

No. 759,977.

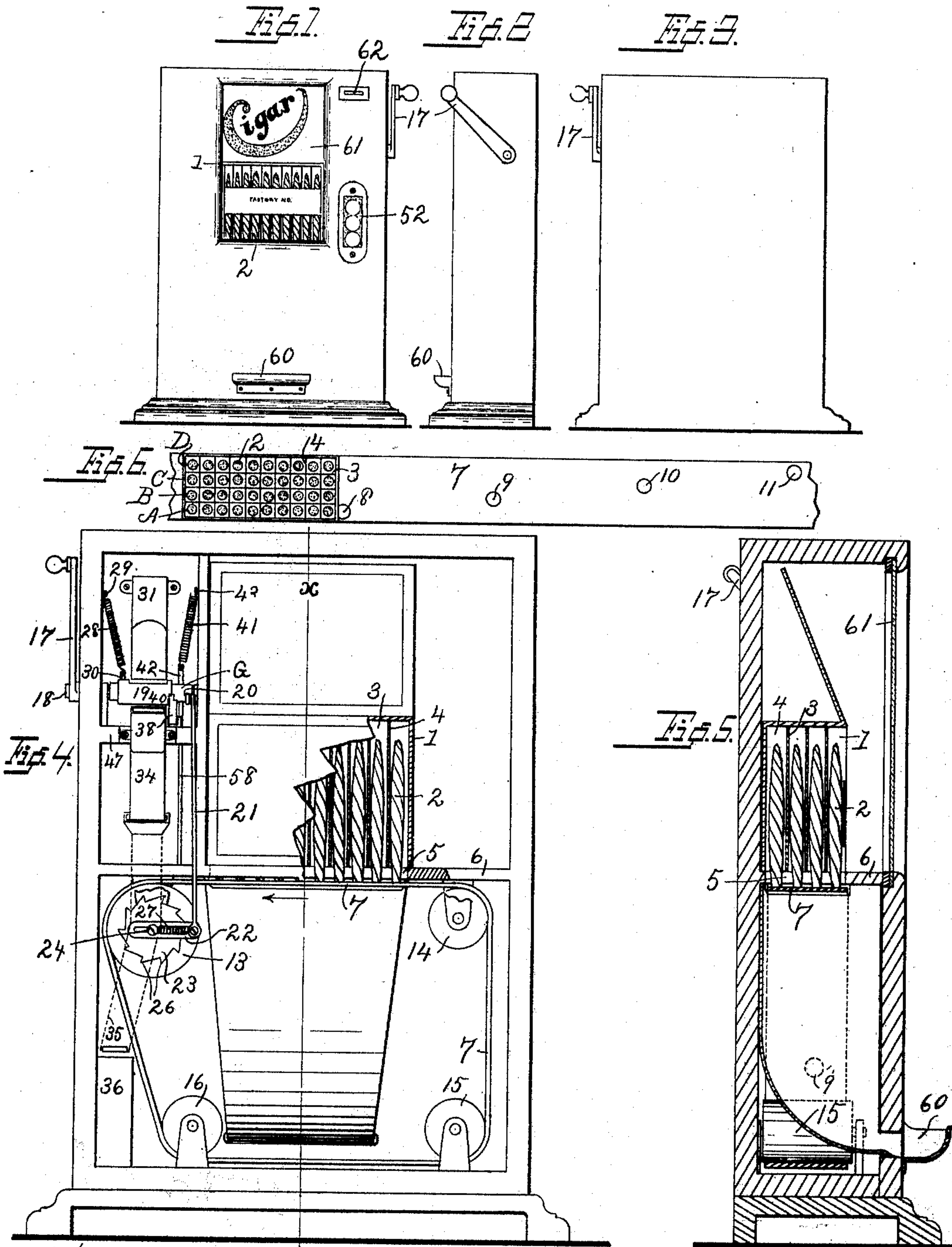
PATENTED MAY 17, 1904.

A. C. ESTBERG.
VENDING AND DELIVERY MACHINE.

APPLICATION FILED MAY 23, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 6.

