(No Model.) 2 Sheets—Sheet 1.

W. WYAND.

COIN CONTROLLED VENDING MACHINE.

No. 546,410. Patented Sept. 17, 1895.

Fig. 1.

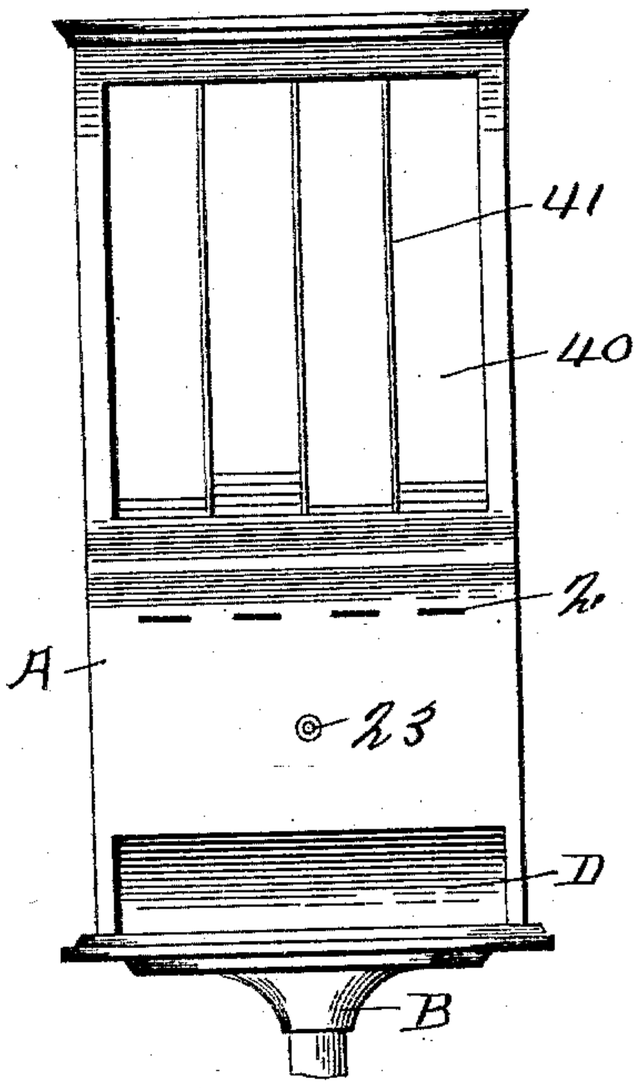


Fig. 2.

