

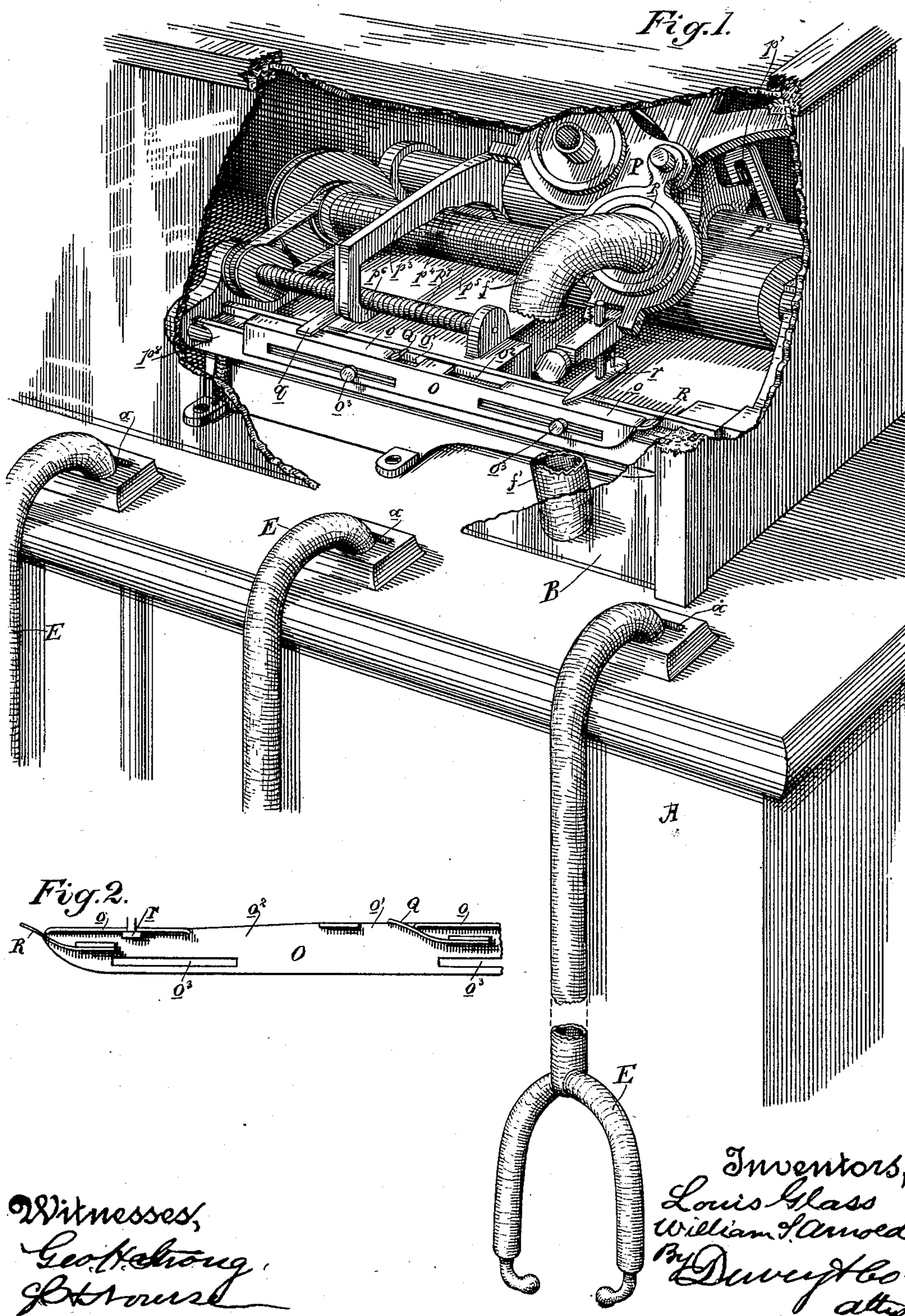
(No Model.)

3 Sheets—Sheet 1.

L. GLASS & W. S. ARNOLD.
COIN ACTUATED ATTACHMENT FOR PHONOGRAPHS.

No. 428,750.

Patented May 27, 1890.



