(No Model.) 4 Sheets—Sheet 1.

A. K. KELLER.

MACHINE FOR OPERATING PHONOGRAPHS.

No. 518,191. Patented Apr. 10, 1894.

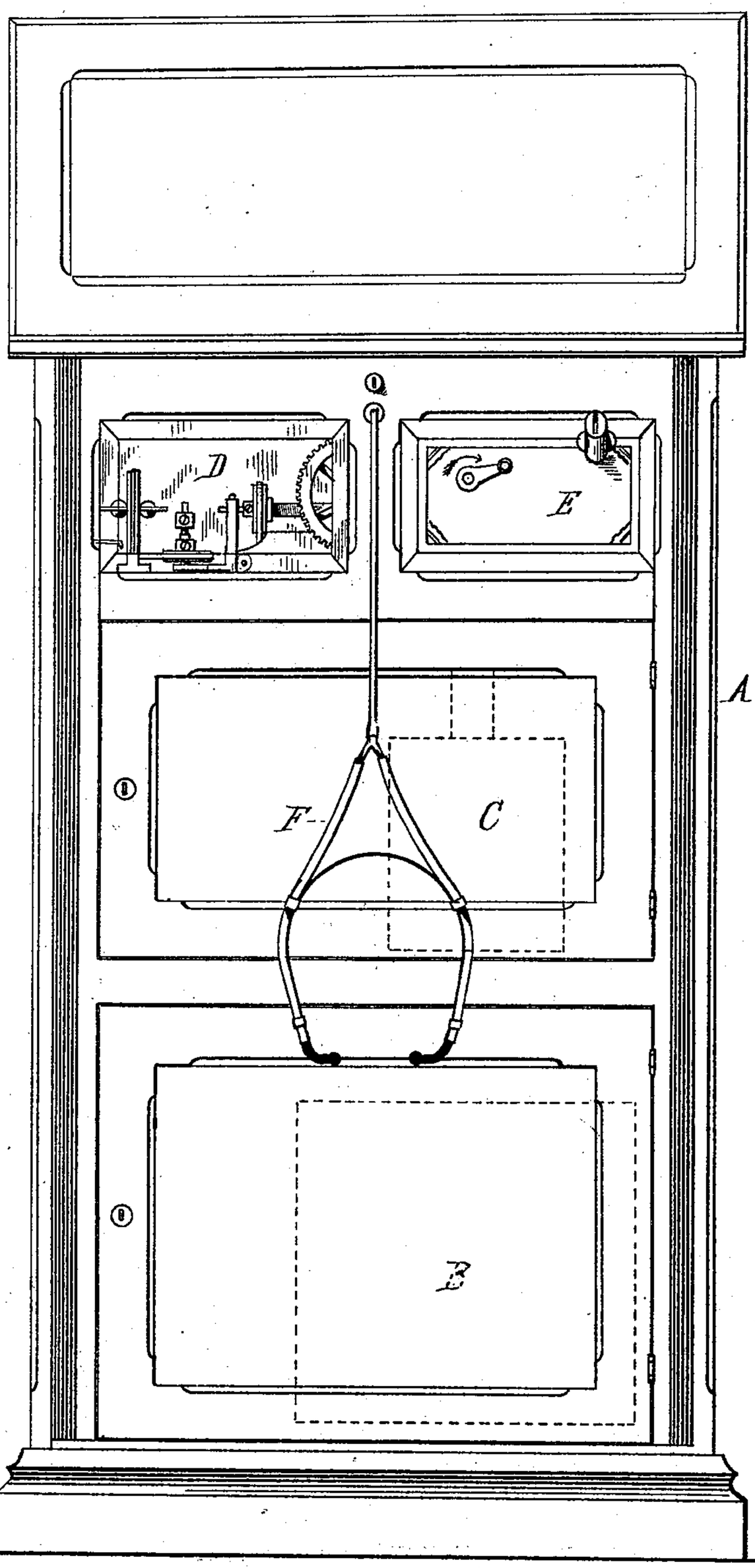

Fig. 1.

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A. K. KELLER.