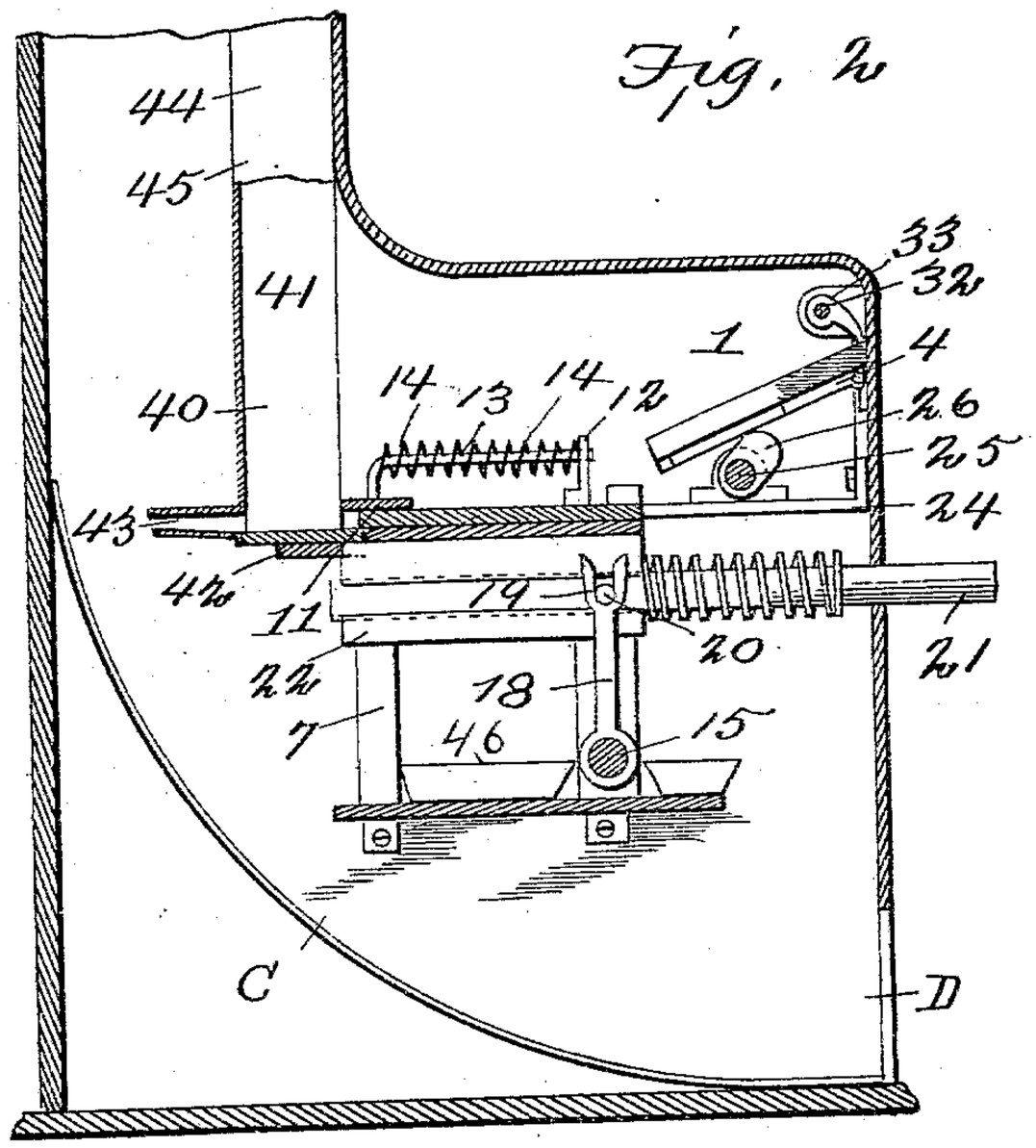


Fig. 3.