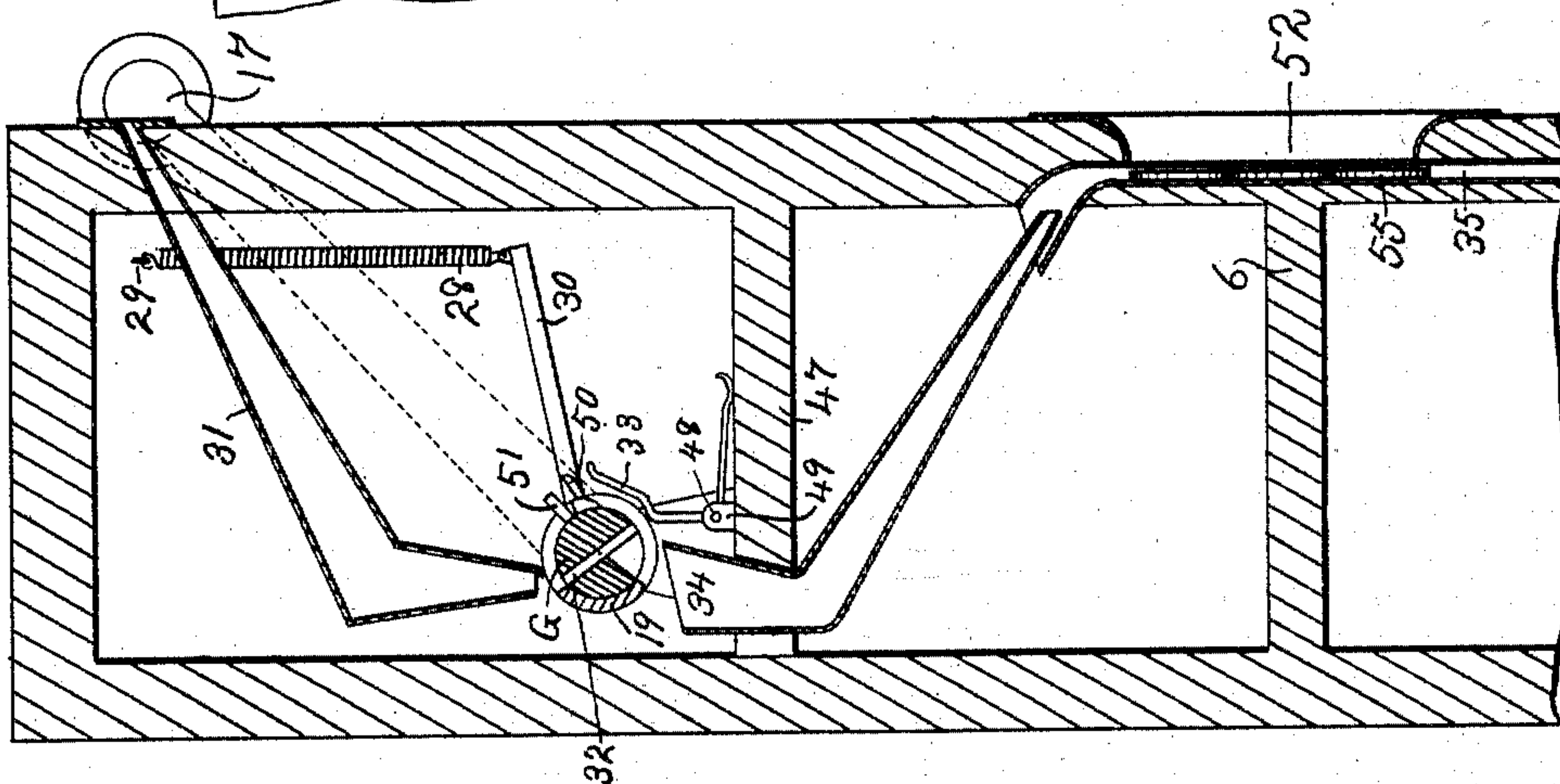
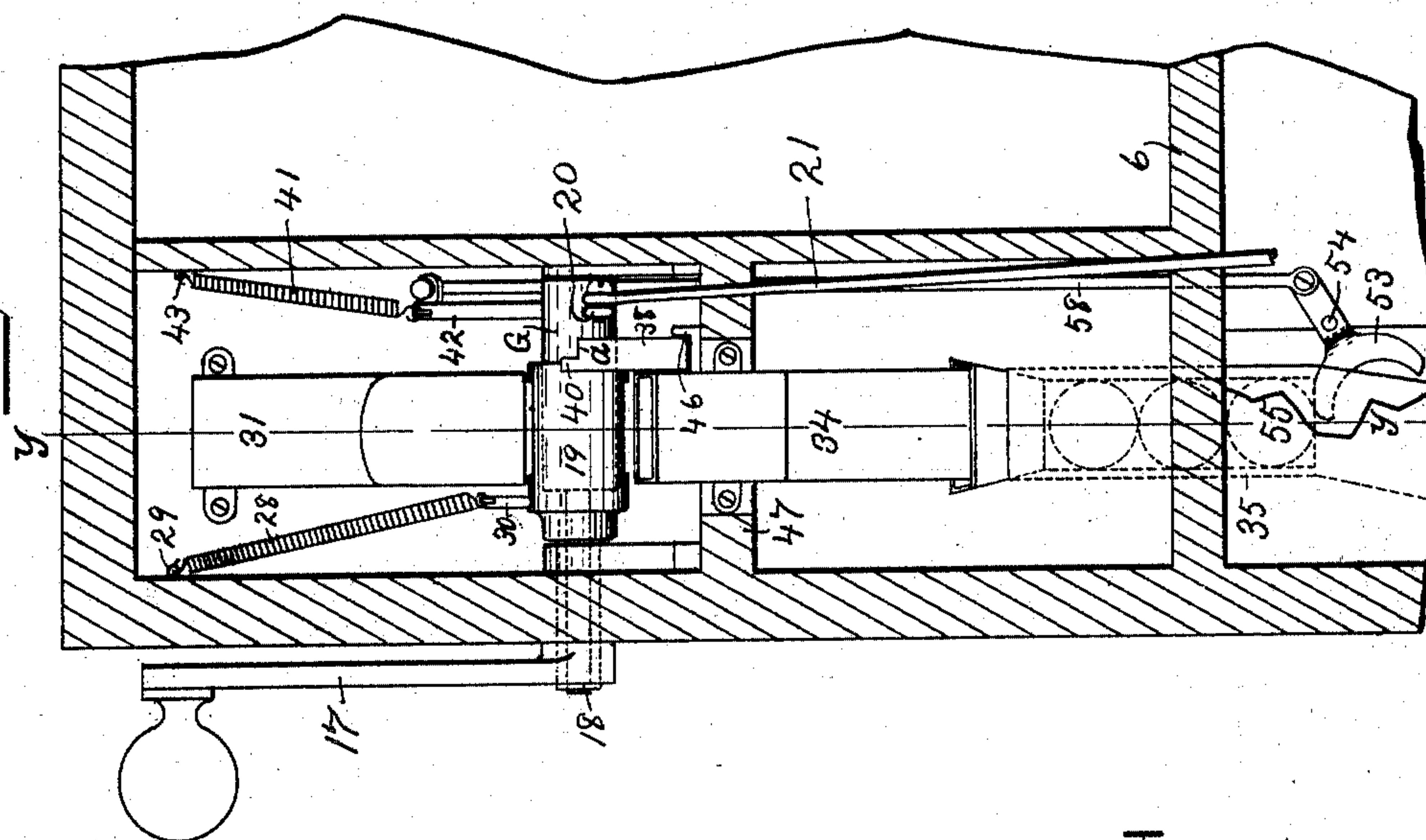


