No. 703,062. Patented June 24, 1902.

A. W. HAVENS.

COIN CONTROLLED APPARATUS.

(Application filed Oct. 15, 1900.)

(No Model.) 2 Sheets—Sheet I.

Fig. I.

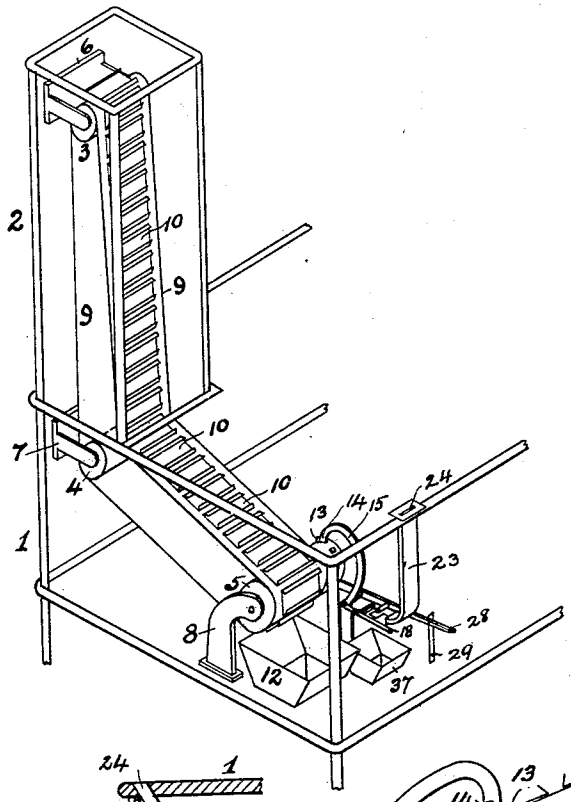
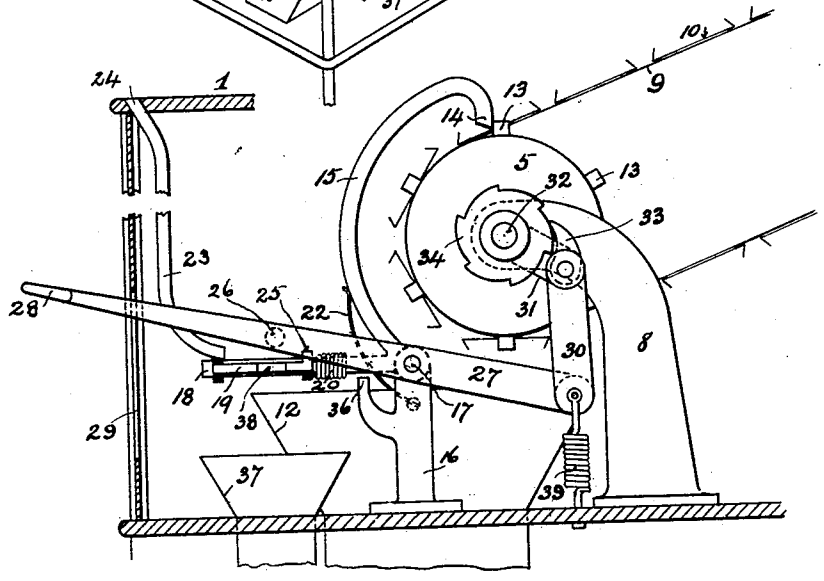


Fig. II.



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INVENTOR

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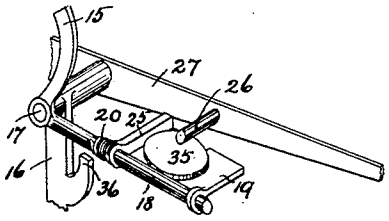


Fig. III.

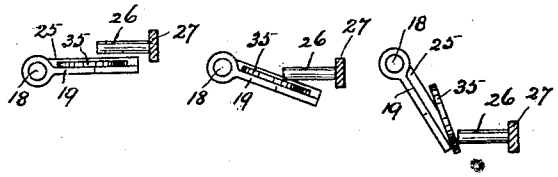


Fig. V. Fig. VI. Fig. VII.