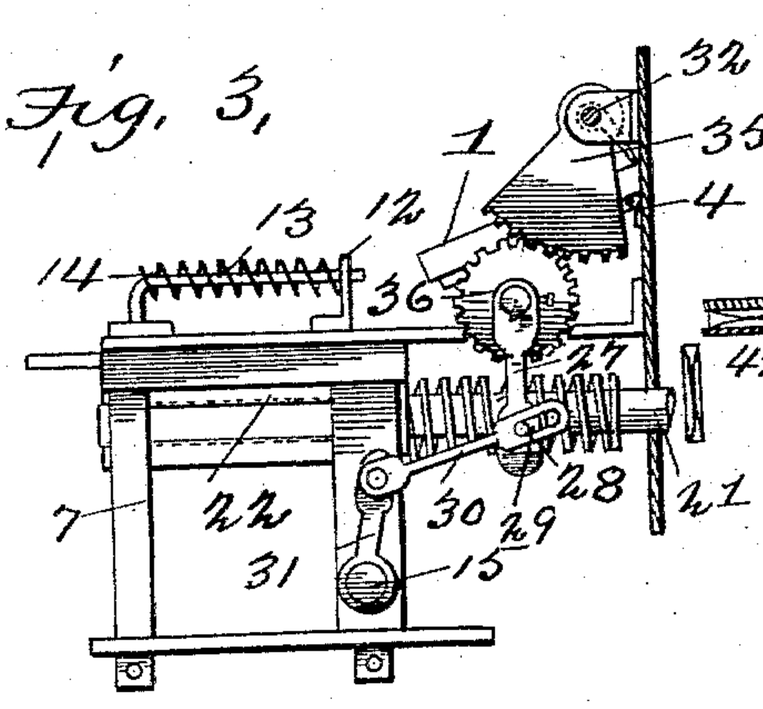
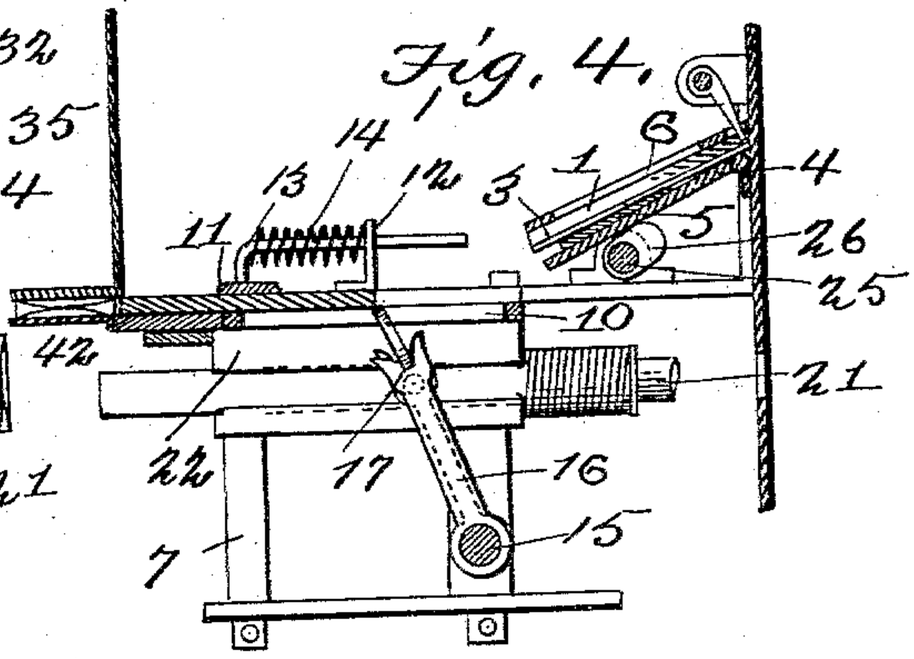


