

No. 680,060.

Patented Aug. 6, 1901.

W. H. MILLER.

PLATFORM MOTOR FOR PHONOGRAPHS, &c.

(Application filed Apr. 26, 1898.)

(No Model.)

4 Sheets—Sheet 1.

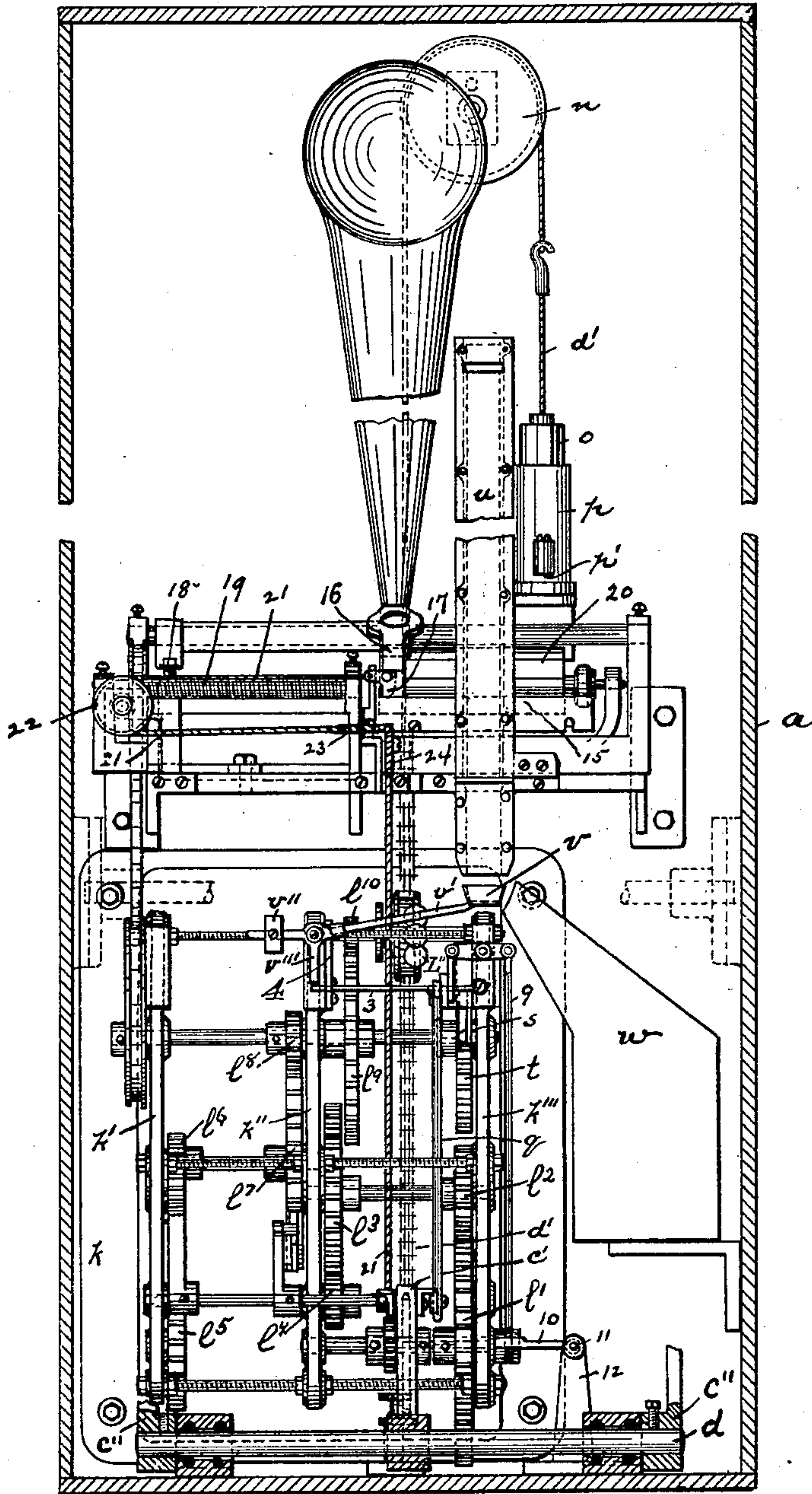


Fig. 1.

