

Aug. 4, 1925.

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C. H. ECHOLS

COIN CONTROLLED VENDING MACHINE

Filed July 15, 1924

3 Sheets-Sheet 1

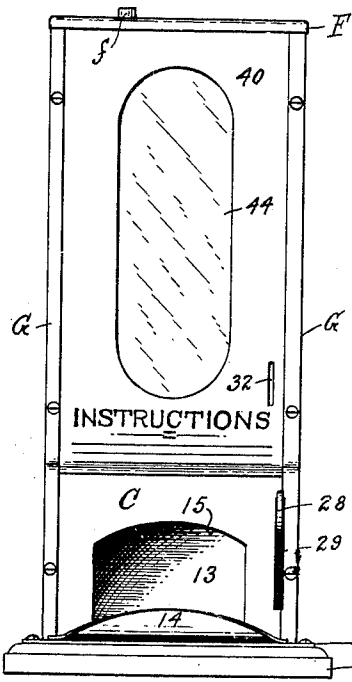


Fig. 1.

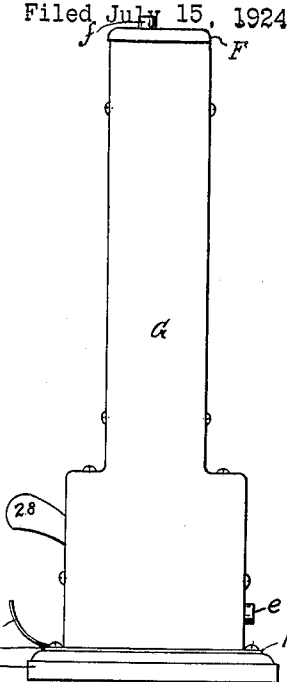


Fig. 2.

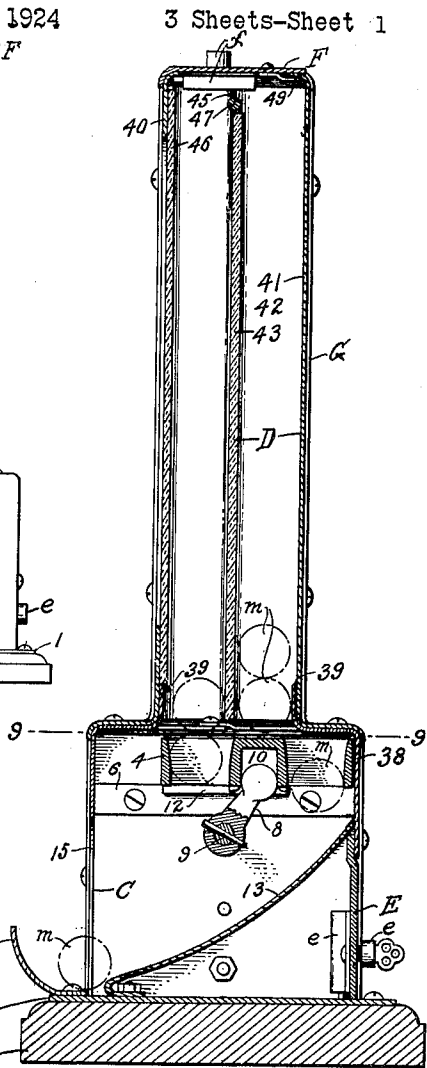


Fig. 4.

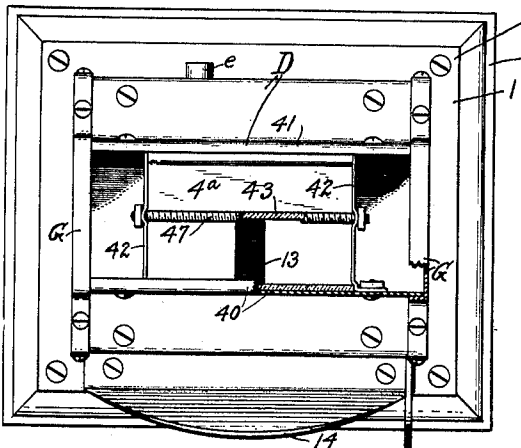


Fig. 3.

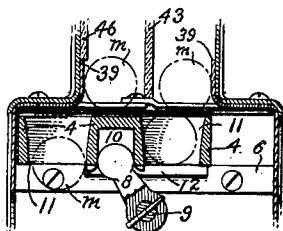


Fig. 5.

