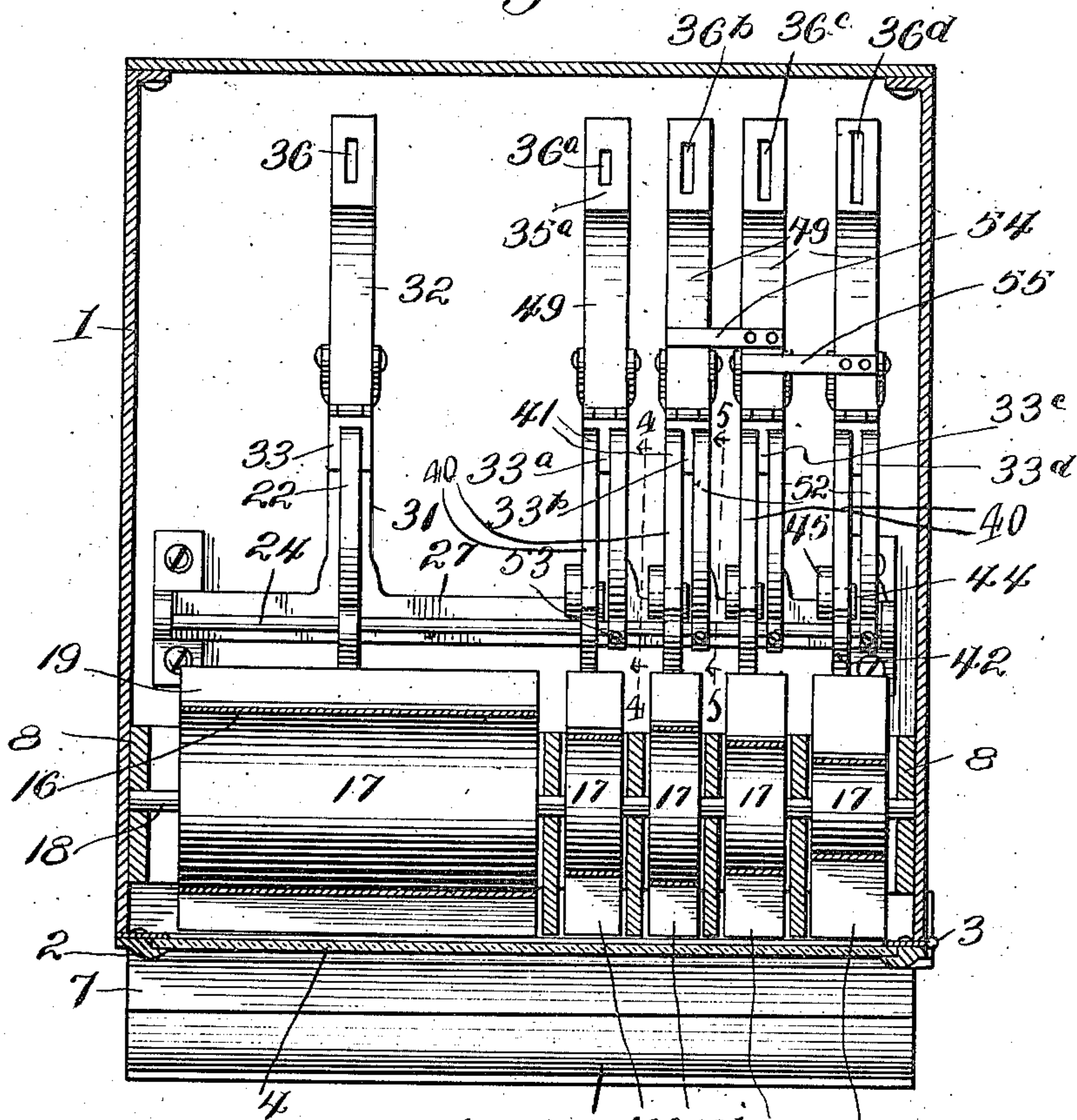


Fig. 4.

