

2 Sheets—Sheet 1.

Patented May 18, 1897



(No Model.)

2 Sheets—Sheet 2.

J. J. FORCE & C. A. GUNDAKER, Jr.
COIN CONTROLLED APPARATUS.

No. 582,730.

Patented May 18, 1897.

Fig. 4.

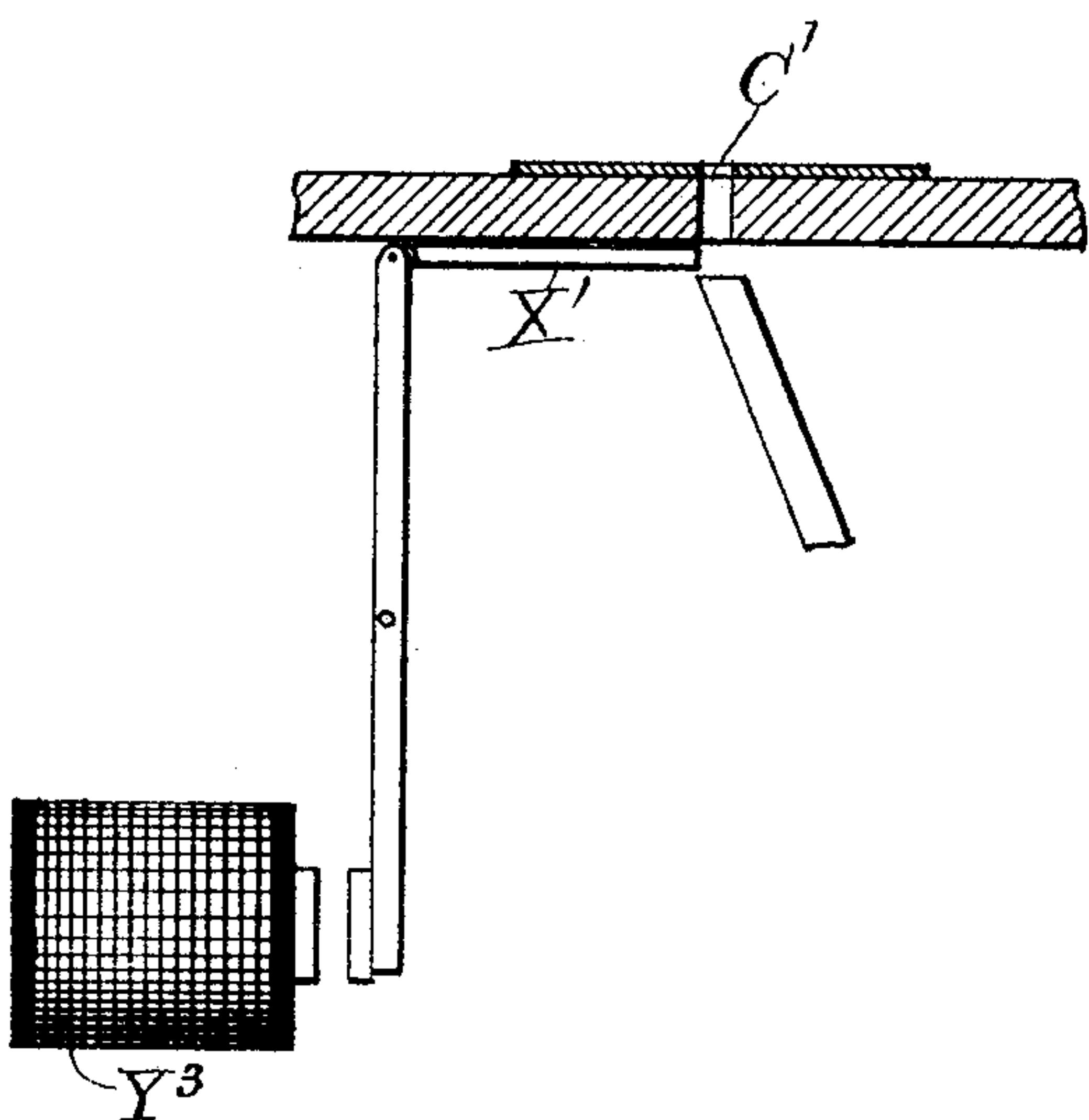


Fig. 2.