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3 Sheets-Sheet 2

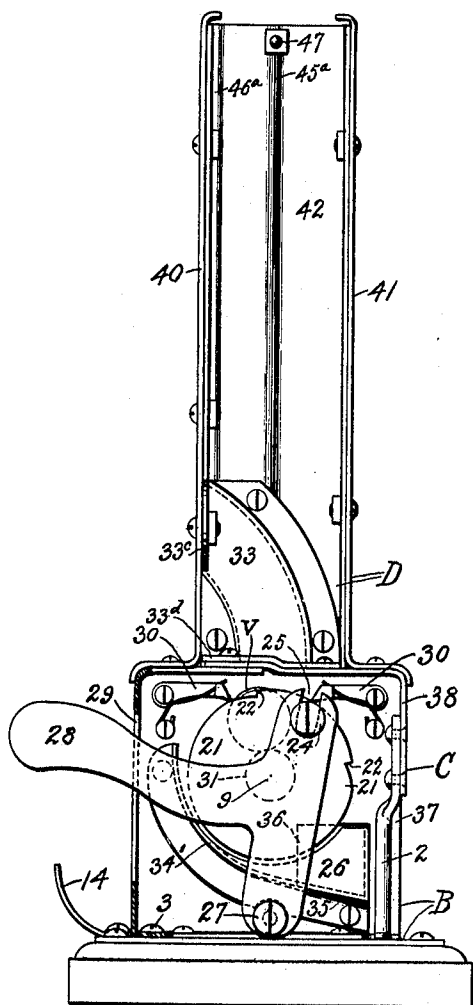


Fig. 6.

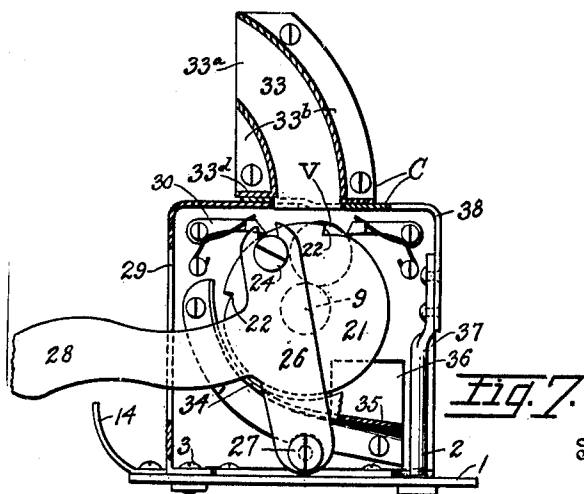


Fig. 7.

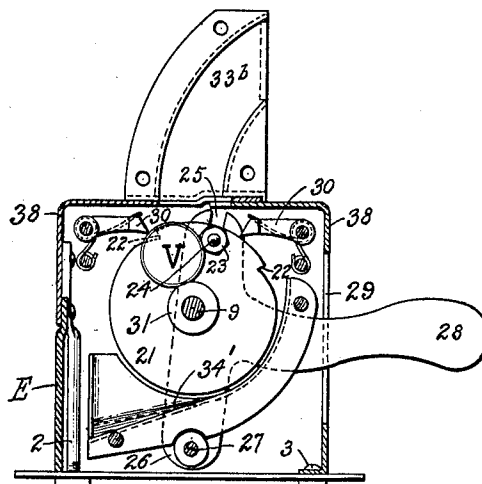


Fig. 8.

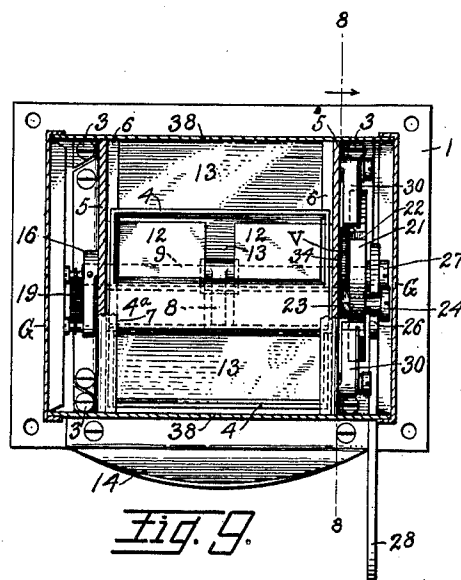


Fig. 9.