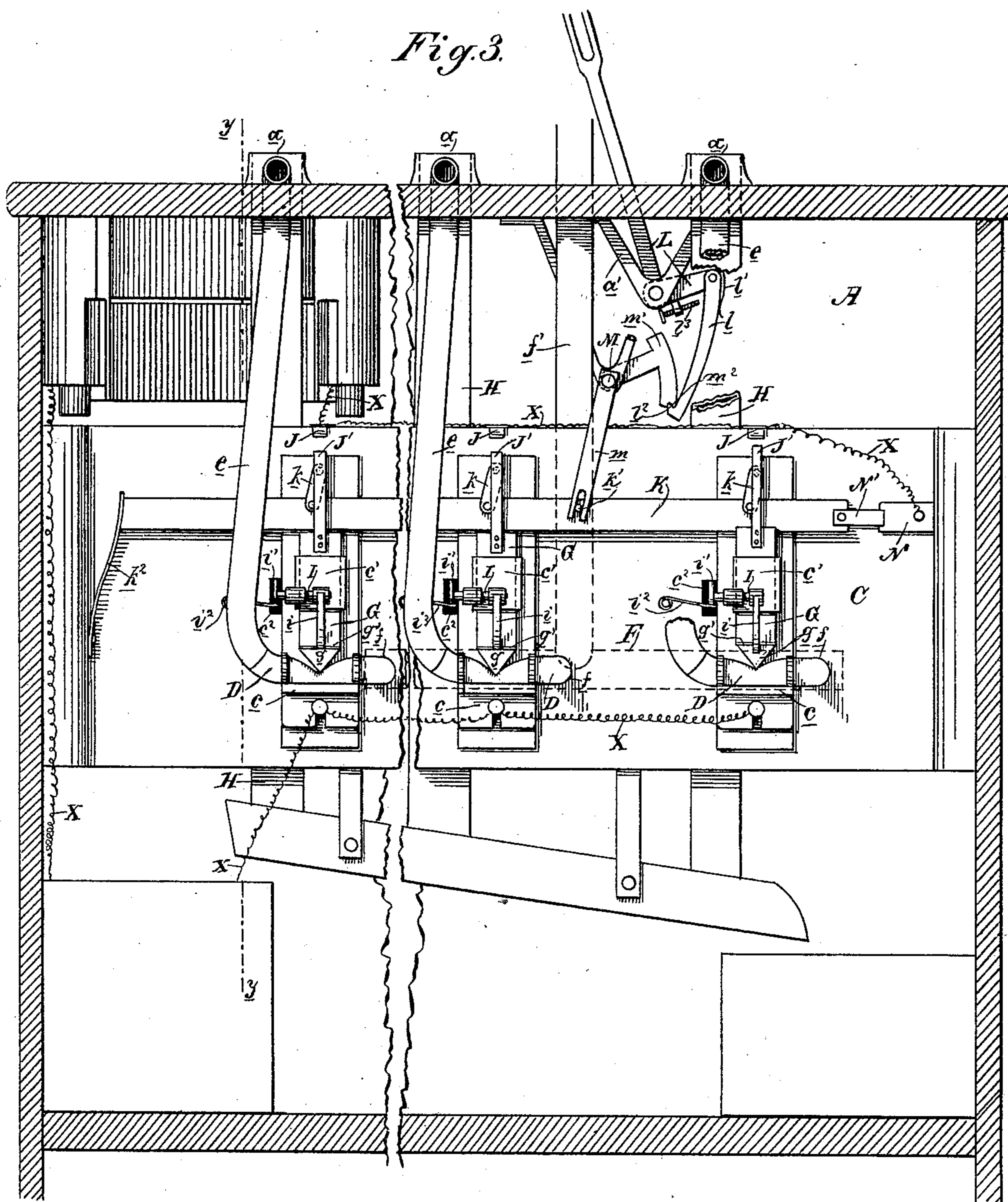
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Witnesses,
Geo. H. Strong
J. H. House

Inventors,
Louis Glass,
William S. Arnold
By Dewey & Co. atty.

(No Model.)