Fig. 4.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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COIN CONTROLLED VENDING MACHINE.

No. 546,410. Patented Sept. 17, 1895.

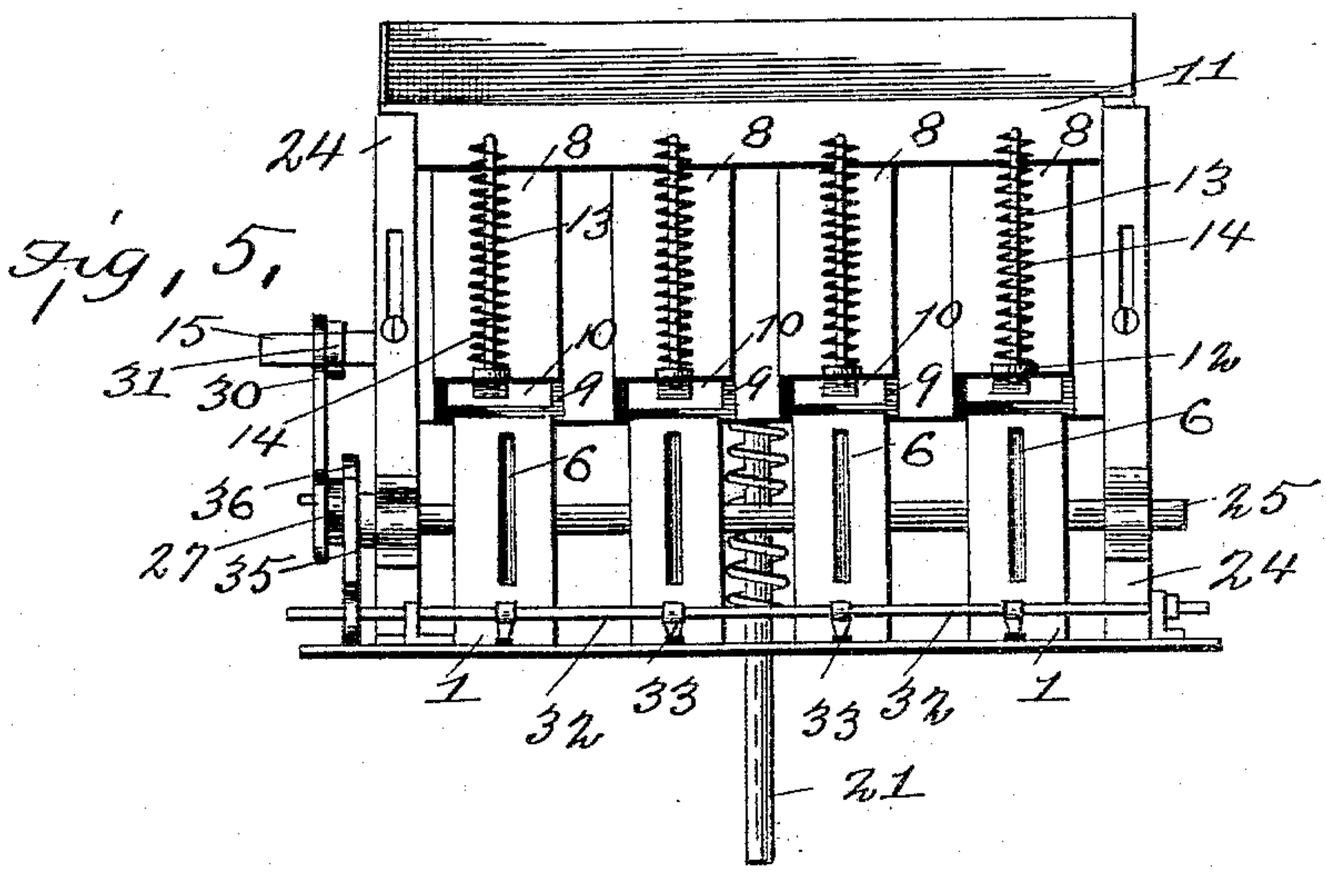

Fig. 5.

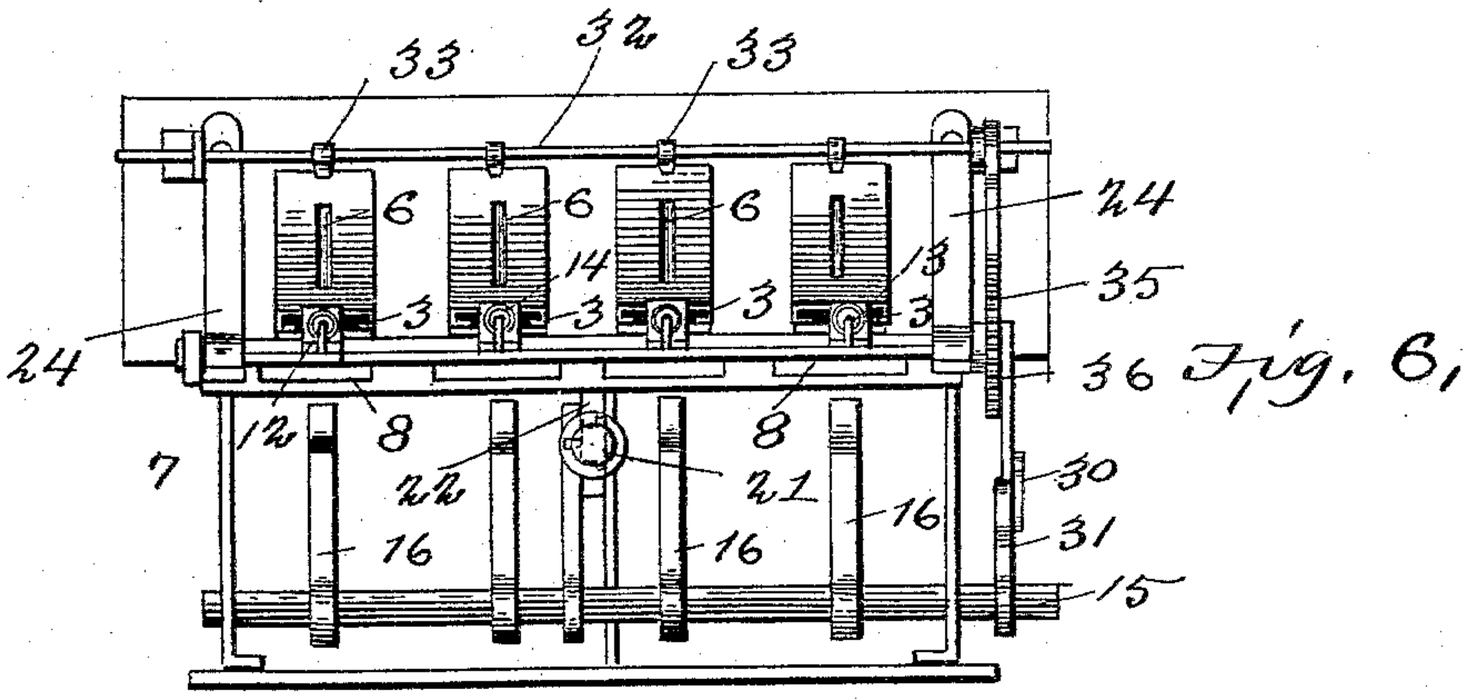

Fig. 6.

