

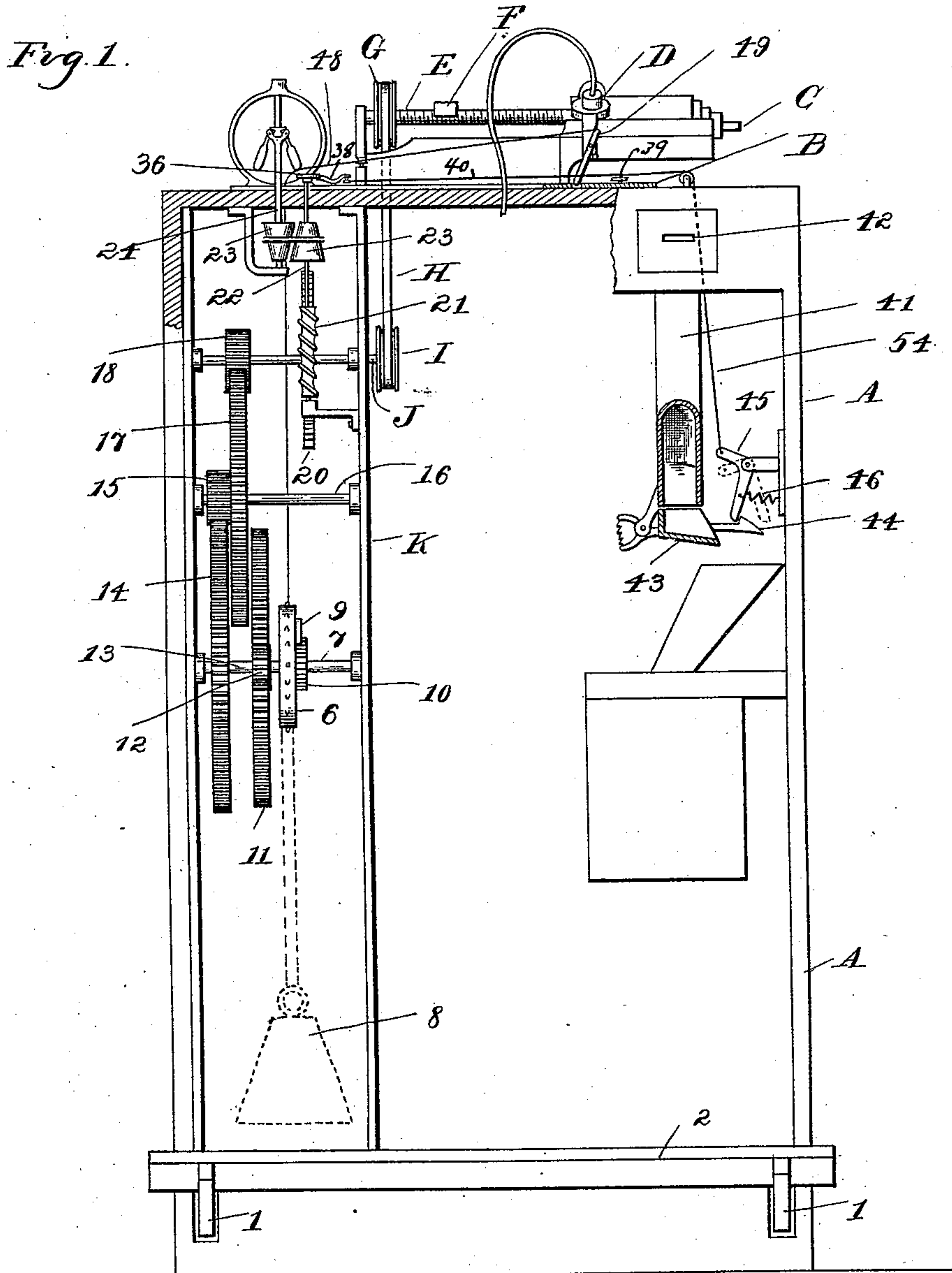
(No Model.)

3 Sheets—Sheet 1.

F. S. CHURCH.
COIN CONTROLLED PHONOGRAPH.

No. 529,019.

Patented Nov. 13, 1894.



Witnesses
A. L. Shobbe
N. L. Lindop

Inventor
Frank S. Church
By Wm. Sprague & Co.
Atty.