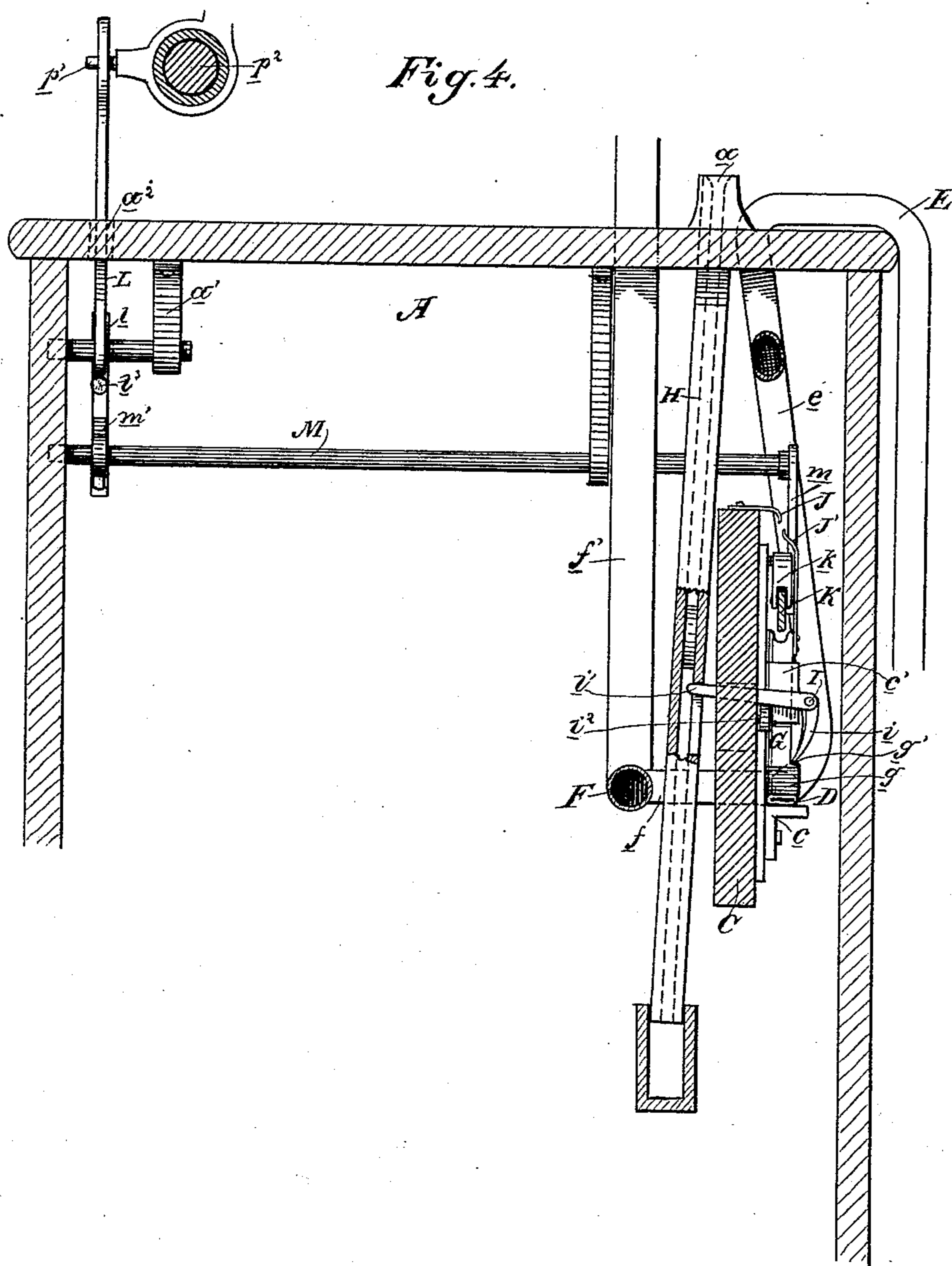
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COIN ACTUATED ATTACHMENT FOR PHONOGRAPHS.

No. 428,750.

Patented May 27, 1890.



Witnesses,
Geo. F. Strong
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UNITED STATES PATENT OFFICE.

