

(No Model.)

M. O. ANTHONY.

AUTOMATIC FEED AND RETURN MECHANISM FOR PHONOGRAPHS.

No. 489,519.

Patented Jan. 10, 1893.

FIG. 1.

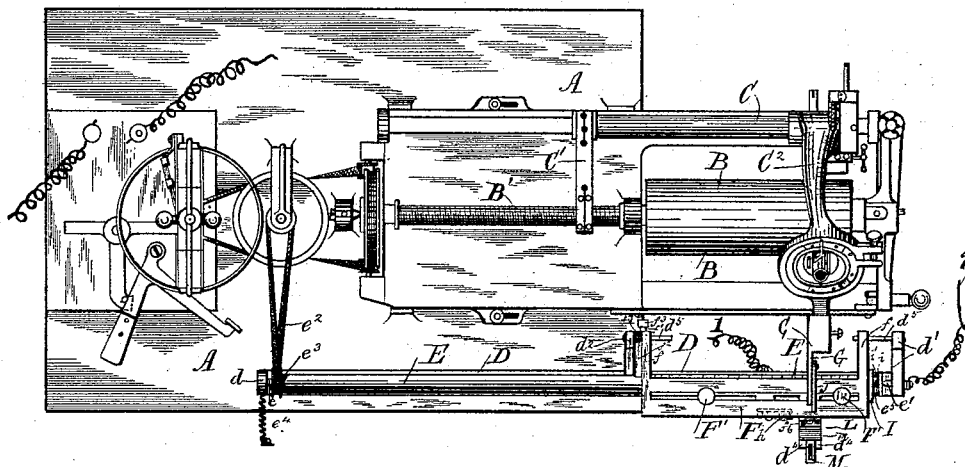


FIG. 3.

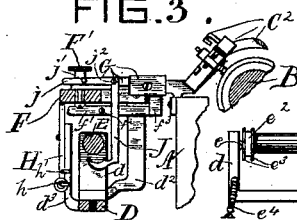


FIG. 2.

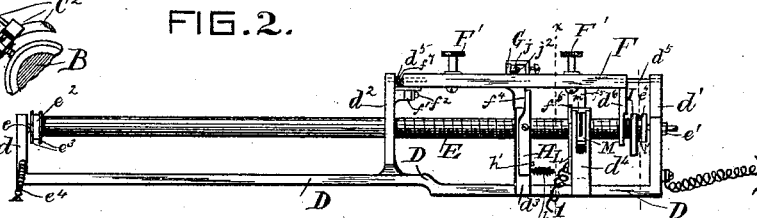


FIG. 4.

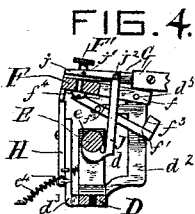


FIG. 5.

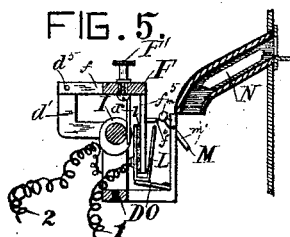


FIG. 6.

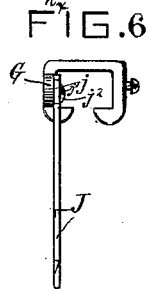
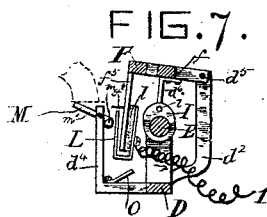


FIG. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

MARCUS O. ANTHONY, OF CINCINNATI, OHIO, ASSIGNOR OF THREE-FIFTHS
TO JAMES L. ANDEM, OF SAME PLACE.

AUTOMATIC FEED AND RETURN MECHANISM FOR PHONOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 489,519, dated January 10, 1893.

Application filed November 20, 1890. Serial No. 372,019. (No model.)

To all whom it may concern:

Be it known that I, MARCUS O. ANTHONY, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Automatic Feed and Return Mechanisms for Phonographs, of which the following is a specification.

The object of my invention is to provide an automatic coin actuated feed and return mechanism for phonographs, whereby the machine may be entirely inclosed and protected from injury either from carelessness ignorance or rough handling, by thoughtless or evil disposed persons. It is especially intended for that class of exhibition machines which are placed in public places to reproduce popular music or declamations for the amusement of those who may drop a coin in a slot in the case inclosing the machine. In instruments of this class now in use, a push rod or lever projects through the case which is connected to the sensitive mechanism within. It is requisite to operate this rod or lever after the coin is dropped in, in order to set the machine in motion. I have found by experience that the handling of this rod or lever by careless or inexperienced persons deranges the sensitive mechanism of the phonograph, frequently injures the phonogram and causes a drawling sound at the commencement, and ending, of the piece upon the phonogram. All of these defects are remedied by my invention, which I will now proceed to describe in detail, in connection with the accompanying drawings, after which I will particularly refer to and point out its novel features in the claims.

