

(No Model.)

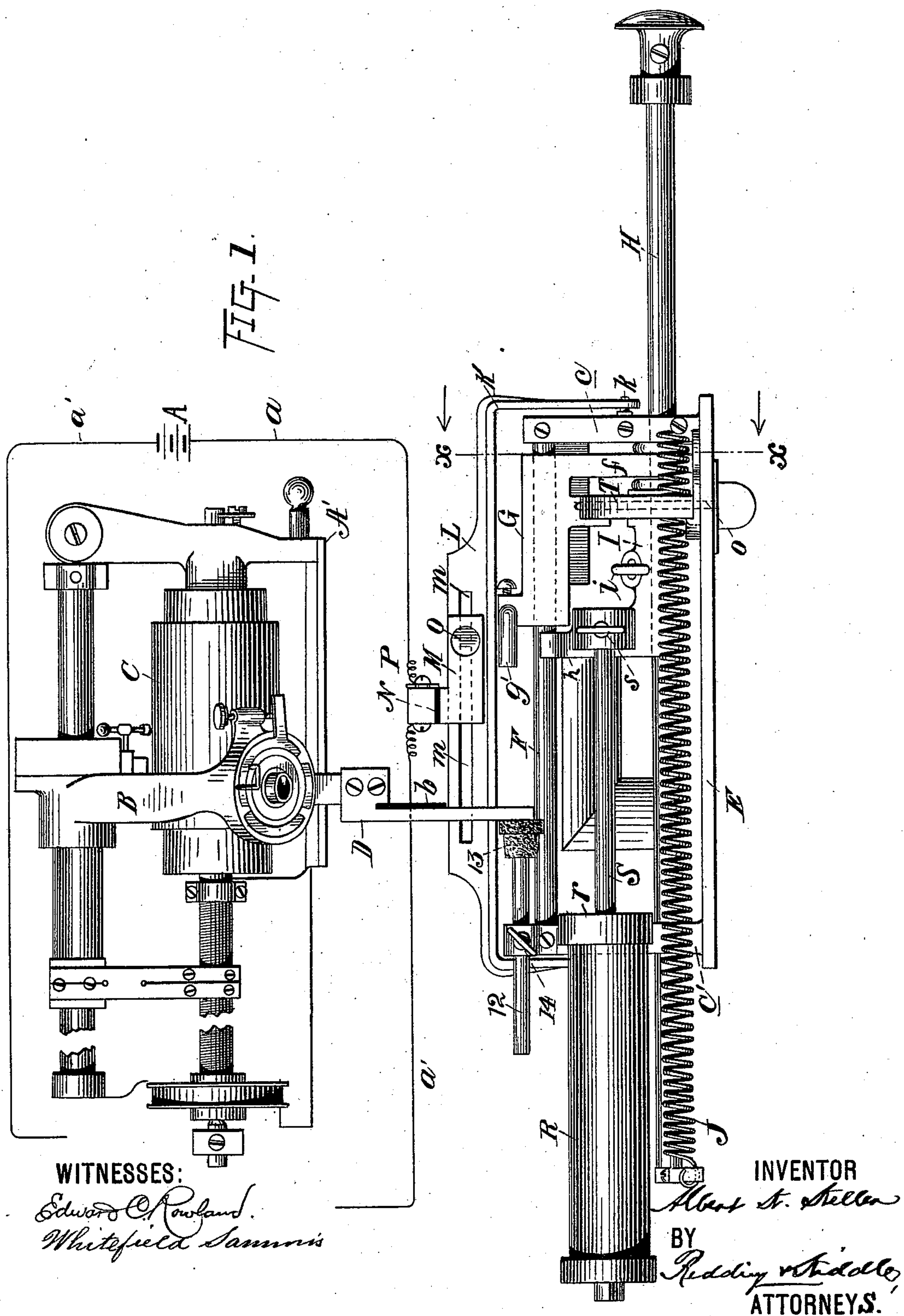
3 Sheets—Sheet 1.

A. K. KELLER.

MACHINE OR ATTACHMENT FOR OPERATING PHONOGRAPHS.

No. 518,192.

Patented Apr. 10, 1894.



(No Model.)