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALBERT C. ESTBERG, OF WAUKESHA, WISCONSIN.

VENDING AND DELIVERY MACHINE.

SPECIFICATION forming part of Letters Patent No. 759,977, dated May 17, 1904.

Application filed May 23, 1902. Serial No. 108,620. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. ESTBERG, a citizen of the United States, residing at Waukesha, county of Waukesha, and State of Wisconsin, have invented new and useful Improvements in Vending and Delivery Machines, of which the following is a specification.

My invention relates to improvements in vending-machines; and it pertains more especially to that class which is adapted to be used for vending and delivering cigars direct from the original package.

My device is explained by reference to the accompanying drawings, in which—

Figure 1 represents a front view thereof. Fig. 2 is a side view. Fig. 3 is a rear view. Fig. 4 is a rear view with the exterior wall of the inclosing case removed to show the interior mechanism. Fig. 5 is a vertical section drawn on line *xx* of Fig. 4. Fig. 6 is a diagrammatic view of the endless belt used for controlling the escape of cigars from the package. Fig. 7 is a detail showing a device for controlling the movement of the coin after it has been deposited in the coin chute or duct. Fig. 8 is a vertical section drawn on line *yy* of Fig. 7. Fig. 9 is a detail of the coin-controlling mechanism, and Fig. 10 is a detail of the pawl-and-ratchet mechanism for operating the belt-supporting rollers.