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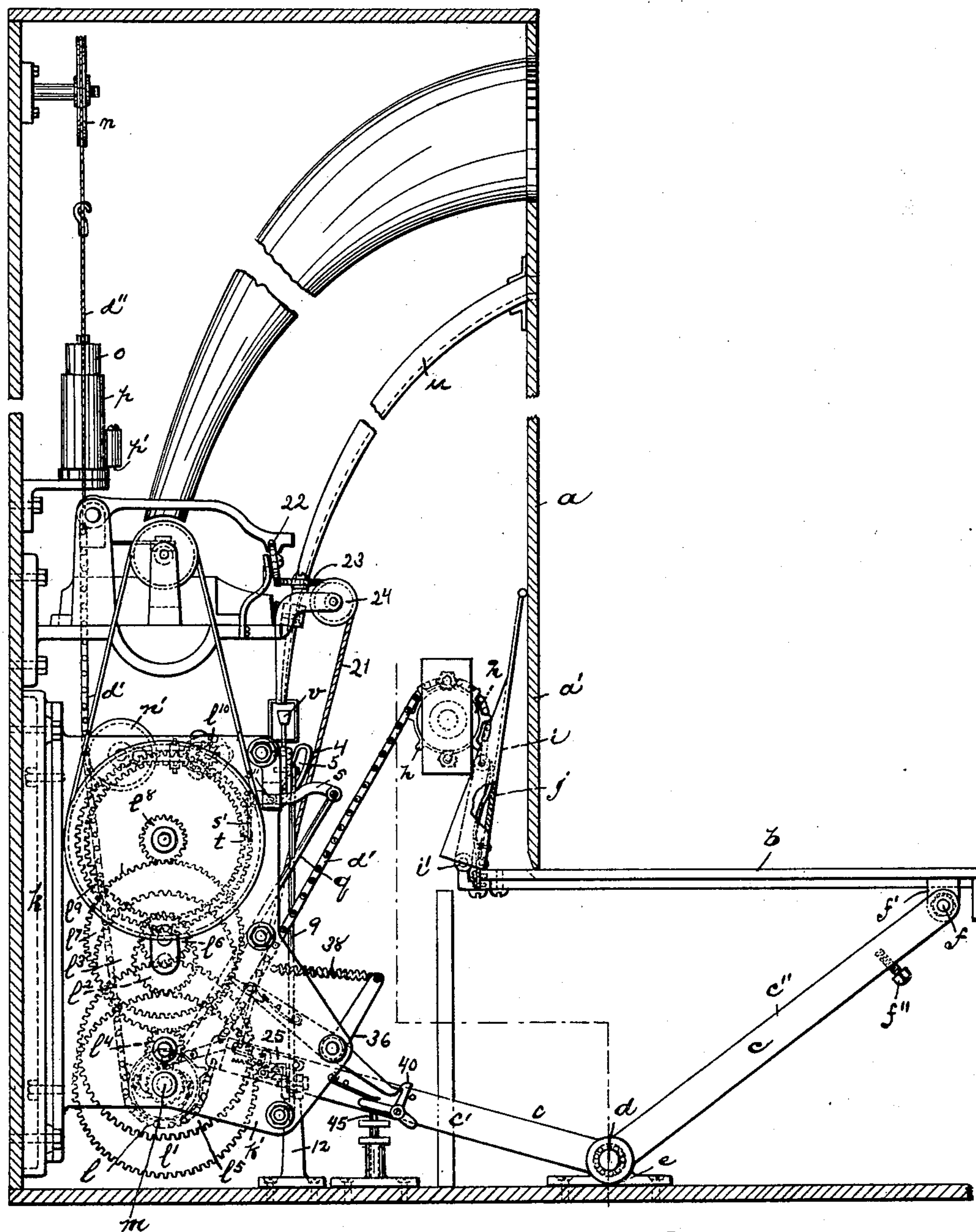


Fig. 2.

