(No Model.) 3 Sheets—Sheet 1.

C. H. TISE & J. D. KING.

CIGAR VENDING MACHINE.

No. 566,250. Patented Aug. 18, 1896.

Fig. 1.

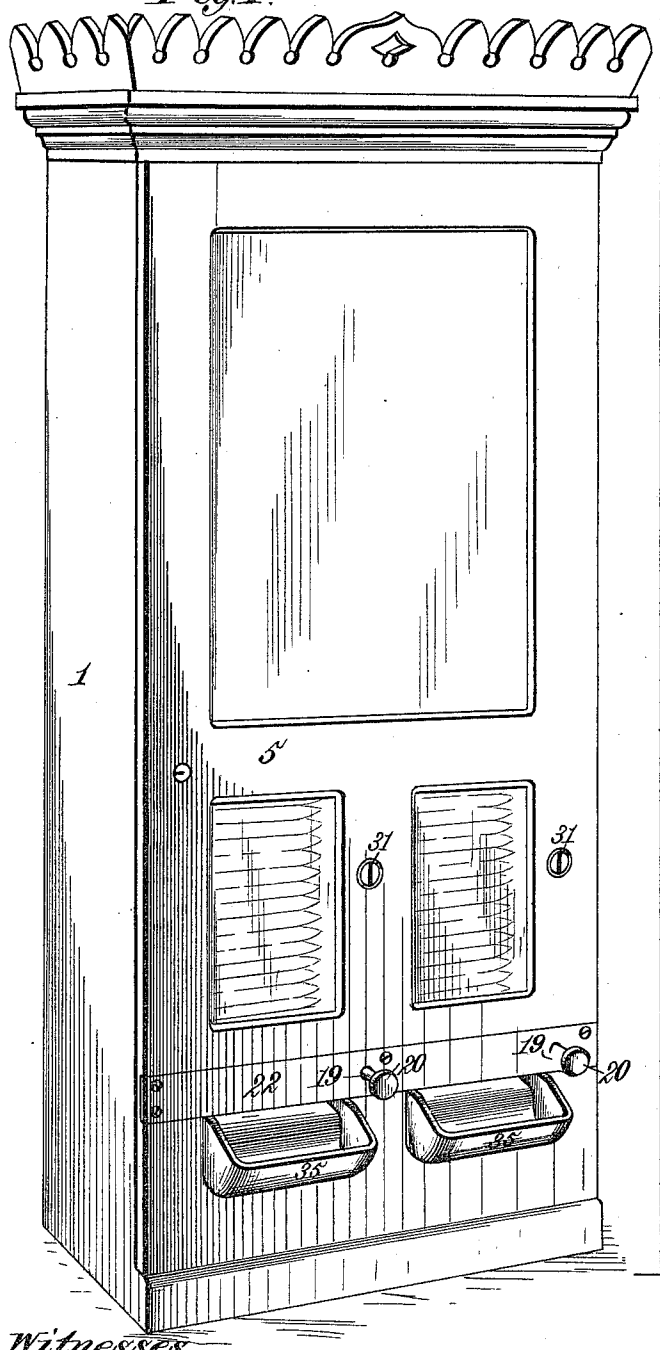
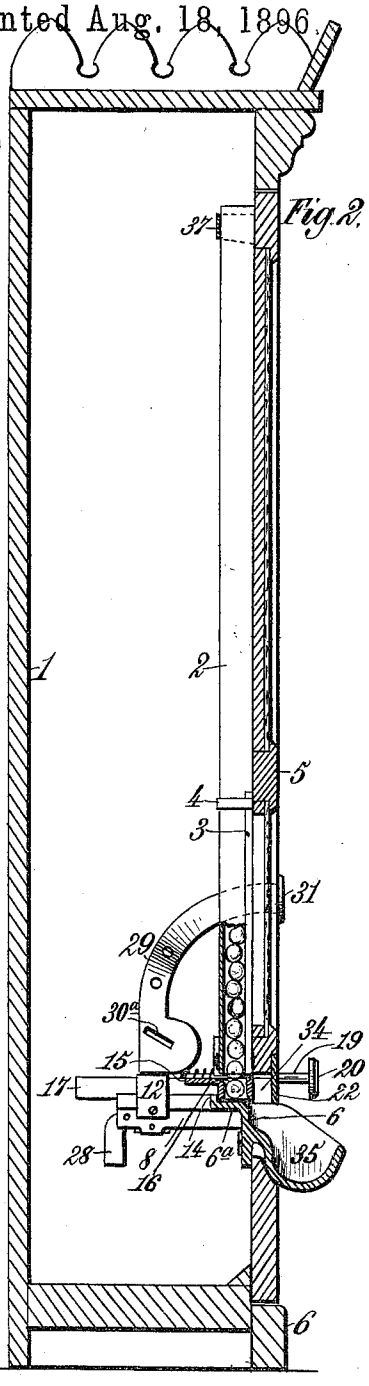


Fig. 2.