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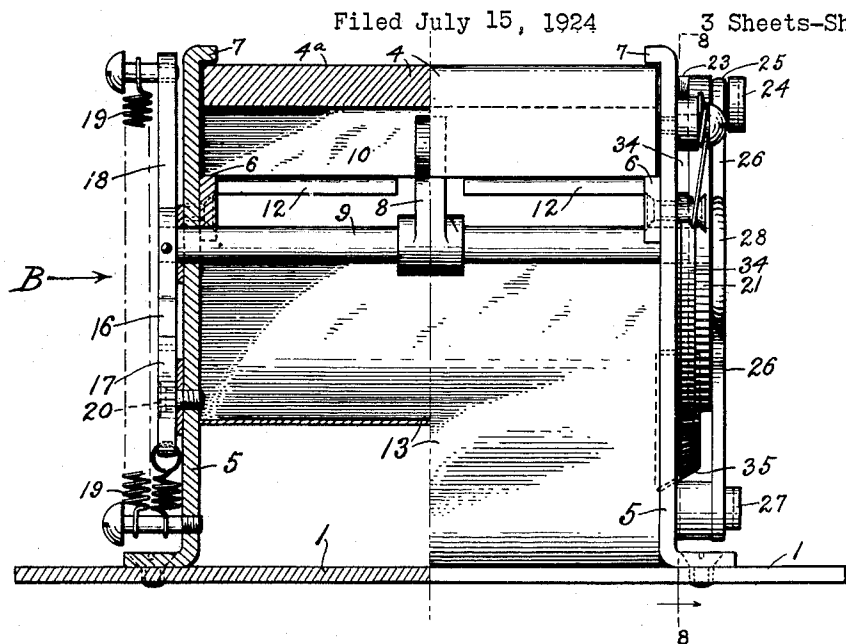
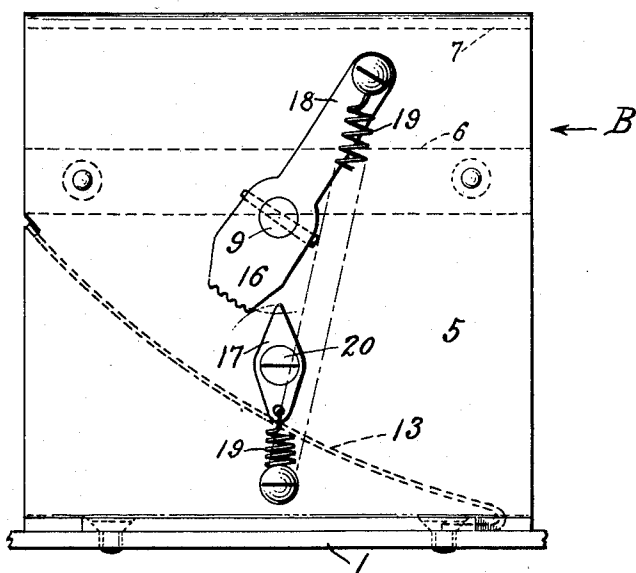
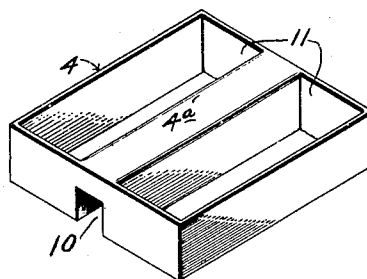
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COIN CONTROLLED VENDING MACHINE

Filed July 15, 1924

3 Sheets-Sheet 3



Inventor

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Patented Aug. 4, 1925.

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UNITED STATES PATENT OFFICE.

CHARLES H. ECHOLS, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO PAUL R. SPICKARD, OF BALTIMORE, MARYLAND.

COIN-CONTROLLED VENDING MACHINE.

Application filed July 15, 1924. Serial No. 726,115.

To all whom it may concern:

Be it known that I, CHARLES H. ECHOLS, a citizen of the United States, residing at Baltimore city, in the State of Maryland, have invented new and useful Improvements in Coin-Controlled Vending Machines, of which the following is a specification.

This invention relates to coin-controlled mechanism, also to vending mechanism, and more specifically, to an improved coin-controlled vending machine.