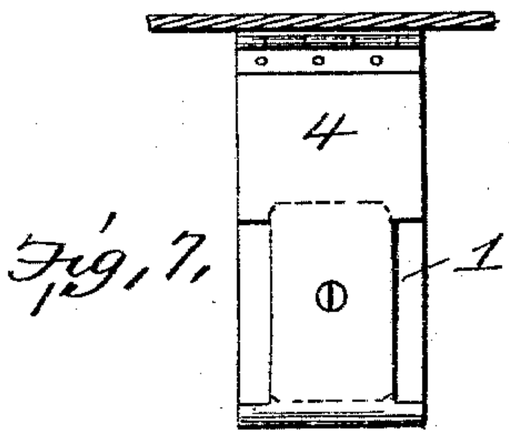

Fig. 7.

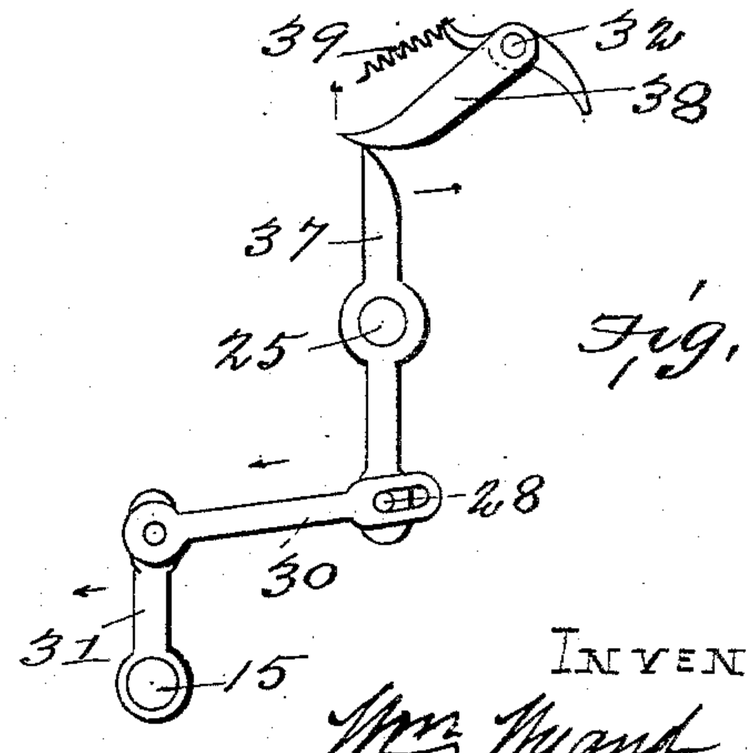

Fig. 8.

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By J. R. Nottingham Atty.

UNITED STATES PATENT OFFICE.

WILLIAM WYAND, OF ATLANTIC CITY, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WILFRID BARR RICH.

COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,410, dated September 17, 1895.

Application filed January 14, 1895. Serial No. 534,903. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WYAND, a citizen of the United States, residing at Atlantic City, in the county of Atlantic and State of New Jersey, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in coin-controlled vending-machines, and it is specially designed to furnish a machine for the automatic vending of confections or other like articles.

The invention consists, first, of a peculiarly-constructed slotway or chute by means of which a proper coin will be deposited into the slotted end of a rocking finger mounted rigidly on a rock-shaft and operated by a push-rod to force the coin into contact with a spring-pressed ejector-slide, and a fraudulent disk of iron or steel be dropped into a suitable receiver arranged for that purpose; second, of suitable mechanism connected with said slotway or chute whereby a coin cannot be deposited in the slotway until all of the operating parts are in normal position ready for operation; third, of a peculiarly-arranged ejector-slide to be operated upon by the coin held by the rocking finger; fourth, of a removable article-holding compartment, and, fifth, of a novel means for operating the rock-shaft and finger to cause the coin to move the ejector-slide to eject an article, as will be hereinafter more fully explained.