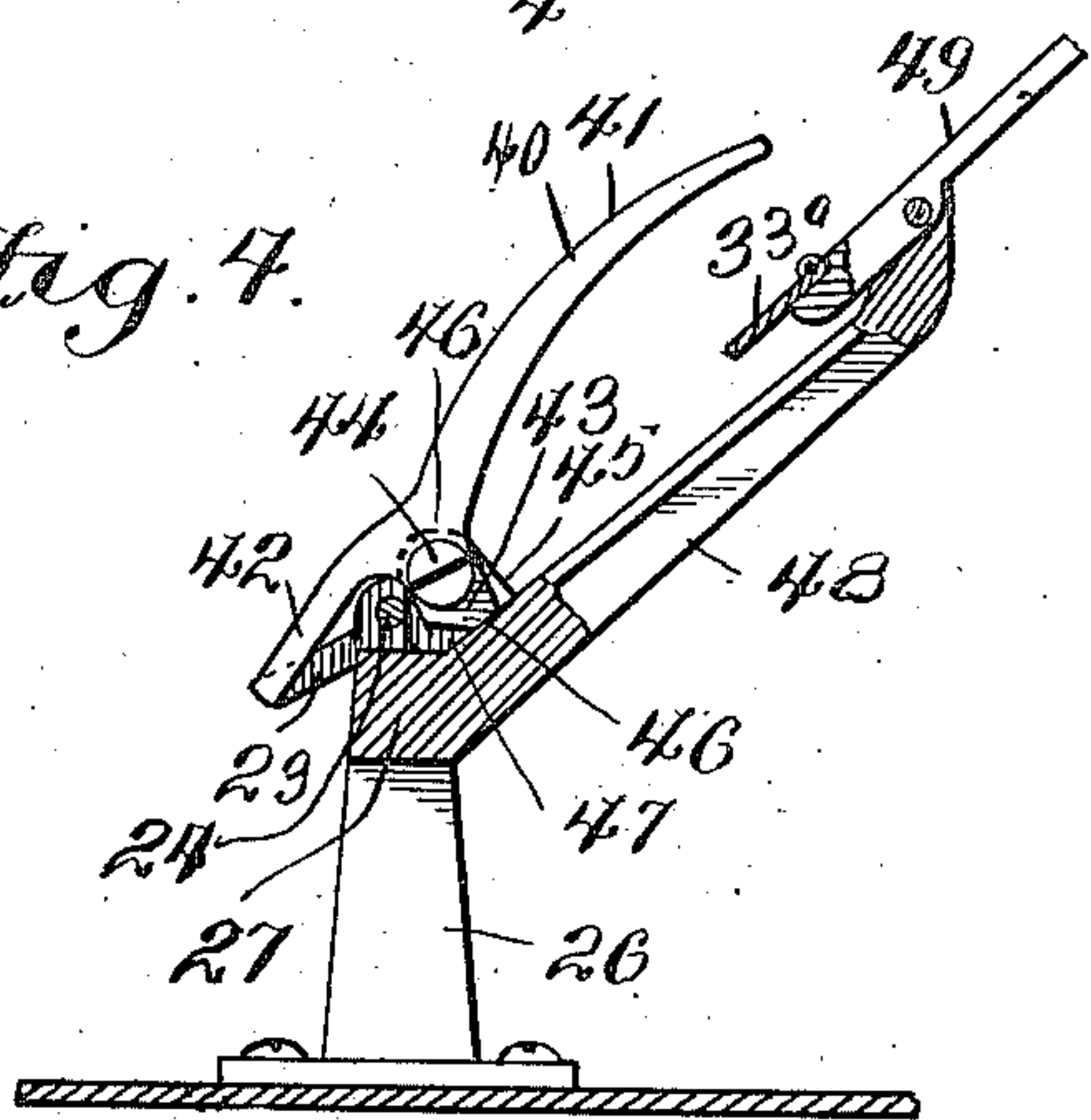