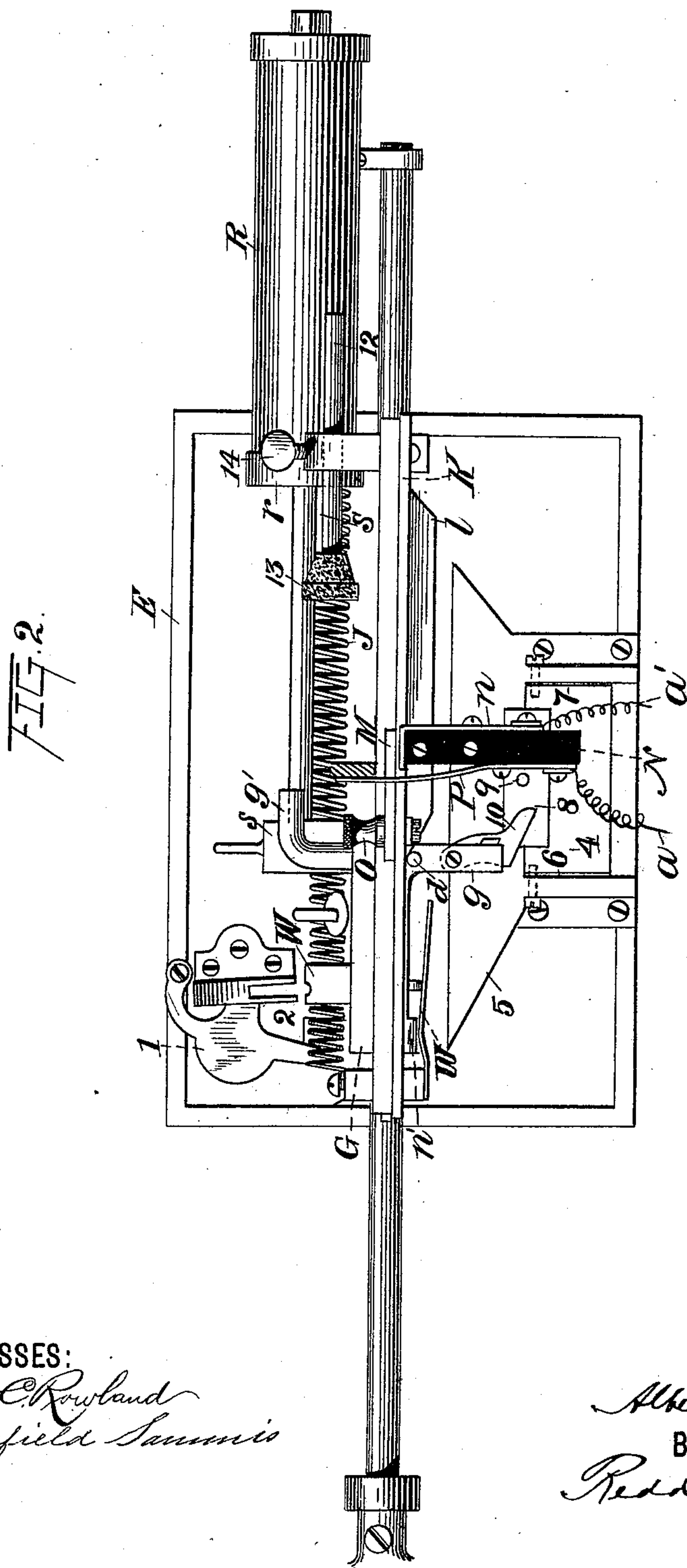
3 Sheets—Sheet 2.

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WITNESSES:

Edward C. Rowland
Whitefield Sammis

INVENTOR

Albert K. Keller

BY

Redding & Thode
ATTORNEYS.

(No Model.)