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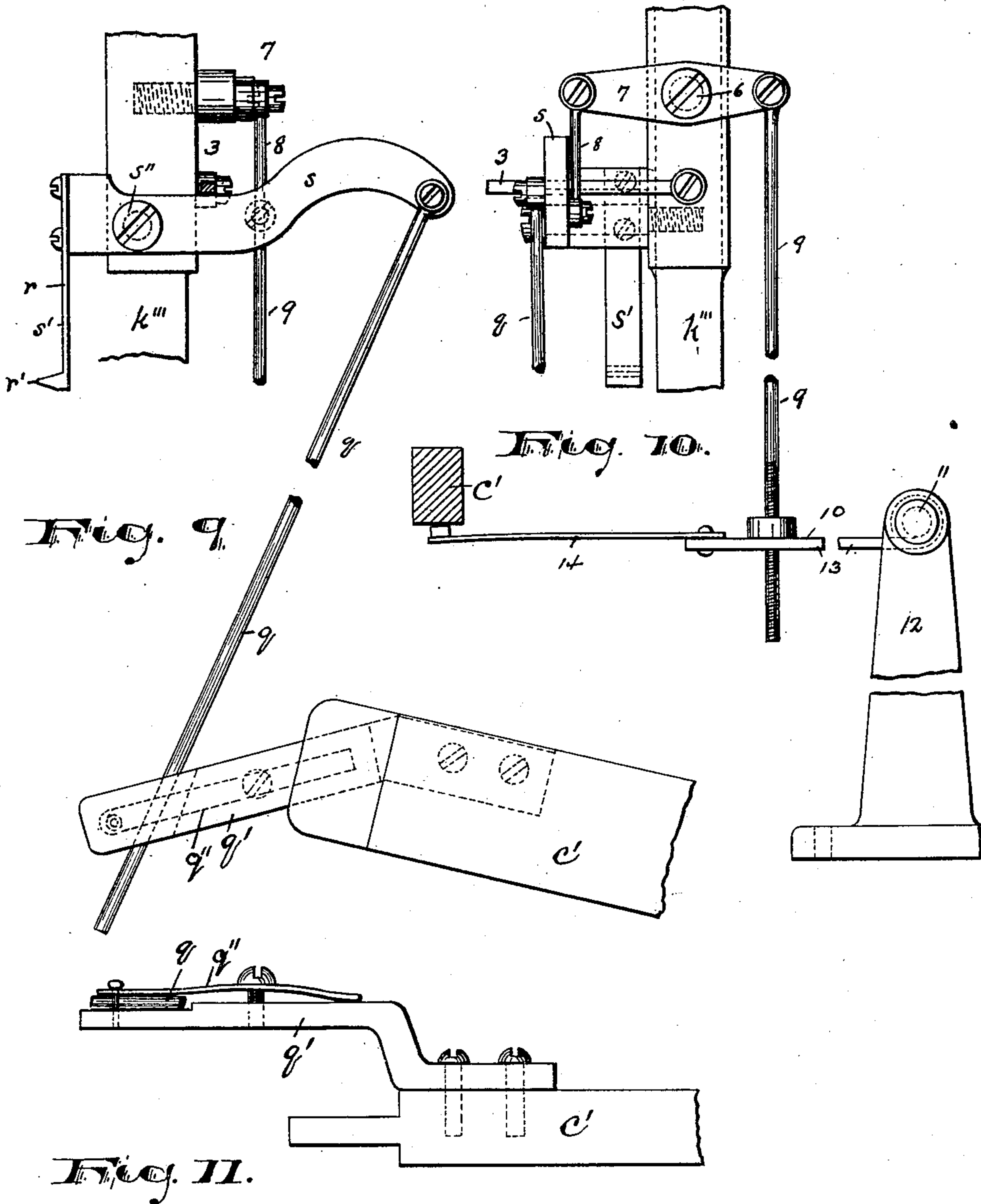
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4 Sheets--Sheet 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WALTER H. MILLER, OF ORANGE, NEW JERSEY.

PLATFORM-MOTOR FOR PHONOGRAPHS, &C.

SPECIFICATION forming part of Letters Patent No. 680,060, dated August 6, 1901.

Application filed April 26, 1898. Serial No. 678,835. (No model.)

To all whom it may concern:

Be it known that I, WALTER H. MILLER, a citizen of the United States, residing at Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Platform-Motors for Phonographs, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

This invention relates to that class of motors in which the weight of the human body is utilized as the motive force.

The improvement is applicable more especially to phonographs, although it may be employed in driving other light machinery.

Some of the objects of the invention are to maintain at a point convenient for the person listening to the music or sound of the phonograph a lever-platform on which to stand while listening, to avoid the change of position in the platform from a horizontal to an inclination, due to a pivotal operation of said platform, and the consequent inconvenience involved in changing the position of the body to accommodate it to the change in the position of said platform.

Other advantages and results may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved motor for phonographs, &c., and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like characters of reference indicate corresponding parts in each of the several views, Figure 1 is a front elevation of my improved motor applied to a phonograph, the front portion of the inclosing case being removed to more fully show the operating mechanism. Fig. 2 is a side elevation of the same. Fig. 3 is a detail side view showing certain rear connections with a platform-supporting lever. Fig. 4 is a detail plan of the same. Figs. 5 and 6 are detail views of a certain

catch or detent lever, and Figs. 7 and 8 are detail views of another lever connected therewith. Fig. 9 is a detail side view of certain holding mechanisms for preventing the train of motor-gearing from operating. Fig. 10 is a front view of certain releasing mechanisms, and Fig. 11 is a plan of the rear end of the platform-lever.