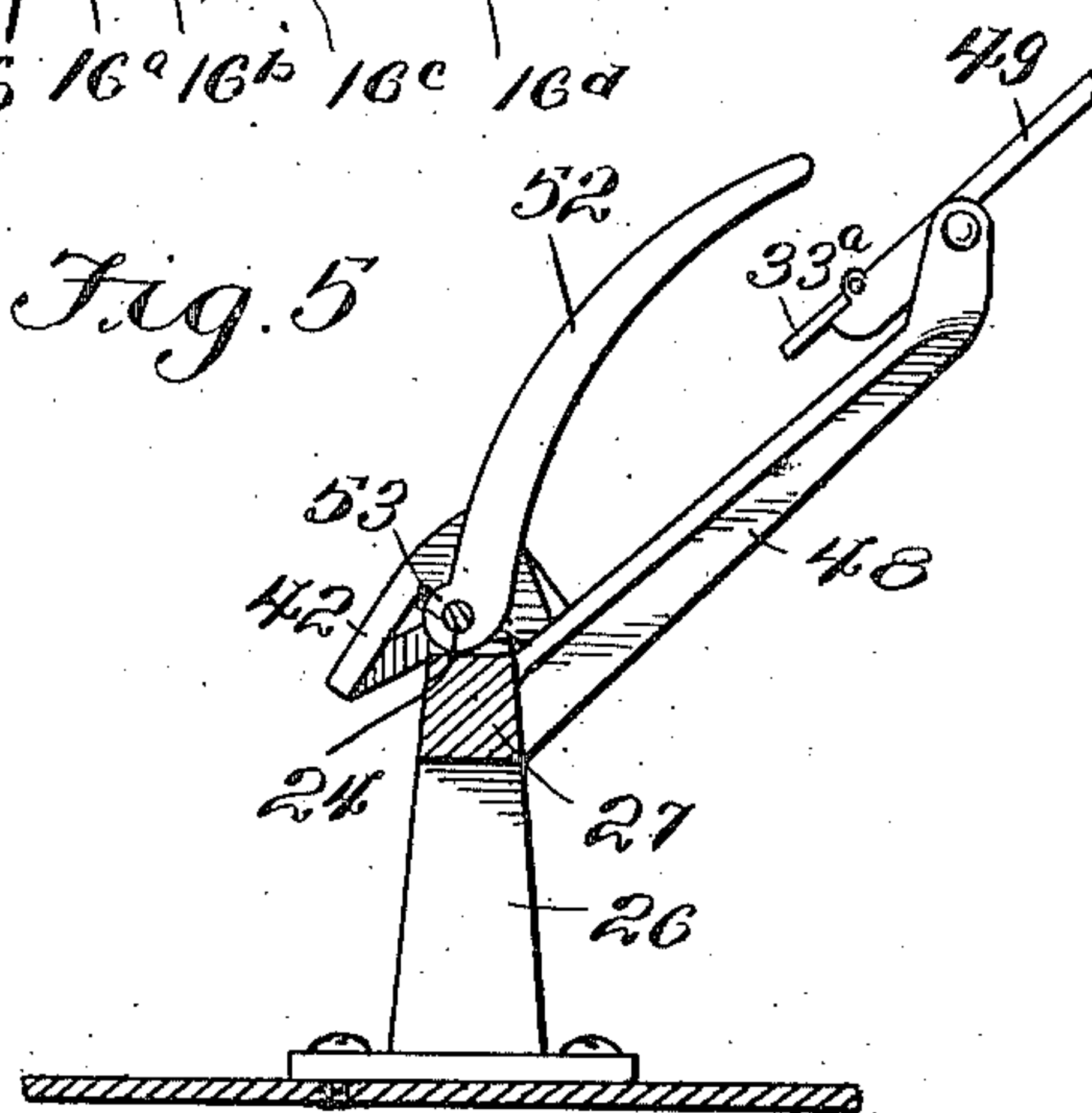