One object of this invention is to provide an exceedingly simple and comparatively inexpensive coin-controlled mechanism which is unfailing in its operation, and which is exceedingly convenient and easily understood and manipulated for operation.

Another object of the invention is to provide an improved device of this character with a double-acting coin-controlling mechanism; that is, a mechanism including a handle mounted for movement in opposite directions, and which is coin-controlled for movement in both of said directions.

Another object is to provide a device of this character with an improved double acting vender; that is, an improved mechanism for vending alternately from two tiers or groups of articles or packages to be vended, and delivering the vended goods to a receiver or delivery tray in sight of the purchaser who may easily remove the goods from the tray.

Another object is to provide a device of this character that has the operating handle, the coin-slot, the delivery tray, and a window displaying the goods, all arranged on the front or face of the machine with instructions which may refer to each part with which the purchaser has to do; thereby assuring maximum convenience and facility of operation, also rendering it easy and practical to arrange and combine any number of these vending mechanisms in a unitary structure having a continuous and unbroken casing in which all the unitary vending mechanisms are contained; so a variety of commodities can thereby be displayed and vended, for instance, chewing gum (different varieties), stick-candy, "life-savers", chocolate confections, and other individual or packaged articles of various sizes and shapes.

Other objects and important features will

be pointed out or implied in the following details of description, in connection with the accompanying drawings in which—

Fig. 1 is a front view of a unit including only a single vending mechanism shown in Figs. 3 to 12 inclusive: Fig. 2 is a right end view of the unit shown in Fig. 1: Fig. 3 is an enlarged top plan view, the removable cover being omitted, and parts being in horizontal section: Fig. 4 is a central vertical sectional view showing the vending carriage in its rearmost position, the goods being represented by the broken line circles: Fig. 5 is a fragmental sectional view, the section being in the same plane as that of Fig. 4, the vending carriage being in the foremost position, and showing the vending operation next succeeding the one shown by Fig. 4: Fig. 6 is an elevation of the right end of the frame and coin-controlled mechanism, a part of the frame or casing being in vertical section, the ends and removable or openable closures being omitted, the handle being at or near its uppermost position: Fig. 7 is a view, partly in elevation and partly in vertical section, of the frame-section which contains the coin-controlled mechanism and supports the coin-chute, the handle being at or near its lowermost position: Fig. 8 is a vertical sectional view, the section being taken in the line 8—8 of Figs. 9 and 10 and between the two plates that form the coin-chute: Fig. 9 is a horizontal sectional view the section being substantially in the plane of line 9—9 of Fig. 4: Fig. 10 is a view, in half section, of the rigid frame structure and the dispensing carriage, as viewed from front to rear, the coin-controlled mechanism being shown in full front elevation: Fig. 11 is a left end view of the structure illustrated by Fig. 10: and Fig. 12 is a perspective view of the vending carriage.

These drawings were made from a working machine, and Figs. 10 and 11 are drawn to actual scale; Figs. 1 and 2 being one-third actual size; and Figs. 4 to 9, inclusive, and Fig. 12, being one-half actual scale or size. Referring to these drawings in detail, in which similar reference characters correspond to similar parts throughout the several views:

The unitary vending machine (here illustrated) is preferably composed of the separable units, A, B, C, D, E, F and GG,

each of which units is itself preferably composed of a number of primarily separate parts, except the base of pedestal A and the end walls GG of the casing. These unitary sections are preferably secured together by means of screws and bolts, except the parts or units E and F which are the removable or openable closures and are provided with locks and keys by means of which they are secured in place, for protecting the goods and the coins, and may be opened for replenishing the goods and removing the coins: These locks are indicated at *e* and *f*, respectively. The advantages, of thus constructing machines in unitary sections which are easily assembled and secured to one another so as to form the complete machine, are well known by manufacturers and others.

