

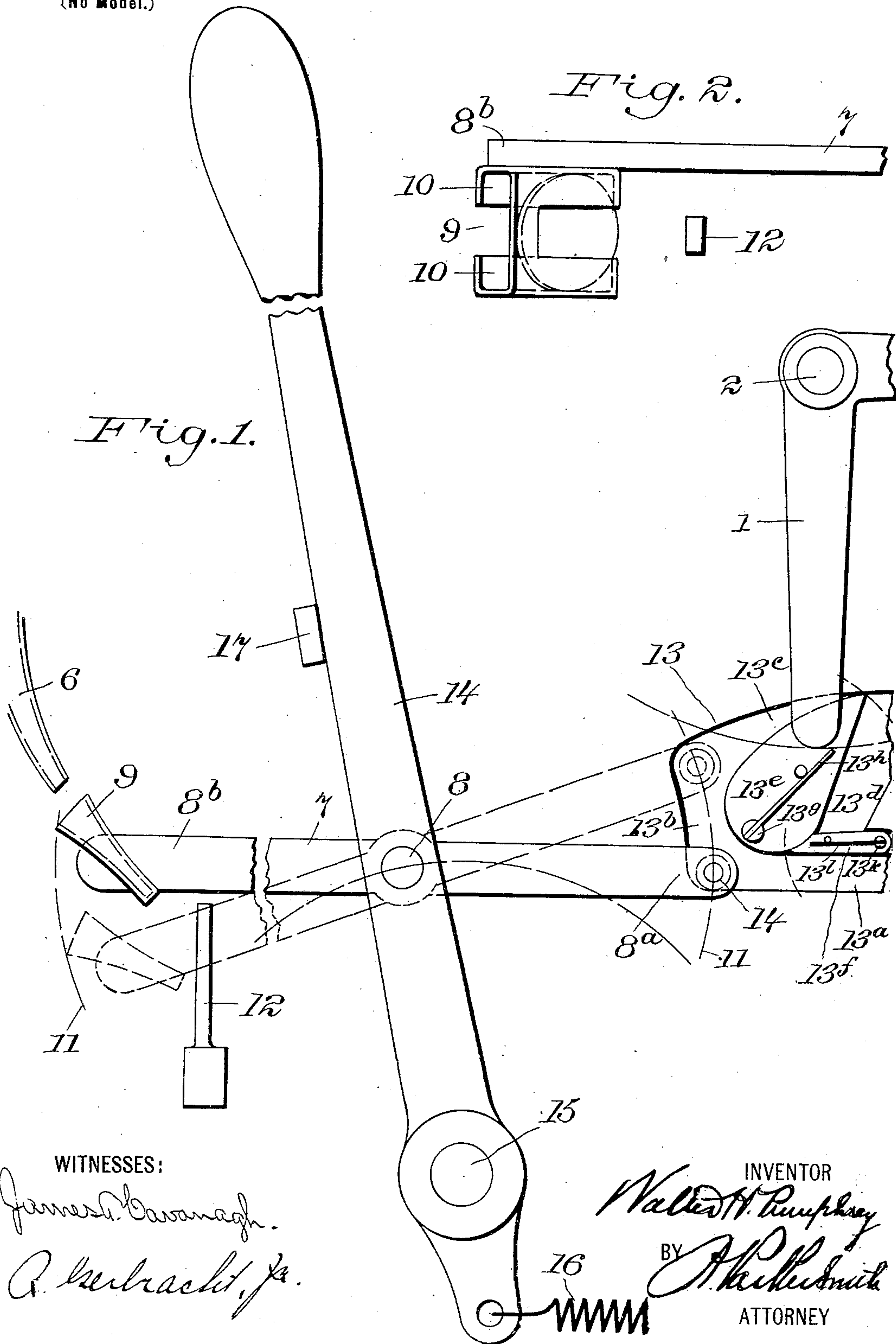
No. 677,325.

Patented June 25, 1901.

W. H. PUMPHREY.
COIN CONTROLLED MECHANISM.

(Application filed Aug. 20, 1900.)

(No Model.)



WITNESSES:

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COIN-CONTROLLED MECHANISM.

SPECIFICATION forming part of Letters Patent No. 677,325, dated June 25, 1901.

Application filed August 20, 1900. Serial No. 27,514. (No model.)