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Atty.

(No Model.) 3 Sheets—Sheet 2.

C. H. TISE & J. D. KING.

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Fig. 3.

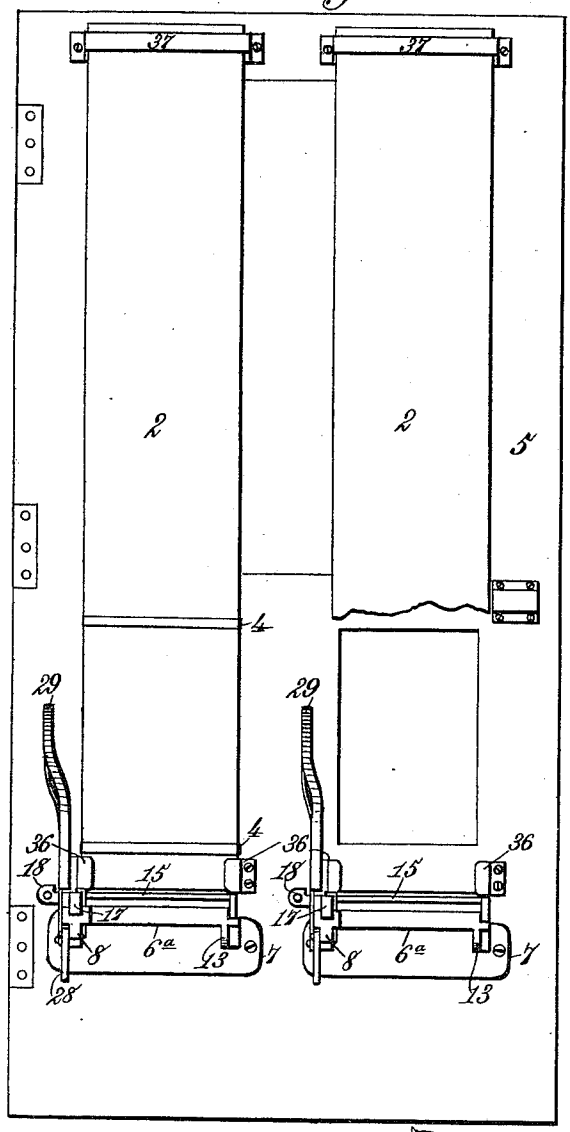

Fig. 4.

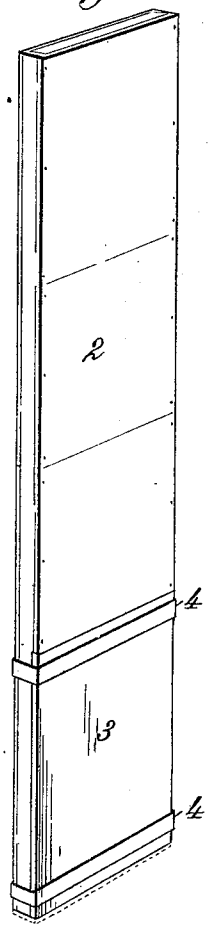

Fig. 5.

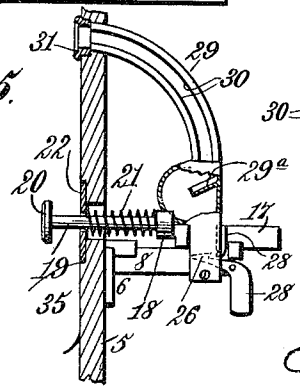

Fig. 6.

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C. H. TISE & J. D. KING.

CIGAR VENDING MACHINE.

No. 566,250. Patented Aug. 18, 1896.

Fig. 7.

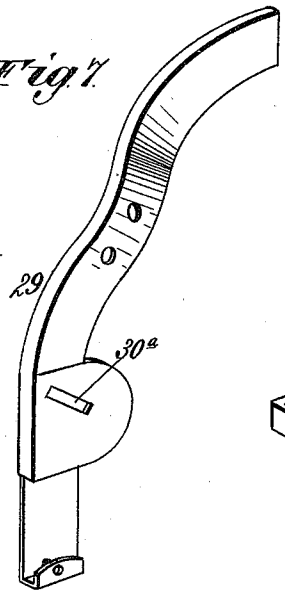


Fig. 8.