(No Model.)

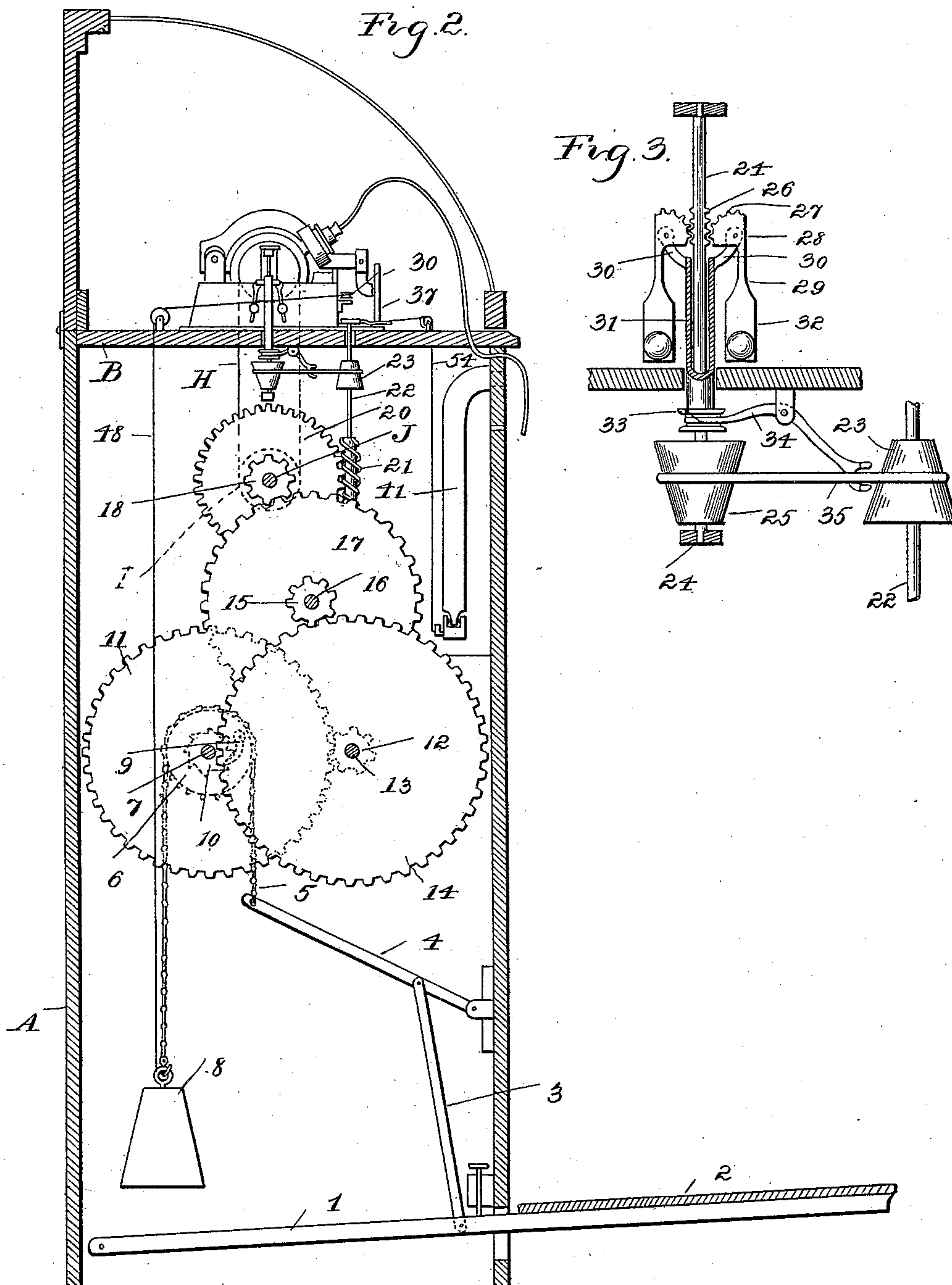
3 Sheets—Sheet 2.

F. S. CHURCH.

COIN CONTROLLED PHONOGRAPH.

No. 529,019.

Patented Nov. 13, 1894.



Witnesses
A. L. Kobbie
M. L. Lindop

Inventor
Frank S. Church
By Woodward & Lothrop Attys.