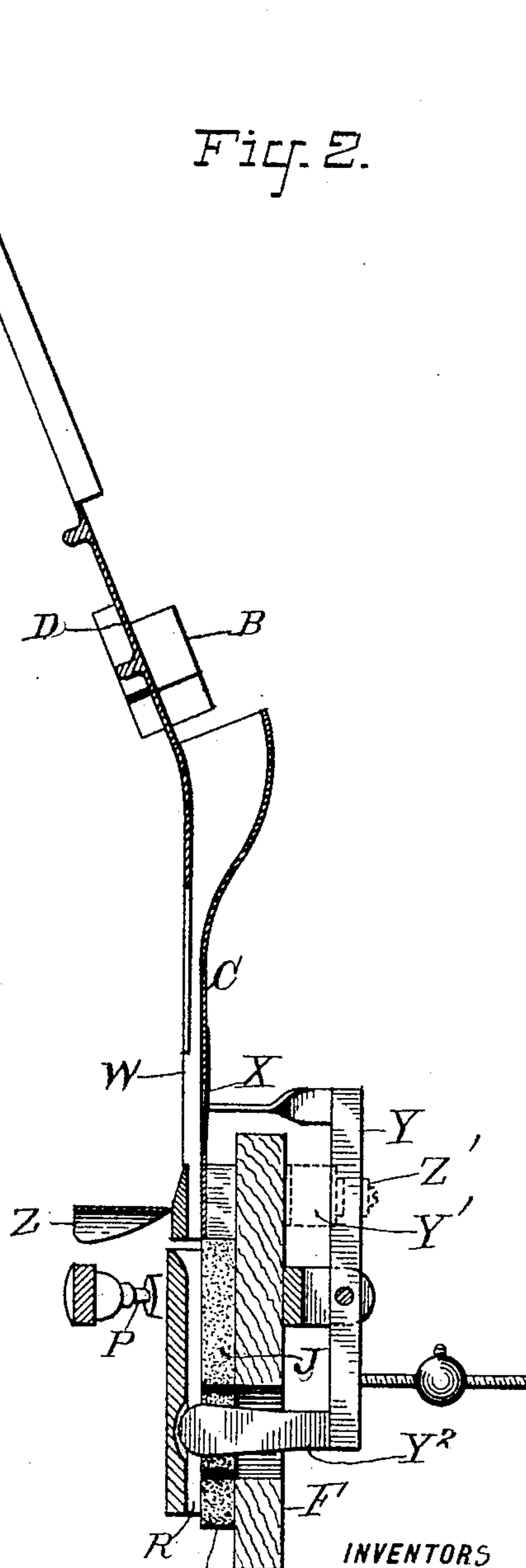
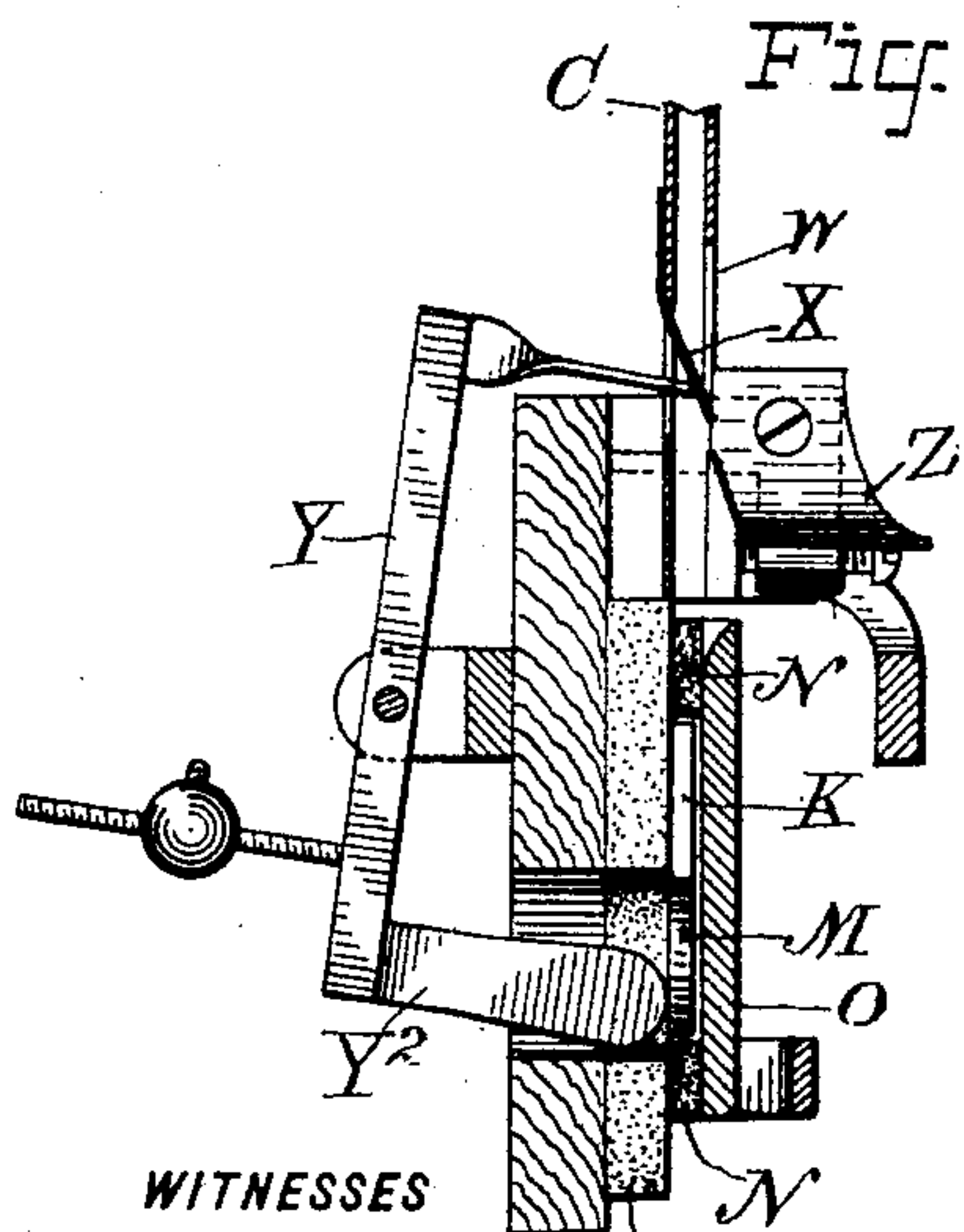