To all whom it may concern:

Be it known that I, WALTER H. PUMPHREY, a citizen of the United States of America, and a resident of the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Coin-Controlled Mechanism, of which the following is a specification.

My invention relates to coin-operated mechanism of a class adapted particularly for use in connection with slot-machines. In machines of this character the use of a coin for actuating a more or less complicated locking device by its weight or the momentum acquired in its passage through a chute gives rise to various objections in that to insure a proper response under the action of an inserted coin the several parts of the locking device must be made extremely light, delicate, and at all times carefully maintained in proper relation, as a slight disarrangement or binding of any part of the locking device will be sufficient to prevent its operation, and under such conditions the machine will fail to respond upon the insertion of a coin. Any attempted enlargement of the parts of the locking device for the purpose of securing greater strength and reducing the liability of disarrangement is impractical, as the source of power—i. e., the falling coin—cannot be increased, and the device must therefore be adapted to it. Difficulty has also been experienced in the use of delicate locking mechanism, as the machines are usually placed out of doors, exposed to all changes in atmosphere and temperature, and a breakdown of such locking mechanism frequently occurs, causing the machines to be labeled "Out of order" for a considerable length of time, thereby increasing the cost of maintenance and materially reducing the net earnings.

In view of the foregoing it is the object of the invention to produce a locking device comprising the smallest possible number of parts so related as to render their disarrangement under ordinary conditions improbable if not impossible and each part being, furthermore, of ample strength to insure long life and remain practically unaffected by changes in temperature or atmosphere.

Furthermore, the invention contemplates

the employment of a locking device of such peculiar construction by which the work ordinarily required of a coin will be materially reduced, in that the coin is only utilized to overbalance a weighted lever which swings freely and merely requires to be shifted by the coin from its normal position, and thereafter the operation is completed by hand.

Mechanism embodying my invention is illustrated in the accompanying sheet of drawings, throughout both views of which like reference characters indicate corresponding parts.

Referring to the drawings, Figure 1 is a view in diagram of a hand-operated coin tripping device, and Fig. 2 is a detail view in plan of the coin-carrier and the coin-ejector in operative relation thereto.

In the drawings, 1 may represent any portion of a coin-controlled machine, and in the present instance serves to illustrate the member to be actuated. It may be one end of a bell-crank lever turning about a pivot 2, whose opposite end engages a locking device of, for example, the indicating mechanism of a weighing-machine. Again, the part 1 may represent the lower end of a shutter movable back and forth beneath a sight-opening, such as would be employed in a picture, exhibiting or similar machine, or this member might represent a portion of the ejector of a vending-machine. The particular function, however, of part 1 is unimportant so far as the present invention is concerned, inasmuch as it is not essential to the operation of the same and is merely employed for completing an operative illustration.

6 represents a coin-chute, which ordinarily leads from a slot in the outer casing of the machine and serves to properly direct the coin and deposit it as may be required.

7 represents a trip-lever, which is pivoted at 8 so as to lie normally in a substantially horizontal position. The lever may be thus maintained by having one end 8^a weighted, or any other means may be employed for this purpose. At the opposite end 8^b the lever is provided with a coin-carrier 9, consisting of parallel oppositely-disposed guides 10 10, closed at their lower ends, as indicated in Fig. 2, and flared at the upper end, which lat-

ter, constituting the entrance to the guides, is normally alined with respect to the discharge end of the coin-chute, (shown in Fig. 1,) so that a coin in passing through the chute is discharged therefrom and passes at once into the carrier of the trip-lever and by its weight causes this lever to swing in the arc indicated at 11 11 to the position shown in dotted lines.

12 represents a coin-ejector, which is fixed with relation to the carrier and is centered with respect to the guides forming the same. Ordinarily in the back-and-forth movement of the trip-lever the coin-carrier will clear the ejector; but when the trip-lever is swung downward to the position indicated in dotted lines the tongue or engaging end of the ejector enters the space between the guides and as the trip-lever is advanced will engage the coin and hold it while the lever moves forward, thereby dislodging the coin, which in falling from the carrier may be caught in any suitable receptacle. (Not shown.)