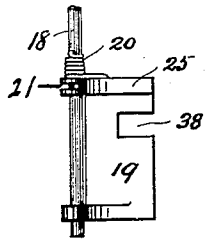


Fig. IV.

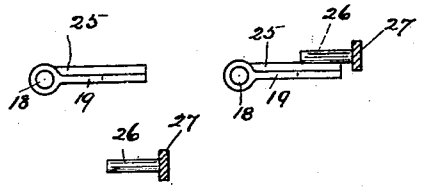


Fig. VIII. Fig. IX.

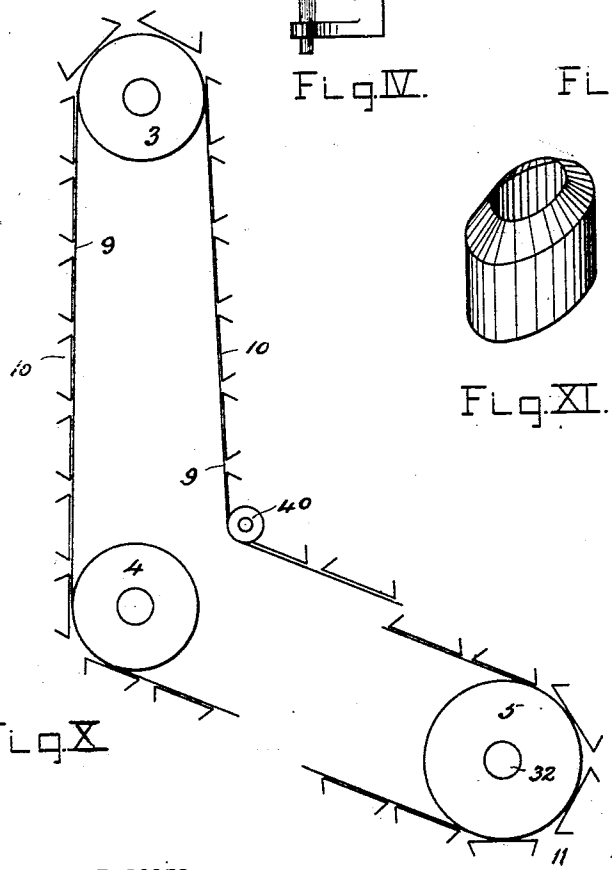


Fig. X.

Fig. XI.

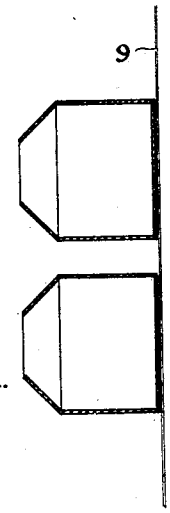


Fig. XII.

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UNITED STATES PATENT OFFICE.

ARTHUR W. HAVENS, OF RICHMOND, VIRGINIA.

COIN-CONTROLLED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 703,062, dated June 24, 1902.

Application filed October 15, 1900. Serial No. 33,048. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. HAVENS, a citizen of the United States, and a resident of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Coin-Controlled Apparatuses, of which the following is a specification.

My invention relates to coin-controlled apparatuses; and it has for its object the provision of improved coin-controlled mechanism for operating vending-machines and the like, which mechanism may be operated by hand upon depositing the requisite coin; and it consists in the novel construction and arrangement of parts hereinafter fully described, and illustrated in the drawings.

For the purpose of illustration my improved mechanism will be described as applied to a vending-machine.

In the drawings which form a part of this specification, and in which like numerals refer to like parts in the different views, Figure I is a view in perspective of the apparatus, showing it fitted in an ordinary show-case. Fig. II is a detail view of the operating mechanism. Fig. III is a detail view, in broken perspective, of the coin-receiver and of the operating-lever. Fig. IV is a view in plan of the coin-receiver. Figs. V to IX, inclusive, are detail views showing the manner in which the operating-lever acts upon the coin. Fig. X is a diagrammatic view showing the arrangement of the cups for holding the articles to be dispensed. Fig. XI shows in perspective a modified form of cup, and Fig. XII shows in section two modified cups attached to a portion of the belt.