Referring to the drawings in which like parts are indicated by similar reference letters and numerals wherever they occur throughout the various views. Figure 1. is a plan view of a phonograph detached from its inclosing case, and provided with my improvements. Fig. 2. is a front elevation of the attachment. Fig. 3. is a transverse vertical section taken through line *x, x*, of Fig. 2, looking to the left, with the parts in position they occupy when the reproducer carriage or spectacle frame is coupled to the lead screw, which is formed upon the shaft of the phonogram carrier. Fig. 4 is a similar view with the carriage or spec-

tacle frame disconnected from the lead screw and coupled to the retracting screw. Fig. 5 is a similar view in the same plane with the parts in position shown in Fig. 3. Fig. 6 is a detail view in front elevation of the device for coupling the carriage to the retracting screw. Fig. 7. is a detail view in vertical section through line *y, y*, of Fig. 2, looking to the left.

In Fig. 1 A represents the plate upon which the body of the well known Edison phonograph is mounted, the phonogram cylinder B, lead screw B', traveling carriage C, the coupling arm C', rocking spectacle frame C², which carries the reproducer, and the mechanism for actuating them as well as the bearings or supports in which they are mounted, are well known and need not therefore be specifically described.

All of my improvements are mounted upon or supported in a standard or frame which is secured by a pivot screw upon the cabinet top in front of the phonograph.

The frame in which my improvements are mounted consists of base bar D, end uprights, *d, d'*, and intermediate uprights *d², d³*, and *d⁴*, all of which are preferably cast in a single piece.

The return screw E, which has a much greater pitch than the lead screw, is mounted on centers *e, e'*, in the end uprights *d, d'*. The screw shaft E, is revolved by a belt *e²*, passing over pulley *e³*, which is secured upon the shaft near one end, and over a pulley driven by the motor which operates the phonograph; the belt is kept tight by a coiled spring *e⁴*, one end of which is secured to the frame D, and the opposite end by a screw to the cabinet top. (Not shown.)

F is a frame swung upon pivot pins *d⁵*, which are secured to the uprights *d', d²*, and pass through the arms of the frame to allow the frame a limited longitudinal movement. The frame is counterpoised by a weighted lever arm *f'*, which is fulcrumed at *f²*, upon the upright *d²*, the inner end of this lever bears upon the under side of the free end of the frame, and the opposite end of the lever is provided with a weight *f³*.

To the front end of the rocking arm C², which carries the reproducer, is detachably secured an arm G, which extends transversely

across the frame F; the frame F, is slotted longitudinally, the screw shanks of the movable stops F', pass through this slot and have tightening screws underneath. Against one of these stops the arm G, strikes as it is carried in one direction by the lead screw B', and against the other one when carried in the opposite direction by the retracting screw E; the frame F, is carried a short distance by the arm G, as it strikes either stop, and by this means the frame C, is automatically coupled to the lead screw and disconnected from the retracting screw when the frame is carried to the left by the arm G, and automatically coupled to the retracting screw and disconnected from the lead screw when the frame F, is carried to the right. This coupling is accomplished by the depression of the free end of the frame in one case and the elevation of it in the other. It is understood of course that the elevation of the frame disconnects the reproducer from the phonogram, and its depression connects the reproducer and phonogram.

The free end of the frame F, is supported in its lower position upon the upper end of the upright d^3 , and in its upper position upon the upper end of the bar H, which is pivoted upon the front edge of the upright d^3 , a foot f^4 , projects down from the frame F, to rest upon the top of the pivoted bar H. In the lower position the rocking frame C, C', C², is uncoupled from the retracting screw and coupled to the lead screw, the reproducer is also in contact with the phonogram. In the upper position the rocking frame is coupled to the retracting screw and uncoupled from the lead screw and phonogram. The arm H, is drawn and held in its vertical position by a coiled spring h , which pulls it against a stop h' .

Upon the reduced right hand end of the screw shaft E, is secured a disk e^4 , and loosely fitted upon this reduced end is a cam I, in proximity to the disk, a pin e^5 projects inward from the side of disk e^4 , and a similar pin i , projects from the adjacent side of the cam, both pins are arranged the same distance from the axis of the screw shaft E so that when the cam is pushed in the direction of the disk it is revolved with the disk by the pin e^5 , striking the pin i . Depending down from the end of the frame D along side of the cam I, is a rigid arm d^6 , which has an offset above the lowest part of the cam when the frame F, is in its lowest position.