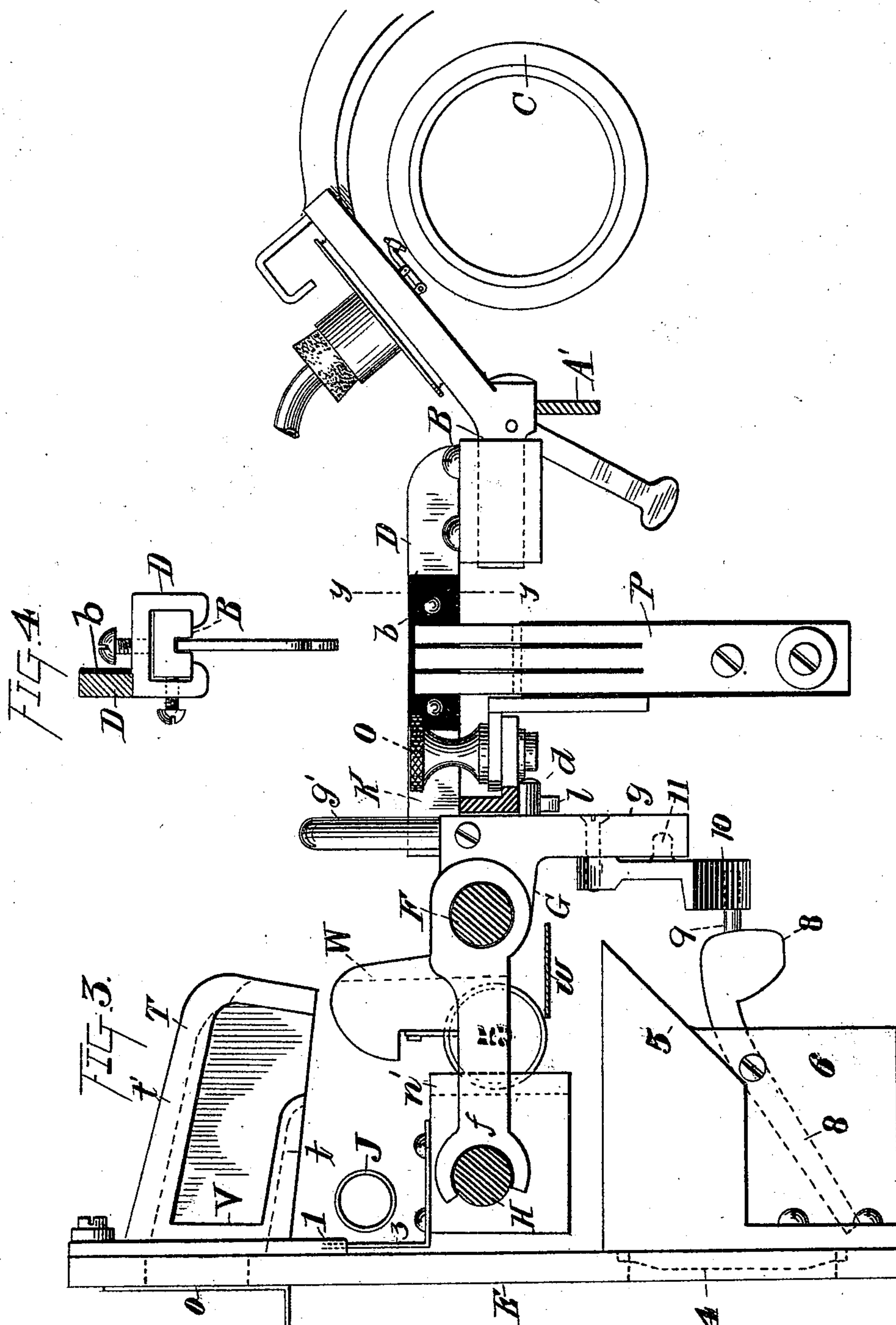
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UNITED STATES PATENT OFFICE.

ALBERT K. KELLER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AUTOMATIC PHONOGRAPH EXHIBITION COMPANY OF NEW YORK.

MACHINE OR ATTACHMENT FOR OPERATING PHONOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 518,192, dated April 10, 1894.

Application filed March 10, 1891. Serial No. 384,477. (No model.)

To all whom it may concern:

Be it known that I, ALBERT K. KELLER, of New York city, in the county and State of New York, have invented certain new and useful
5 Improvements in Machines or Attachments for Operating Phonographs, of which the following is a specification.

My invention relates to machines or attachments for operating or throwing into operation
10 phonographs or talking machines through the medium of a coin and in the accompanying drawings forming a part hereof I have illustrated one form of mechanism embodying my invention which remains inoperative
15 for the purpose desired until after the insertion of a suitable coin; I have also shown a phonograph which is adapted to be operated by an electrically driven motor, not shown, the motor circuit being normally open and adapted
20 to be closed after the coin has been inserted and my invention also consists in the novel features hereinafter set forth and claimed.