In Figs. I and II, 1 is a part of a show-case, of which 2 is an extension. 3, 4, and 5 are rolls mounted in suitable brackets 6, 7, and 8. On these rolls is carried an endless belt 9, which may be made of webbing, leather, thin steel, or other suitable material and to which are attached at regular intervals cups 10 10 10, &c. If the belt is of thin steel, it may have punched at regular intervals in its sides holes adapted to engage pins spaced at each end of the roll. If desired, the belt 9 may be formed of or be provided with sprocket-chains, in which case the rolls would be provided with sprocket-wheels of a pitch similar to that of the chains.

The cup of the form shown in Figs. I, II, and X is particularly adapted to carry single articles—such as pencils, penholders, bars of soap, cakes of chocolate—the inclined sides effectually preventing the article from dropping out until the cup reaches the position indicated at 11 in Fig. X. The belt is "loaded" from the back of the show-case extension 2, the articles placed in the cups resting on the lower inclined side of the latter. As each cup passes over the top roll 3 the article which it contains will slide across it and be caught by and rest upon the inclined side, which is now the lower one. When the cups contain comparatively heavy and bulky articles, such as bars of soap or chocolate, it is better to give the vertical portions of the belt 9 a slight inclination, as shown in Fig. X, so as to avoid any chance of the said articles accidentally dropping from the cups attached thereto.

Fig. XI shows a cup adapted to contain a quantity of small articles, such as pins, needles, tacks, "candy drops," &c. In Fig. XII two cups of this form are shown in section attached to a part of the belt.

When the lower roll 5, and consequently the belt 9, is operated to deliver an article, the article contained in the cup which reaches the position indicated at 11 in Fig. X will drop into the delivery-chute 12, (see Figs. I and II,) through which it will pass to a suitable and conveniently-situated receptacle. One end of the lower roll 5 is provided with studs 13 13, (see Fig. II,) which studs are engaged by the detent 14 to prevent the roll 5 from being accidentally turned. The detent 14 is formed on the end of the rod 15, which is pivoted on the bracket 16 at 17. (See also Fig. III.) The rod 15 is provided with a horizontal extension 18, upon which is mounted the coin-receiver 19, a plan of which is shown in Fig. IV. This coin-receiver is mounted on the rod extension 18 in such a manner that it can revolve around it through an arc of about ninety degrees. Fixed on the rod extension 18 is a spring 20, the free end of which is attached to or extends beneath the end of the coin-receiver. Consequently if the re-

ceiver be depressed and suddenly released it will fly up under the action of the spring 20, its upward flight being checked by suitable means, such as a fixed stop or a pin fixed in the rod extension and passing through a slot in the head of the receiver. (See 21, Fig. IV.) The detent 14, and consequently the rod extension 18, is after being operated returned to its original position, as shown in Fig. II, by means of the spring 22, one end of which may be fixed on the supporting-bracket 16.