In said drawings, *a* indicates a suitable case having at its lower part an extension which is open at the front to permit the downward movement of a horizontal platform *b*, upon which the person whose weight gives motion to the machine stands while listening to the sound issuing from the phonograph. The said platform *b* is vertically movable while maintaining its horizontal position and has no material pivotal movement by which it would be caused to pitch or incline backward or forward to the inconvenience of the listener. While in the construction shown said platform has a slight forward movement as it lowers, this is not sufficient in degree to be inconvenient, if at all noticeable, and for all practical purposes the movement is vertical and is so denominated herein. The said platform *b* is supported at its forward end by a lever or levers *c*, fulcrumed at *d* upon suitable bearings *e*, formed at the base of the case, the said bearings being preferably provided with balls, by means of which friction is reduced, the ball-bearings being applied in any suitable manner. At its rear end the platform is supported by connections with said lever, as hereinafter described. The lever *c* preferably comprises a shaft, to which are secured three upwardly-inclined arms, of which the forward arms *c''* extend to the front part of the platform *b* near the opposite ends thereof and the rear arm *c'* extends rearward for purposes hereinafter specified. The said lever-arms *c''* are pivoted, as at *f*, to the under side of the said platform. Suitable ears or extensions *f'* are provided to receive the same. A regulating screw or screws *f''* may be employed to limit the downward movement of said arms. The rear edge of the platform lies back of the vertical front face or board *a'* of the case, as indicated in Fig. 2, and is supported by a chain or flexible connection *d* of sufficient strength and little or no extensibility, which is secured to said platform

about midway between the ends thereof and preferably in the vertical plane of the lever-arm c' . Said chain extends upward over an idle pulley h , which may be and preferably is as sprocket-wheel, although this is not essential to the invention. The rear edge of platform is also provided with a shutter i , which is pivoted or hinged, as at i' , to said platform and extends upward behind the front plate or board a' of the case, bearing forward on the inner side thereof, as indicated in Fig. 2, and held against said inner side by springs j . Said door serves to close the opening or aperture formed by the descending platform, supplementing the front plate of the case and preventing the entrance of dust or dirt and improper access to the working parts within. The chain d' and the lever c thus cooperate in holding the platform at a horizontal position and inasmuch as the front and rear arms of the lever are of about equal length the chain at its connection with the platform lowers with the same rate of speed as the forward arm of the lever lowers, and thus the horizontal position of the platform is maintained as it descends under the weight of the listener.

Suitable means are provided within the casing for holding the platform up to its highest position when not properly in use or for preventing the downward movement of said platform prior to its being released by the insertion of a coin, the price of a hearing at the machine, and the release of the holding mechanism. Means are provided for releasing said holding devices and permitting the insertion of the coin into the machine and guiding and controlling its movements to the releasing devices. Within said casing is arranged a bed-plate or frame K , which is preferably removable from the casing, said frame being provided with inwardly-projecting ears or flanges k' k'' k''' , as shown in Figs. 1 and 2, which ears or flanges afford bearings for a series of arbors or shafts and other appliances of a train of mechanism controlled by the downward movements of the platform.

From the idle pulley h , Fig. 2, the chain d' extends downward to the lever-arm c' , and from thence it passes under the sprocket-wheel l , arranged on the arbor m , and imparting motion to said sprocket-wheel and the parts in train therewith. From said sprocket-wheel said chain extends upward and connects with a cord of twisted wire d'' , which latter passes over a pulley n , arranged near the top of the machine, and from thence downward to a weight o for counterbalancing the weight of the platform. Of course it will be understood that the chain can easily be continued over the pulley n and down to the weight.

I prefer to employ an idle pulley n , Fig. 2, when the parts are in the relation shown at a point below the phonograph to press said belt or chain d' back out of engagement or

interference with the phonograph or other working parts, as will be understood.

The weight arranged on the chain d' or cord d'' for counterbalancing the platform b , as described, and securing certain automatic return actions is preferably cushioned in its downward movement by air, a cylinder p being provided to receive the said weight and a small vent-opening p' being formed in said cylinder to permit a slow outflow of air, so that the downward progress of said weight when the platform is free of the weight of the listener is retarded and there will be no sudden movements detrimental to the machine and productive of noise. The air-cushion also prevents the platform from tripping or throwing the auditor as he steps off because of a quick upward action when said platform is relieved of weight.

The actions of the air-cushion and platform when the parts are constructed as described are thus extended over a considerable period of time, beginning immediately upon the stepping off of the listener and continuing during the whole period of descent of the weight and the return of the platform to its elevated position. Thus the raising of the platform is slow and regular and without any jarring action, as above described.

To maintain the desired horizontal position of the platform during its descent, I connect the rear end of the arm c' of the lever c to the lower rear end of the chain d' , as shown in Fig. 2, by which means the chain and the lever are compelled to move together simultaneously and the distance of movement of the chain will be substantially equal to the distance of movement of the forward end of the lever c where it connects to the platform, the arms of said lever being substantially of the same length, as above indicated, or the point of connection of the platform with one arm of the lever and of the chain with the other arm of the lever being of uniform distance from the fulcrumal bearing of the lever, as will be understood. The chain d' in the construction shown is discontinuous at the arm c' or the said arm c' forms one of the links thereof; but it is understood that other means may be employed for extending the chain beyond the lever and for securing the downward movement of the platform while maintaining its horizontal relation other than these specifically described.