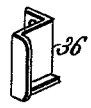


Fig. 9.

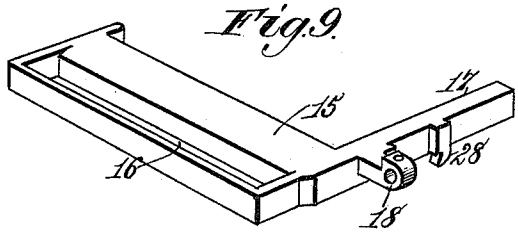


Fig. 10.

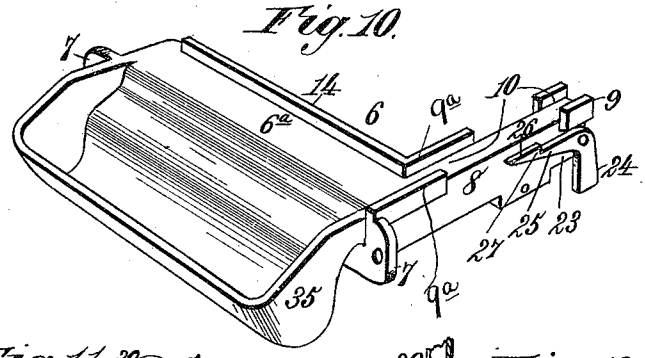


Fig. 11.

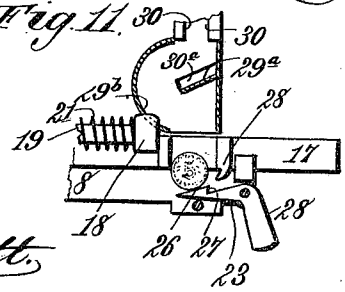
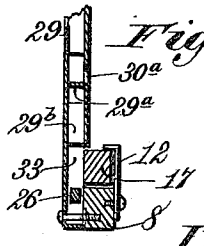


Fig. 12.



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Charles H. Tise.
Jefferson D. King.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

CHARLES H. TISE AND JEFFERSON D. KING, OF WINSTON, NORTH CAROLINA.

CIGAR-VENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 566,250, dated August 18, 1896.

Application filed April 15, 1896. Serial No. 587,622. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. TISE and JEFFERSON D. KING, citizens of the United States, residing at Winston, in the county of Forsyth and State of North Carolina, have invented new and useful Improvements in Cigar-Vending Machines, of which the following is a specification.

Our invention relates to coin-controlled machines for vending cigars and other merchandise, and has for its object to produce a device of the character described consisting of but very few separate parts and free from complication of structure and arrangement.

To these ends our invention consists in the several novel features of construction and in the parts and new combinations of mechanism hereinafter fully described, and then particularly pointed out and defined in the claims which conclude this specification.

In order that those skilled in the art may be able to clearly understand and to construct and use our said invention, we will describe the same in detail, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a perspective view of the entire machine. Fig. 2 is a vertical section from front to rear in a plane near one of the coin-chutes. Fig. 3 is a rear elevation. Fig. 4 is a detail view showing one of the cigar-boxes removed from the machine. Fig. 5 is a detail section of the coin-operated mechanism. Fig. 6 is a transverse vertical section of the coin-chute. Fig. 7 is a perspective view of the coin-chute. Fig. 8 is a perspective view of the box-supporting brackets. Fig. 9 is a perspective view of the delivery-slide. Fig. 10 is a perspective view of the receiving-hopper and its parts, including the cigar-supporting bracket, the support for the slide and slide-bar, and the locking-pawl. Fig. 11 is a detail view showing the position of the coin in tripping the locking-pawl and the construction of the lower end of the coin-chute. Fig. 12 is a detail section taken transversely through the slide-bar and supporting-arm and through the lower part of the coin-chute.