The requisite coin may be delivered to the coin-receiver through a coin-chute 23, the upper end of which terminates in a slot or opening 24. When a coin is dropped into the chute 23, issuing from the lower end of the same, it slides along the coin-receiver 19 until it is brought to rest by the raised end 25 of the said receiver. The coin is now immediately under the arm 26, which is fixed to and projects from the lever 27. (See Figs. II, III, and V.) One end 28 of the lever 27, which lever may conveniently be pivoted upon the extended head of the bracket 16, (see Figs. II and III,) extends through a slot 29 in the front of the show-case 1 a distance sufficient for it to be grasped and depressed by the hand. To the other end of the lever 27 is connected a link 30, (see Fig. II,) which link is connected at its upper end to a second link 31. The link 31 is loosely mounted on the shaft 32 of the roll 5 and carries the pawl 33, which engages in the teeth of the ratchet-wheel 34, which is rigidly mounted on the said shaft 32. It will now be seen that when the end 28 of the lever 27 is depressed, and supposing that the detent 14 has been raised out of engagement with the upper one of the studs 13, the pawl 33, engaging the ratchet-wheel 34, will cause the roll 5 to make a partial revolution, the lever and ratchet-wheel being so proportioned that the roll 5 will be revolved and the belt 9 advanced an amount sufficient to drop the contents of one cup only at each depression of the end 28 of the lever 27; but before the roll 5 can be revolved the detent 14 must be raised out of the path of the studs 13. This is effected in the following manner: The operator having dropped a coin 35 through the chute 23 onto the coin-receiver 19 depresses the end 28 of the lever 27. In doing so he causes the arm 26, which projects from the lever 27, to press downward upon the coin. Now the spring 20, which holds the coin-receiver in its horizontal position, is stronger than the spring 22, which keeps the detent 14 in engagement with the studs 13 and the rod extension 18 in its horizontal position. Consequently the first pressure of the arm 26 on the coin depresses the rod extension 18 and coin-receiver 19 bodily and without altering their relative positions, and consequently it also raises the detent 14 out of the path of the studs 13. The downward motion of the rod extension is checked by the fixed stop 36, which may be attached to the bracket 16, and as soon as this downward motion of the rod extension is checked the continued downward pressure of the arm 26 upon the coin now overcoming the spring 20 will turn the coin-receiver on the rod extension as pivot until the coin is drawn from the receiver and drops into the hopper 37, which may be connected with any suitable receptacle conveniently situated at the back of the show-case. The operation of the arm 26 in removing the coin from the coin-receiver is illustrated in Figs. V, VI, and VII. After the coin has dropped from the receiver the latter will fly up to its original position, as shown in Fig. VIII, and the rod extension 18 and the detent 14 will, under the action of the spring 22, also return to their original positions; but the arm 26 is now below the coin-receiver 19. To allow it to return to its original position above the receiver when the pressure is taken off the end 28 of the lever 27, there is cut in the plate of the receiver a slot 38 of a size sufficient to allow the arm 26 to pass through it. The return movement of the lever after it is released is effected by the spring 39. It will now be seen that on pressure being applied to the end 28 of the lever 27 the detent 14 is raised out of the path of the studs 13 to free the roll 5, and this being accomplished continued pressure throws the coin into the hopper 37 and at the same time, through the medium of the pawl 33 and ratchet-wheel 34, gives a partial revolution to the roll 5, and consequently an onward movement to the belt 9. In order that the first application of pressure to the end of the lever 27 may not cause the pawl 33 to operate on the ratchet-wheel 34 before the detent 14 has been withdrawn from the path of the studs 13, a certain amount of lost motion is provided for between the pawl and ratchet, this lost motion being taken up by the time the withdrawal of the detent has been effected.

From the above description of the operation of my invention it will be seen that for every coin dropped upon the coin-receiver only a limited and regulated number of articles can be extracted from the apparatus, for as soon as the coin drops from the coin-receiver the detent-releasing mechanism becomes inoperative and it remains so, and consequently prevents the movement of the belt until another coin is dropped upon the receiver.

In Fig. X 40 is one of two short rolls which are placed on either side of the belt 9 and which are just long enough to engage the edges of the belt to guide it around the turn. These rolls 40 are only necessary when my invention is fitted in existing show-cases to keep the belt from fouling the latter. In cases where a new show-case is constructed for a vending apparatus the former can be so designed that the belt of the latter has a straight run from the upper roll 3 to the lower roll 5. When it is necessary to use the guide-rolls 40, it is preferable to make the cups 10

of flexible material, such as sheet-steel, in order that they may easily pass the turn, or, if desired, the bottoms of the cups may be dispensed with, using only the inclined sides, which would then be attached directly to the belt.

While I prefer the construction of my invention as described in this specification and as illustrated in the accompanying drawings, I do not confine myself to it, for it is evident that some of the details admit of a modified construction or can be replaced by equivalents without affecting the principle upon which the machine operates.