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## VENDING APPARATUS.

948,914.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed March 23, 1909. Serial No. 485,285.

*To all whom it may concern:*

Be it known that I, ARTHUR H. ARNOLD, a citizen of the United States, residing at Central, in the county of Pickens and State of South Carolina, have invented new and useful Improvements in Vending Apparatus, of which the following is a specification.

This invention relates to coin-controlled vending apparatus for vending cigars, chewing gum and various other kinds of goods and articles.

One object of the invention is to provide an apparatus of this character having a simple, reliable and efficient type of article holding and vending mechanism.

Another object is to provide a vending apparatus having means for simultaneously discharging an article from a single holder or articles from two or more holders.

With these and other objects in view the invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a vertical front to rear section through the apparatus on the plane indicated by the line 1—1 of Fig. 2. Fig. 2 is a vertical transverse section on the plane indicated by the line 2—2 of Fig. 1. Fig. 3 is a sectional plan view of the apparatus. Figs. 4 and 5 are detail sections on the lines 4—4 and 5—5 of Fig. 3.

Referring to the drawings, 1 designates the inclosing casing of the apparatus, which as shown is of rectangular form and may in practice be constructed of any suitable material. This casing is provided at the front thereof with a door or closure 2, which may be hinged or pivoted at one of its side edges to the adjacent side of the casing, as shown at 3, and held closed at its opposite edge by any desired type of fastening means, not shown. This door may be opened for replenishing the vending and change-making devices when occasion requires and for removing the deposited coins at desired intervals, and is provided with a glass or other transparent panel 4 through which the interior mechanism may be viewed from the exterior. The door is also provided adjacent its lower edge with an outlet 5 for the discharge of the vended article and the change, if any, due the purchaser, said outlet having associated therewith a receiving and retaining tray 6 and an overhanging

guard 7 to guide the article or change to the tray and prevent an unscrupulous person from attempting to manipulate any of the internal devices without the prior deposit of a proper coin.

Arranged transversely within the front portion of the casing is a supporting frame comprising a pair of side pieces 8 and upper and lower cross pieces 9, and which is preferably subdivided by a series of vertical partitions 10 into a number of spaces or compartments 11, 12, 13, 14 and 15, the compartment 11 occupying one side or half of the width of the casing, while the other compartments occupy the remaining half as clearly shown in Fig. 2.

Arranged for operation within the space or compartment 11 is a vending device comprising an endless flexible conveyer 16 mounted upon guide pulleys 17 journaled on axles 18 fixed at their ends in one of the side pieces 8 and the adjacent partition 10. The front stretch of this conveyer is arranged to move in parallel relation to and closely in rear of the panel 4 of the door, and is constantly of a length corresponding substantially to the height of the panel, which terminates at its lower edge adjacent the outlet 5. The outer surface of the conveyer carries a continuous series of brackets or shelves 19 arranged in spaced relation and so constructed that the brackets or shelves upon the front stretch of the conveyer will operate in conjunction with the panel 4 to provide a series of pockets to hold the articles to be vended, which may be cigars, as shown, or any other desired kind of goods in suitable form.

The weight of the articles 20 on the front or working stretch of the conveyer serves to operate the conveyer by gravity for the intermittent feed of the articles to the outlet 5, and suitable means are provided for holding the conveyer against movement and permitting a prescribed degree of movement thereof for the discharge of a single article at a time. The means for performing this function comprises a bell crank detaining or locking lever 21 having an upwardly and rearwardly curved trip arm 22 and a lower, shorter detent arm or finger 23, which normally engages one of the brackets on the rear stretch of the conveyer to hold the latter against movement. The lever is mounted at the angle of intersection of its arms upon a rock shaft 24 to which it is fixed by a set



screw 25, which shaft is journaled in the upper ends of a pair of supporting standards 26 connected by a cross bar 27 extending transversely from side to side of the casing in rear of the supporting frame of the vending and change-making devices. The lever is formed with a shoulder 28 to engage the upper surface 29 of the bar, whereby it is retained by the gravity of its arm 22 in normal position, as shown in Fig. 1, and the bar is formed with a beveled stop portion 30 to limit the downward movement of the finger 23.