The base or pedestal A is recessed to receive the lower ends of the bolts and the nuts which secure the section C on the section B, so that the base-plate 1 (of the part B) lies snugly on the pedestal A and is secured on the latter by means of screws, as indicated. The bolts that hold the parts B and C together are shown at 2 and 3 (Figs. 6, 7 and 8). The part B is shown separately in Figs. 10 and 11; and the part shown in Fig. 12 (although itself a separable part) is properly an element of the section B, as indicated by the numeral 4, and is the vending carriage. The plate 1 has upright bearing plates 5 united therewith, and these are provided with parallel and horizontal supporting and confining guides 6 and 7 along which the vending carriage is caused to travel forward and rearward by means of an arm 8 extending up from a shaft 9 into a groove or recess 10 of the carriage. The carriage is formed with walled merchandise receptacles 11 which are open at their upper and lower ends except when the lower end of either one or the other is partly closed by two merchandise-supporting plates 12 whose inner edges are spaced from one another to permit the arm 8 to swing therebetween. The merchandise (as indicated at *m* in Figs. 4 and 5) rests on these plates or supports 12, and is pushed from either the front or rear edges of these supports, according to whether the merchandise is in the front receptacle or the rear receptacle 11, and in either case, the merchandise falls on a forwardly inclined partition 13 which forms the front and top of the coin-receiving till, at the same time serving as an ejector for causing the merchandise to pass (by gravity) into the tray formed by its lower end and a forwardly and upwardly extending stop or plate 14, an opening 15 being provided for the merchandise to pass forwardly through. The part 14 is preferably united with the plate 1, but is omitted from Fig. 10 to avoid ob-

scuring the lower part of the plate or partition 13.

To prevent a return of the vending carriage until it has moved to either its forward vending position or its rearward vending position, and thus compel it to vend alternately from the front and rear tiers (as will presently be shown), I may provide any appropriate form of full-stroke mechanism; and one form is here shown (Figs. 10 and 11), where a toothed segment 16 engages with a spring-pressed pawl 17. The segment 16 and an arm 18 are secured on the shaft 9 and oscillate therewith. A spring 19 yieldingly holds the segment and shaft in the extremes of their movement, and also forces them to complete their movement after they have traveled beyond their central position. The pawl is pivoted at 20, and the operation thereof and of the other parts of the full stroke-mechanism appears to need no further explanation, being clearly shown by the drawings, and being extremely simple.

On the opposite end of the shaft 9, at the right side of the machine, is an improved form of coin-controlled mechanism, or a substantial part thereof, comprising a disc 21 formed with abutments 22 which may be formed by notching the periphery of the disc. About midway between these abutments is an inwardly extending abutment 23 (Figs. 8, 9 and 10) which is conveniently formed by placing a nut on the screw 24 which passes through the disc 21 and through a slot 25 of an operating lever 26 which is pivoted at 27, preferably on a screw or bolt that is secured to the upright plate 5 at the right side of the section B. This lever is provided with a handle 28 that extends forward through an opening or slot 29 of the part C, and is swingable up and down in this slot for the purpose of imparting rotary movement, forward and backward, to the disc 21 and its supporting shaft 9. Spring-pressed pawls 30 are pivoted on the right-hand upright 5 in position to respectively cooperate with the abutments 22 for holding the disc against operating movement until the effective detent is released by the interposition of a coin of the predetermined size (as will presently be seen).

A preferably cylindrical coin-support 31 is mounted on the shaft 9, concentric with the axis of the disc and its shaft, and is of such diameter that it holds the coin (here represented by the letter V) with its upper margin above that of the disc 21. The pawls 30 extend inward from the disc 21 and are in the path of the coin V when it is pushed forward or rearward, by the abutment or pusher 23, when the handle 28 is lowered or raised, and thereby turns the disc forward or rearward. Fig. 8 illustrates the

foregoing, the rear pawl 30 being held out of the path of the rear abutment 22 by the periphery of the coin V. If desired to change the mechanism to be controlled by smaller coins, it is only necessary to replace the part 31 with one of larger diameter, or to put a reenforcing band on the part 31. The coins are introduced into the coin slot 32 (Fig. 1) and pass thence through the coin-chute 33 into one of the coin-spaces 34 (Figs. 9 and 10), either before or behind the abutment 23, according to the one of the two starting positions the vending mechanism is in. This is illustrated in Figs. 6 and 7. In Fig. 6, if the lever 26 is operated by lowering its handle 28, this raises the front pawl 30, and ejects the coin forwardly; whereas, if the coin is in rear of the abutment 23, the raising of the handle causes the coin to raise the rear pawl 30, and the coin is ejected rearwardly. In either event, the coin falls on a rearwardly inclined coin-delivery or guide 34' which is laterally inclined at 35, so that the coin slides through an opening 36 and enters the till from whence it may be removed by opening the closure E, through the opening 37, shown in Figs. 6 and 7 where the closure E is omitted. The coin chute is preferably formed of two plates 33^a and 33^b, the latter being formed with a channel embossed therein, the plate 33^a being secured by screws (as shown), or by other means, in position to close one side of the channel, thus making it tubular. The part 33^a is formed with an apertured lug 33^c and a base-flange 33^d, the latter being secured by screws or other means to the apertured top of the hood 38 that extends over the uprights 5 and constitutes a part of the casing that encloses the vending mechanism and the coin-till. This hood is preferably formed with vertical flanges 39 (Figs. 4 and 5) turned up from the central opening through which the merchandise passes into the vending carriage.