The reference-numeral 1 in said drawings indicates the body or casing of the machine, which consists of an ordinary box having a width according to the number of separate deliveries incorporated in a single machine. In practice a box containing cigars or other merchandise will be provided for each delivery, as will be hereinafter explained. In our invention these boxes are constructed as follows:

Each box consists, as shown in Fig. 4, of a greatly-elongated structure 2, formed of wood or any suitable material, its dimensions being such as to permit the required number of cigars to lie therein in a single rank side by side. The top or the portion which would correspond to the top of the ordinary cigar-box is not hinged, as it is in the boxes last named, but is permanently attached by small nails. A portion of this wall of the box consists, for a purpose explained hereinafter, of a transparent pane 3 of such length as to expose to view a number of the cigars packed in the box. The box is usually filled at the factory and is stamped as required by law. The pane 3 may be and preferably is detachable and may be applied by any suitable means, an example of which we have shown in the drawings, consisting of a pair of elastic bands 4, encircling the box and holding the pane 3 in place by their contraction. We may, however, use any other fastening or attaching devices suitable for the purpose. One object of making this pane readily attachable and detachable is to preserve it, should the box be destroyed after it is emptied, as is very frequently the custom, in order to prevent it from being again used to defraud the revenue.

The front of the casing 1 is closed by a door 5, which extends from beneath an ornamental molding at the top to the sill 6 at the bottom. All the parts of the coin-controlled mechanism are mounted upon this door. Said parts are extremely few in number, and are as follows:

In the present instance we have shown two separate coin-slots, and employ two independent sets of devices. As these are exact duplicates one of the other a description of either will be sufficient for both.

Upon the rearward or inner face of the door 5, upon each side of the central vertical line of the latter, is attached a casting

which consists of an angle-plate 6, having lugs 7 at its ends, by which it is fastened to the door by screws. At one end of said plate 6 is an integral rearwardly-projecting bracket-bar 8, having T-shaped portions 9, in the widened upper parts of which are formed channels 10. Immediately in front of one of the T-shaped portions 9 an angle-plate 12 is mounted on the side of the bar 8, its horizontal part overhanging the said bar. On the other end of the plate 6 is formed a short rearwardly-projecting bracket 13, and between this bracket and the bracket-bar 8 extends the horizontal member or platform 6^a of the angle-plate, all the said parts being integrally united. The bracket-bar 8 has flanges 9^a rising above the upper surface of the horizontal plate 6^a, and upon the rearward edge of the latter is a flange 14 of the same height, bounding on one side a space having such dimensions as to receive a cigar. Upon the platform 6^a and upon the upper side of the bracket-bar 8 rests the delivery-slide. Said slide consists of a flat plate 15, having an opening, which is slightly larger than a cigar adapted to be delivered from the machine. Upon one end of the plate 15 is formed a bar 17 which lies in the channels 10, between the flanges 9^a, in which it is retained by the angle-plate 12. Projecting from the vertical face of the bar 17 is a lug 18, from which projects a spindle 19, parallel with and at a short distance from the bracket-bar. This spindle is of sufficient length to pass through an opening in the door and receive a knob 20 or other suitable device by which the delivery-slide may be pulled. Coiled on the spindle is a spring 21, of suitable tension, one end abutting against the lug 18 and the other end against the inner face of the door, or against the inner surface of a metallic face-plate 22, which extends from side to side of the outer face of the door. The spring 21 serves to restore the delivery-slide to its position of rest after each sale, its normal position being such that the opening 16 lies over the platform 6.