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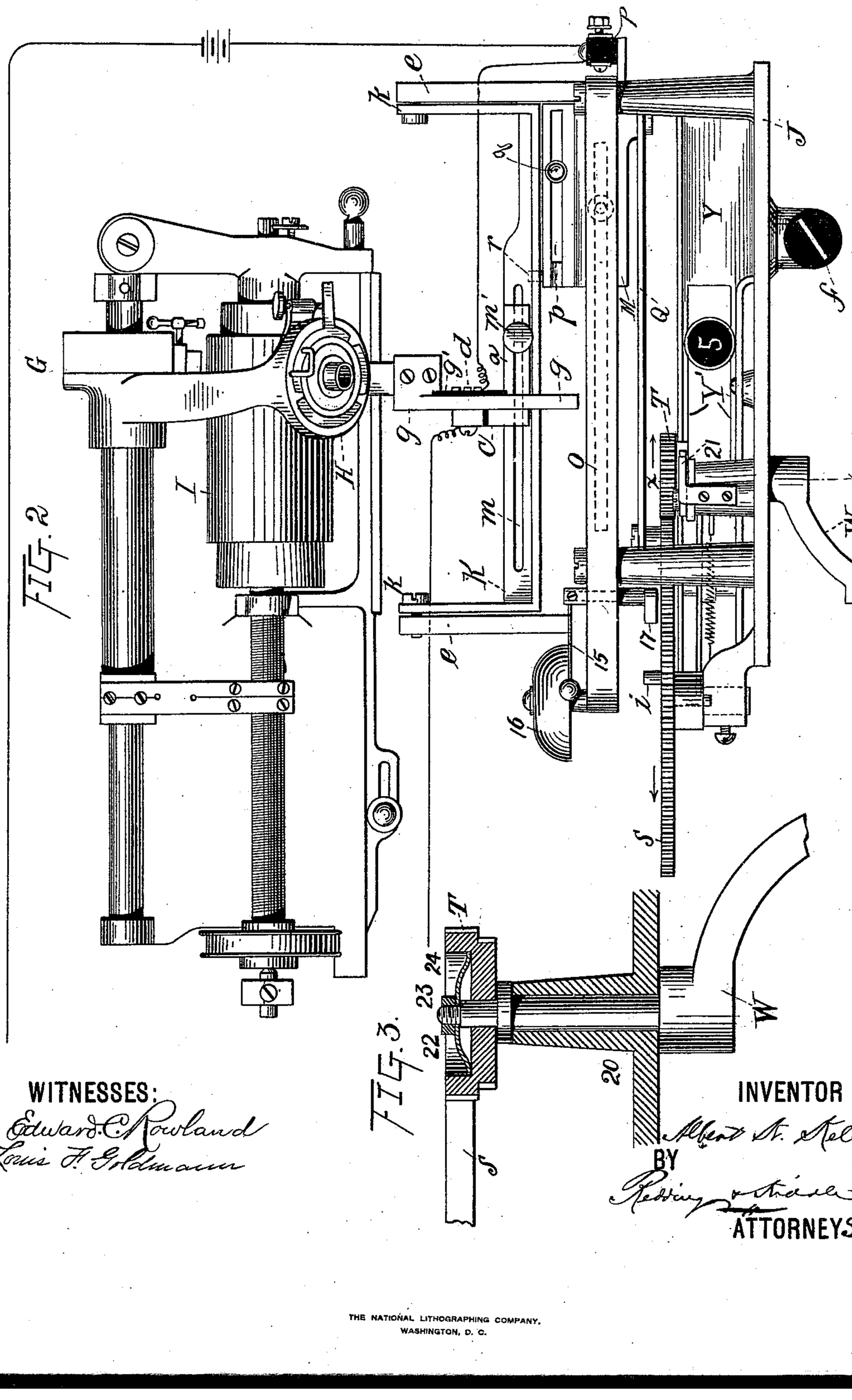

FIG. 2

FIG. 3.

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MACHINE FOR OPERATING PHONOGRAPHS.

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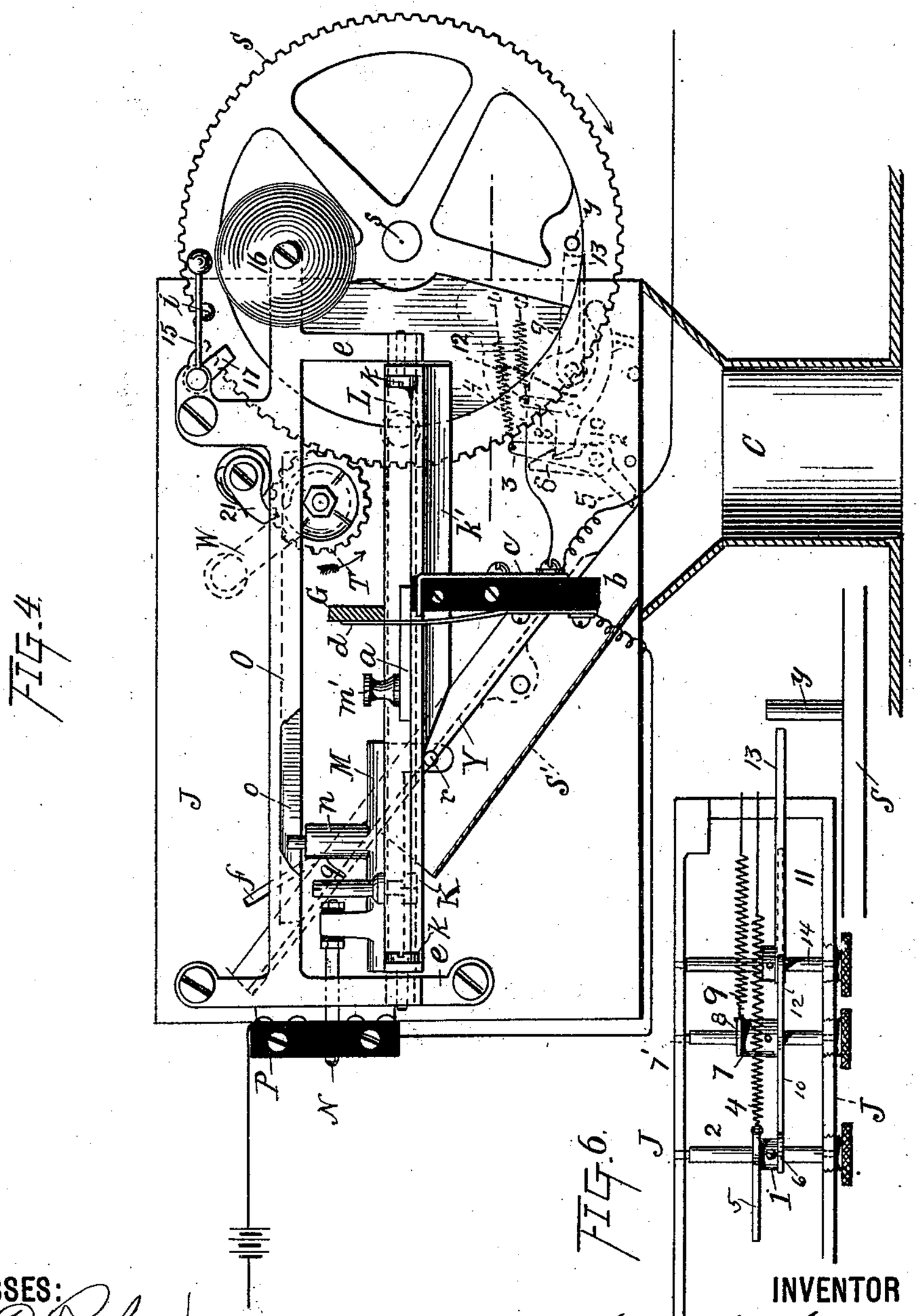