(No Model.)

3 Sheets—Sheet 3.

F. S. CHURCH.
COIN CONTROLLED PHONOGRAPH.

No. 529,019.

Patented Nov. 13, 1894.

Fig. 1.

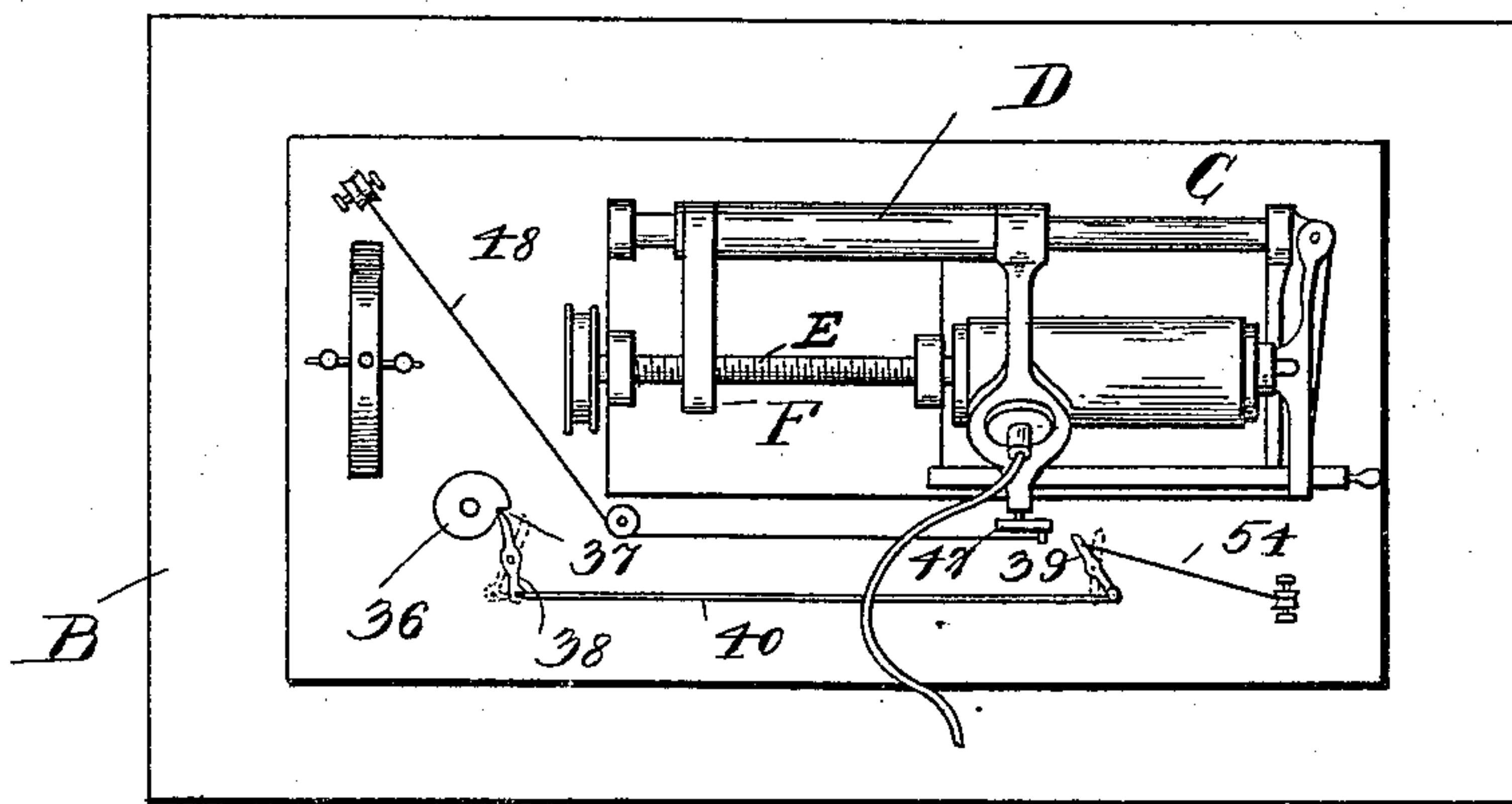
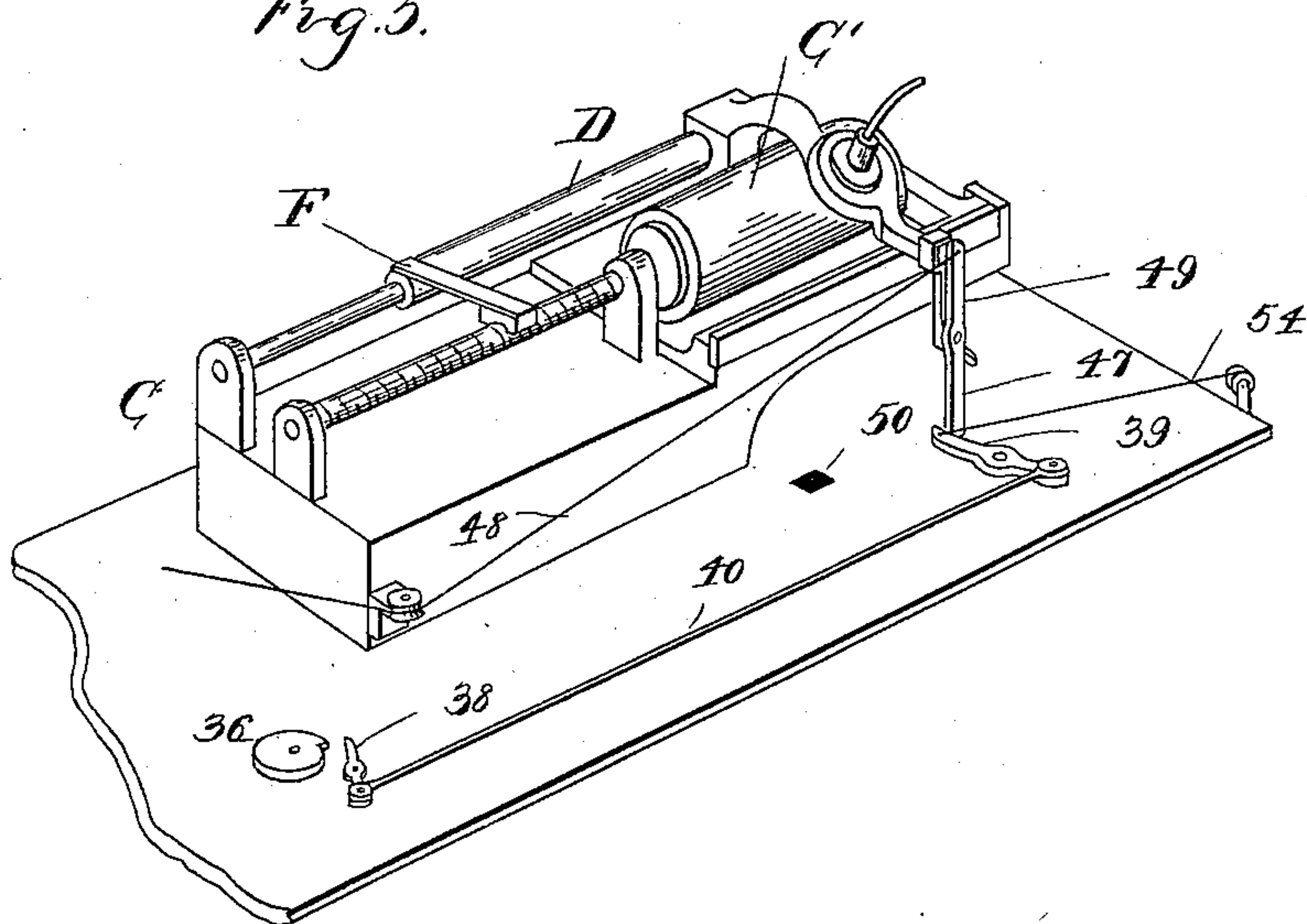


