

No. 771,543.

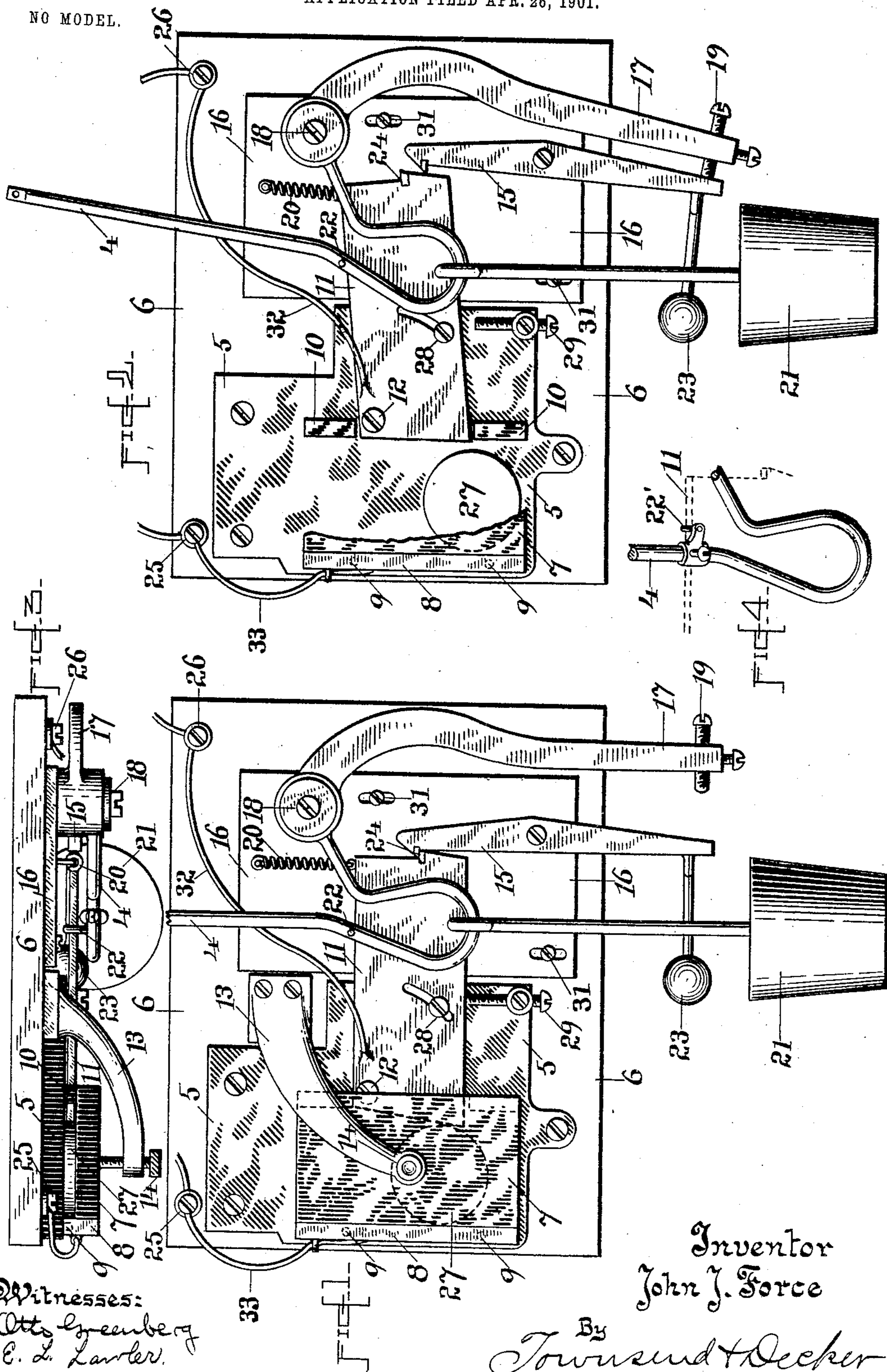
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COIN CONTROLLED APPARATUS FOR HEAVY CURRENTS.