FIG. 4.

FIG. 6.

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(No Model.) 4 Sheets—Sheet 4.

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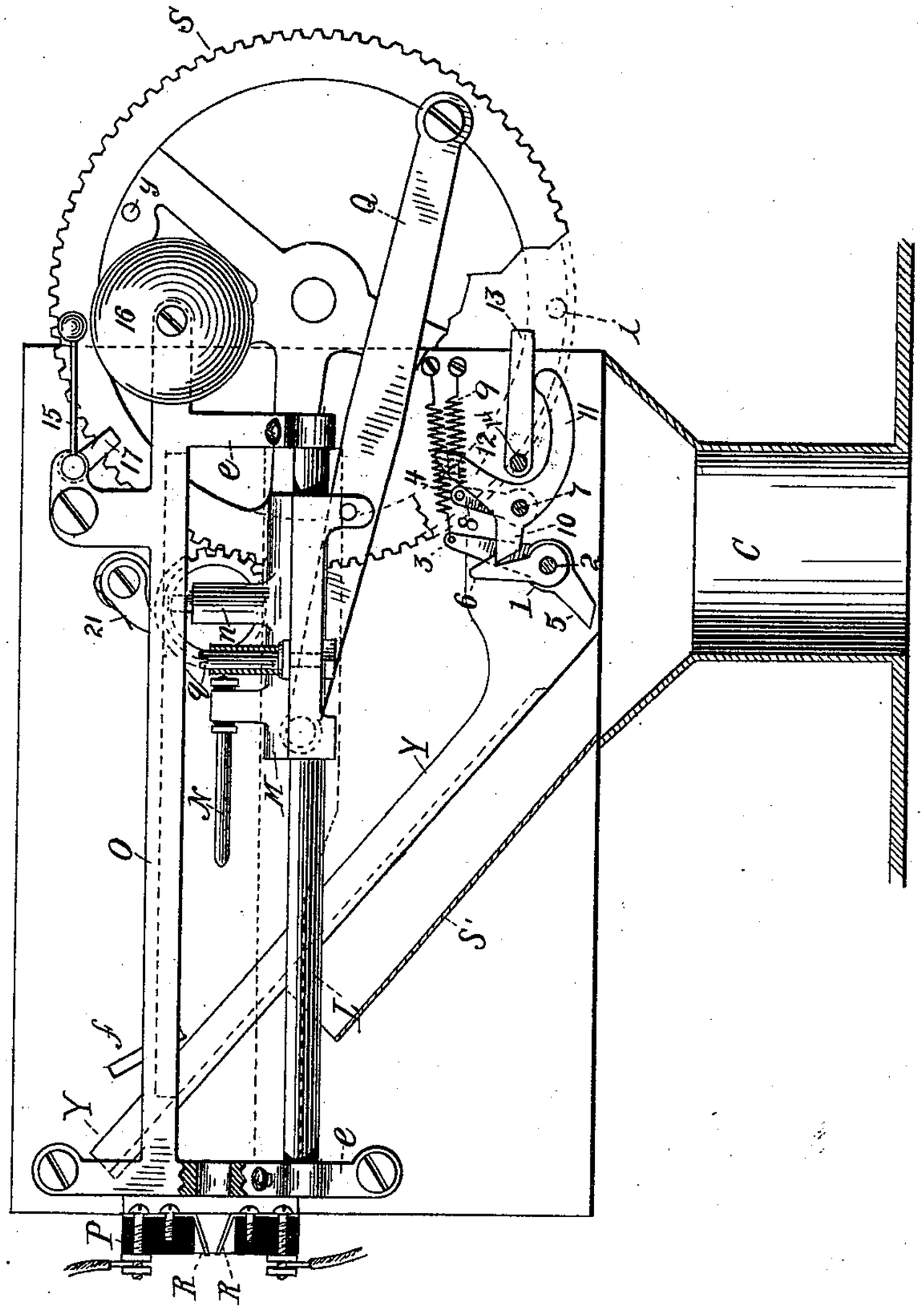

FIG. 5.