Extending upwardly and rearwardly at an angle from the bar 29 is a bracket arm 31 upon which is pivotally mounted a releasing or trip lever 32 provided at its lower end with a pivoted finger 33 adapted to rest against a seat shoulder 34 and provided at its upper end with an angularly bent coin receiving portion 35 having an opening 36 for the reception of a prescribed size of coin. Normally the portion 35 of the lever is arranged to close the lower end of a coin chute 37 inclining downwardly and inwardly from a coin inlet 38 at the upper front portion of the machine. The opening 36 will permit of the passage therethrough without actuation of the lever 32 of a coin of smaller size and denomination than the one intended, but when the proper size coin is inserted and retained in said opening, the weight of the coin causes said lever to tilt to the dotted line position shown in Fig. 1, in which its rear arm swings downwardly and its front arm upwardly, causing the finger 33 to engage the arm 22, thereby tripping the lever 21 to swing its arm or detent 23 downward to release the conveyer, which will thereupon move the distance of one pocket to discharge the article in the lower pocket through the outlet 5. As soon as the finger 33 passes the arm 22 of lever 21, the latter swings backward by gravity to normal position, so that the detent 23 will engage the bracket following that from which it was released and again lock the conveyer from movement: The trip lever 32 after the release of the coin, which drops therefrom by gravity and rolls down an inclined shelf 39 on to the front portion of the bottom of the casing, also swings back by gravity to normal position, in which operation its pivoted finger 33 tilts up on coming in contact with the arm 22 so as to pass easily beneath said arm and then drops by gravity to normal position, resetting the apparatus for the subsequent operation.

The cigars or other articles carried by the conveyer 16 may be vended at any certain price, say at five cents each, in which event it will be understood that a five cent piece should be inserted into the slot 38 to effect the operation of the conveyer and discharge of a single cigar or article, in the manner

above described. It is desirable in the operation of a machine of this kind to also provide a means by which a prospective customer not having a five cent piece on hand may insert a coin of a larger denomination and receive a cigar or article and the proper amount of change. I provide a means by which several coins of different values greater than a nickel may be inserted, an article discharged and the proper amount of change given to the customer.

The change making devices are arranged within the several spaces or compartments 12, 13, 14 and 15, and in the main are similar in construction to the goods vending device, and, as they are alike in construction to each other, a description of one will suffice for all. They are in effect vending devices, differing broadly from the vending device 16 merely in the discharge of coins instead of goods, and hence in the use of the terms "vending devices" or any equivalent it is to be understood that any one of the devices shown is contemplated, except where its particular purpose or nature is specifically defined. For purpose of distinction, the several change-making devices are designated by the reference characters 16<sup>a</sup>, 16<sup>b</sup>, 16<sup>c</sup> and 16<sup>d</sup>, and each consists of an endless conveyer corresponding in construction to the conveyer 16 and mounted in like manner upon the axles 18, each of said change-making conveyers, which vary in width according to the widths of the compartments and the sizes of the coins to be held thereby, being provided with a series of brackets 19<sup>a</sup> identical in form to the brackets 19 of the conveyer 16. The pockets formed by the brackets upon the front stretch of the conveyer 16<sup>a</sup> may each support a single coin of a prescribed denomination, say a five cent piece, while the pockets upon the front stretch of the conveyer 16<sup>b</sup> each carries two ten cent pieces, those of the conveyer 16<sup>c</sup> each a single twenty-five cent piece, and those of the conveyer 16<sup>d</sup> each a single fifty cent piece, so that upon the deposit of a dime, quarter, half-dollar or silver dollar in the machine, as hereinafter described, an article may be discharged with the proper amount of change through the outlet 5, which as previously set forth, extends entirely across the front of the machine so that it will serve for co-operation with each and all of the conveying devices.