The objects of the invention are, first, to prevent the fraudulent operation of the machine by the substitution of spurious articles—such as iron or steel or disks of tin-foil or cardboard—for the proper coin; second, to prevent the insertion of a coin into the slotway or chute while a previously-inserted coin is contained therein or the various parts of the machine are not in operative position; third, to provide for readily cleaning the coin-slotway of obstructions—such as paper, cardboard, tin-foil, and like foreign substances; fourth, to provide for the ready insertion of the articles to be delivered or vended, and, fifth, to provide against robbery of the machine of its articles of commerce.

The above-mentioned objects are attained by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a front plan view of a vending-machine, showing four article-compartments to which my improved vending mechanism is to be applied; Fig. 2, a central vertical sectional view of the same, showing the mechanism by means of which the ejector-slide is operated in full lines and parts of the case broken away; Fig. 3, an end view of the mechanism with the case removed; Fig. 4, a central sectional view of a coin slotway or chute and ejector-slide, showing the several mechanisms in position after having been operated to eject or deliver a package; Fig. 5, a top plan view of the mechanism of four combined coin slotways or chutes and ejector-slides; Fig. 6, a rear elevation of the same with the article-holding compartments removed; Fig. 7, a bottom plan view of one of the coin slotways or chutes, and Fig. 8 a modification of the mechanism for preventing the insertion of a coin while a previous coin is in the slotway or chute.

For convenience in describing the machine, I will describe under the heads hereinafter referred to.

The case.—The letter A indicates a case which may be constructed of any suitable material and in any desired shape best adapted for the purpose. This case is preferably mounted upon a pedestal B, or it may be fastened to a wall or other suitable support and is provided with a curved false bottom C, which extends from back of the casing to a horizontal opening D made in the front of the case at the lower portion thereof. In the lower or body portion of the case, above the false bottom, are situated the vending mechanisms, and in the upper or upright portion are situated the article-holding compartments, the front of said upper portion being of glass.

The coin-chute.—The numeral 1 indicates a series of inclined coin chutes or slotways which project from the inner side of the front of the body portion of the case, to which they are fastened. Each coin-chute registers with a slot 2 cut through the front of the case, by

means of which a coin is inserted into the coin-chute, and is provided with a longitudinal opening in its bottom extending its entire length, the side edges of which opening are turned inwardly to form guides or ways 3 for the passage of the coin or other substance passed through the slot 2. Beneath each coin-chute is located a hinged plate 4, upon the upper face of which is secured a permanent magnet 5, which is designed to attract and hold disks of iron or steel until contact is broken, by means to be hereinafter explained. The top of each coin-chute is provided with a longitudinal slot 6, by means of which obstructions—such as paper, tin-foil, and the like—inserted by mischievous persons, may be removed.

The ejector mechanism.—The numeral 7 indicates a frame which is fastened to the inner sides of the casing in any suitable manner and supports a series of ejector-slides 8, which operate in guides or ways 9 directly over slots 10, made in the top of the frame. Each ejector-slide is confined between its respective guides by a strip 11, which rests upon the outer ends of said guides and is secured thereto by means of screws, as shown in the drawings. The inner end of each ejector-slide is provided with a vertical stud 12, which is perforated to receive one end of a rod 13, the other end of said rod being rigidly fastened to the strip 11. Coiled around each rod is a spring 14, which serves to hold the ejector-slide pressed forward in normal position. The ejector-slides are somewhat shorter than the slots 10, leaving an opening of sufficient width to readily allow a proper coin to pass through as it drops from the rear end of a coin-chute, which terminates over said slot.

The operating mechanism.—The numeral 15 indicates a rock-shaft which is journaled in the ends of the frame 7 and carries a series of rockable fingers 16, one for each coin-chute. Each finger at its upper or free end is provided with a transverse slot 17, having flaring or inclined sides, and is so located that when the various parts of the machine are in normal position a coin inserted into any of the chutes will fall into said slotted finger end and be there held until brought into contact with the ejector-slide by the rocking of the rock-shaft, as will be hereinafter explained. Projecting from the center of the rock-shaft is a vertical arm 18, having a slotted end 19, which receives a pin 20 projecting from a spring-actuated push-rod 21, which reciprocates between guides 22, secured beneath the top of the frame 7. The outer end of the push-rod extends through the front of the casing and is provided with a suitable knob 23 for convenience in pushing said rod to operate the interior mechanism to deliver the confection or other article.