It will be understood from the above description that the weight p , acting both on the chain and lever, holds the platform normally in an elevated position. To lock the platform in this elevated position and prevent the machine being worked prior to the insertion of a coin, I provide a detent or stop mechanism of any suitable construction. The construction shown and described is the one I prefer to employ and desire particularly to claim. Said preferred construction includes a stop-bar q for operating a pawl s'

and preventing the working parts from moving. Said bar q is engaged near its lower end by a friction-clip attached to the rear end or arm c' of the lever c , the said bar q extending downward between the spring q'' and the extension q' formed or secured at the rear end of said arm c' , as will be understood upon reference to Figs. 3, 9, and 11. By this construction the arm c' of the lever c is movable independent of the stop-bar q and is capable of clutching and operating said bar q to effect an engagement of the pawl s' with the ratchet-wheel t when said pawl is free to be thus operated.

When the platform lowers and the lever c lifts the bar q longitudinally, the pawl-lever s , Fig. 9, is turned on its fulcrum and the pawl-tooth r' is thrown out of engagement with the ratchet-wheel t . In the reverse movement of the platform the pawl is brought into holding relation with the said ratchet-wheel t with an elastic pressure due to the spring r , Fig. 9, and the devices in train with said ratchet-wheel are prevented from rotation, the friction clip or clutch attached to the lever c is permitted to slide on the bar q , the propelling power overcoming the clutch-friction of the contact, and the said lever c thus continues its movement until the upward-moving platform b arrives at its highest limit of movement. By this construction and arrangement of parts it will be apparent that the machine is locked by the engagement of the locking-pawl with the wheel t of the train of gearing immediately upon the removal of the weight of the listener from the platform and the beginning of the return movement impelled by the weight o . Said platform is returned to its initial position, even though the auditor has not waited to listen to the full complement of music paid for and the speaker of the phonograph has not traversed the full length of the cylinder.

The ratchet or gear wheel t , as above indicated, is in train with the series of gear or cog wheels l' , l^2 , l^3 , to l^{10} , by means of which the motion of the weighted platform and its supporting-chain is transmitted to the phonograph and governor l'' , the wheel or pinion l'' transmitting the power to the governor in any suitable manner. The pawl-lever s , connected to the upper end of the stop-rod q , is fulcrumed at s'' upon the frame of the machine or one of the flanges k''' thereof, and at its end opposite that at which it is pivotally connected to said rod q it is provided with the pawl comprising a spring r and the pawl-tooth r' , Fig. 9, as above mentioned. When said rod q is forced upward by the friction-clip above described, upon the descent of the platform, the said tooth r' will be thrown out of engagement with the wheel t , and the said wheel t and the cog-wheels l' , l^2 , l^3 , &c., above referred to, in train therewith will be free to revolve and to transmit motion from the descending platform to the phonograph or other mechanism to be operated, as will be

understood. The particular arrangement of said cog-wheels may be varied at will.

The lower extremity of the stop-rod q is somewhat reduced in diameter, so that at the initial point of release the friction-clip will not be hard thereon, thus reducing the amount of power required to secure the release of the pawl s' under the weight of the coin. This reduction of the rod is, however, but slight and not observable in the drawings and may be omitted in the construction. To release the stop rod or bar and its pawl from holding engagement with the train of power-transmitting devices, I have employed mechanism controlled by the weight of a coin inserted in the machine as the price of a hearing.

Any releasing device may be employed; but the device preferred I have shown and I will now proceed to describe.

Upon the mounting of the platform by the auditor and the insertion of the coin within the slot of the inclosing case a in any ordinary manner the coin is directed by means of a curved guideway u to a trip-lever v , referring especially to Fig. 1, the point of engagement of said lever by the coin being somewhat cup-shaped to receive the coin from the guideway and after the descent of one arm v' of the trip-lever to direct it into the coin-receptacle w , the downward movements of said arm v' being limited by a suitable stop. (Not shown.) The said lever v is held in a normal position to receive the coin from the slide-way by a weight v'' , Fig. 1, arranged on a third arm of said lever, or a spring may be employed for the same purpose. The arm v''' of said lever v serves as a stop or keeper for another lever 3, loosely fulcrumed at one end, as at 4, upon the forward edge of one of the flanges k''' of the frame. This loose lever 3 crosses the plane of action of the pawl-lever s , so as to lie in contact with the upper edge of the said pawl-lever s , as shown in Fig. 9. Thus when said arm v''' is in holding relation to said lever 3 the latter is held transversely across the plane of action of the lever s and serves as a stop or holding device for the same. The free end of said loose lever 3 is arranged within a guideway 4, Fig. 2, having a slot 5, adapted to contain and guide the said free end of the lever 3. This slot 5 is so formed and related in position to the lever 3 and the arm v''' of the lever v that it will direct or guide the loose lever 3, when released and pushed up by the pawl-lever s , obliquely upward and outward from under the lifted downwardly-extending end of the arm v''' . Conversely, when the loose lever 3 is permitted to gravitate by the downward movement of the rod q and pawl-lever arm connected thereto it will be guided to a position beneath the end of the arm v''' , and thus locked again, all as will be understood.