Fig. 3.



WITNESSES

H. N. Capel.
C. S. Dolbear.

INVENTORS

J. John Joseph Force
Charles A. Gundaker, Jr.
BY

Townsend & Decker
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN JOSEPH FORCE, OF ELIZABETH, AND CHARLES A. GUNDAKER, JR.,
OF NEWARK, NEW JERSEY.

COIN-CONTROLLED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 582,730, dated May 18, 1897.

Application filed July 13, 1896. Serial No. 598,952. (No model.)

To all whom it may concern:

Be it known that we, JOHN JOSEPH FORCE, residing at Elizabeth, in the county of Union, and CHARLES A. GUNDAKER, Jr., residing at Newark, in the county of Essex, State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Coin-Controlled Apparatus, of which the following is a specification.

10 This invention relates to coin-controlled apparatus in general, and particularly to that class of such apparatus wherein the coin is instrumental in closing an electric circuit, either to place the apparatus in position to be
15 operated or to operate it.

One object of the invention is to positively insure the closure of the electric circuit.

Another object is to so construct the apparatus that when it is in operation by means
20 of one coin other coins will be prevented from reaching the operative parts, thereby providing against clogging now so common in coin-controlled apparatus.

In electrical coin-controlled apparatus heretofore patented the coin has been made to operate a circuit-closer, either by its weight or momentum; but such mechanism is uncertain
25 in its operation, due to the coin rebounding or to its failing to strike the circuit-closer with sufficient force.

Another grave objection to coin-controlled apparatus existing prior to this invention is found in the frequency with which the coins become clogged in transit to the operating
35 position. For example, in those machines, such as phonographs, wherein a certain interval must be allowed after one operation (as the reproduction of one piece of music) before the machine can again operate, a second coin is frequently inserted before the
40 first is released and becomes so wedged in the passage as to prevent the release of the first coin. In this way the coin-passage becomes clogged, and the machine is therefore often
45 misused by patrons who drop their coins in the slot and get nothing in return. This clogging necessitates taking the machine apart and removing the obstructing coins. Clogging also frequently arises from a coin turn-

ing while in transit and getting crosswise of the duct or chute. This is remedied herein by a change in the shape of the chute.