Referring to the drawings,—Figure 1 is a top view of a phonograph and of a machine embodying my invention connected therewith
25 showing the manner of attaching such machine with the phonograph and the arrangement of the two machines with relation to each other; it also shows the position of the
30 phonograph arm after a coin has been inserted and the attachment operated, that is, after the phonograph arm has been moved from its normal position (at the end of the phonogram) and carried to the inner end of said
35 phonogram, the motor circuit closed and the phonograph in operation. Fig. 2 is a side view in elevation, looking from the inside or from the phonograph, of a machine embodying my invention the parts shown being in
40 their normal position. Fig. 3 is an end view taken through line $x-x$ of Fig. 1, looking in the direction of the arrows on said figure; and Fig. 4 is a sectional view taken through line
45 $y-y$ of Fig. 3 showing the manner of connecting the attachment to the phonograph.

The style of phonograph or talking machine with which I preferably employ my invention is shown in Fig. 1 and such phonograph is adapted to be operated by an electrically

driven motor, not shown, connected with a source A of electricity by wires $a a'$.

B is the phonograph arm and C the phonogram or recording cylinder upon which have been registered the sounds desired to be reproduced in the manner now well understood; and to this phonograph arm B is attached an arm or extension D (see Fig. 4) which has a piece of insulating material b on one side thereof for purposes to be presently explained. When the phonograph is at rest and the machine for automatically operating the same is in its normal position, that is, before a suitable coin has been inserted, the phonograph arm B is down in contact with the phonogram C or resting on the frame A' of the phonograph at the end of the forward movement of said phonograph arm and the normal position of the parts of a machine embodying my invention is shown in Fig. 2.

E is a metal plates from which extend arms or brackets $c c'$ and to this plate and these brackets forming part thereof are connected the parts and devices comprising the mechanism proper embodying my invention.

F is a guide-rod supported in bearings in the brackets $c c'$ and upon this guide rod travels a cross head or carriage G which is constructed as shown, having at one end a downwardly extending arm g from which project a pin d and an upwardly extending arm or post g' . From the other end of said cross head projects an inwardly extending arm f (see Fig. 3) which extends to and grasps a sliding bar or push rod H and is adapted to move therealong for purposes to be presently explained. To the rod H is attached a cross head or carriage I connected therewith by means of a set screw i and this cross head has an outwardly extending arm h similar to the inwardly extending arm f of the cross head G, the outer end of which arm h extends to and grasps the guide rod F and is adapted to move therealong, and these two cross heads G and I are adapted to be keyed or united by a coin as will be hereinafter explained and when so united comprise a movable coin-carrier. To one end of rod H is attached one end of a spiral spring J, the other end of said

spring being attached to the plate E, (see Fig. 1) and this rod H passes through and is supported by the brackets *cc'* and is adapted to be moved therethrough, and as will be readily understood, when the rod H is forced in, it expands the spring J connected with it and when the rod H is released or the pressure removed, the tension of the spring J will return said rod to its normal position.

To the brackets *c c'*, is connected or pivoted at *k k*, a rocking bar K, or lifting device which is constructed with a downwardly projecting inclined rib *l* which extends for a part of its length only and an outwardly extending rib or flange L which has a slot or guide-way *m* therein and upon this rocking-bar K rests the phonograph arm B, or the extension D thereof, so that when said rocking-bar moves up and down, it will raise and lower said phonograph arm and this rocking-bar K normally rests on the pin *d* on the cross head G (see Fig. 2) and is raised by the pin *d* striking the rib *l* under which rib the pin moves with the cross head G and is lowered when the pin *d*, in returning, passes beyond the rib *l*, as will be readily understood. On this rocking-bar K is connected an adjustable circuit making and breaking device shown in Figs. 2 and 3 which consists of a metal piece M attached to said rocking-bar by means of the screw O which passes through said strip into and through the slot *m* and to this metal piece M is united a block of insulating material N to one side of which is connected a metal strip *n* which is bent over across the top of said insulated material and extends slightly beyond it (see Fig. 2) and to this metal strip runs wire *a'* connecting with the battery and motor. To the other side of said block of insulating material is united a metal forked strip or spring contact P, to which runs wire *a* connecting with said battery and motor and the motor circuit is adapted to be closed when the strips P and *n* make contact, but they are normally kept apart by the phonograph arm B, or the extension D thereof, keeping the circuit open, since the spring-contact P is in direct contact with the insulating piece *b* on the extension D when the phonograph is at rest, as shown in Fig. 2, but when the arm B is moved away the spring-contact P will return itself in contact with the other metal piece *n*, thereby closing the motor circuit. As just stated, this electrical circuit making and breaking device is connected with the rocking-bar K by means of the adjustable screw O which is adapted to move along said slot and may be secured at any point on said rocking-bar according to how much of the record registered upon the phonogram it is desired shall be heard, said device being adapted to be operated by the phonograph arm at any point in its forward travel to break the motor circuit and thereby stop the phonograph. I do not limit myself however, to the use of the circuit making and breaking device shown and de-

scribed, nor is it essential that the circuit making and breaking device should be connected with the rocking bar, since any other suitable device that is adapted to be operated by the phonograph for the purposes set forth may be employed within the spirit of my invention.