Like parts are identified by the same reference characters throughout the several views.

As is the case with all devices of this character, my machine is located within an inclosing case in which the cigars are stored, the function of the machine being to deliver the cigars singly from the casing. The casing is therefore provided with a door or lid (not shown) of any ordinary construction adapted to permit the insertion of the cigars. It is also provided with a discharge-aperture through which the cigars are delivered, which aperture is hereinafter more particularly described.

Cigars vended and delivered by my device are preferably packed in separate cells or holders free from contact with each other in specially-prepared boxes or packages, so that when one side of the box is removed and the cigars turned into a vertical position they will

be free to drop of their own gravity from the box.

1 represents the original cigar-box in which the cigars 2 are packed at the factory. The cigars are kept from contact with each other by the longitudinal and transverse partitions 3 and 4 or by any other means for accomplishing such purpose. Preparatory to placing the cigar-box in the machine the wall of the box opposite the ends of the cigars is removed, when the box is turned up edgewise, so as to bring the cigars into a vertical position with their exposed ends down. The box is then placed above the aperture 5, formed in the partition 6, when all the cigars therein drop of their own gravity upon the upper surface of the belt 7. The belt 7 is provided with a plurality of apertures 8, 9, 10, and 11, one aperture for each longitudinal series of cigars contained in the box. The belt 7 is supported upon the rollers 13, 14, 15, and 16 and is caused to move from right to left, as indicated by the arrow in Fig. 4, a distance corresponding with the distance between the cigars in the respective series with each downward or rearward movement of the crank 17, whereby as the apertures 8 to 11, inclusive, in the belt 7 are brought below the respective cigars in the series said cigars are permitted to drop through the belt and fall into the receptacle below. For example, as the aperture 8 passes from one cigar to another in the first series A one cigar after another is permitted to escape through said aperture 8 from the box until all the cigars in such series are removed therefrom, when the next aperture 9 is brought by the action of the crank 17 beneath the first cigar of the second series B. Thus in like manner the cigar from the several series A to D, inclusive, is removed as the several apertures 8 to 11, inclusive, pass beneath the box.

Motion is communicated from the crank 17 to the belt 7 through the shaft 18, cylindrical sleeve 19, cylinder G, arm 20, link 21, lever 22, ratchet-wheel 23, and roller 13. The sleeve 19 is provided with an opening through which the coin passes from the inlet-duct into the longitudinal slot 32 of the cylinder G. A seg-

ment of the lower portion of the cylinder G is cut away upon one side of the slot 32 to prevent the upper edge of the coin from binding in the slot 32 as it escapes from said cylinder. The lever 22 has sliding pivotal connection at its inner end with the roller-supporting shaft 24 and is provided with a projecting lug 25, which is adapted to engage the teeth 26 of the ratchet 23, and said lug 25 is retained in contact with the teeth 26 by the spiral spring 27, which spiral spring 27 is connected at one end to the shaft 24 and at its opposite end to the outer end of the lever 22, whereby with each forward-and-backward movement of the crank 17 the roller 13 is revolved a distance corresponding with the distance between the teeth 26 of the ratchet-wheel, which has the effect to move the belt 7, supported from said roller, a distance corresponding, as stated, with the distance between the cigars in the box. The crank 17 is drawn downward or rearward by the hand of the operator and is drawn back to its normal position by the action of the spiral spring 28, which spiral spring 28 is connected at one end with the inclosing case by the pin 29 and at its opposite end with the sleeve 19 by the arm 30. When in its normal position, the crank 17, with the sleeve 19, may be turned without communicating motion to the cylinder G or any of the other operating mechanism communicating between said cylinder G and the belt 7. When, however, it is desired to get a cigar from the box, a coin is deposited in the chute 31, which is conducted by said chute to and is discharged into the slot 32, formed in the cylinder G, when it is retained in said slot by the spring 33. The relative dimensions of the cylinder G to the coin is such that the coin when thus supported projects slightly from the periphery of said cylinder, whereby as the sleeve 19 is turned upon said cylinder it impinges against the protruding edge of the coin, and thereby causes said cylinder G to turn with the sleeve, whereby motion is communicated from said cylinder G through the lever 20, link 21, and the other intermediate mechanism to the belt-supporting roller 13, whereby the belt is moved forward, as previously described, a distance corresponding with the distance between the cigars, thereby permitting a cigar to drop through one of the several apertures in the belt with each downward movement of the crank. This being done, the lever 17 is released from the hand of the operator, when it is thrown back, as stated, by the action of the spiral spring 28, when the coin which is held by the impinging surfaces of the cylinder G and the inclosing sleeve is released from the slot and permitted to drop into the chute 34, when it passes of its own gravity into the chute 35 and from thence is discharged into the receptacle 36.