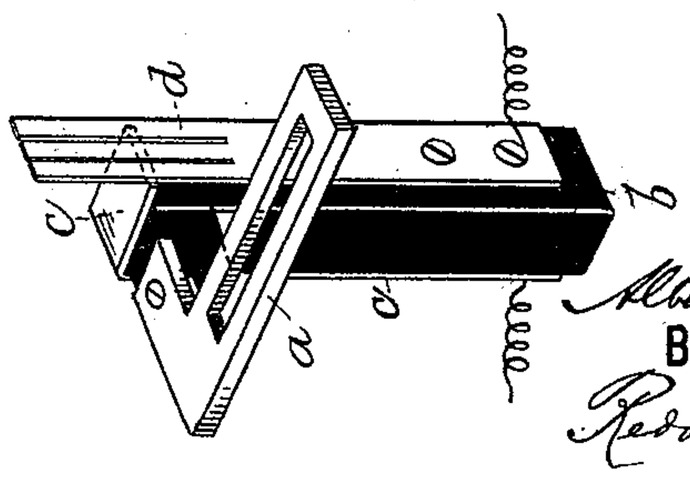

FIG. 7.

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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 FOR OPERATING PHONOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 518,191, dated April 10, 1894.

Application filed February 14, 1891. Serial No. 381,404. (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 Improvements in Machines for Operating Phonographs, of which the following is a specification.

My invention relates to machines or attachments for operating phonographs after the manner of what are known as "vending machines," such attachments remaining normally locked but being released by a coin to be moved to operate the phonograph, and my invention consists of the novel devices and combination of parts hereinafter described and set forth in the claims hereof.

In the accompanying drawings, forming a part hereof, I have shown a machine which embodies my invention, in which—

Figure 1 is a front view in elevation of the case A, which incloses the electric battery B, coin receptacle C, phonograph D and attachment E, which are by preference arranged in relation to each other in different compartments, as shown, the listening tube F connected with the phonograph passing through an opening in the front of the case. Fig. 2 is a top or plan view of a phonograph and of an attachment embodying my invention connected therewith. Fig. 3 is a sectional view taken through line *x*—*x* of Fig. 2, showing the crank and connections therewith. Fig. 4 is a side view in elevation, looking from the rear of the attachment, and showing the normal position of the parts of the attachment. Fig. 5 is a view similar to Fig. 4, but with the rocking bar K and parts attached thereto removed, showing the position of certain parts of the attachment, after a coin dropped into the machine has tripped the locking mechanism, and the parts have been moved from their normal position. Fig. 6 is a top or plan view of the locking mechanism; and Fig. 7 is a perspective view of the adjustable circuit opening and closing device.

As shown in Fig. 2 the phonograph is located in front of the attachment, the driving mechanism which I preferably employ for operating it consisting of an electric battery and motor (not shown) as is now usual, and G is the phonograph arm and H the reproducer and recorder carried thereby. When the phonograph is at rest and in its normal position with respect to an attachment embodying my invention, the phonograph arm G is normally down and at the end of its forward movement, that is to say, at the end of the record on the phonogram I, or at some desired point thereof, away from the commencement of the record thereon, and to the said arm G is connected an extension *g*, which has insulating material *g'* on one side thereof.

J is a metal plate to which is secured the frame supports and bearings for the parts and devices comprising the attachment proper.

K is a rocking bar or reciprocating raising and lowering device, which is pivoted at *k*, *k* on the arms *e*, *e* of the frame, and upon this rocking bar K the phonograph arm G, or its extension *g* rests. The rocking bar K has a rib *k'* on its under side, which is cut away at one end thereof, as shown in Fig. 4; and in the upper surface of said rocking bar is cut a slot or guide-way *m*, which together with the clamping screw *m'* permits the circuit making and breaking device, shown in Fig. 7 to be secured to the rocking bar at any desired point. The circuit making and breaking device referred to consists of a metal piece *a*, to which is united a block of insulating material *b*, while to one side of the said block *b* is connected a metal strip *c*, which is bent over across the top of the said block and extends slightly beyond it, as shown. To this metal strip runs a wire connecting with the battery and motor and forming a part of the motor circuit. To the other side of the said block of insulating material is secured a metal forked strip or spring contact *d*, to which runs a wire connecting with the battery and motor, and the motor circuit is thus adapted to be closed when the strips *c* and *d* make contact, but these strips are normally kept apart by the phonograph arm G, or extension thereof, which when at rest, is against the strip *d*, which extends up beyond the insulating block *b*, as shown in Fig. 4. Thus when the arm G is moved away, or shifted, the spring contact *d* will return itself into contact with the metal strip *c*, thereby closing the motor circuit at that point. As before stated, this circuit making and breaking de-

vice is carried by the rocking bar K, and is secured thereto by means of the before mentioned screw *m'*, which passes through the metal piece *a* of the circuit maker, which rests on the rocking bar, and through the slot or guide-way *m* in the said bar, thus permitting the circuit making and breaking device to be adjusted and secured at any point on the said rocking bar, according to how much of the record on the phonogram it is desired shall be heard, since it is adapted to be operated by the phonograph arm in its forward travel to break the motor circuit, and thereby stop the phonograph.

L is a guide rod which is supported in the supports *e*, *e* of the frame, and upon this guide-rod travels a cross head M or movable operating device from which rises a guide post *n*, the upper end of which slides, in order to guide the cross head, in a groove or guide *o* in the cross piece O of the frame which supports the attachment. In the upper surface of the cross head M is a slot or guide-way *p*, in which may be secured at any point thereof a post *q*, by means of which the phonograph arm is moved by the said cross head to shift it from one end of the record to the other; to the under side of the cross head M is secured a pin *r* on which rests the rocking bar K (see Fig. 4) and the said cross head also carries a projection or plug N, which is insulated therefrom, and which is adapted to make contact with the metal contacts or electrodes R, R, carried by a block of insulation P on one side of the attachment, to close the motor circuit at that point, and to which contacts are attached the wires connecting with the battery and motor.