The invention consists in a coin-controlled apparatus so constructed that when one coin has been inserted into operative position it
55 will set said apparatus into operation and at the same time cause suitable mechanism to prevent other coins from clogging the passage to the coin-operating position or station.

The invention further consists in the construction, combination, and arrangement of
60 parts hereinafter fully described, and set forth in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 represents
65 the coin-chute and so much of the coin-controlled apparatus as is necessary to illustrate the invention. Fig. 2 is a vertical central section on the line 2 2, Fig. 1, looking toward the left. Fig. 3 is a similar section on the
70 same line, looking toward the right. Fig. 4 is a modification in detail.

As this invention relates simply to that part of a coin-controlled apparatus in which the coin plays a part, only that portion has been
75 illustrated.

This apparatus may be applied to any coin-controlled machine or apparatus in which the motive power is electrical or is electrically governed, and the coin-check, *per se*, may be
80 applied to any form of coin-controlled apparatus.

The invention has been shown as of the form particularly adapted to automatic phonographs.
85

A indicates the upper part of the coin-chute; B, the jumping block; C, the vertical portion of said chute, and D the transverse portion or bed, extending from the jumping block to the vertical portion of the chute.
90 This much of the device is in the main old. The only improvement therein claimed as a part of this invention consists in making the bed D perfectly plain and uninterrupted, thereby omitting a step or break in said plane
95 which occurs in existing forms of like apparatus at the junction of said plane with the vertical portion of the chute, as at the dotted

line E. By the omission of this break or step in the bed a coin on its way from the jumping block to the vertical portion of the tube is maintained in a flat position, whereas in the old form of chute coins frequently turn and become wedged edgewise in the upper part of the vertical portion of the chute.

F represents any suitable support for the chute and circuit-closing parts of the apparatus, shown here as consisting of a strip of wood, which may be suitably secured in the coin-controlled apparatus. The chute may be secured to this support in any suitable way, here shown as so secured through the agency of a clip G, attached to the lower end of the chute and screwed to the support, and a clip H, attached to the support and having a set-screw I passed through it against the lower end of the chute. This set-screw provides for a perfect adjustment of the chute proper to the lower portion of the coin-passage—namely, that wherein the coin reaches its operating position or station. This operating position or coin-station is formed by the plate of vulcanite or other insulating material J, upon which is mounted adjustably the fixed terminal K of the controlling electric circuit L, which terminal is presented obliquely to the travel of the coin, as indicated in Fig. 1, and is of substantially the same thickness as the coin, the coin being indicated at M. At the upper and lower sides of this terminal are abutments N of insulation which serve to prevent electrical engagement between the fixed contact K and the movable contact O. This movable contact is preferably hung near one corner upon the pivot P, said pivot being supported at its outer end in the bracket Q and set obliquely, so as to cause the contact-plate O to swing outwardly as it moves away from the contact K, thereby providing for a free discharge of the coin. Plates thus supported are common in apparatus already in use. It is not claimed as a part of this invention.

Along the right-hand edge of the swinging contact O is an internal flange R, Figs. 1 and 2, which coöperates with the contact K to form a converging passage in which the inserted coin becomes firmly wedged and completes the circuit L. A keeper S is provided at the lower end of the plate O to insure its returning exactly to the coin-holding position. Any suitable means may be employed for retaining the plate O in its normal position, and in the drawings such means is shown as consisting of an elbow-lever T, pivoted to the support F, and bearing at one end against the plate O and having a weight secured to the other end. From the weighted end a cord, as U, passes over a suitable directing-pulley to the tripping-lever V, which lever is operated in the automatic phonograph by the carriage as it moves back to the initial position, such operation resulting in withdrawing the elbow-lever from the contact-plate O, allow-

ing the coin to escape and then allowing the weight to drop and throw the plate O back into the coin-receiving position. This is an old and well-known operation and needs no further description.

In one side of the portion C of the coin-chute is an opening W the full width of the chute. In the opposite side of the chute is an opening through which the coin-check operates. This check in the preferred form of our invention consists of a thin spring-plate X, hinged, as by a narrow tongue, to the wall of the chute and hanging normally, as indicated in Fig. 2, out of the path of the coin. This check may be mechanically or electrically operated, as desired. It is preferred to operate it mechanically. The operating mechanism therefor consists of the lever Y, pivoted and counterbalanced, as shown, its upper end resting against the rear of the check X and its lower end projecting through the support F and insulation J into the position assumed by the operating-coin. The normal position of this lever is represented in Fig. 2, the plate A being gouged to receive the lower end of the lever.