Upon the frame of the machine, contiguous to the pawl-lever s , is fulcrumed, as at 6, Fig. 10, a walking-beam 7, which is linked by

the rod or link 8 to the pawl-lever *s*. The opposite end of the walking-beam 7 is connected by a rod 9 to a spring-lever 10, fulcrumed at 11 upon a bracket or stud 12, connected to or
 5 formed upon the bottom of the casing of the machine. Said spring-lever comprises, preferably, an arm of rigid metal 13, to which is fastened a flat steel spring 14. The lower extremity of the said rod 8 is threaded and enters
 10 a correspondingly - threaded perforation in the rigid portion 13 of the said spring-lever 10. The spring portion 14 of said spring-lever is held to the rigid portion 13 by any suitable means, and the said spring portion extends forward to a point of engagement with the lever-arm *c'*. When the said arm *c'* is brought to its lowest limit of movement, it engages the end of said spring-arm 10 and depresses the same against the elasticity of the spring portion 14.
 20 The result of this is to cause a tension upon the rod 9, the connecting rod or link 8, and the pawl-lever *s*, which tends to throw the pawl-tooth *r'* from holding engagement with the cog or gear wheel *t*. Said pawl-lever is, however, held from moving by the lever 3 and trip-lever *v*, as above described. As soon as a coin acts upon the trip-lever *v*, thereby releasing the loose lever 3, the spring-lever 10 resumes its normal straight position by virtue of its elasticity, producing a downward draft on the rod 9 and an upward draft on the connecting-rod 8, and thus throwing the pawl-tooth *r'* from engagement with the cog or gear wheel *t* and sliding the stop-rod *q* upward in
 35 relation to the friction-clip against the friction thereof. The weight of the coin thus effects a train of movement by which the pawl-tooth *r'* is withdrawn from holding relation to the train of transmitting gear-wheels as soon as a coin is inserted in the machine and without waiting for the upward movement of the arm *c'* to begin.

To facilitate the starting of the machine, so as to secure a movement more immediate than
 45 the weight of the body alone acting through the train of devices would produce, I have provided a push-pawl 35, Figs. 3 and 4, which is adapted to engage one of the wheels of the train of power-transmitting gearing to facilitate a forward operation thereof. Said push-pawl may engage any one of the said wheels to secure the desired operation. The said push-pawl is hinged at one arm 361 of a bell-crank lever 36, fastened upon a shaft 37, said arm
 55 361 extending to a point adjacent to the cog-wheel and the push-pawl being held in operative position in a straight line with the said arm by a spring 351, which permits the cogs of the wheel to pass said pawl in their forward motion, the said hinge-joint permitting flexion of the pawl in only the one direction from its normal position in straight line with the arm 361. To another arm 362 of the said bell-crank lever 36 is attached a
 65 power-storage spring 38, in which power may be stored as the platform ascends and the lever-arm *c'* descends. To effect this storage

of power, the bell-crank lever 36 has an outwardly - extending third arm 363, and at a suitable point on the lever-arm *c'* is pivoted
 70 a catch-piece 40, hooked at its upper end, as shown in Figs. 3 and 4. Upon the elevation of the lever-arm *c'* to or nearly to its highest point the said catch-piece 40 engages with its upper hooked end the third arm 363 of the
 75 bell-crank lever 36, being held from slipping therefrom by the spring 39 acting on the projection 401 of the catch-piece. It will thus be seen that as the lever-arm *c'* is depressed by the power of the counterbalancing-weight
 80 it pulls down with it the third arm 363 of the bell-crank lever 36, thus turning the said bell-crank lever on its fulcrum and producing a tension in the spring 38. Near the lower limit of movement of the lever-arm *c'*
 85 the said projection 401 strikes an adjustable stop 45, the catch 40 is released from the arm 41 of said lever 36, and the spring 38 becomes free to exert its power upon said bell-crank lever to cause the pawl 35 to push upon the
 90 gear-wheel. This power becomes effective immediately upon the entrance of a coin and the consequent releasing of the machinery, as has been described, and is expended in pushing the gear-wheel of the train to facilitate initial movements.
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By the construction thus described the proposed listener at the machine is enabled to step upon the level platform, insert the coin to release the mechanisms, and immediately
 100 listen to the sound issuing from said machine and during such listening maintain himself in easy position without any inconvenience or disturbance of his equilibrium or poise due to a change in inclination of the platform.
 105