As before stated, Fig. 4 shows the position of all the parts when the phonograph is at rest and the attachment locked, that is, the plug or electrode N is in contact with the contacts R, R, and the motor circuit is hence closed at that point, but the strips or contacts *c* and *d* supported by the rocking bar K are separated, being kept apart by the phonograph arm G or extension thereof, and hence the motor circuit is open at that point, that is, said motor circuit is normally open.

S is a cog wheel or as I may hereinafter term it, a driving wheel which turns on the shafts *s* and in gear with a smaller cog wheel T, which for clearness I may hereinafter term a "primary" wheel, the said cog wheel S being adapted to be moved by the small cog wheel T, which is connected with the crank W, and the cog wheel S is connected with the cross head M by a connecting rod Q, and is of such size or diameter that one revolution thereof will move the cross head M from its normal position, along the guide rod L, to the extreme end thereof, and return the cross head again to its normal position, the said wheel S being held locked, thus locking all the parts of the attachments, until it is released in the manner to be hereinafter explained.

Y is a coin chute, through which the desired coin travels, the coin being inserted therein through the opening *f* for that purpose in the plate J, and dropping through the said chute into the coin receptacle or money box C. This chute is constructed, as shown in Figs. 2 and 4, that is, it is cut or slotted out on its under side, so as to leave a strip or guide Y' on each side thereof, sufficient to support a coin of the proper size, and prevent it from falling therethrough without releasing the locking mechanism but the slot is large enough to permit a smaller coin to drop or to be directed therethrough into another chute, S' on the under side of the chute Y, which chute S' also leads to the coin receptacle. Hence if a coin not of the proper size be dropped into the machine in an attempt to operate it, said coin will not trip the locking mechanism, but will be dropped into the chute S' and thence into the money box.

The locking mechanism proper consists of the following:

1 is a metal sleeve which is keyed to a shaft 2, supported in bearings in the metal plate J, and this sleeve has connected with it an arm 3, to which is attached one end of a spring 4, the other end of said spring being attached to the frame of the attachment. To another part of said sleeve is connected an arm 5 and a hooked or toothed arm 6, and upon the arm 5 the coin drops or strikes, tripping it as it passes through the chute Y, the said arm 5 protruding directly in the path of the coin. As will be of course understood the sleeve 1 and arms 3 and 5 and 6 are all in one piece and the sleeve 1 and shaft 2 may also be one piece.

7 is a sleeve similar to 1 and keyed to a shaft 7', similarly supported from the plate J, and has forming part of it an arm 8, to which is connected one end of a spring 9, the other end of said spring being connected to the frame of the attachment, and to this sleeve 7 is also connected, so as to form a part of it, the arms 10, 11, and 12. As will be seen in Figs. 5 and 6, the arm 10 of said sleeve 7 is in engagement with the hooked arm 6 of the sleeve 1, and is normally held thereby, and for convenience I shall use the word "sleeve," throughout this specification as referring to the locking mechanism above described, including thereby the shaft on which it turns, since the sleeves above mentioned are keyed to the shafts, though as stated, the arms might be cast directly to the shafts, as will be understood.

13 is a bar or rod which is adapted to move on the spindle 14 connected with the plate J, and this arm 13 is normally in the position shown in Fig. 4, being held up by the arm 11 of the sleeve 7, on which arm of the said sleeve rod 13 rests. The function of this rod or bar 13 is to hold the attachment locked through the medium of a pin or stud *y* on the cog-wheel S, against which arm 13 said pin or stud strikes or engages, if an attempt is made, before the proper coin has been dropped

into the machine, to move the cog-wheel S (from the position shown in Fig. 4) in the direction of the arrow. The cog-wheel S is weighted on one side so that normally the pin *y* will be kept a slight distance from the arm 13. There is also, on the cog wheel S a pin *i*, which trips the hammer 15 to ring the bell 16 when the wheel S has made one revolution, and the cross head M has been returned to its normal position, (at which time the phonograph will begin to talk) and this pin *i* trips the hammer 15 as it moves around by striking the lug 17 on the same shaft as the hammer, thereby lifting the latter and permitting it to fall, striking the bell.

W is a crank shaft mounted in a bearing 20 in the plate J, by means of which the cog wheel T is turned, to turn the cog wheel S, and to the inner end of said shaft is connected the cog wheel T, which is constructed as shown in Fig. 3 with cog teeth on one side or portion thereof and ratchet teeth on the other side or portion thereof, with which ratchet teeth a suitable pawl 21 is adapted to engage, to lock the wheel against backward movement. The wheel T is connected to the crank W by a frictional connection, that is, the cog wheel T is milled out at 24 to receive a stiff metal spring washer 22, over which is screwed a nut 23, uniting said washer to the shaft 19. So long as the wheel S is locked, though the crank may be turned in either direction, the attachment will not be operated, but the crank will revolve as will also the spring washer, but as soon as the cog wheel S has been released, that is, as soon as the arm or trigger 5 has been tripped by a coin, and the arm 13 lowered, and the crank turned, the tension of the spring washer 22 on the cog wheel T being greater than the resistance of all of the other parts to be moved, the wheel T will turn, rotating the driving wheel S. As the pin *y* moves around, it strikes the arm 12 on the sleeve 7 and thereby raises the arm 11 thereof, which sets up the rod 13 and holds it raised, and lowers the arm 10 of said sleeve 7, which is held by the toothed arm 6, which has been restored to its original position by the spring 4 connected with the said sleeve 1 or the arm 3 thereof, as will be readily understood.