Each change making device or conveyer is held from movement by a locking lever 40 having a trip arm 41 and a detent 42 generally similar to the lever 21, said lever 40 being however provided with a lug or extension 43 mounted upon a pivot pin or screw 44 carried by an extension 45 from the bar 27 and provided with contact surfaces 46 and 47 to engage an arm 48 projecting from the bar to limit its tilting movement. The detent 42 is



provided to engage the brackets on the rear stretch of the conveyer to hold the same normally against movement under the weight of the coins in the front pockets thereof.

5 The arm 48 is an equivalent of the arm 31 and has pivotally mounted thereon a strip lever 49 similar in all respects in construction to the lever 32, except that the coin receiving slot therein is of proper size to receive the denomination of coin to be inserted for the actuation of the particular change-making device in question. The trip fingers upon the series of levers 49 are designated 33<sup>a</sup>, 33<sup>b</sup>, 33<sup>c</sup> and 33<sup>d</sup> respectively, while the coin receiving slots in the portions 35<sup>a</sup> of said levers are respectively designated 36<sup>a</sup>, 36<sup>b</sup>, 36<sup>c</sup> and 36<sup>d</sup>, each of which slotted portions of the levers is arranged to communicate with the lower end of a coin chute 50 leading from a coin insertion slot 51. The series of coin insertion slots for use in connection with the article vending and change-making devices are arranged in alinement with each other and bear in practice the numerical designations of the respective denominations of coins to be inserted therein.

10 It will be understood that the lever 46 is mounted independently of the shaft 24 and does not in operation affect the same but merely releases the particular conveyer of the change-making device associated therewith. For the purpose of simultaneously operating both such particular change-making device and the vending device, an actuating arm or lever 52 is provided for co-operation with each lever 46 and its trip lever 49 and is fixed to the shaft 24 by a set screw 53, the arrangement being such that when the lever 49 is tilted by a coin its finger will simultaneously engage and trip both levers 46 and 52. Hence it will be understood that if the purchaser should deposit a ten cent piece in the correspondingly marked insertion slot the vending devices 16 and 16<sup>a</sup> will be simultaneously operated to discharge a cigar and a nickel in change through the outlet 5, while if a twenty-five cent piece should be inserted in the proper slot the vending devices 16 and 16<sup>a</sup> will be simultaneously operated to discharge a cigar and two ten cent pieces in change through the slot 5. If desired the pockets of the conveyer 16<sup>c</sup> and 16<sup>d</sup> may respectively contain the proper amount of change to be given when they are simultaneously actuated in like manner with the conveyer 16, so that with the cigar forty-five cents would be ejected by the conveyer 16<sup>c</sup> and ninety-five cents by the conveyer 16<sup>d</sup> upon the respective deposits of a fifty cent piece and a silver dollar in the coin slots associated therewith. But the coins are preferably arranged in the pockets of the several change-making devices in the denominations hereinbefore

described and provision made for actuating one or more of said change making devices in unison with the vending device to reduce the number of change making devices required for the purpose. To this end the trip lever 49 associated with the vending device 16<sup>c</sup> is provided with a laterally extending arm 54 to engage the corresponding trip lever of the vending device 16<sup>b</sup>, while the trip lever associated with the vending device 16<sup>d</sup> is provided with a laterally extending arm 55 to engage the said trip lever of the vending device 16<sup>c</sup>. The arrangement of these arms is such that the trip lever of the vending device 16<sup>b</sup> may be operated independently of the trip levers of the vending devices 16<sup>c</sup> and 16<sup>d</sup>, while the trip lever of the vending device 16<sup>c</sup> may be operated independently of the trip lever of the vending device 16<sup>d</sup>, but not without operating the trip lever of the vending device 16<sup>b</sup>, while on the other hand the trip device associated with the vending device 16<sup>d</sup> can not be operated without depressing the trip levers of the vending devices 16<sup>b</sup> and 16<sup>c</sup> therewith. Hence when a half-dollar is deposited in the proper slot and operates the trip lever of the vending device 16<sup>c</sup>, the trip lever of the vending devices 16 and 16<sup>b</sup> will be necessarily actuated therewith to discharge an article from the vending device 16, two dimes from the vending device 16<sup>b</sup> and a twenty-five cent piece from the vending device 16<sup>c</sup>. When a silver dollar, on the other hand, is deposited in the proper slot the vending device will be operated to discharge a cigar, while the vending devices 16<sup>b</sup>, 16<sup>c</sup> and 16<sup>d</sup> will be simultaneously operated therewith to respectively discharge two dimes, a quarter and a half-dollar, making the correct change.