Besides the adjustable circuit making and breaking device shown connected with the rocking-bar to regulate how much of the record on the phonogram shall be heard and which is operated by the phonograph arm at any point in its forward travel, I provide an adjustable device (see Fig. 1) consisting of a rod 12 having a head 13 of rubber or other soft material, which rod passes through the bracket *c'* and is adapted to be held at any point by a set screw 14 to regulate how much of the record shall be heard by limiting the backward movement of the phonograph arm and stopping such arm at any point from the inner end of the phonogram or commencement of the record.

In order to prevent the rod H from being pushed in too rapidly or forcibly and thereby injure the parts and throw the phonograph out of adjustment, I employ an air-cushion or other suitable retarding or regulating device (see Figs. 1 and 2) and this consists of an air compression chamber or cylinder R, supported in a bearing *r* secured to the bracket *c'*, and through this air chamber is adapted to work in and out a piston rod S which is connected at one end to an arm *s* which rises from cross head I, attached to the rod H; therefore when rod H is pushed in, it forces the piston rod S into the cylinder R thereby retarding the inward movement of said rod and the parts connected with it and operated thereby.

Before a proper coin is inserted into the machine, the rod H and parts connected with it may be moved in and out without operating the attachment or the phonograph, but when a suitable coin has been inserted into the machine, it locks or keys the cross heads G and I, enabling the attachment to operate and at the same time operate the phonograph as will now be explained.

In plate E there is an opening *o* for the insertion of the coin and the coin chute is connected with this plate (see Fig. 3) so that the coin will pass directly therethrough, preferably edgewise or parallel to the line of travel, and this coin chute is constructed as shown in said figure of an inclined plate T which has a flange or rib *t* on the lower edge extending for only part of its length and another flange or rib *t'* on its upper edge of one side thereof extending along its entire length and down one end and between which ribs the coin travels and the distance between these ribs is adjusted according to the size of the predetermined coin desired to operate the machine; to this plate T over ribs *t* and *t'* is attached another open plate or frame V. These plates and ribs make a chute for the coin, which is

inclined in two directions. It is inclined downward so that the coin will readily roll down the inclined rib *t*, and inclined or tilted sidewise, so that the coin is tilted over against the upper edges of the open plate V. If the coin is below the proper size, it will not reach as high as this edge, and will lop over and fall directly into the bottom of the box instead of passing between and keying the cross heads.

From the cross head G rises an arm W which is milled out from end to end as shown in dotted lines in Fig. 3 and forms a continuation of the coin chute, it being located directly thereunder and the coin passing through said chute will pass into and through said arm and drop on to a short metal piece or plate *w* which projects thereunder (see Fig. 2) and said coin is thereby prevented from dropping into a coin receptacle or hopper (to be hereinafter explained) until it has performed its function, being also held up against lopping over to one side by the guide in said arm W and against lopping over to the other side by a rib *n'* on the cross head I, thus keying these two cross heads together so that when the rod H is then pushed in both cross heads will move together or be forced over to the limit of their inward movement, the coin being prevented from dropping after it has passed the plate *w* only by the pressure against it of the cross heads, but as soon as the cross heads have traveled beyond said plate *w* and the inward pressure removed, as there will be nothing to keep the coin from dropping, it will fall into a coin receptacle as will be readily understood. Of course the coin chute can be arranged to guide the coin on its side instead of edgewise and the cross heads may be locked for the desired purpose by a coin so introduced within the spirit of my invention. To prevent another coin from being inserted into the machine before the rod H has returned, I attach to the plate E a pivoted device or arm 1 which is constructed as shown in Fig. 2 with a lug 2 on one side, which when the cross head I is forced in by rod H, moves in front of the opening *o*, closing said opening and this lug is normally kept away from said opening by a projection 3 attached to the cross head I, with which projection the lower end of said pivoted arm 1 engages.