LOUIS GLASS AND WILLIAM S. ARNOLD, OF SAN FRANCISCO, CALIFORNIA,
ASSIGNORS TO R. W. SMITH, OF SAME PLACE.

COIN-ACTUATED ATTACHMENT FOR PHONOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 428,750, dated May 27, 1890.

Application filed December 18, 1889. Serial No. 334,196. (No model.)

To all whom it may concern:

Be it known that we, LOUIS GLASS and WILLIAM S. ARNOLD, citizens of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Coin-Actuated Attachments for Phonographs; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates, generally, to the class of devices designed to be operated by a suitable coin deposited properly, and especially to an attachment of this class intended to be operated in connection with a phonograph.

Our invention consists in the novel constructions and combinations hereinafter fully described, and specifically pointed out in the claims.

The object of our invention is to provide a suitable device by which the phonograph may be exhibited and heard by any one upon the deposit of a suitable coin.

Referring to the accompanying drawings for a more complete explanation of our invention, Figure 1 is a perspective view showing the phonograph and immediately adjacent parts. Fig. 2 is a view of the inner side of guide-bar O. Fig. 3 is a front elevation of the operative parts with box A. Fig. 4 is a cross-section on line *y y*, Fig. 3.

A is the main box or casing. Upon its top is a casing B, in which the phonograph (represented generally by P) is contained. Within the box A, and just back of its front wall, is a board or strip C, along the outer face of which at intervals are located the brackets *c*. Upon these brackets are supported and secured the independent flexible tubes D. With one end of each tube is connected the pipe *e*, which extends upwardly through the top of box A, and each pipe has connected with its upper end a hearing-tube E, which is of the usual style and hangs down in front of box A. The other end of the tubes D is carried backwardly through the board C, and each has connected with it a tubular arm *f* of a horizontal main sound-pipe F, which extends along and is supported by the back of board C, so that said pipe F is connected with all the flexible tubes D. From the main pipe F extends upwardly a pipe *f'*, which passes

through the top of the box A and is suitably connected with the spectacle *p* of the phonograph P. Now, therefore, it will be seen that when the phonograph is in operation the sound will be transmitted through pipe *f'*, main pipe F, arms *f*, flexible tubes D, pipes *e*, and hearing-tubes E to the ears of the visitor.

Along the front of board C are secured suitable guide-sockets *c'*, and in these are fitted and adapted to slide up and down the cut-off blocks G, the lower ends *g* of which are pointed, and are adapted to bear normally upon the flexible tubes D, and to so compress said tubes that the passage of sound through them will be obstructed. These blocks G are held down and are tripped by the following mechanism: Along the back of the board C are the several coin-chutes H, the upper ends of which communicate with the several coin-slots *a* in the top of box A. Their lower ends are supposed to communicate with a suitable coin-receptacle within the box.

Pivoted upon each guide-socket *c'* is a rock-shaft I, having on one end a stop-arm *i*, the lower end of which is adapted to drop and bear upon a shoulder *g'* on the cut-off block G, and thereby to hold said block down to compress tube D. The other end of the shaft I carries a trigger-arm *i'*, which projects backwardly through an elongated slot or opening *c''* in board C and enters the coin-chute H, its end within said chute being suitably rounded or beveled to allow the action of the coin upon it, and yet permit the passage of said coin. A spring *i''*, bearing under arm *i'*, returns and holds the parts in normal position, so that the stop-arm *i* will automatically drop into engagement with the shoulder *g'* of the cut-off block G when said block is pressed down. As long as this engagement continues the block is held down; but upon dropping a suitable coin into the passage H through the slot *a*, said coin in its downward course through the chute will come in contact with the projecting end of trigger-arm *i'*, and thereby move said arm. This rocks shaft I and removes its stop-arm *i* from engagement with the shoulder *g'* of block G, and said block, being free, is forced upwardly by the expansion of tube D, due to its own elasticity. Thus the tube D is opened for the passage of sound.

This vertical movement of the cut-off block G is made to subserve another purpose, to wit, the closing of the electric-motor circuit by which the motor is driven and the phonograph set in operation.