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NO MODEL.



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COIN-CONTROLLED APPARATUS FOR HEAVY CURRENTS.

SPECIFICATION forming part of Letters Patent No. 771,543, dated October 4, 1904.

Application filed April 26, 1901. Serial No. 57,522. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. FORCE, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Coin-Controlled Apparatus for Heavy Currents, of which the following is a specification.

This invention relates to coin-controlled apparatus wherein the control is exercised by means of electric current passed through the actuating-coin.

The object of the invention is to construct an apparatus of this sort in a manner such that it may be effectively used with heavier currents than those employed in coin-controlled phonographs and the like—that is, with currents such as are required to operate an automatic coin-controlled piano or similar instrument. In apparatus of the latter sort, where a comparatively heavy current is used, it is essential that the interruption of the current be abrupt, and this means, where the circuit is closed through the coin, that the coin must be released by an instantaneous or snap action so that no arcing can take place between it and the contacts.

The invention therefore consists in the formation, construction, and combination of parts embodying my invention, as hereinafter described and claimed.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of the apparatus, showing the parts in position to receive and hold the coin during the operation of the instrument to which said apparatus forms an adjunct. Fig. 2 is a similar view of said apparatus with parts thereof removed and with the coin-holding parts in position to release the coin. Fig. 3 is a plan of the apparatus as seen in Fig. 1. Fig. 4 is a modification in detail.

The apparatus which forms the subject of this application is intended as an adjunct to an instrument or machine whose operation is automatic and whose control is effected by means of a coin of any desired denomination, and as the invention lies wholly in this adjunct no attempt has been made to illustrate

its connection with any particular instrument or machine.

The connection to the instrument or machine to which the device in question is an adjunct may be made in any suitable way, as by link, chain, or other connection with the lever 4, shown complete in Fig. 2 and as broken away in Fig. 1. In this apparatus the current supplying power to the instrument or machine flows through the coin dropped into the apparatus for starting the instrument or machine into operation. To this end a coin-station is provided which has a plate of insulation 5 secured to a suitable back 6 and forming one side of said station, and another plate of insulation, as 7, removably secured to the plate 5 at a sufficient distance therefrom to allow the coin to pass between said plates 5 and 7. One edge of said station is formed by means of a metallic strip, as 8, preferably secured to the plate 7 and in turn held in place upon the plate 5 by means of dowels secured in the plate 5 and projecting into sockets in the strip 8. These dowels are indicated at 9. The opposite edge of the coin-station is formed in part by projections of insulation 10, and the movable contact 11, which is pivoted, preferably, at one corner, as indicated at 12.

Any suitable means may be provided for holding the plate 7 removably in position—such, for instance, as the arm 13, secured to the back 6 and projecting over the plate 7, to the center of which, through the end of said arm, passes a set-screw, as 14.

Any suitable form of chute may be provided for conducting the coin to the coin-station just described.

The snap action for controlling the exit of the coin from said station may be of various constructions, the one illustrated, however, being preferred. The snap action consists of a latch or detent 15, pivoted to an adjustable plate 16, located upon the back 6, said latch being arranged to engage a shoulder or offset at 24 and hold the movable contact 11 in position for stopping the coin in the coin-station, and the tripping-lever, which is compounded from the lever 4 and the arm 17, extending from the pivotal point 18 of the lever

4, there being in the lower end of the arm 17 an adjustable projection 19 for engagement with the latch 15.

For the withdrawal of the engaging end of contact 11 from the coin-station on its release by the latch 15 there is provided a spring, as 20, and for the return of the movable contact to its normal position for stopping the coin there is provided a weight, as 21, which is suspended from a loop in the lever 4, a pin or suitable projection, as 22, being provided in the lever 4 for engaging the upper edge of the movable contact 11. The latch 15 is also preferably counterweighted, as by means of a ball 23, to throw its upper end into engagement with the shoulder or notch 24 on the end of the movable contact. The electric circuit controlled by the coin may be connected at the binding-posts 25 26, between which it passes through conductor 32, movable contact 11, the coin, as indicated at 27, the contact 8, and conductor 33.