In order to detect whether or not the coin employed is a genuine coin, since the machine may be operated by a piece of metal if of the proper size, I secure in an opening in the plate E a piece of glass 4 behind which is arranged a pivoted device which retains the coin and holds it to view during the operation of the phonograph and until said device is tripped by the cross head G after another coin has been inserted. The contrivance which I employ for this purpose is as follows: To the plate E is secured a coin receptacle or hopper 5 having downwardly extending sides 6, 7, to which is pivoted a bottom piece 8 (see Fig. 3) and from the upper portion of said

bottom piece projects a pin 9 which is adapted to engage with a trip or pivoted arm 10 attached to one side of and projecting downwardly from the arm *g* on the cross head G and the arm 10 is held against backward movement by a lug 11 thereon which strikes against the arm *g* on cross head G (see Fig. 2). When a coin has been inserted of the proper size and locks the cross heads together to enable them to be moved together as before explained, and said coin has been released and dropped, it will fall into the hopper down on to the lower part of the bottom piece 8 directly in front of the glass, exposing such coin to view, as just set forth, and said bottom piece is tripped or tilted to throw out the coin by the arm 10 on cross head G striking the pin 9 as said cross head travels in its succeeding inward movement and the coin will drop into another coin receptacle or money box, not shown, placed immediately below; the arm 10 in returning will ride over the pin 9 without tilting the pivoted bottom, as will be readily understood.

The operation of the machine is as follows: The normal position of the phonograph arm is, as before stated, at the end of its forward movement or at some intermediate point and preferably down in contact with the phonogram; it must, therefore, be returned to the commencement of the record or phonogram or at some intermediate point and to do so must first be raised lest the needle point mar the record in moving over the phonogram; it is also normally against the spring-contact P keeping the motor circuit open and must therefore be moved away to close the circuit. The phonograph arm may however, if desired, be normally held in a raised position, at the end of its forward movement or at some intermediate point ready to be moved without first raising it and after it has been moved backward to the desired point, lowered and subsequently raised within the spirit of my invention.

As will be understood from the previous description, the rod H and cross head I which is attached to it may be pushed in and out without operating or throwing the phonograph into operation until a proper coin has been inserted into the machine and keys said cross head to the cross head G, which latter cross head is adapted to operate to throw the phonograph into operation; that is, the cross head G constitutes a movable operating device or "driven" part which directly operates to throw the phonograph into operation after the insertion of a suitable coin but which remains normally inoperative or idle for the purposes desired until it is connected with other mechanism or "driving" part which is adapted to operate or move it through the medium of a coin.

Assuming the phonograph arm to be at its normal position, as is the position of the parts of the attachment shown in Fig. 2, a suitable coin is inserted in the opening *o* in the plate

E; it will travel into the coin chute and ride on the rib *t* of the plate T and around its rounded end passing into the guide arm W and drop onto the plate *w* being held up in place by said plate and the guide in arm W and the rib *n'* on the cross head I; thus the two cross heads are keyed together and when the rod H is now pushed in it will move both cross heads, and the post *g'* on the cross head G will strike the phonograph arm B or extension D and carry or shift it over to the desired point. Before however, the post *g'* has reached the phonograph arm, or at the same time, the pin *d* on the said cross head will strike the inclined rib *l* on the rocking-bar K and as said cross head moves along the rocking-bar will be lifted, thereby raising the phonograph arm so that it may be moved to any point of the record without destroying it. The cross heads are moved over until the post *g'* strikes the rod 12 and when the pressure is removed the coin will drop into the hopper 5 onto the lower portion of the bottom piece 8 and be exposed to view through the glass 4 and the spring J will return the cross heads to their normal position ready to be keyed by another coin, meanwhile remaining inoperative to operate the phonograph. The phonograph arm has been left at the commencement of the record or at some desired intermediate point and as the motor circuit was closed by the movement of the phonograph arm away from the circuit making and breaking device as before explained the phonograph will begin to talk since the phonograph arm has been lowered to the phonogram by the lowering of the rocking bar K by the return of the cross head G, since the pin *d* thereof has passed beyond the rib *l* on said rocking-bar, permitting it to lower. The phonograph arm is carried forward by the feed screw and mechanism forming part of the phonograph until it reaches the circuit making and breaking device which it operates to again open the motor circuit and the phonograph ceases to talk or operate until another suitable coin is inserted and the motor circuit closed again as fully set forth.