Adjacent to the sprocket-wheel *l*, loose upon the shaft *m*, is a ratchet-wheel 41, keyed to said shaft, said ratchet-wheel being engaged by pawls 42 42, arranged on the side of the sprocket-wheel *l* and which produce rotation
 110 of the shaft and gear-wheels thereon during the upward movement of the lever-arm *c'*, but allow said shaft to remain stationary during the downward movement of the lever-arm, as is common in machinery.
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Having thus described the invention, what I claim as new is—

1. The combination with the horizontal platform, of the lever fulcrumed below said platform and having upwardly - extending
 120 arms, one of which is pivotally connected to the front of said platform and the other extends rearward thereof, an idle pulley arranged above the rear of said platform and a chain connected to the rear of the platform
 125 and extending up therefrom over said pulley and thence to the rearwardly - extending arm of the lever to which latter said chain is connected, substantially as set forth.

2. The combination with the horizontal
 130 platform, of the lever, fulcrumed below said platform and having upwardly - extending arms, one of which is connected to the front of said platform, the other extending rear-

ward thereof, an idle pulley arranged above the rear of the platform and a chain attached to the rear of the platform and extending up therefrom over said pulley and thence to the rearwardly-extending arm of the lever to which it is attached, and a counterbalance-weight and chain, the latter being so attached to the rearwardly-extending arm of the lever as to raise the platform when the weight of the occupant of the platform is removed, substantially as set forth.

3. In a motor, the combination with a horizontal platform, of a lever having upwardly-inclined arms extending toward the front of the platform and rearward thereof and directly connected to the platform at the front, a chain or flexible connection attached to said platform at the rear and supporting said platform thereat, a counterbalance-weight so connected to the lever as to raise the platform, the rear extension of the lever having a friction-spring q'' , a bar q , engaged by said spring, and detent or stop mechanism connected to said bar, substantially as set forth.

4. In a motor, the combination with a horizontal platform, of a lever having arms c' , c'' , one of which is connected to and supports the platform, an idle pulley, a chain or flexible connection connected to the platform and supporting the same at the side or end opposite that supported by said lever, said chain being arranged over the pulley and connected to the other arm of the lever, substantially as set forth.

5. In a motor, the combination with a platform and supporting-lever, of power-transmitting gearing including a sprocket-wheel l , a chain engaging said sprocket-wheel and imparting motion thereto, a counterbalance-weight attached at one end to said chain, the other end of the chain being attached to the platform-supporting lever, the weight being supported in such a manner as to lower one end of said lever to raise the other end supporting said platform, said lever having upwardly-inclined oppositely-extending arms, one of which receives said chain and the other supports the platform, substantially as set forth.

6. In a motor, the combination with a platform, of a train of power-transmitting gearing including a sprocket-wheel, a lever having oppositely-inclined arms, the forward one of which supports the platform, a chain attached to the rearward arm of said lever and extending downward therefrom around the said sprocket-wheel to impart motion thereto, and carrying a counterbalance-weight at its end, the chain also extending beyond its point of attachment to the lever into connection with the platform and supporting the same at the side opposite to that supported by the lever, substantially as set forth.

7. In a motor, the combination with the platform and the train of power-transmitting wheels including a sprocket-wheel l , of a flexible connection having a weight at one end

and connected to the platform at the other, said flexible connection, at points intermediate of said weight and platform being arranged over an idle pulley, under said sprocket-wheel and over a second idle pulley, and means cooperating with said flexible connection in supporting said platform and maintaining the same in a horizontal position as the said platform moves vertically, substantially as set forth.

8. In a motor, the combination with the platform and lever having an arm c' , of a friction-clip attached to said arm, a rod or bar q , arranged in said clip, and detent means operated by said rod, substantially as set forth.

9. In a motor, the combination with the platform and lever operated thereby, of a friction-clip and a detent rod or bar held by said clip, said clip permitting independence of movement between the lever and rod or bar, and detent mechanism engaged by said rod or bar, substantially as set forth.

10. The combination with the platform and lever, c , operated thereby, a train of gearing and connections with the lever for transmitting power therefrom to said gearing, of a friction-spring q'' connected with said lever, a rod or bar q , operated by said lever and spring, a lever s , operated by said rod, and a pawl operated by said lever and adapted to engage one of the train of gear-wheels, substantially as set forth.