It is unnecessary herein to show the motor by which the phonograph is operated, and it is sufficient to say that a motor-circuit, of which X are the wires, is established, having such a course that it is opened and closed by the contact-springs J and J'. The springs J are secured to the face of board C, and the springs J' are secured to and carried by the cut-off blocks G. When the blocks are down to their normal position, the springs J and J' are out of contact and the motor-circuit is open and all the parts are inactive; but upon the upward movement of the block G the spring J' is brought into electrical contact with the spring J, whereby the circuit is closed, the motor driven, and the phonograph set in operation. The operation, therefore, up to this point is as follows: Upon dropping the proper coin into the slot *a* and passage II, the trigger mechanism is affected to relieve the block G, which thereupon rises, opening the tube D, and at the same time closing the motor-circuit, whereby the phonograph is operated, and it can be heard by the visitor who applies to his ears the hearing-tube E.

The object of providing a series of slots *a* and coin-chutes II and the separate parts relating to each is to permit more than one person at a time to hear the phonograph; but it will be observed that the arrangement is such that each person desiring to hear must deposit his coin and cannot take advantage of the generosity of another. This results from the independent tubes D, which, though all are connected with the main pipe F, each has its own hearing-tube E, and each has its own cut-off block G. Therefore, when one visitor deposits his coin and applies the hearing-tube E to his ears, he alone can hear, for his coin operates only the cut-off block of his own hearing-tube connections, the other blocks remaining in normal position and cutting off the other tubes D and their hearing-tubes; but when a second person deposits a coin in another slot he too can hear.

In order to return the cut-off blocks to their normal position and press them down upon the tubes D at the end of the operation, there is a swinging presser-bar K, suspended by pivoted links *k* along the face of the board C. The lower edge of this bar is adapted by the swinging movement to be brought down upon the tops of the cut-off blocks and to force them down on the flexible tubes D. This movement of the bar is accomplished by the following mechanism. Pivoted in a suitable bracket *a'*, under the top of box A, is a bell-crank or bent lever L, the upper arm of which projects through an elongated slot *a*² in the box-top and is slotted over the end of the arm *p'*, projecting rearwardly from the spectacle-frame of the phonograph. Pivoted

to the end of the lower arm of lever L is a pawl *l*, which is controlled by a spring *l'*, and has on its end a small tooth *l*². The lower arm of lever L also carries an adjustable stop-screw *l*³, the point of which is directed against the pawl *l*. Mounted in the box A is a rock-shaft M, one end of which carries a crank *m*, the lower end of which engages a pin *k'* on the presser-bar K. The rock-shaft also carries a rocker-arm *m'*, having a notch *m*² in its end, which is adapted to receive the tooth *l*² of the pawl *l*. Now, as the spectacle-frame of the phonograph moves on its forward course its arm *p'* carries the lever L over with it, and the pawl *l* gradually moves down until at the end of the operation its tooth *l*² engages the notch *m*² of the rocker-arm *m'*. Then as the spectacle-frame and its arm move back again the lever L is returned, and its pawl, holding to its engagement with arm *m'*, rocks shaft M, which movement, through the crank *m* on the end of the shaft, swings the presser-bar K down into contact with the cut-off blocks G, thereby forcing them down upon the flexible tubes D, where they are held by the stop-arm *i* of shaft I; but as said blocks must be relieved of the bar for a repetition of the operation, the stop-screw *l*³ comes into action as follows: The pawl *l*, being pivoted to the lever L, hangs freely therefrom and remains in its engagement by the power of its spring *l'*; but as said pawl is resisted by its engagement, it lags behind sufficiently on its pivot to allow the stop-screw to catch up and come into contact with it, and when this occurs the pawl is forced from its engagement, thereby releasing the rock-shaft M. Thereupon to return the presser-bar K, a spring *k*², attached to one end of the bar, immediately draws it back, and thereby relieves the cut-off blocks. As, however, when the cut-off blocks are pressed down the motor-circuit is broken by the separation of the contact-springs J and J', it follows that some provision must be made for keeping the circuit closed and operative in order to effect the return of the parts. This is effected by the contact-springs N and N', which are let into the circuit. The spring N is on the board C and the spring N' is on the end of the presser-bar K. Now, when the bar is being forced down by the mechanism heretofore described, and thereby causing the separation of the contacts J and J', the contact-spring N' on the end of the bar immediately comes in contact with spring N, thereby keeping the circuit closed, so as to continue the operation to effect the return of the phonograph-spectacle, and the circuit is thus kept closed until it is broken by the retraction of the bar under the power of its spring *k*², whereupon the entire mechanism is inactive.