Fig. 5.



Witnesses
A. L. Kabbie

N. L. Lindop

Inventor
Frank S. Church

By *Wm. Sprague & Son*
Attys.

UNITED STATES PATENT OFFICE.

FRANK S. CHURCH, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO
W. FITZ-HUGH EDWARDS, OF SAME PLACE.

COIN-CONTROLLED PHONOGRAPH.

SPECIFICATION forming part of Letters Patent No. 529,019, dated November 13, 1894.

Application filed May 12, 1892. Serial No. 432,732. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. CHURCH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Coin-Controlled Phonographs, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in coin controlled phonographs, and the invention consists in the peculiar construction of a motor which I have shown applied to the operation of a phonograph and designed to be set in motion by the weight of the operator, the motion continuing for a determined length of time dependent upon the downward movement of the platform or lever, upon which the operator stands, and the lock applied at the end of said movements or thereabout whereby the device which is operated cannot be again started except through the intervention of some intermediate mechanism.

In the herein application I have shown the retraction of my device controlled by a coin operated mechanism.

The invention further consists in the peculiar construction, arrangement and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a front elevation of a phonograph cabinet showing the phonograph with my motor applied, the front casing of the cabinet being removed. Fig. 2 is an end elevation thereof, with the end of the casing removed. Fig. 3 is a detail section through the governor. Fig. 4 is a plan view showing the phonograph and the means of applying the lock. Fig. 5 is a perspective view of the parts shown in Fig. 4, in a different position.

A is the supporting frame or cabinet of any desired construction, upon the top B of which is secured a phonograph C of the usual type having the carriage D driven by means of the screw threaded shaft E engaging with the nut F, the shaft E being provided with the grooved pulley G over which a belt H passes, this belt engaging over the grooved pulley I secured upon the shaft J which is journaled in the frame K of my motor.

The motor consists of the operating lever 1, pivoted at the rear of the casing and extending through the front where it is provided with a platform 2, upon which the operator stands, it being intended that his weight shall act through a series of gear wheels governed by an escapement or governor to drive the phonograph cylinder.

The operating lever or platform 1 is connected with the gearing by means of the connecting rod 3, which is pivotally secured to the lever 4 having the sprocket chain 5 attached to its outer end and passing over the sprocket wheel 6, which is sleeved upon the shaft 7 journaled in the frame. To the other end of this sprocket chain I preferably attach a weight 8 to counterbalance the platform 2, and act to reset the phonograph and motor lever.

In the downward movement of the platform 2 motion is transmitted from the sprocket wheel 6 to the shaft 7 by means of the pawl 9 engaging with the ratchet wheel 10 which is secured to that shaft.

11 is a gear wheel also secured to the shaft, meshing with the pinion 12 upon the shaft 13, to which is likewise secured the gear wheel 14 meshing with the pinion 15, on the shaft 16 on which is also the gear wheel 17, which meshes with the pinion 18 on the shaft J to which is secured the worm gear 20 which meshes with the worm 21 upon the shaft 22, this latter being vertically arranged and extending through the top B of the cabinet. It is evident that if motion were imparted by the downward movement of the platform 2 to this train of gears the shaft E would be rapidly driven as long as the platform continues its downward movement and as soon as it reaches the end of the downward movement, the device would stop. As soon as the operator has stepped off the platform, the weight 8 would return it to its initial position ready for another operation.

In order to provide for persons of different weight imparting a different speed to the phonograph, I employ a governor or escapement of some type for regulating the speed of the drive shaft J.

The particular construction of governor which I have herein shown comprises the

worm 21, the vertical shaft 22 and cone pulley 23 upon said shaft, and shaft 24 and cone pulley 25 thereon, this shaft being journaled in stationary bearings and extending above the top B of the cabinet, being provided near its upper end with the circular gear 26, with which the segmental circular racks 27 upon the heads 28 of the governor weights 29 engage. These heads are pivoted upon the arms 30 formed at the upper end of the sleeve 31 which is keyed to the shaft 24. The arms 29 are provided at their outer ends with suitable fans 32. The sleeve 31 at its lower end is provided with a grooved collar 33 in which the bifurcated end of a lever 34 is adapted to engage. This lever at its other end is slotted or bifurcated to embrace a belt 35 stretched between the two cone pulleys, as plainly shown in Fig. 3. The motion being imparted through the mechanism described to the worm 21, will be transmitted through the belt 35 and the cone pulley 25 to the shaft 24, which will carry with it the sleeve 31 and cause the governor arms to be extended more or less toward a vertical line increasing or diminishing the amount of power required to turn the governor. The raising and lowering of these arms will raise or lower the lever 34 which will raise and lower the belt 35 upon the cone pulleys and govern the speed of the shaft 22, which in turn will control the speed of the shaft 18 through the gear wheel 20 and pinion 21. Upon the top of the shaft 22 is secured the disk 36 having the shoulder 37 arranged on one side thereof.