From the foregoing description, taken in connection with the drawings, the mode of use of my improved vending device will be readily understood, and it will be seen that a device of this kind is provided which embodies substantial advantages in simplicity of construction and convenience in use. Of course, the goods vending device may be employed alone, or in connection with one or more of the change-making devices, and the latter may be employed independently of the goods vending device, which variations are held to come within the spirit and scope of the appended claims.

Having thus fully described the invention, what is claimed as new, is:—

1. A vending apparatus comprising a casing, a series of automatically movable vending devices arranged therein, detents for locking the respective vending devices against movement, releasing means for the respective detents, and means whereby the detent controlling any particular vending



device may be operated independently of or in conjunction with one or more of the contents of the other vending devices.

2. A vending apparatus embodying a plurality of automatically movable vending devices, means for independently holding the same from movement, individual releasing devices for the respective holding means, means for operating one of said releasing devices, and means for simultaneously operating one or more of the other releasing devices with the first-named releasing device.

3. A vending apparatus embodying an endless conveyer provided with a continuous series of holders and movable under the weight of articles therein, a pivoted gravity retracted detent adapted to engage the holders to prevent movement of said conveyer, and a pivoted gravity retracted trip device having a finger to engage and trip said detent to release the carrier a determined period, said finger being independently movable in one direction.

4. A vending apparatus embodying an endless conveyer provided with a series of holders and movable by gravity under the weight of articles supported by the holders on one of the stretches thereof, a pivotally mounted gravity retracted detent adapted to engage the holders on the return stretch of the conveyer to prevent movement of the latter, and a pivoted gravity movable trip device for moving said detent to conveyer releasing position.

5. A vending apparatus embodying a plurality of automatically movable vending devices, detents for holding the same from movement, a trip device for releasing one of said detents independently of the other, a series of releasing devices for individually releasing the other detents, means for operating one of the latter named releasing devices with the first named releasing device, and means for simultaneously operating a plurality of said latter named releasing devices with said first named releasing device.

6. A vending apparatus comprising a casing, a series of automatically movable vending devices arranged side by side within said

casing, the latter being provided with a common discharge outlet for the vending devices, and each of the last consisting of an endless conveyer provided with holders, detents coacting with the holders to lock the respective vending devices against movement, releasing means for the respective detents, and means whereby the detent controlling any particular vending device may be operated independently of or in conjunction with one or more of the detents of the other vending devices.

7. A vending apparatus embodying a series of automatically movable holders, a shaft, a detent mounted on said shaft and operative to hold one of the vending devices from movement, detents mounted independently of said shaft for holding the other vending devices from movement, a trip device on the shaft associated with each of the latter named detents, a releasing device for the first named detent, and a releasing device for each of the other detents, said releasing device being adapted to simultaneously actuate the trip device associated with such detent.

8. A vending apparatus comprising a plurality of automatically movable vending devices, a detent for locking one of said devices from movement, detents for holding the other vending device against movement, the latter named detents being mounted independently of the first named detent, a trip device associated with each of the latter named detents, said trip devices being connected for movement with the first named detent, means for retracting the said first named detent, and devices for retracting each of the other detents and the trip device associated therewith, and means coupling certain of said devices for movement in unison.

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

ARTHUR H. ARNOLD.

Witnesses:

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W. E. HYDE.