In order to automatically effect the return of the spectacle of the phonograph, there is the following mechanism: To fully understand this some of the parts of the phonograph will now have to be described. The

spectacle p and its connected parts are mounted pivotally upon the back rod p^2 , so that they can travel on said rod, and also swing sufficiently to be thrown down into contact with or up away from the cylinder, according as they are traveling forwardly or returning. The traveling spectacle-frame carries a nut-arm p^3 , which has a nut at p^4 , which engages the well-known fine-threaded feed-screw p^5 of the main shaft, whereby the parts are fed forwardly. The nut-arm extends across the machine and carries in its outer end the depending return-nut p^6 , which, when the arm is raised, is adapted to come up into engagement with the return-screw p^7 . Along the front of the machine extends the jig-back rail p^8 . These parts are all common to the phonograph. Now, to the front of the jig-back rail p^8 is attached a guide-bar O , having a top flange o , which projects inwardly over the edge of the rail. This flange is broken away in two places to form the openings o' and o^2 . To the innerside of the guide-bar, below its flange and sufficiently separated therefrom to leave a space, is secured a spring Q , the free end of which curves upwardly and projects through and above the opening o' in flange o . A similar spring R is secured to the guide-bar at its first end and projects upward and beyond said end. Projecting outwardly from the return-nut p^6 is a foot q , the point of which is adapted to play above and below the flange o alternately, and secured to the spectacle-frame is a similar foot r , adapted likewise to travel above and below flange o . Now upon the forward travel of the spectacle and the nut-arm the feet q and r both travel under the flange o , for they are then depressed by the spectacle, being in contact with the cylinder and the nut-arm being down, whereby its feed-nut p^4 is in engagement with the feed-screw and its return-nut is out of engagement below the return-screw; but when the limit of forward travel is reached the foot r , moving under the flange o , passes near the end just above spring R , so that as it passes from under the end of the flange o , depressing said spring in so doing, the latter, when the foot is free of the flange, immediately throws the foot up to a plane above the flange, and thereby raises the spectacle out of contact with the cylinder in order to allow it to return without touching it. Immediately after this throwing up of the foot r the foot q is similarly thrown up by the spring Q , through the opening o' , to a plane above the flange o . This throws the nut-arm up, whereby its feed-nut is disengaged and its return-nut is forced to engagement with the return-screw. Thereupon the parts move on their return, the feet r and q traveling above flange o until when the former reaches opening o^2 in the flange and the latter reaches the end of the flange they both drop down again and return the parts to position for forward movement again. The springs Q and R are in the nature of cams, but their action is

quicker. The guide-bar O is adjustably secured to the jig-back rail by means of slots and pins o^3 , whereby its position may be regulated to properly time the action of its springs Q and R . It will be seen that this automatic return of the spectacle may be made use of in other connections than coin-actuated ones—for example, where it is desirable to exhibit a constantly-operating phonograph, one which will repeat itself and serve for advertising purposes. In this connection the automatic return of the spectacle is important and essential.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In coin-actuated machines, the combination, with complementary phonograph mechanism, flexible sound-conveying tubes, and a coin-chute, of mechanism for rendering the phonograph mechanism alternately operative and inoperative, comprising a sliding piece normally compressing the tubes to prevent the passage of sound, a rock-shaft having two arms, one of which projects into the coin-chute and is struck by the passage of the coin, and the other engages the sliding piece, but releases the same when the shaft is rocked by the passage of the coin, substantially as described.

2. In coin-actuated attachments, the combination, with complementary phonograph mechanism having a coin-chute, the flexible tubes D , and the sliding blocks adapted to compress said tubes, of a mechanism for tripping the sliding block, comprising a rock-shaft having an arm engaging and holding the block, and provided with a second arm which projects into the coin-chute in the path of the coin, whereby the sliding block is released by the passage of the coin, and an electric circuit for operating the motor of the phonograph, and a circuit maker and breaker operated by the sliding block.