Upon one side face of the bar 8 under one of the lugs 9 is pivotally mounted the locking device. This consists simply of a gravity pawl or dog having substantially the form of a bell-crank or elbow lever, one arm, 24, being so weighted as to hang downward, and the other arm, 25, which extends from the point of pivotal support toward the door, being supported by the weighted arm in a horizontal position, or substantially so. From the upper edge of this arm, between its free extremity and the pivotal point, a lug 26 rises, having a shoulder 27. When the delivery-slide is restored to normal position by the spring 21, the shoulder 27 rises in front of a tooth or lug 28, which projects from the side of the bar 17 and extends from its upper edge to a point a little below the lower edge of the bar. The path traveled by this lug is in the same vertical plane with the gravity-pawl 25. The length of the lug 26, or the distance between the shoulder 27 and the free end of the arm 25, is such that the forward movement of the delivery-slide cannot carry the tooth 28 beyond its extremity when the delivery movement takes place. Upon the same side of the bracket-bar 8 is mounted the coin-chute 29, so arranged that its exit end is directly over the arm 25 of the gravity-pawl. The chute is open upon one side, its opposite edges 30 being turned over upon the open side and brought into substantial parallelism with the closed wall of the chute. The width of the inclosed channel is such as to permit the coin by which the mechanism is operated to move freely therein, with its opposite edges inclosed by the edges 30. The space, however, between the bottom of the chute and the turned edge 30 upon the opposite side is greater than the diameter of a penny. The chute rises from its point of support on the bar 8 and curves over to the inner face of the door, and near its highest point it is deflected laterally in the direction toward which the open side of the chute is turned, the deflection consisting in moderately inclining the chute in said direction and at the same time carrying it toward the door. The result of this deflection is that the coins which traverse this portion of the chute are caused to lean toward the open side, and if a penny, or a plug of somewhat less diameter than the nickel, or legitimate coin, be inserted in order to work the machine fraudulently it will merely fall out of the chute in traversing the deflected portion, since its upper edge has no support by the turned edge on the upper margin of the chute. The entrance end of the latter passes through the door and is united with a slotted escutcheon 31 on the outer face of the door. The lower end of the chute is closed upon one side by the downwardly-extended side wall of the chute and upon the other side by the vertical face of the bar 17, and in the space thus inclosed lies the gravity-pawl, its lug 26 lying directly in the line of descent of the coin used, in order to depress said arm and set the delivery-slide free. When the arm 25 drops, the coin still remains thereon until the delivery takes place, when the movement of the bar 17 and the lug 28 sweeps the coin off the arm and out of the chute through the opening 33 between the prolonged wall of the chute and the bar 17. This opening faces toward the door and the discharged coin falls upon the bottom of the casing, or into any suitable receptacle provided for the purpose.

At or near its lower end, or above the bracket-bar 8, the coin-chute is widened, or extended toward the door of the casing. In this portion, which is wholly inclosed upon both sides and both edges, we arrange a coin-stop 29^a, which lies directly in the path of the coins descending the chute. This stop consists of a short partition inclined downward and toward the door, so that a coin descend-

ing upon it is arrested for an instant and then rolls down the partition 29^a upon a coinway 29^b, which has an inclination opposite to that of the coin-stop. The coin coming hereon after its momentum has been destroyed by the coin-stop rolls down the moderately-inclined way and passes by a very short fall upon the arm 25 of the gravity-pawl. By this construction attempts to defraud the machine by the insertion of small coins or other articles, expecting that their momentum will trip the pawl, are entirely defeated.

We can form the coin-stop conveniently by cutting a narrow strip of metal upon three sides in the side wall of the extended part of the chute and then bending the strip inward. This forms a slot 30^a along the edge of the coin-stop. The presence of the latter is a valuable safeguard against picking the gravity-pawl by inserting a wire in the coin-chute.

The lowest cigar in the box lies in front of a slot 34 in the door of the casing, which is concealed by the transverse face-plate 22, the lower edge of which lies just below said opening. Immediately beneath the face-plate 22 is the hopper or receiver 35, which is substantially semicircular in cross-section. Its rearward wall curves backward at its top and extends through the delivery-opening in the door, the two end walls of the hopper being extended in like manner, and said parts are rigidly and permanently united to the angle-plates 6 6^a at the point where said plates join each other. The end walls of the hopper also unite with the angle-plate at such points as to make flush surfaces with the inner faces of the ends of the platform 6^a. We prefer to construct the hoppers as separate castings and to unite them to the angle-plates by brazing, or in any other manner suitable for the purpose. We may, however, cast them in the same mold, using a different metal for the hopper, such as brass, or any metal or alloy suitable.

Upon the inner face of the door, just above the delivery-slide, and at each end of the platform 6^a, are attached angular brackets 36, to support the lower end of the cigar-box. Near the top of the door an angular loop 37 is secured to the inner face of the door, having such size and shape that it will closely surround the upper end of the box, permitting it, however, to be withdrawn from or inserted in said loop. These supports may be of any other form, however, that will properly support the box from which the cigars are sold.

In use the end wall of the cigar-box which is adjacent to the end of the transparent pane 3 is removed. The other end of the box is inserted in the loop 37 and pushed up far enough to permit the lower end to engage the brackets 36, the fingers being placed over the open end of the box to prevent the escape of the cigars while this is being done. When the lower end of the box is dropped into the brackets 36, it will hang directly over the platform 6^a, its open end being in the same horizontal plane with the upper edge of the delivery-opening or thereabout. The cigars thus lie in a single vertical rank one upon another, the lowest cigar resting upon the platform 6^a and in the opening 16 in the delivery-slide. The insertion in the slot of the proper coin trips the gravity-pawl and retains it in that position until the slide is pulled. As the latter pushes the cigar out of line and into the hopper those above it will rest upon the upper surface of the slide-plate in rear of the opening 16, by which they will be supported until the delivery-slide is retracted by the spring 21. As the slide resumes its normal position the lowest cigar in the box drops into the opening 16, those above descending a like distance and resting upon it.