11. The combination with a platform and lever, c , of a train of power-transmitting gearing, a friction-clip attached to the lever, a rod or bar in frictional contact with said clip, a lever s , connected to said rod or bar, a pawl s' , connected to said lever s , and adapted to engage the power-transmitting gearing, a walking-beam, rods 8 and 9, one of which connects the lever, s , to said walking-beam, and the other of which rod connects said walking-beam to a lever 10, and said lever 10, adapted to be engaged by the lever c , substantially as and for the purpose set forth.

12. The combination with the motor-gearing, of a detent adapted to engage said gearing and having a downwardly-extending rod or bar, a vertically-movable platform, a lever having one arm connected to said platform and adapted to move therewith, and a friction clutch, or clip adapted to clutch by friction, arranged on the other arm of said lever and engaging the said rod or bar but capable of moving independent thereof, substantially as set forth.

13. The combination of a train of gearing, a lever c having a friction clutch or clip, a detent adapted to engage said gearing, and a bar or rod connected to said detent and engaged by said friction-clip, substantially as set forth.

14. The combination with the train of motor-gearing, of a platform-lever c , having a friction-clip, a pawl adapted to engage the gearing to prevent operation of said gearing,

and a rod *q*, extending into frictional relation to said clip and adapted to operate said pawl, substantially as set forth.

15. The combination with the motor-gearing, of a platform and counterbalance therefor, of a detent to prevent operation of said gearing, a friction device in connection with the platform and adapted to frictionally clutch a part connected to said detent to cause the latter to engage and stop said gearing upon the ascent of the platform, and releasing means adapted to disengage the detent from engagement with the gearing preliminary to the descent of said platform, substantially as set forth.

16. The combination with the motor-gearing, of a platform and a counterbalance therefor, a lever *s*, having a pawl for stopping the operation of the motor, a connecting rod or bar attached to said lever *s*, a lever *c*, having a friction-clip for operating said connecting rod or bar, and means connecting said platform and lever *c*, substantially as set forth.

17. The combination with a moving platform and means for transmitting motion from said platform to the device to be operated, of a friction-clip in connection with the platform, a detent having a rod or bar engaged by said clip, said detent being adapted to engage the said power-transmitting means upon the ascent of the platform, and means for raising said platform, substantially as set forth.

18. The combination with a moving platform and means for transmitting motion from said platform to the device to be operated, of a friction-clip in connection with the platform, a detent adapted to engage the power-transmitting means and having a rod engaging said friction-clip, a locking-lever for said detent, and means for releasing said detent, substantially as set forth.

19. In a motor, the combination with a vertically-movable platform, means for locking said platform in its elevated position and for releasing the same, a lever connected at its forward arm to said platform and operated thereby, and power-transmitting gearing, of a power-storage spring connected to the rear arm of said lever and brought under tension by the ascent of the platform, and means for releasing said spring and transmitting its energy to the said gearing, substantially as set forth.

20. The combination with the power-transmitting gearing, of the platform, lever *c*, push-pawl 35, a crank-lever supporting said pawl, a storage-spring 38, adapted to expend its power upon said gearing directly upon the release of said platform to aid in effecting an immediate operation of the motor upon such release, means for locking the platform in its elevated position and releasing means, substantially as set forth.

21. In a motor, the combination with the platform and its supporting-lever *c*, having an arm *c'*, and a catch 40, attached thereto, of the spring 38, lever 36, and push-pawl, and a bearing 45, adapted to throw said catch 40 from said lever when the lever-arm *c'*, is at or near its lower limit of movement, substantially as set forth.

22. In a motor, the combination with the platform and its supporting-lever and chain and connections, of a train of power-transmitting wheels including the sprocket-wheel *l*, having a ratchet-and-pawl connection, said pawl causing the sprocket-wheel to turn with it during the operation of the motor and to turn freely in the opposite direction, a pushing-lever stationed near said supporting-lever, a catch 40, arranged on said supporting-lever and adapted to engage said pushing-lever, and releasing means adapted to release said catch from the pushing-lever, substantially as set forth.

23. In a motor having a train of power-transmitting gearing, of a movable platform and connections, and a detent or stopping device controlled by said platform, substantially as set forth.

24. In a motor, the combination with the motor transmitting devices, of a moving platform in connection with said transmitting devices, a stop or detent controlled by said platform to effect an engagement of said stop or detent with said transmitting devices to lock the same against movement, and means permitting the rising and falling of said platform, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of November, 1897.

WALTER H. MILLER.

Witnesses:

CHARLES H. PELL,
C. B. PITNEY.