38 is a lever pivoted to the top B of the cabinet in proximity to this wheel and so arranged that it may be moved into or out of the path of the shoulder 37. The lever 38 is connected to the lever 39 by means of the connecting rod 40.

41 is a coin chute of any desired construction in which a coin may be inserted through the slot 42. At the lower end thereof is arranged the spring actuated tray 43 which the coin is adapted to strike in its descent through the chute, lowering the same and releasing the hook 44 from the bell crank 45, which is connected with lever 38, through bar 40, lever 39, and coil 54 whereupon the spring 46 will actuate said crank and through a connecting cord 54 extending from the lever 45 to lever 39 rock the lever 39 and withdraw the lever 38 from the path of the lug 37, and hold it in this position while the motor is operating.

The motor will continue to operate as long as the platform 2 descends, which I will regulate to be equal to the time required to move the carriage D the length of the cylinder C'. During this forward movement of the carriage the finger 47 pivoted at the front of the carriage trails along inclined rearwardly. When the operator steps off the platform and the weight 8 begins to lower, the weight draws the finger to its vertical position, by means of the cord 48 connected to the extension 49

above the pivotal point. In turning to its vertical position, it will lift the forward edge of the carriage and with it the nut F from its drive shaft, allowing the weight in its downward motion to return the carriage to its initial position, riding meanwhile upon the end of the finger as shown in Fig. 5. When the carriage reaches the end in returning the end of the finger enters the aperture 50, allowing the carriage to fall, with the nut F upon the drive shaft. In the return of the carriage the finger strikes the end of the lever 39, and rocks it as shown in Figs. 4 and 5, throwing the lever 38 into locking position in relation to the disk 36—locking that disk and the motor. The rocking of the lever 39 also draws on the cord 54 rocking the lever 45 against the tension of the spring 46, and re-engaging it with the hook 44, so that the machine cannot again be operated except by the insertion of a proper coin. I have shown this lock operated by the return of the phonograph, but it is obvious that it may be done in any other suitable manner, for instance, by the return of the lever 1, or in any other manner after the motor has run the predetermined period due to the arrangement of the length of stroke of the lever 1.

What I claim as my invention is—

1. The combination with a phonograph, of a regulated motor therefor, having an actuated period corresponding to the driving interval of the carriage and automatic means for re-setting it for each actuation, substantially as described.

2. The combination with the phonograph, of a regulated motor therefor having an actuating period corresponding to the driving period of the carriage, an independent automatic re-setting device for the motor, and a re-setting device for the carriage, substantially as described.

3. The combination with a phonograph, of a regulated motor therefor, having an actuating period corresponding to the driving interval of the carriage, an independent automatic re-setting device for the motor, said re-setting device also forming the re-setting device for the carriage, substantially as described.

4. The combination with a phonograph, of a motor therefor, comprising an oscillating platform and a train of gearing actuated therefrom, of a weight for returning the platform to its initial position, and an independent connection from said weight to the phonograph carriage, substantially as and for the purpose described.

5. The combination with a phonograph, of a motor therefor, comprising an oscillating platform, a train of gearing actuated thereby, an automatic governor between the gearing and the phonograph cylinder, a weight for returning the platform to its initial position, and a connection from said weight to the phonograph carriage, substantially as described.

6. The combination with a phonograph, its

carriage and a motor therefor, comprising a train of gearing, a lever forming a platform upon which the operator is adapted to stand, and a winding up connection from said lever 5 to the motor, substantially as described.

7. In a phonograph, the combination with a carriage of a motor for driving it forward and a motor for returning it, of the finger 47 pivoted to the carriage normally held and 10 trailing in an inclined position in the forward movement of the carriage and adapted to be rocked to a vertical position in the return movement, substantially as described.

8. The combination with a phonograph cyl-

inder and its carriage, of a motor for driving 15 it forward and a motor for returning it, of the finger 47 trailing in an inclined position in the forward movement of the carriage and adapted to be rocked to a vertical position in the return movement and a well at the return 20 movement into which said finger drops, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK S. CHURCH.

Witnesses:

M. B. O'DOHERTY,
N. L. LINDOP.