To prevent the cylinder G from turning with the sleeve 19 as the same is released from

the hand of the operator, I have provided such cylinder with a stop 37, which engages against the upper end of the pawl 38 at *a*, whereby said cylinder G is held at rest and said sleeve 19 is moved thereon a slight distance in advance of the sleeve until the coin which has been caught between the impinging surfaces of said cylinder and sleeve is released, when by the further movement of said sleeve a lug or angular bearing 39, formed on said sleeve, is brought in contact with the angular lug 40 of said pawl 38, whereby said pawl 38 is thrown back and released from contact with said lug 37, when said cylinder G is again moved forward by the action of the spiral spring 41, which spring 41 is connected with the cylinder G through the arm 42. The stop 37 is formed in connection with the periphery of the cylinder G at one end of the sleeve 19, beneath the pawl 38, (see Fig. 7,) and the stop 39 is formed in connection with the sleeve 19, also beneath said pawl 38. One end of the spring 41 is connected at a fixed point 43 to the inclosing case, while its opposite end is connected, as stated, to said arm 42. The upper end of the pawl 38 is held in contact with the cylinder G by the spiral spring 43', which spring is connected at a fixed point to the inclosing case by the pin 44 and at its opposite end to said pawl. The lower end of the pawl 38 is pivotally supported from the inclosing case by the pin 45 and lugs 46.

The spring 33, by which the coin is retained in the slot in the cylinder G, is pivotally supported from the partition 47 by the bolt 48 and lugs 49. The upper end of the spring is held in contact with the periphery of the sleeve 19 by its own elasticity, and thereby prevents the coin from escaping until the spring 33 is thrown back from the slot in said sleeve by contact with the pin 50, which is connected with the sleeve. When said spring 33 has been thrown back by contact with the pin 50, it is retained in such position until released by contact with the pin 51, which pin 51 is supported from the cylinder G. Thus the spring 33 will be held back by the pin 51 until the sleeve, with the pin 50, is thrown back to normal position, when the cylinder G will be released, as previously stated, from the action of the retaining-pawl 38, whereby said pin 51 will be brought out of contact with said spring. By this arrangement it will be obvious that the necessary interval of time is permitted to elapse between the reverse movement of the sleeve and that of the inclosed cylinder, whereby the coin has time to escape before said spring 33 is permitted to again close the slot.

To provide for retaining a plurality of nickels in sight in front of the sight-glass 52 of the chute, the lower end of said chute is partially closed by the two-armed tilting lever 53, which is pivotally supported upon the pin 54, its bifurcated end extending into the

chute 35 far enough to engage upon the upper and lower edges of the lower coin 55, as indicated in Fig. 7. The tilting lever 53 is connected with the arm 42 by the link 58, whereby with each upward-and-downward movement of the lever 42 the lower coin is separated from those above it and permitted to drop from the chute. It will be understood that the upper branch of said bifurcated lever 53 is inserted between the lower and the next succeeding coin above it and holds the upper coins, while the lower coin is permitted to drop past the lower branch of said bifurcated arm, and that when said arms are tilted in the opposite direction the lower bifurcated arm holds the series until the upper arm engages above the next succeeding coin in the chute, whereby but a single coin is permitted to escape at a time.

60 is a cigar-receptacle in which the cigars are deposited one after another as they are permitted to escape from the cigar-box within reach of the purchaser.

That portion of the wall of the machine directly in front of the cigar-box 1 is provided with a pane of glass 61, which enables the purchaser to see the cigars, the number of the factory, and the label of such cigars before making his purchase.

62 is a slot through which the coin is deposited into the upper end of the duct 31.