The mechanism for preventing fraud.—The numeral 24 indicates two brackets which are adjustably secured to the frame 7, and journaled in suitable bearings secured to said brackets is a rock-shaft 25, which carries a series of cams 26, which contact with the hinged plates 4 beneath the coin-chutes. The rock-shaft extends beyond its bearing at one side and has adjustably secured thereto a downwardly-projecting arm 27, which is provided with a pin or stud 28, which enters a slot 29 in one end of a connecting-link 30, the other end of said link being pivoted to a vertical arm 31, adjustably secured to one end of the rock-shaft 15, which extends beyond its bearing at that side. When the several mechanisms are in normal position, the cams 26 are pressed against the hinged plates 4, holding them up against the guides or ways formed in the bottom of the coin-chutes, and when the push-rod is pushed in to cause a delivery of an article the cams are rocked toward the front of the casing, permitting said hinged plates to drop away from the guides or ways of said coin-chutes, the object of which will be more fully explained in the description of the operation of the machine.

The mechanism for preventing the insertion of coin only at the proper time.—The numeral 32 indicates a rock-shaft which is journaled in suitable bearings secured to the inside of the front of the casing, and rigidly secured on said rack-shaft is a series of fingers 33, which extend downwardly through slots 34 in the top of the coin-chutes. One end of the rock-shaft extends beyond its bearing at that side and has rigidly secured to it a segmental gear 35, which meshes with a pinion 36 secured on the extended end of the rock-shaft 25. Instead of the segmental gear and pinion, an arm 37 may be secured on the rock-shaft 25, and a cam 38 secured on the rock-shaft 32, as shown in Fig. 8. In either case, however, fingers are caused to alternately obstruct the entrance to the coin-chute or withdraw therefrom as the rock-shaft 32 is rocked to and fro. When the cam 38 is employed instead of the segmental gear, a spring 39 is employed to hold the rock-shaft 32 and the fingers 33 in normal position, so as not to obstruct the coin-slot.

The article-holding receptacle.—The numeral 40 indicates a removable case divided into four compartments by vertical partitions 41. Each compartment is designed for a different variety of confection, so that the intended purchaser may select the particular confection he prefers. The rear of the frame 7 is provided with an extension 42, which supports the case 40 in proper position, with each compartment in line with an ejector-slide. The back of the case, at its bottom, is provided with a series of short tubes 43, one for each compartment, the bottom of said tubes being constructed of spring metal and independent of the sides, the purpose of which will be hereinafter explained. The case is entered and withdrawn through an opening 44, closed by a door 45, at one side of the casing proper.

The general operation.—The various de-

vices of the machine being in normal position with the several compartments of the case 40 filled with packages of confections or other articles, one of said packages in each compartment being inserted in the exit-tube 43, upon the insertion of a proper coin through one of the slots 2 said coin will pass down the inclined chute and drop into the slotted finger-end, where it will be held against accidental displacement by the side edges of the slot 10. While in this position it will be observed that the top or upper portion of the coin projects up through said slot 10 and rests against the inner end of the ejector-slide, while the lower or bottom portion of said coin is held firmly in the lower portion of the finger-end slot, the sides of which are parallel for a short distance. By pushing in the push-rod the rock-shaft 15 and its finger are caused to turn and press against the ejector-slide, which as it moves forward forces the package lying at the bottom of the compartment against the package contained in the tube 43, ejecting that package upon the curved false bottom, where it, by gravity, is delivered at the opening at the front of the case. As the ejector-slide moves forward to eject the package, the top portion of the pressed coin gradually parts contact with the end of said ejector-slide, and by the time the slide has ejected the package the contact is broken, the coin falls into the receiver 46, and the spring-pressed ejector-slide is returned to its normal position. The permanent magnets located at the bottom of the coin-chutes operate to attract and hold iron, steel, or tinned sheet-iron disks which may be attempted to be used fraudulently to operate the machine. The said disks will be held by the magnets until the hinged plates are permitted to drop by the cams which uphold them normally, when the fraudulent disk will drop forward out of the lower end of the chute. It will be seen that when the plates are dropped for the discharge of such disk, fraudulent substitutes for coin, the coin-receiving fingers will be out of normal position and consequently will not receive such disk, which will drop into a separate receptacle provided for the purpose, and the machine will fail to discharge or deliver the confection. After the insertion of a coin and the push-rod is forced in, the segmental gear causes the pinion 36 to rock the rock-shaft 25 and project the fingers 33 across the slots, so as to prevent the insertion of another coin until the parts again assume their normal position. It will be observed that if any of the connecting mechanisms between the several rock-shafts should become disengaged the fingers 33 will fall across the slots 2 and thus prevent the insertion of coins when the machine is out of order. It will be observed that the spring portion of the discharge-tubes of the confection or package receptacle will hold the package to be discharged by frictional contact, so that it cannot accidentally drop out or be shaken out or dislodged intentionally so as to fraudulently extract the contents of the receptacle. The coins and any fraudulent substitutes therefor are collected in separate trays or receptacles, which may be removed through suitable doors provided for the purpose.