The apparatus normally stands with its parts in the positions indicated in Figs. 1 and 3, wherein latch 15 holds movable contact 11 in position to engage and stop the coin in the coin-station, as indicated in dotted lines. In this position spring 20 is under tension, and the weight 21 holds the arm 17 out of engagement with the latch 15 and the pin 22 into engagement with the upper edge of the movable contact 11, which pin in this position serves as a stop for limiting the return movement of the lever 4.

When in the operation of the instrument or machine controlled by the apparatus in question the arm 4 is moved to the right and reaches the limit to which said instrument or machine is set to operate, the projection or screw 19 in the end of the arm 17 engages the latch or detent 15 and moves it until its detent end passes the point or edge of the notch or shoulder at 24 on the movable contact. The instant this occurs the contact is thrown quickly by the spring 24 by a quick or snap action, which is completed freely and unrestrained in any manner by the presence of the latch. As will be seen, the quickness of the movement which takes place is due entirely to the spring and in no manner depends upon the speed with which the latch may move. Hence there is a true snap action. In apparatus where the movement of the releasing-contact is gradual and continuous during the operation of the instrument or machine controlled thereby there is more or less sparking between the coin and the contact and the latter becomes roughened or corroded, and the last point of engagement therewith by the coin in the slow release thereof quickly burns away because of constant arcing. In my apparatus this trouble is avoided by the coin being instantly and completely released upon the first movement thereof in leaving the coin-station.

Moreover, by the snap action the contact as soon as its withdrawal from the coin begins is moved to a considerable distance from the coin, and so completely prevents or materially lessens the chances of arcing.

By the term "snap-action device" or "snap-action mechanism" as used in the claims is meant an arrangement of parts whereby the opening of the coin-station is delayed during the movement of parts connected therewith and until such time as it may be opened instantaneously, and thereby prevent burning between the coin and the contacts holding it.

The movable contact is provided with limiting-stops, as indicated at 28 29, and the plate 16 is also provided with adjustment devices, as indicated at 31, whereby the apparatus may be adjusted for making a break of greater or less extent between the coin and the movable contact, as well as to adjust it for the use of coins of various denominations.

The pin 22 in lever 4 may be replaced by any adjustable projection, such as seen in Fig. 4, said projection 22' consisting of a bent rod secured to a sleeve, which may be fixed at any altitude upon the lever 4. The adjustment of this projection provides for setting the lever 4 in vertical position after any adjustment of the movable contact or of the plate 16.

The hook on latch 15 and the notch on movable contact 11 are preferably steel-faced to provide good wearing-surfaces, and the conductor 33 is preferably passed through a loop on contact 8 before being soldered thereto, whereby the plate 7 may be hung by said conductor when the station is opened and without danger of severing the connection with the conductor.

Many changes in the form and construction of parts constituting the apparatus embodying this invention may be made without departing from the spirit of the invention.

I claim as my invention—

1. In a coin-controlled apparatus, the combination of a spring-actuated contact adapted to be engaged by the coin and to form electric connection therewith as described, a latch or detent engaging a shoulder or offset on said contact and holding it normally in position to be engaged by the coin and to hold said coin temporarily, and actuating devices for operating said latch or detent to suddenly free the spring and allow it to operate the contact so as to release the coin and break circuit therewith by a snap action, and means connected with said actuating devices for simultaneously restoring the latch and contact to normal position.

2. In a coin-controlled apparatus, the combination of a hinged coin-detaining contact-lever 12, a spring normally tending to throw the lever in a direction to separate it from the coin, a detent-lever 15 normally engaging a shoulder on said contact lever or plate, an

actuating device for tripping said detent-lever, a weight connected with said actuating device for restoring it to normal position and means connected with said actuating devices
5 for restoring the contact-lever to position where it will be engaged by the detent as the parts recede under the action of said weight.

Signed at New York, in the county of New York and State of New York, this 22d day of April, A. D. 1901.

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