While I have shown and described my invention as applied to phonographs as the mechanism to be automatically thrown into operation by a machine embodying my invention, yet I do not limit my invention to its use with phonographs or talking machines; nor do I limit my invention to the particular construction of parts and devices, separately or in combination comprising the mechanism shown and described which embodies my invention and which efficiently accomplishes the desired results, not to the use of my invention with talking machines or phonographs *per se* since I use the latter term as a generic term and intend to include thereby, all talking machines such as graphophones and phonograph-graphophones.

I believe that I am the first to conceive and produce the broad fundamental combinations

between a phonograph coin controlled mechanism, and mechanism to shift or raise or lower the reproducer which are necessary to the production of a coin controlled phonograph. And I believe that I am the first to combine such coin controlled mechanism with a phonograph that is operated by an electric motor, and also the first to include the motor in a circuit which can be opened at two points in the operation of the coin controlled phonograph. But I do not claim in this application the broad and fundamental combinations indicated, since these are all claimed in my other application, Serial No. 379,824, filed January 31, 1891, for attachments for operating phonographs, which, in the set of three applications filed by me to cover all my inventions is made the application wherein I have claimed my generic inventions. Nor do I claim broadly in this application the combination of coin controlled mechanism with a phonograph where the operation is that the reproducer is normally in contact with the phonogram at the end of the record, and, when the phonograph is operated in conjunction with the coin controlled mechanism is first lifted off the phonogram, then shifted to the beginning of the record, and then lowered. Nor do I claim such a coin controlled phonograph in combination with a motor for operating it, the circuit of which motor is normally held open by the reproducer at the end of the record. These combinations are claimed broadly in my application, Serial No. 381,404, filed February 14, 1891, which, though specific under the aforesaid broad generic application filed January 31, 1891, is still generic to this present application in respect of the last points enumerated.

It will be observed that in this present application, all of the claims are limited to operating mechanism in which there are two co-operative parts which are keyed by a coin. But without otherwise limiting myself to the exact details of construction shown,

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a phonograph, of a device to raise and lower the reproducer, and means to operate on said device to raise and lower it, said means being constructed in two parts which can be keyed or united by a coin, substantially as and for the purpose set forth.

2. The combination, with a phonograph, of a device to raise and lower the reproducer, and means which can be moved to operate on said device to raise and lower it and at the same time shift the reproducer, said means remaining normally inoperative and constructed in two parts which can be keyed or united by a coin, substantially as and for the purpose set forth.

3. The combination, with a phonograph, of a device to raise and lower the reproducer, a movable cross head or carriage adapted to operate on said device and lower it, and at

the same time shift the reproducer, another movable cross head which can be united to the first cross head by a coin, and means to move said cross heads, substantially as and for the purpose set forth.

4. The combination, with a phonograph, of a device to raise and lower the reproducer, and means to shift said reproducer and raise and lower said device, which means consist of the cross heads G and I which can be keyed together by a coin, and the rod H to move said cross heads, substantially as and for the purpose set forth.

5. The combination, with a phonograph, of a device to raise and lower the reproducer, means to raise and lower said device and shift said reproducer, which means consist of two cross heads which can be keyed together by a coin, and a device to move said cross heads, substantially as and for the purpose set forth.

6. The combination, with a phonograph having its motor circuit normally open, of a device to raise and lower the reproducer, means to operate on said device to raise and lower it, said means being constructed in two parts which can be keyed or united by a coin, and means operated by the phonograph to open and close the motor circuit, substantially as and for the purpose set forth.

7. The combination, with a phonograph having its motor circuit normally open, of a device to raise and lower the reproducer, means to operate on said device to raise and lower it, said means being constructed in two parts which can be keyed or united by a coin, and an adjustable circuit making and breaking device operated by the phonograph to open and close the motor circuit, substantially as and for the purpose set forth.

8. The combination, with a phonograph, of a lifting device to raise and lower the reproducer, an adjustable circuit making and breaking device connected therewith and operated by the phonograph to open and close the motor circuit, and means to operate on said lifting device to raise and lower it, said means being constructed in two parts which can be keyed or united by a coin, substantially as and for the purpose set forth.

9. The combination, with a phonograph, of a lifting device to raise and lower the reproducer, an adjustable circuit making and breaking device connected therewith and operated by the phonograph to open and close the motor circuit, means to operate on said lifting device to raise and lower it and at the same time shift the reproducer, said means remaining normally inoperative and being constructed of two parts which can be keyed by a coin, substantially as and for the purpose set forth.