The section D (Figs. 3, 4 and 6) comprises a front wall 40, a rear wall 41, lateral partitions 42 and a longitudinal partition 43, the latter preferably being transparent, and the front partition preferably including a transparent panel 44, so the merchandise can be seen in the compartments at both sides of the partition 43. As shown in Fig. 6, the walls 40 and 41 are provided with horizontal base flanges seated on the hood 38 and secured by screws. The flange 33^c is also secured by a screw to the front wall 40, thus holding the coin-chute in registration with the coin-slot, at the same time bracing the entire structure. The partitions are preferably formed with grooves 45 and 46 in which the glass or other transparent partitions are seated, respectively, and as these grooves are pressed in the sheet material of the partitions, they result in

corresponding ridges 45^a and 46^a (Fig. 6) which stiffen these partitions. The middle partition 43 has its top clamped by means of a bolt and nuts, indicated at 47, drawing the lateral partitions against the edges of the middle partition and thus preventing this partition from becoming accidentally displaced while assembling or while replenishing the merchandise compartments. The flanges 39 assist the screws in holding the parts C and D in rigid relation with one another, and the front one of these flanges 38 forms a seat for the lower end of the transparent panel 44. The rear compartment of the section C (back of the panel 43) feeds the articles of merchandise to the rear compartment 11 of the vending carriage, and the front compartment of the section C feeds the articles to the front compartment 11 of the vending carriage. The partition 4^a of the vending carriage alternately prevents and permits feeding into its compartments 11, respectively, from the feeding compartments, by its partition 4^a moving under one feeding compartment after moving from under the other feeding compartment.

The end sections GG are secured in place by screws or other appropriate means, and over the tops of these and the sections D, the section F is fitted, and locked by the locking mechanism *f* (of any appropriate kind) and a clip or other securing means 49.

The closure E is provided with the locking mechanism *e* (of any appropriate kind), and the bolt 2 cooperates with this lock for securing the closure (section E) in place.

It is not intended to limit this invention to the exact details of construction here shown, but I may make such changes that are within the scope of the inventive ideas as implied and claimed.

What I claim as my invention is:

1. In a coin-controlled mechanism, the combination of an oscillatory energy-transmitting member including a coin-seat and an abutment, means to engage said abutment for controlling movement of said member and being disengageable from said abutment by means of a coin on said coin-seat, and an operating lever fulcrumed at one side of a line extending axially from the axis of said oscillatory member, this lever being operatively connected to said oscillatory member at the other side of said line, substantially as shown.

2. In a coin-controlled mechanism, the combination of an oscillatory energy-transmitting member including a coin-seat and an abutment, a casing in which said member is journaled, means to engage said abutment for controlling movement of said member and being disengageable from said abutment by a coin on said seat, and a lever fulcrumed on a part of said casing at one

side of a line extending axially from the axis of said oscillatory member, this lever being operatively connected to said member at the other side of said line, substantially as shown, the front side of said casing having an opening through which said lever extends outward radially from said line.

3. In a coin-controlled mechanism, the combination of an oscillatory energy-transmitting member including two coin-seats and two abutments, means to engage the respective abutments for controlling the oscillatory movements of said member and being disengageable from the respective abutments by a coin on the respective coin-seats, and an operating lever fulcrumed at

one side of a line extending axially from the axis of said member, said lever being operatively connected to said oscillatory member at the opposite side of said line, substantially as shown.

4. The structure defined by claim 1, said lever having its fulcrum below said line and its engagement with said oscillatory member above said line, this lever having a manipulative arm extending substantially horizontally forward in a radial direction with respect to the axially extending line.

In testimony whereof, I affix my signature.

CHARLES H. ECHOLS.