Pivoted to one side of the arm G, is a jay, J, which extends down below the retracting screw E, and has a hooked arm to pass under the screw, the upper side of this arm is curved and spirally inclined to engage the screw threads and couple the arm G, to the retracting screw E, when the frame F, is thrown to the upper position. The upper horizontal arm j , of the jay is a spring and is perforated to pass over a pin j' , which projects from the arm G. The purpose of this arrangement is to hold the jay firmly in place

and to permit it to be thrown from under the screw when it is desired to raise the rocking frame C², and arm G, which may be done by drawing out the spring arm j , until it is disconnected from the pin j' , when the jay may be swung around upon its pivot j^2 .

In the position shown in Figs. 2 and 3 the frame F, is depressed, the jay J, disconnected from the retracting screw the arm C', coupled to the lead screw and the reproducer bearing upon the phonogram. The machine is thus in the position it occupies when reproducing the piece upon the phonogram. Now as the spectacle frame C², with arm G, connected to it moves to the right, the arm G, will strike the stop F', and carry the frame F, to the right until the arm d^6 , strikes the cam I, and carries it in the direction of the disk e^4 , by the same movement of the frame F, the upper end of the pivoted bar H, is pressed to the right by the foot f^4 . Now as the disk revolves the cam I, under the offset of the arm d^6 , the free end of the frame is elevated, disconnecting the arm C, from the lead screw and coupling the jay with the retracting screw, so soon as the foot f^4 , is elevated above the top of the bar H, the spring h , draws it back to its vertical position under the foot f^4 , the frame F, is thus held in its upright position until it is moved in the opposite direction which is done by the arm G, carrying it to the left, a sufficient distance to pull the foot off of the bar H, when the frame again drops to the position shown in Figs. 2 and 3. At the same time a spring i' , which is coiled around the shaft E, between the cam I, and the disk e^4 , presses the cam away and disconnects the pins e^5 , and i .

I will now describe the means by which the machine is automatically set in motion, and automatically stopped: From the frame F, a leg f^5 , extends downwardly opposite the standard d^4 , which projects up from the base D, a contact spring L, is secured to one side of this leg, but insulated from it by the plate of fiber l , or other insulating material. The spring extends around the under side of this leg and is inclined upwardly and outwardly from it. In the upper slotted end of the standard d^4 , is journaled a lever M, upon the inner end of which is formed a bar m , which overbalances the long arm m' , of the lever, which carries and holds the bar m , against the standard d^4 , and out of contact with the spring L. The long arm of the lever M, is slotted to receive but not pass a coin, which is dropped into a chute N, the outer end of which extends through the case or cabinet and the inner end of which terminates above and registers with the slot in the lever arm so that when the coin is dropped into the chute it will fall into the slot in the arm m' , depress the lever, and bring its inner end in contact with the spring L, thus closing the circuit through the frame of the attachment. The electric wire 1, connects to the spring L, and the wire 2, connects to the upright d' , the pin f^6 , projects out from

the leg f^5 , to stop the lever in nearly a horizontal position until the frame F, is moved to the left a sufficient distance to draw the pin from over the bar m , of the lever when the weight of the coin throws the long end of the lever down the coin will roll off into a receptacle in the cabinet, when the lever will be returned to its normal position to receive another coin. The movement of the frame to the left also draws the foot f^4 , off from the top of the pivoted bar H, when the free end of the frame drops down and brings the base of the spring L, upon a spring O. This again closes the circuit which remains closed until the arm G, is carried to the right a sufficient distance to engage the stop F' , and carry the frame along with it until the cam I, engages with the leg and elevates the frame F, and breaks the circuit: The contact surfaces are preferably tipped with platinum to prevent injury from "sparking" when contact is made or broken. From the foregoing it will be seen that so soon as the piece upon the phonogram has been given off the frame F, is elevated, the circuit broken, causing the mechanism to stop, the spectacle frame C^2 , uncoupled from the lead screw and coupled to the retracting screw, ready to be returned, and the piece again given off by the introduction of another coin into the chute. The stops F' , F' , are set to correspond to the length of the piece upon the phonogram. To prevent jar when the frame F, is carried to the left by the arm G, I interpose a coiled spring f^7 , around the pin d^5 , between the arm f , and the upright d^2 .

I do not limit myself to the exact construction and arrangement of the parts shown that it is evident that many mere mechanical changes may be made to accomplish the same result. I would therefore have it understood that I shall consider such mere mechanical changes as within the spirit and scope of my invention.