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

1. In a coin-controlled vending-machine, the combination, with the coin-chute thereof, of a rockable finger having a bifurcated or slotted end adapted to receive and support a coin dropped from said chute, a horizontally-reciprocating ejector, and means for operating said finger, whereby the coin is caused to operate said ejector to deliver an article from the article-holding receptacle.

2. In a coin-controlled vending-machine, the combination of a coin-chute, having an opening at its bottom, a hinged plate at the bottom of said chute, and carrying a magnet on its upper face, to arrest iron or steel substitutes for coin, and means for releasing the arrested coins, substantially as specified.

3. In a coin-controlled vending-machine, the combination, of a coin-chute, having an opening at its bottom, inwardly projecting flanges at each side of the opening forming guide ways for the coin, a hinged plate carrying a magnet to arrest substitutes for coin, means for holding the plate in normal position and for dropping it to release the coin, substantially as specified.

4. In a coin-controlled vending-machine, the combination of a coin-chute, an ejector-slide, the intermediate finger located upon a rock-shaft and adapted to hold the coin against the forward edge of the slide, and the push-rod and lever connecting the same with the rock-shaft whereby an inserted coin can be caused to operate the slide to discharge the confection and deposit the coin in a proper receptacle, substantially as specified.

5. In a coin-controlled vending-machine, the combination with the coin-chute thereof, a spring-actuated ejector-slide, a rockable coin-receiving and supporting finger and mechanism for operating the same, of a rockable finger situated at the rear of the coin-slot, and mechanism whereby said finger is thrown across said slot when the operating-mechanism is out of normal position.

6. In a coin-controlled vending-machine, the combination, with the coin-chute and a spring-actuated ejector-slide, of a rock-shaft 15 carrying a coin-supporting finger, a rock-shaft 32 situated in the rear of the coin-slot and carrying a segmental gear meshing with a gear-wheel, a finger 33 secured upon said rock-shaft 32 and mechanism connected with rock-shaft, 15, whereby the finger 33 is moved in and out of the coin-slot.

7. In a coin-controlled vending-machine, the combination, of a coin-chute provided with guide-ways for the coin and having a

hinged bottom carrying a magnet to arrest fraudulent coins, a rock-shaft carrying a cam adapted to hold said hinged bottom in normal position, and means for rocking said cam to drop the hinged bottom and release the fraudulent coin.

8. In a coin-controlled vending-machine, the combination, with the coin-chute, the spring-actuated ejector-slide, and a rockable coin-supporting-finger, of a removable article-holding case having a discharge chute provided with a spring bottom to hold the article to be ejected by frictional contact, and mechanism for operating the coin-supporting finger to force the coin against the ejector-slide and thereby eject said article, substantially as specified.

9. In a coin-controlled vending-machine, the combination, with the coin-chute and spring-actuated ejector-slide, of a rock-shaft carrying a coin-supporting finger and a bifurcated arm, and a spring-actuated push-rod adapted to operate said arm to rock said shaft.

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

WILLIAM WYAND.

Witnesses:

E. A. PAUL,

J. R. NOTTINGHAM.