As will be seen from the foregoing description, when the proper coin is dropped into the machine it travels through the coin chute Y and strikes on the arm or trigger 5 of the sleeve 1, releasing the arm 10 of the sleeve 7 from the toothed arm 6 of sleeve 1 with which it engages, and thereby lowering the rod 13, so that the wheel S may be rotated. The locking levers will then be set up or locked again by means of the pin *y*, striking the arm 12 on the sleeve 7, in passing, as just before explained. When the driving wheel S turns, it moves the cross head M by means of the connecting rod Q, breaking the circuit at one side of the attachment by removing the plug N from the contacts or electrodes R, R, and as said cross head moves along it raises the rocking bar K, since the pin *r* on said cross head, traveling in a horizontal plane, strikes the rib *k'*, on the under side of the rocking bar, thereby raising said rocking bar and raising the phonograph arm, which is also carried over to the forward end of the phonogram, or the commencement of the record by means of the post *q* on the cross head M, which is adjustable, so as to strike the phonograph arm, to carry it either to the beginning of the record on the inner end of the phonogram or to any point thereof, where said arm is left, and as soon as the phonograph arm is moved, the contacts or terminals *c* and *d* will be united and the motor circuit closed at that point. The phonograph has not yet commenced to operate, since the motor circuit is still open, the plug or electrode N being removed from the contacts or electrode R, R, but by continuing the turning of the crank, and the revolution of the wheel S, the cross head M is returned to its original position, the rocking bar K is lowered and with it the phonograph arm, and the plug N is again inserted between the metal contacts R, R, thereby completing the motor circuit. The phonograph will now begin to talk, since the phonograph arm, and with it the reproducer, carried thereby, has been brought to the commencement of the record, or some desired point thereof, and left in that position and automatically lowered when the cross head was returned to its normal position.

The notice to the listener that the circuit is closed is given by the ringing of the bell in the manner before explained, and the phonograph ceases to operate as soon as the phonograph arm has traveled over and reached the terminal or electrode *d*, forcing it away from the terminal or electrode *c*, the motor circuit being thereby broken, and the phonograph ceasing to talk.

From the foregoing it will be seen that the power which I preferably employ to operate the phonograph is derived from an electric battery and motor, and that the motor circuit is normally open and can be made and broken at two points; that the phonograph arm, and reproducer, when the phonograph is at rest, are down, or lowered, and at the end of the forward movement of the said phonograph arm, or at some point away from the beginning of the record upon the phonogram, while in the application filed by me on the 31st day of January, 1891, and serially numbered 379,824, the phonograph arm is normally raised from the phonogram, and at the commencement of the record thereon; that the phonograph arm normally resting on the rocking bar K keeps the circuit broken at that point by operating the circuit opening and closing device carried by the rocking bar, and that this device is adjustable, and may be fixed at any point on the said rocking bar, so that the phonograph arm will break the circuit and stop the motor at any

desired point, according to how much of the record upon the phonogram it is desired shall be heard. It is obvious, however, that if desired, the reproducer may be normally raised, and at the end of the record upon the phonogram instead of being normally lowered, as hereinbefore described, and in such a case it will only be necessary to shift the phonograph arm and lower it at the end of its movement toward the beginning of the record.

While I have shown and described phonographs as the mechanism to be thrown into operation by an attachment embodying my invention, yet I do not limit my invention to its use with phonographs, nor do I mean to limit my invention to the specific construction, as hereinbefore described and shown in the drawings of the coin controlled attachment for operating phonographs, nor to the particular construction of devices, separately or in combination forming parts thereof, and I use the word phonographs throughout this specification and the claims forming a part thereof, as a generic term, intended to include all talking machines such as the graphophone and the phonograph-graphophone.

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 coin controlled phonographs. 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 phonographs. 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 a set of three applications filed by me to cover all my inventions, is made the application wherein I have claimed my generic invention.

The other of the three applications referred to in my application, Serial No. 384,477, filed March 10, 1891, for a machine for operating phonographs, in which is claimed a specific construction not shown either in this application or in my aforesaid application, Serial No. 379,824.

What I do claim in this application, however, is—

1. The combination, with a coin controlled phonograph, of means for shifting the reproducer, and means operated by the shifting means for lowering the reproducer, substantially as described.

2. The combination, with a coin controlled phonograph, of means for shifting the reproducer, and means operated by the shifting means for raising and lowering the reproducer, substantially as described.

3. The combination, with a phonograph, of a coin controlled mechanism for shifting and lowering the reproducer and throwing the phonograph into operation, and means operated by the phonograph for stopping the phonograph, substantially as described.

4. The combination, with a phonograph, of coin controlled mechanism, and means operated by it for lifting, shifting and lowering the reproducer, and throwing the phonograph into operation, and means operated by the phonograph for stopping the phonograph, substantially as described.

5. The combination, with a phonograph operated by a motor, of coin controlled mechanism for shifting and lowering the reproducer and starting the motor, and means operated by the phonograph for stopping the motor, substantially as described.

6. The combination, with a phonograph operated by a motor, of coin controlled mechanism for raising, shifting and lowering the reproducer and starting the motor, and means operated by the phonograph for stopping the motor, substantially as described.

7. The combination, with a phonograph operated by a motor, and having its motor circuit normally open, of a coin controlled mechanism for shifting and lowering the reproducer and closing the motor circuit, and means operated by the phonograph for opening the motor circuit, substantially as described.