Our invention provides a coin-controlled vending-machine that consists of but very few separate parts and is wholly free from all complication of structure and arrangement, the machine being marked by extreme mechanical simplicity. By the form of cigar-box used we avoid the trouble and loss caused by the frequent necessity of opening the casing and charging the cigar-chutes, since we avoid the transfer of the cigars from one receptacle to another and the breakage and injury which are more or less unavoidable. By arranging the cigars in a single rank also we are able to simplify the delivery apparatus very materially, as it is impossible to remove single cigars by mechanical device from a bunch of cigars without mechanism specially devised to bring the cigars separately to the delivery without breaking or injuring the wrappers. Again, by the construction of the coin-chute we effectually shield the gravity-pawl from all possibility of the sharp sudden impact of small coins, slugs, washers under the weight of the proper coin, or any article which by falling might acquire sufficient momentum to trip the pawl for an instant. By means of the coin-stop at the lower end of the chute the coins are compelled to pass upon the arm 25 of the pawl, their momentum being wholly destroyed. Thus, should a small coin by chance succeed in reaching the end of the chute, its weight will not be sufficient to operate the gravity-pawl. Moreover, by this same construction we practically defeat all attempts to pick the lock by inserting a wire, since if it follows the chute its end will by the inclined coin-strip 29^a be merely guided through the narrow slot 30^a. By arranging the gravity-pawl also so that its pivotal point and weighted arm are beneath the widened or T-shaped portion of the bracket-bar 8 we afford a large additional protection against this class of pilferers. By our invention also we bring the line of pull upon the delivery-slide and the line of resistance of the restoring-spring into one and the same line, so that there is no side thrust on the slide, and all tendency toward binding

and toward unequal wear will be avoided, besides the fact that such construction adds to the simplicity and diminishes the space required for the accommodation of the mechanism.

By forming the delivery-slide as well as the angle-plate and hopper each in a single piece which comprises all the essential adjuncts we materially decrease the cost of manufacture, besides producing a stronger and better machine.

What we claim is—

1. In a coin-controlled vending apparatus, the combination with a locking device, of a coin-chute having an enlargement at its lower end, an inclined coin-stop arranged in said enlargement in the path of the descending coin and operating to check the descent of the coin, a slot being formed in said coin-chute to one side of said coin-stop and a separate coinway leading to the locking device at a slight inclination to cause the coin to drop lightly onto the locking device, substantially as described.

2. In a coin-controlled vending apparatus, the combination with a locking device, of a coin-chute having at or near its lower end an inclined coin-stop, and a coinway leading to the locking device at a slight inclination, a slot being formed in said coin-chute to one side of said coin-stop, for the purpose specified.

3. In a coin-controlled vending apparatus, the combination with a locking device, of an inclined coin-chute 29 for delivering a coin to the locking device, said chute having a strip 29^a cut in one side thereof and bent inwardly in an inclined direction, as shown, to form a coin-stop and to form a slot 30^a for preventing the picking of the locking device, substantially as described.

4. In a coin-controlled vending-machine, the combination with a closed casing of an angle-plate attached to the inner face of one wall, a bracket-bar having T-shaped portions provided in their widened parts with channels, a delivery-slide having a bar at one end lying in said channels, a gravity-pawl pivoted upon the vertical face of the bracket-bar directly beneath one of said T-shaped portions, and a curved and laterally-deflected coin-chute mounted at its lower end on the same side of the bracket-bar, substantially as described.

5. In a coin-controlled vending-machine, the combination with a closed casing, of an angle-plate attached to the inner face of one wall, a bracket-bar having T-shaped portions provided in their widened parts with channels, a delivery-slide having a bar at one end lying in said channels, a gravity-pawl pivoted upon the vertical face of the bracket-bar and provided with a lug on its free end, a laterally and downwardly projecting tooth on the side of the delivery-slide bar, a lug arranged on the same side of said bar in advance of said tooth, and a coin-chute arranged to deliver a coin onto the gravity-pawl between said tooth and lug, substantially as described.

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

CHARLES H. TISE.
JEFFERSON D. KING.

Witnesses:
JESSE C. BESSENT,
WILLIAM T. HUNT.