3. The combination, with complementary phonograph mechanism and a rock-shaft tripped by the passage of a coin, of a sliding block normally held down by an arm on the rock-shaft, an electric-motor circuit for operating the phonograph and contact-points in the circuit, one of said points being carried by the sliding block, whereby it completes the circuit and starts the phonograph mechanism in operation when the sliding block is released by the rock-shaft, substantially as described.

4. In a coin-actuated attachment for phonographs, the combination of the sliding block, the motor-circuit, the contact-spring J thereof, and the contact-spring J' of the block, the coin-chute, the trigger-arm projecting therein and into the path of the coin, the rock-shaft of said arm, and the stop-arm of the rock-shaft engaging and controlling the sliding block, substantially as herein described.

5. In a coin-actuated attachment for phonographs, and in combination with an automatically-operated phonograph, a tube having

communication with the spectacle of the phonograph and an opening and closing device for said tube actuated by a coin, whereby the passage of sound through the tube is allowed and prevented, substantially as described.

6. In a coin-actuated attachment for phonographs, multiple tubes having communication with the phonograph-spectacle, said tubes having each an independent device for opening and closing it to permit and prevent the passage of sound through it, substantially as described.

7. In a coin-actuated attachment for phonographs, multiple tubes having communication with the phonograph-spectacle, said tubes having each an independent device arranged and adapted to be actuated by a coin for opening and closing it to permit and prevent the passage of sound through it, substantially as herein described.

8. In a coin-actuating attachment for phonographs, and in combination with automatically-operated phonograph, multiple tubes having communication with the spectacle of the phonograph, and each having an independent opening and closing device actuated by a coin, substantially as herein described.

9. In coin-actuated attachments, the combination, with complementary phonograph mechanism, of a flexible tube communicating with the spectacle of the phonograph, a vertically-sliding piece adapted to normally compress said tube to prevent the passage of sound through it, a rock-shaft having an arm engaging and holding said sliding piece, and a second arm carried by the rock-shaft and projecting into the coin-chute in the path of the coin, whereby said second arm is tripped and the sliding piece released to permit the passage of sound through the tube D, substantially as described.

10. In a coin-actuated attachment for phonographs, the combination of a series of independent flexible tubes D, communicating with the spectacle of the phonograph, a series of separate hearing-tubes connected each with a flexible tube, a vertically-moving independent piece for each flexible tube, adapted to bear upon and compress said tube, whereby the passage of sound through any or all of said tubes may be prevented, and a mechanism, substantially as described, operated by the passage of the coin for releasing the sliding block, substantially as herein described.

11. In a coin-actuated attachment for phonographs, the combination of a flexible tube communicating with the spectacle of the phonograph, a sliding block adapted to bear upon and compress said tube to prevent the passage of sound through it and to relieve it again, a tripping mechanism operated by the coin for controlling the movement of said block, and a circuit maker and breaker operated by the block for controlling the motor-circuit, substantially as herein described.

12. In a coin-actuated attachment for phonographs, the combination of a flexible tube communicating with the spectacle of the phonograph, a sliding block adapted to bear upon and compress said tube and to relieve it again, the coin-passage, the trigger-arm projecting into the path of the coin, the rock-shaft carrying said arm, and the stop-arm of the rock-shaft engaging and controlling the block, substantially as herein described.

13. In a coin-actuated attachment for phonographs, the combination of a flexible tube communicating with the spectacle of the phonograph, a sliding block adapted to bear upon and compress and relieve said tube, the coin-chute, the trigger-arm projecting into the path of the coin, the rock-shaft carrying said arm, the stop-arm of the shaft for holding and releasing the block, and the contact-springs J J' of the motor-circuit, operated by the sliding block, substantially as herein described.