In Fig. 3 the lever is represented as operated by the coin M, and in turn operating the check X. The first coin inserted throws this lever and check into the position seen in Fig. 3, which places the check across the chute in position to direct the discharge from the chute of any coin that may be inserted while the coin-controlled apparatus is in operation. To direct the discharged coins away from the circuit-controlling apparatus, there is placed below the opening W, and preferably attached to the bracket H, a curved apron Z.

In the operation of this mechanism a coin of the particular description to which this apparatus is adapted is dropped in the upper end of the chute, strikes the jumping block B, bounds over into the vertical portion C of the chute, and slides down into the narrow portion of the chute or extension thereof into the coin-operating position. (Indicated in Figs. 1 and 3.) As it reaches this position it wedges closely between the flange R and the contact K, completing the circuit L, thereby setting the apparatus into operation; also as it reaches this position it throws out the lower end of lever Y, whose upper end pushes the check X across the chute. Any other coin or coins which may be dropped into the chute while the check is in this position will be discharged from the chute and landed in the cavity of the coin-controlled apparatus free from interference with the circuit-controlling parts. Then as the coin-controlled apparatus has nearly reached the position of rest it operates lever V to move lever T away from the contact-plate O, which swings outwardly at its lower end and releases the coin. As soon as the coin drops the counterbalance-lever Y resumes its normal position and the ap-

paratus is in condition to receive another coin.

Obviously the spring-check X may be omitted and the upper end of lever Y be alone employed to check the passage of coins on their way to the coin-operating position after the insertion of the first coin. The lever Y may also be operated electrically by placing in the circuit L a magnet, (indicated in dotted lines at Y', Fig. 2,) which shall operate upon an armature, as Z', secured to the lever Y. In this case the projection Y² upon the lower end of lever Y would be omitted. In this construction it is obvious that as soon as the coin closes the circuit L the magnet Y' will be energized and the lever Y actuated to throw the check across the chute.

Instead of locating the check as previously described, it may be located at the upper end of the coin-chute just beneath the coin-slot C', Fig. 4. This check X' may then be actuated by a magnet Y³, located in the circuit L, as just described in connection with magnet Y'. With this construction as soon as a coin has reached its operating position and closed the circuit L the magnet Y³ will be energized and the check X' placed across the chute, thereby preventing the insertion of any more coins. With the check thus located the parts X, Y, and Y² would of course be omitted, also the opening W and apron Z.

Many changes in the form, location, and combination of the features of this invention other than those above suggested may be made without departing from the invention.

We wish it expressly understood that the invention is not limited to the application of the automatically-operating check to a coin-controlled apparatus dependent in any way upon the electrical circuit, since the action of the check in the preferred construction is purely mechanical and may be operated by a coin whether or not the coin operates upon an electric circuit. It is obviously applicable to any purely mechanical coin-controlled device in which the coin on reaching its operative position will be able to force back the

projection V² and thereby cause the check to be thrown across the chute.

What we claim as our invention is—

1. The combination with the inclined circuit-terminal, of the laterally and outwardly swinging plate forming one side of the coin-station and provided with an internal flange forming one edge of said station and cooperating with the inclined edge of the fixed terminal to hold the coin in circuit, and releasing means normally holding the swinging plate in position to receive and hold a coin between it and the fixed terminal.

2. The combination with the coin-chute, having an opening in one wall thereof, of a check hinged at said opening and adapted to swing across the chute, a rocking lever resting at one end against said check and extending at the other into the chute at the coin-operating position, for the purpose set forth.

3. The combination with the coin-chute, of a spring-check movable across the chute, and a counterbalanced lever actuated by an inserted coin to move said check across the chute above the inserted coin.

4. The combination with the coin-chute, of the coin-station at the end thereof, a coin-discharge opening in the side of the chute above said station, a coin-check operable through the wall of the chute opposite said opening, and the check-operating device having a part protruding into the coin-station but removable by an inserted coin and having another part adapted to throw the check across the chute and thereby to effect the discharge of subsequent coins deposited while the coin-station is occupied, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 10th day of July, A. D. 1896.

JOHN JOSEPH FORCE.

CHARLES A. GUNDAKER, JR.

Witnesses:

WM. H. CAPEL,

D. H. DECKER.