8. The combination, with a phonograph operated by a motor, and having its motor circuit normally open, of coin controlled mechanism for lifting, shifting and lowering the reproducer and closing the motor circuit, and means operated by the phonograph for opening the motor circuit, substantially as described.

9. The combination, with a phonograph operated by a motor, of a circuit breaker in the motor circuit, normally held open by the reproducer or phonograph arm at the end of the record, and means for closing the circuit at the said circuit breaker when the phonograph is thrown into operation, substantially as described.

10. The combination, with a phonograph operated by a motor, and having its motor circuit normally open, of means to raise and lower the reproducer, a circuit making and breaking device to close the circuit operated by the reproducer in moving from its normal position, and operated by said reproducer on returning to its normal position to open the circuit, substantially as described.

11. The combination, with a phonograph operated by a motor, and having its motor circuit normally open, of mechanism which is normally held locked and is released by a coin to shift and lower the reproducer and close the motor circuit, and means to relock said mechanism simultaneously with the closure of the motor circuit, substantially as described.

12. The combination, with a phonograph operated by a motor, and having its motor cir-

cuit normally open, of mechanism which is normally held locked and is released by a coin to lift, shift and lower the reproducer and close the motor circuit, and means to relock said mechanism simultaneously with the closure of the motor circuit, substantially as described.

13. The combination, with a phonograph operated by a motor, and having its motor circuit normally open, of mechanism which is normally held locked and is released by a coin to shift and lower the reproducer and close the motor circuit, means to relock said mechanism simultaneously with the closure of the motor circuit, and means operated by the reproducer to open said circuit, substantially as described.

14. The combination, with a phonograph operated by a motor, and having its motor circuit normally open, of mechanism which is normally held locked and is released by a coin to lift, shift and lower the reproducer and close the motor circuit, means to relock said mechanism simultaneously with the closure of the motor circuit, and means operated by the reproducer to open said circuit, substantially as described.

15. The combination, with a phonograph, of a motor for operating it in a circuit which can be opened and closed at two points, an attachment normally held locked but released by a coin to open said motor circuit at one of said points and to close it at the other point, and to shift and lower the reproducer, means to hold the circuit closed at the second point, and means to simultaneously close the circuit at the first point and relock the attachment, substantially as described.

16. The combination with a phonograph, of a motor for operating it in a circuit which can be opened and closed at two points, an attachment normally held locked, but released by a coin to open said motor circuit at one of said points and close it at the other point, and lift, shift and lower the reproducer, means to hold the circuit closed at the second point, and means to simultaneously close the circuit at the first point and relock the attachment, substantially as described.

17. The combination, with a phonograph, of a motor for operating it in a circuit which can be opened and closed at two points, an attachment normally held locked, but released by a coin to open said motor circuit at one of said points and close it at the other point, and to shift and lower the reproducer, means to hold the circuit closed at the second point, means to simultaneously close the circuit at the first point and relock the attachment, and means operated by the reproducer to open the circuit at the second point, substantially as described.

18. The combination, with a phonograph, of a motor for operating it in a circuit that can be opened and closed at two points, an attachment normally held locked, but released by a coin to open said motor circuit at one of said points and close it at the other point, and to lift, shift and lower the reproducer, means to hold the circuit closed at the second point, means to simultaneously close the circuit at the first point and relock the attachment, and means operated by the reproducer to open the circuit at the second point, substantially as described.

19. The combination, with a phonograph, of a shifting device for the reproducer, and a coin controlled driving wheel adapted to move the said shifting device, substantially as described.

20. The combination, with a phonograph, of a shifting device for the reproducer, a driving wheel which is normally locked, and can be released by a coin to operate said shifting device, and means to rotate the said wheel, substantially as described.

21. The combination, with a phonograph, of a shifting device for the reproducer, a driving wheel to operate said shifting device, coin controlled mechanism to lock the said wheel, and means to rotate the said wheel, substantially as described.

22. The combination, with a phonograph, of an adjustable device to shift the reproducer over the record upon the phonogram, a driving wheel connected with the said adjustable device, a coin controlled mechanism normally locking the said wheel, and means to rotate the said wheel to shift the said device, and thereby shift the reproducer, substantially as described.

23. The combination, with a phonograph, of a device to raise and lower the reproducer, a wheel, which is normally locked and can be released by a coin, connected with the said device to operate it, and means to rotate the said wheel, substantially as described.

24. The combination, with a phonograph, of a device to raise and lower the reproducer, a driving wheel to actuate said raising and lowering device to raise and lower the reproducer, means which normally lock the said wheel, and are released by a coin, and means to rotate the said driving wheel, substantially as described.

25. The combination, with a phonograph, of a device to raise and lower the reproducer, shifting means for the said reproducer, and a coin controlled driving wheel operating the said shifting means, substantially as described.

26. The combination, with a phonograph, of a device to raise and lower the reproducer, shifting means operating on said raising and lowering device to raise and lower it, a driving wheel, which is normally locked, but can be released by a coin, connected with the said shifting means to operate it, and means to rotate said driving wheel, substantially as described.

27. The combination, with a phonograph, of a device to raise and lower the reproducer, shifting means for the said reproducer, the said shifting means operating upon the raising and lowering device to raise and lower it,

and a coin controlled driving wheel operating the said shifting means, substantially as described.

28. The combination, with a phonograph, of a device to raise and lower the reproducer, a traveling cross head or carriage to operate said device to raise and lower it and to shift the said reproducer, a driving wheel connected with the said carriage to impart motion thereto, coin controlled mechanism to lock the said wheel, and means to rotate the said wheel and shift the said cross head, and thereby raise, lower and shift the reproducer, substantially as described.