Having now described my invention, what I claim, and desire to protect by Letters Patent of the United States, is—

1. In a coin-controlled machine, a pivoted locking-arm, a horizontal arm pivoted with the locking-arm, a coin-receiver swung upon the horizontal arm and supported in its normal position by means of a spring, a stop to limit the downward movement of the horizontal arm, and a lever provided with a pin normally projecting over the coin-receiver so arranged that when the lever is depressed the pin bearing upon the coin on the coin-receiver depresses the horizontal arm to unlock the locking-arm, and so that upon the said horizontal arm striking the stop the pin still bearing upon the coin tilts the coin-receiver and slides the coin therefrom.

2. In a coin-controlled apparatus, a coin-controlled mechanism consisting of a horizontal pivoted arm, a coin-receiver swung upon the arm and supported in its normal position by means of a spring, a stop to limit the downward movement of the arm, and a lever provided with a pin normally projecting over the coin-receiver so arranged that when the lever is depressed the pin bearing upon the coin on the coin-receiver depresses the arm and so that upon the arm striking the stop the pin still bearing upon the coin tilts the coin-receiver and slides the coin therefrom.

3. In a coin-controlled machine, the combination of an operating-lever provided with a projecting pin, a pivoted locking-bar having a horizontal extension, a coin-receiver swung on the extension and located in the path of the operating-lever pin, a stop to limit the downward movement of the locking-bar extension and means to move said extension to its horizontal position, and away from the said stop.

4. In a coin-controlled machine, the combination of a coin-controlled mechanism consisting of an operating-lever provided with a projecting pin, a pivoted horizontal arm, a coin-receiver swung upon the arm and located in the path of the operating-lever pin, a stop to limit the downward movement of the arm.

5. In a coin-controlled machine, the combination of an operating-lever provided with a projecting pin, a pivoted arm, a coin-receiver swung upon the arm and located in the path of the operating-lever pin, a stop to limit the downward movement of the arm and means to move said arm away from said stop.

6. In a coin-controlled machine, the combination of an operating-lever having a projecting pin, a vertically-swinging locking-bar having a horizontal extension, a coin-receiving plate swung on the extension and held in its normal position by means of a spring and located in the path of the operating-lever pin, and a stop to limit the downward movement of the locking-bar extension.

7. In a coin-controlled machine, the combination of an operating-lever having a projecting pin, a pivoted arm, a coin-receiving plate swung on the arm and held in its normal position by means of a spring and located in the path of the operating-lever pin, and a stop to limit the downward movement of the arm.

8. In a coin-controlled machine, a coin-controlled mechanism consisting of an operating-lever having a projecting pin, a pivoted arm, a coin-receiver swung upon the arm and held in its normal position by means of a spring and located in the path of the operating-lever pin, and a stop to limit the downward movement of the arm.

9. In a coin-controlled machine, the combination of an operating-lever having a projecting pin, a vertically-swinging locking-bar having a horizontal extension, a coin-receiving plate swung on the extension and held in its normal position by means of a spring and provided with a slot located in the path of the operating-lever pin, and a stop to limit the downward movement of the locking-bar extension.

10. In a coin-controlled machine, the combination of an operating-lever having a projecting pin, a horizontal pivoted arm, a coin-receiving plate swung on the arm and held in its normal position by means of a spring and provided with a slot located in the path of the operating-lever pin, and a stop to limit the downward movement of the arm.

11. In a coin-controlled machine, a coin-controlled mechanism consisting of an operating-lever having a projecting pin, a pivoted arm, a coin-receiving plate swung upon the arm and held in its normal position by means of a spring and provided with a slot located in the path of the operating-lever pin, and a stop to limit the downward movement of the arm.

Signed at Richmond, in the county of Henrico and State of Virginia, this 5th day of October, A. D. 1900.

ARTHUR W. HAVENS.

Witnesses:
ARTHUR SCRIVENOR,
C. W. THROCKMORTON.