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

1. In a vending and delivery machine, the combination of an inclosing case; an endless delivery-belt and supporting-rollers therefor within said case, said belt being provided with a plurality of apertures located at predetermined distances apart, both longitudinally and transversely thereof; means for supporting a box of cigars above said belt, so that the cigars will rest of their own gravity upon said belt; means for communicating an intermittent movement to said belt from the exterior of said case, so as to bring the perforations of said belt successively beneath but one cigar at a time, until the contents of the box is discharged; and means for conducting said cigars from said delivery-belt to the exterior.

2. In a vending and delivery machine, the combination of an inclosing case; an endless delivery-belt and supporting-rollers therefor within said case, provided with a plurality of apertures located at predetermined distances apart, both longitudinally and transversely thereof; means for supporting a box of cigars upon said belt, so that the cigars will rest of their own gravity, upon said belt; an operating-crank located upon the exterior of said case; means for temporarily coupling said crank with the delivery-belt and communicating an intermittent motion to said belt with each forward movement of said crank, a distance corresponding with the distance between

the cigars in said box; and means for conducting the cigars from said delivery-belt to an exterior receptacle.

3. In a vending and delivery machine for cigars, the combination of an inclosing case; a cigar box or receptacle located in said case; in which the cigars are at uniform distances apart in separate series; an endless belt located beneath the lower ends of said cigars, provided with a separate aperture for each series of cigars therein; means for communicating an intermittent movement from the exterior of said inclosing case to said perforated belt, so that the apertures of said belt will register successively with the respective cigars in the several series; and means for conducting the cigars from the box to an exterior receptacle.

4. In a vending-machine, the combination with an endless belt, of means for imparting to said belt a step-by-step movement continuously in one direction, said belt being provided longitudinally thereof with a plurality of release-openings which are located laterally out of alinement with respect to each other.

5. A vending-machine comprising an endless belt, a portion of which constitutes a support for the articles to be vended, rollers over which said belt is trained, means for imparting a step-by-step movement to said belt continuously in one direction, said belt being provided with a release-opening through which the articles to be vended are successively dropped as the belt is advanced.

6. A vending-machine comprising an endless belt, a portion of which constitutes a support for the articles to be vended, rollers over which said belt is trained, means for imparting a step-by-step movement to said belt continuously in one direction and means for sustaining the articles to be vended on said belt in rows parallel with the direction of travel of the belt, said belt being provided, longitudinally thereof, with a number of release-openings located laterally out of line with each other.

7. A vending-machine comprising an endless belt, a portion of which constitutes a support for the articles to be vended, rollers over which said belt is trained, means for imparting a step-by-step movement to said belt continuously in one direction, and a rack for the articles to be vended having a plurality of rows of pockets arranged parallel with the direction of travel of the belt, said belt being provided, longitudinally thereof, with a number of release-openings, said openings being located laterally out of line with respect to each other and each opening being adapted to be passed beneath one of said rows of pockets.

8. A vending-machine comprising a casing, a frame therein provided with a plurality of rollers, one of which is a driven roller, an endless belt trained over said rollers, means for imparting to said driven roller a step-by-step movement continuously in one direction,

a box supported on said frame provided with a plurality of rows of pockets arranged parallel with the direction of movement of the belt, said belt constituting the bottom of said box and adapted to support the articles in said pockets, and being provided longitudinally thereof with a plurality of release-openings which are located laterally out of alinement with each other.

10 9. A vending-machine, comprising a casing, a frame therein embracing upright standards, rollers mounted in said standards, one of said rollers being a driven roller, an endless belt trained about said rollers, means for imparting to said driven roller a step-by-step movement continuously in one direction, a box supported on said frame and provided with a plurality of rows of pockets arranged parallel with the direction of travel of the belt, a portion of said belt traveling horizontally beneath and constituting the bottom of said box and adapted to support the articles in said pockets, said belt being provided, longitudi-

nally thereof, with a plurality of release-openings which are arranged laterally out of alinement with respect to each other, and a chute for directing outside of the casing the articles dropped through the belt. 25

10. A cigar-vending machine comprising a casing, means for supporting in the upper part of said casing a box of cigars, said upper part of the casing being made of sufficient height to permit a box of cigars to be displayed therein with the lid thereof thrown backwardly, and being provided with a transparent front wall to permit the cigars and the labels on the box to be displayed therethrough, and means in the lower part of the casing for releasing the cigars one by one from said box. 35

In testimony whereof I affix my signature in the presence of two witnesses. 40

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Witnesses:

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