29. The combination, with a phonograph, of a shifting device for the reproducer, a driving wheel connected with the said shifting device, the said wheel being normally held locked, and being released by a coin, and means to rotate the said driving wheel consisting of a crank, a primary wheel, and a frictional connection between the said crank and primary wheel, whereby the crank may be turned without turning the said primary wheel, substantially as described.

30. The combination, with a phonograph, of a shifting device for the reproducer, a driving wheel connected with the said shifting device, the said wheel normally being held locked, but being released by a coin, and means to rotate said driving wheel, which means consist of a crank, and a primary wheel adapted to be turned thereby, the said primary wheel and crank being connected together in such manner that the crank may be turned without turning the primary wheel so long as the driving wheel is locked, substantially as described.

31. The combination, with a phonograph, of a device to raise and lower the reproducer, a shifting device for the reproducer, and means to operate the said shifting device, which means consists of a crank, and a primary wheel connected with the said crank in such manner that the crank may be turned without turning the said primary wheel so long as the driving wheel remains locked, substantially as described.

32. The combination with a phonograph, the normal position of the reproducer of which is down and at the end of its movement, and at the end of the record upon the phonogram, of a device adapted to shift the reproducer to the beginning of the record upon the phonogram, and coin controlled mechanism connected with the said device to shift the reproducer, the said mechanism consisting of a wheel upon one revolution of which the said shifting device will be moved away from and returned to its starting point or normal position, substantially as described.

33. The combination, with a phonograph, of a device to raise and lower the reproducer, means operating on the said device to raise and lower it, a driving wheel connected with said raising and lowering means, the said driving wheel being normally held locked, and being released by a coin, and means to rotate said driving wheel, the said rotating means consisting of a primary wheel, a crank adapted to turn the said primary wheel, and means connecting the said crank and primary wheel, whereby the crank may be turned without turning the said primary wheel, substantially as described.

34. The combination, with a phonograph, of a driving wheel which remains normally locked but can be released by a coin, a primary wheel which engages with the driving wheel to rotate it, and a crank frictionally attached to the primary wheel, substantially as described.

35. The combination, with a driving wheel S, of the wheel T, constructed as shown and described, and consisting of a part having cog teeth meshing with the wheel S, and a part with ratchet teeth, a spring pawl locking the said wheel T, a spring washer 22, a nut 23 and a crank 18, all constructed to operate substantially as shown and described.

36. In a coin controlled mechanism, the combination with the wheel S, constructed as shown, and described, and having a stud or pin *i* thereon, of the wheel T constructed as shown and described, a crank W, a bell 16 and a hammer 15, all arranged to operate substantially as and for the purpose set forth.

37. In a coin controlled mechanism, the combination with a coin chute, of the driving wheel S, having the stud *y* thereon, and mechanism operated by a coin passing through the said chute, the said mechanism consisting of a sleeve 1, arms 3, 5 and 6 and spring 4 connected with the said sleeve, sleeve 7, arms 8, 10, 11 and 12 and spring 9 connected therewith, and rod 13, all arranged to operate substantially as shown and described.

38. In a coin controlled mechanism, the combination, with the driving wheel S, constructed as shown and described, being weighted at one side, and having studs *y* and *i* thereon, of the wheel T constructed as shown and described and consisting of a part having cog teeth to mesh with the wheel S and a part having ratchet teeth, a pawl to lock said wheel T, a spring washer 22, a nut 23, a crank 18, mechanism operated by a coin, consisting of a sleeve 1, arms 3, 5, and 6, and a spring 4 connected with the said sleeve, a sleeve 7, arms 8, 10, 11, and 12, and a spring 9 connected therewith, and a rod 13, all arranged to operate substantially as shown and described.

39. The combination, with the wheel S and stud *y* thereon, of a coin actuated mechanism consisting of a sleeve 1, arms 3, 5, and 6, and a spring 4 connected with the said sleeve, a sleeve 7, arms 8, 10, 11, and 12, and a spring 9 connected therewith, and a rod 13, all arranged to operate substantially as described.

40. In a coin controlled mechanism, the combination, with a driving wheel, of a coin chute, a trigger pivoted therein, and a sleeve having a plurality of arms, one of which is engaged by the said trigger another of which locks

the said wheel and another of which projects contiguous to the said wheel and is actuated thereby to cause the trigger and the first named arm to engage, substantially as described.

41. The combination, with the phonograph arm of a phonograph, of the rocking bar K, having a rib *k'*, and the cross head M having the post *q* and pin *r*, substantially as described.

42. The combination, with a phonograph, of the rocking bar K, constructed as shown and described, the cross head M constructed as shown and described, a driving wheel S and a connecting rod Q, substantially as described.

43. The combination, with a phonograph operated by a motor, of the rocking bar K, constructed as shown and described, a circuit making and breaking device connected therewith, the cross head M constructed as shown and described, a circuit making and breaking device connected therewith, and a coin controlled driving wheel and connecting rod for operating the said cross head, substantially as described.

44. The combination, with the cross head or carriage M, guide rod L, and driving wheel S, of coin controlled mechanism to release the said wheel, substantially as described.

In testimony whereof I have signed my name to this specification the 9th day of February, A. D. 1891.

ALBERT K. KELLER.

In presence of—
FRED H. KNAPP,
GEO. W. AYERS.