What I claim is.—

1. The combination, with a phonograph having a sliding and rocking carriage with an arm carrying a reproducer and an arm adapted to be engaged with the lead screw when the carriage is depressed, and disconnected from it when the carriage is elevated, of a standard or frame, a carriage retracting screw mounted in said standard, a vibrating frame also mounted in said standard, an arm secured to and extending from the reproducer carriage or spectacle frame over said vibrating frame to be actuated by the vibrating frame, a jay secured to said arm to engage the retracting screw when the arm is elevated, and to be released from it by the depression of the arm, stops secured upon said vibrating frame in the path of the extended arm by which the vibrating frame is moved longitudinally, a support to hold the vibrating frame in its elevated position, a cam actuated by the retracting screw to elevate the vibrating frame upon said support, electrical contacts upon the vibrating frame and the standard, a pivoted le-

ver adapted to receive a coin, and be actuated by said coin to close the circuit and set the phonograph in motion, and the electric wire, one connected to the standard and the other to the vibrating frame and passing thence to the motor whereby the motor is set in motion to retract the carriage, the carriage depressed and carried forward by the lead screw, elevated, the circuit broken, the machine stopped, and again brought into position to be set in motion by an inserted coin, substantially as shown and described.

2. In a phonograph attachment the combination of the standard, the retracting screw and vibrating frame mounted thereon, the arm G, resting upon the vibrating frame and secured to the rocking frame of the phonograph, supports for the vibrating frame in its upper and lower position, means such as shown to elevate the vibrating frame upon its upper support and to throw it therefrom, an open circuit through said support and standard to the phonograph motor when the vibrating frame is elevated, a coin actuated lever to close the circuit and set the machine in motion and return it to its normal position when the coin is discharged substantially as shown and described.

3. In an automatic coin actuated attachment for phonographs the combination substantially as hereinbefore set forth of the frame or standard D, d , d' , d^2 , d^3 , d^4 , the retracting screw E, and vibrating sliding frame F, mounted in said standard, the extension arm G, resting upon said frame, the stops in F' , in said frame in the path of said arm, the coupling jay J, secured to said arm the downwardly extending leg f^5 , the contact spring L, carried by said leg, the electric wire 1 connecting said spring and the motor battery, the pivoted lever M, for closing the circuit through said spring, the electric wire 2, connecting the battery and standard D, the spring contact O, connected to the standard and means such as shown for elevating and depressing the frame F, coupling and uncoupling the lead screw, and retracting screw, automatically by the introduction of a coin.

4. The combination of the standard D, and its connections the electric wire 2, connected to said standard, the vibrating and sliding frame F, carrying the insulated contact spring L, the wire 1, connected to said spring, and the coin actuated lever M, for closing the circuit through the frame and setting the machine in motion, substantially as shown and described.

5. The combination in a phonograph attachment of the vibrating frame for connecting and disconnecting the reproducer from the phonogram, of the lead screw for carrying the frame and reproducer over the phonogram, the retracting screw, arm G, and jay, J, for returning the frame and reproducer when disconnected from the phonogram and lead screw the cam I, and disk e^4 , actuated by the retracting screw to disconnect the frame from

the phonogram and lead screw and couple it to the retracting screw, the supports for the said frame in its upper and lower positions, the electric contact pieces L, O, and coin actuated contact lever M, for closing the circuit and setting the machine in motion.

6. In a phonograph of the character described the combination of the vibrating frame and retracting screw located in front thereof, the arm G, secured to the spectacle frame of the phonograph and extending over the vibrating frame, the coupling jay secured to said arm and having its hooked end extending under the retracting screw to engage said screw when the vibrating frame is elevated and be disengaged from it when the frame is depressed, the stops F', F', to be engaged by the arm G, and move the frame in either direction the contact spring L, connected to the frame the lever M, having the weight or bar m, to hold it normally out of contact with said spring, and slotted arm m', to deliver an inserted coin in the slot in the arm, the contact spring O, connected to the frame D, of the attachment under the spring L, and the electric wires connecting the vibrating frame and frame D, and the phonograph motor whereby the machine is automatically set in motion by the insertion of a coin and automatically stopped and reset for the reception of another coin after the piece on the phonogram has been reproduced substantially as hereinbefore set forth.

7. In an automatic coin actuated attachment for phonographs the means hereinbefore described for making and breaking the electric

circuit, which consists of the vibrating frame F, carrying the terminal L, the standard D, carrying the terminal O, the lever, M, m, m', for closing the circuit through the attachment when the frame is in its elevated position, the chute for delivering the coin on said lever, the said terminals L, and O, arranged one above the other and adapted to be brought in contact by the depression of the frame, combined and arranged substantially as shown and described.

8. The combination in a phonograph attachment of the standard, lead screw, and vibrating frame mounted therein, the spectacle frame, the extension arm G, secured thereon and extending over the vibrating frame; jay J, pivoted upon said arm G, and adapted to be held rigid for the connection with the screw E, or to be swung around on its pivot to escape said screw and permit the spectacle frame and arm G, to be thrown up substantially as shown and described.

9. The combination substantially as hereinbefore set forth of the standard having uprights d', d², and pins d³, projecting from said standards, the vibrating frame F, swung upon said pins, the weighted lever, f', f³, pivoted on standard d², having its unweighted end bearing against the under side of the frame F, to counterpoise it substantially as shown and described.

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Witnesses:

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