13 represents a suitable guideway for a stud 14 or friction-roller mounted on a stud on the end 8^a of the trip-lever. This guideway comprises a horizontal portion 13^a, a substantially vertical portion 13^b, an upward-inclined portion 13^c, and a return-way 13^d. Should the trip-lever be given a back-and-forth movement before a coin is inserted, the stud 14 will ride in the lower horizontal portion 13^a of the guide; but upon the insertion of a coin its weight causes the trip-lever to swing and carries the stud upward through the vertical portion of the guide to the position indicated by dotted lines. If now the trip-lever is advanced, it will pass through the upward-inclined portion 13^c of the guide, and in moving therethrough will engage and swing the member 1 to be actuated, causing it to operate as required. As a means of insuring proper cooperation between the guides and the stud of the trip-lever I preferably employ a number of spring-sustained dogs 13^e 13^f. The dog 13^e, loosely pivoted upon a stud 13^g, is yieldingly supported in engagement with the wall of the inclined portion 13^c of the guide by means of a spring 13^h, and in a similar manner the dog 13^f, loosely pivoted upon the stud 13^k, is yieldingly supported in operative relation with the dog 13^e by means of a spring 13ⁱ. When, therefore, after the trip-lever has been shifted by the weight of the coin and is advanced in the guide, the stud or roller in passing through the guide-section 13^c causes the dog 13^e to swing about its pivot in opposition to its spring, and as the roller passes beyond the dog the latter is quickly returned to its normal position by the reaction of its spring and prevents the return of the roller 14 except by way of the guide-section 13^d. In passing through this latter section of the guide the roller forces its way past the dog 13^f, which latter prevents its return in the manner above described. I do not consider these spring-actuated dogs essential at all to the operation

of the device, and they may be dispensed with, if desired, the same being true of the guide.

14 represents a hand-lever upon which the trip-lever is pivotally mounted. This hand-lever, turning about its center 15, is held at one extremity of its movement under a retractile spring 16 and stop 17.

The operation is as follows: Assuming the parts to be in their normal position, as shown in full lines in Fig. 1, when it is desired to actuate the member 1 a coin is first inserted and directed by the chute into the coin-carrier, where it lodges. The momentum acquired by the coin during its travel through the chute serves to overbalance the trip-lever, and the weight of the coin thereafter serves to move the lever from the position shown in full lines to that shown in dotted lines. The hand-lever is then grasped and moved toward the right or away from its stop, and in being swung about its pivotal center advances the end 8^a of the trip-lever into engagement with the member 1, which latter is thereby actuated, and at the same time the coin-carrier upon the opposite end 8^b of the trip-lever is moved toward the ejector, which latter engages and dislodges the coin in the manner above described. If a guide such as illustrated is employed, the forward movement of the hand-lever is continued until the stud or roller passes beyond the dog 13^e, after which it may be released, as it is self-returning under the action of the retractile spring 16.

Should it be attempted to operate the device without first inserting a coin, the movement of the hand-lever toward the right would merely result in causing the end 8^a to play back and forth in a horizontal plane clear of the member to be actuated and would not therefore produce any effect.

The advantages of my invention consist in its extreme simplicity and strength of construction, there being comparatively few parts and so relatively arranged as to render the same readily accessible. Furthermore, the invention possesses advantage in the feature of combining hand-power for operating the locking device with the automatic action of the coin in adjusting the latter for effective operation.

I do not wish to be understood as limiting myself to the exact construction, &c., herein shown and described, as various parts may be dispensed with and other changes made within the meaning of the present invention. The hand-lever, for example, may be replaced by any other suitable device—such as a crank, push-rod, or the like—capable of being operated from outside of the machine. The form of trip-lever may also be modified, it not being essential that the same should be carried by or pivoted upon the hand-lever, so long as a relation exists between the same which enables the parts to cooperate, as described. The coin carrier and ejector may also be of different form and differently related, so long

as they coöperate to receive and check the coin, as described. The guide for the trip-lever may be entirely dispensed with, or the guides shown may be employed and the spring-dogs dispensed with. As these and other changes are, however, perfectly obvious to the ordinary mechanic, I do not deem it necessary to further describe or illustrate the same, as I consider all such modifications mere changes in form and still within the scope of my invention.

Having therefore described my invention, what I claim as new, and desire to protect by Letters Patent, is—

In coin-operated mechanism, the combina-

tion with a member to be actuated, of a trip-lever movable normally clear of said member, means for placing a coin to act independently in effecting a preliminary adjustment of the trip-lever into operative relation with said member, guides to maintain the lever so adjusted, and an actuating device for the lever.

Signed at New York this 16th day of August, 1900.

WALTER H. PUMPHREY.

Witnesses:

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