10. The combination, with a phonograph, of a device to raise and lower the reproducer, a movable coin carrier to operate on said device to raise and lower it, said carrier remaining normally inoperative and being constructed in two parts which can be united or keyed

by a coin, and means to move said coin carrier, substantially as and for the purpose set forth.

11. The combination, with a phonograph having its motor circuit normally open, of a device to raise and lower the reproducer, a movable coin carrier to operate on said device to raise and lower it, said coin carrier remaining normally inoperative, and being constructed in two parts which can be united or keyed by a coin, means to move said coin carrier, and means operated by the phonograph to open and close the motor circuit, substantially as described.

12. The combination, with a phonograph, of a raising means for the reproducer, shifting means for the said reproducer, which shifting means remains normally inoperative, and means which can be connected to said shifting means by a coin, substantially as described.

13. The combination, with a phonograph, of raising means for the reproducer, shifting means for said reproducer, which shifting means remains normally inoperative, means which can be connected to said shifting means by a coin, and lowering means for the reproducer, substantially as described.

14. The combination, with a phonograph, of raising means for the reproducer, a shifting device for said reproducer, which shifting device remains normally inoperative, driving means which can be connected with said shifting device to operate it by means of a coin, and means to operate said driving means, substantially as described.

15. The combination, with a phonograph, operated by a motor, of means operated by the phonograph to open and close the motor circuit, a shifting device for the reproducer, which shifting device remains normally inoperative, driving means which can be connected to said shifting device by means of a coin, and means to move said driving means, substantially as described.

16. The combination, with a phonograph, operated by a motor, of means operated by the phonograph to open and close said motor circuit, raising means for the reproducer, a shifting device for the reproducer, which shifting device remains normally inoperative, driving means which can be connected to said shifting device by means of a coin, and means to move said driving means, substantially as described.

17. The combination, with a phonograph, of a device to raise and lower the reproducer, means to operate on said device to raise and lower it and shift said reproducer, which means consist of the cross head G, constructed as shown and described, having the post g' and the pin d connected therewith, and the cross head I, constructed as shown and described, which can be keyed to the cross head G by a coin, and a rod H to move said cross heads, substantially as and for the purpose set forth.

18. In a coin controlled mechanism, the combination of the rod H, spring J, cross head I, cross head G, and guide rod F, all constructed and arranged to operate after the insertion of a coin, substantially as and for the purpose set forth.

19. In a coin controlled mechanism, the combination of a rod H, spring J, cross head I, cross head G, guide rod F, cylinder R, and piston rod S, all constructed and arranged to operate after the insertion of a coin, substantially as and for the purpose set forth.

20. The combination, with a phonograph, of a device to raise and lower the reproducer, a rod H, spring J, cross head I, cross head G, and guide rod F, all constructed and arranged to operate after the insertion of a coin, substantially as and for the purpose set forth.

21. The combination, with the phonograph arm, of the extension D of said arm, rocking bar K, cross head G, cross head I, guide rod F, rod H, and spring J, all constructed and arranged to operate after the insertion of a coin, substantially as and for the purpose set forth.

22. In a coin controlled mechanism, the combination of the rod H, spring J, cross head I, cross head G, guide rod F and plate W, all constructed and arranged to operate after the insertion of a coin, substantially as described.

23. In a coin controlled mechanism, the combination with the cross head I and rib *n* thereof, of the coin chute having opening *o* and

pivoted arm 1 and lug 2, all arranged substantially as and for the purpose set forth.

24. In a coin controlled mechanism, the combination of two movable cross heads to be keyed by a coin, a coin chute composed of the plate T and frame V, the arm or projection W, plate *w*, and rod H, all constructed and arranged to operate substantially as and for the purpose set forth.

25. In a coin controlled mechanism, the combination with two movable members to receive the coin and to be keyed thereby, a coin receptacle, having a pivoted bottom, to receive the coin upon its release from the movable members, and a means actuated by one of the movable members to tilt the said bottom, substantially as described.

26. In a coin controlled device, the combination with a coin controlled locking device to receive the coin, a receptacle, having a pivoted bottom, to receive the coin upon its discharge from the said device, and means for tilting the said pivoted bottom, the movement of the said means being controlled by the said device, substantially as described.

In testimony whereof I have signed my name to this specification the 23d day of February, A. D. 1891.

ALBERT K. KELLER.

In presence of—

GEO. W. AYERS,
ALEX. MAHLEY.