14. In a coin-actuated attachment for phonographs, the combination of a series of independent flexible tubes D, communicating with the spectacle of the phonograph, a series of separate hearing-tubes connected with the tubes D, a separate sliding block for each tube D, adapted to compress and to relieve it, a series of separate coin-chutes, a tripping mechanism for each coin-passage and block, consisting of a trigger-arm projecting into the path of the coin, a rock-shaft carrying said arm, a stop-arm of the shaft controlling the block, and a series of contacts carried by the sliding blocks for closing and opening the motor-circuit, substantially as herein described.

15. In a coin-actuated attachment for phonographs, the combination, with complementary phonograph mechanism and the tubes D, of the sliding block for controlling the operation of the phonograph mechanism, substantially as specified, for holding and releasing said block, and the swinging presser-bar K for returning said block, substantially as herein described.

16. In a coin-actuated attachment for phonographs, the sliding blocks G, in combination with the swinging presser-bar K for returning said blocks and the means for swinging the bar, consisting of the pivoted lever connected with the traveling portion of the phonograph, the pawl of said lever, the rock-shaft, the rocker-arm of said shaft with which the pawl engages, and the crank-arm of the shaft, connected with the presser-bar, substantially as herein described.

17. In a coin-actuated attachment for phonographs, the sliding blocks G, in combination with the swinging presser-bar for returning them, the means for swinging said bar, consisting of the pivoted lever connected with the traveling part of the phonograph, the spring-controlled pawl pivoted to said lever, the rock-shaft, the crank-arm connecting said shaft with the presser-bar, and the rocker-arm of the shaft with which the pawl

engages, and the stop-screw carried by the lever and adapted to bear against the pawl to break its engagement with the rocker-arm, substantially as herein described.

5 18. In a coin-actuated attachment for phonographs, the pipes D and the sliding blocks G, in combination with the swinging presser-bar connected therewith for returning the blocks, mechanism, substantially as described, 10 for swinging the bar, and the spring of the bar for returning it, substantially as herein described.

15 19. In a coin-actuated attachment for phonographs, the pipes D, the sliding blocks G, and the contacts J and J' for opening and closing the motor-circuit, in combination with the swinging bar connected with the sliding blocks for returning the blocks, whereby the contacts J and J' are separated and the circuit broken between them, and the contacts 20 N and N', operated by the bar for keeping the circuit closed, substantially as herein described.

25 20. In a coin-actuated attachment for phonographs, the flexible tubes D, communicating with the spectacle of the phonograph, the hearing-tubes connected with tubes D, the sliding cut-off blocks for controlling said tubes D, the coin-passages, and tripping mechanism operated by the coin for controlling the 30 blocks, the contacts J and J' of the motor-circuit operated by the blocks, the swinging bar for returning the blocks and the mechanism for swinging said bar, the spring for returning it, and the contacts N and N' of the motor-circuit operated by the bar, substantially 35 as herein described.

21. The guide-flange *o* on the jig-back rail of the phonograph, the foot *q* of the return-

nut adapted to travel below and above said 40 flange, and the spring Q for throwing the foot up above the rail, substantially as and for the purpose herein described.

22. The guide-flange *o*, secured to the jig-back rail of the phonograph, the foot *q* of the 45 return-nut, and the foot *r* of the spectacle-frame, both adapted to travel above and below said flange, and the cams or springs Q and R under said flange for throwing the feet *q* and *r* to a plane above the flange, substan- 50 tially as and for the purpose herein described.

23. In a coin-actuated attachment for phonographs, the combination of the flexible tubes D, communicating with the spectacle 55 of the phonograph, and hearing-tubes connected with tubes D, the sliding blocks for controlling said tubes D, the coin-passages, and tripping mechanism for controlling the blocks, the electric contacts J and J' of the motor-circuit, the swinging presser-bar K and 60 mechanism for operating it, its returning-spring, and contacts N and N' of the motor-circuit, and the means for automatically returning the spectacle, consisting of the guide- 65 bar on the jig-back rail of the phonograph having the top flange *o*, the foot *q* of the return-nut, and the foot *r* of the spectacle-frame, and the cams or springs Q and R of the guide-bar, all arranged and adapted to operate sub- 70 stantially as herein described.

In witness whereof we have hereunto set our hands.

LOUIS GLASS.
WILLIAM S. ARNOLD.

Witnesses:

E. H. THARP,
W. D. WALKER.