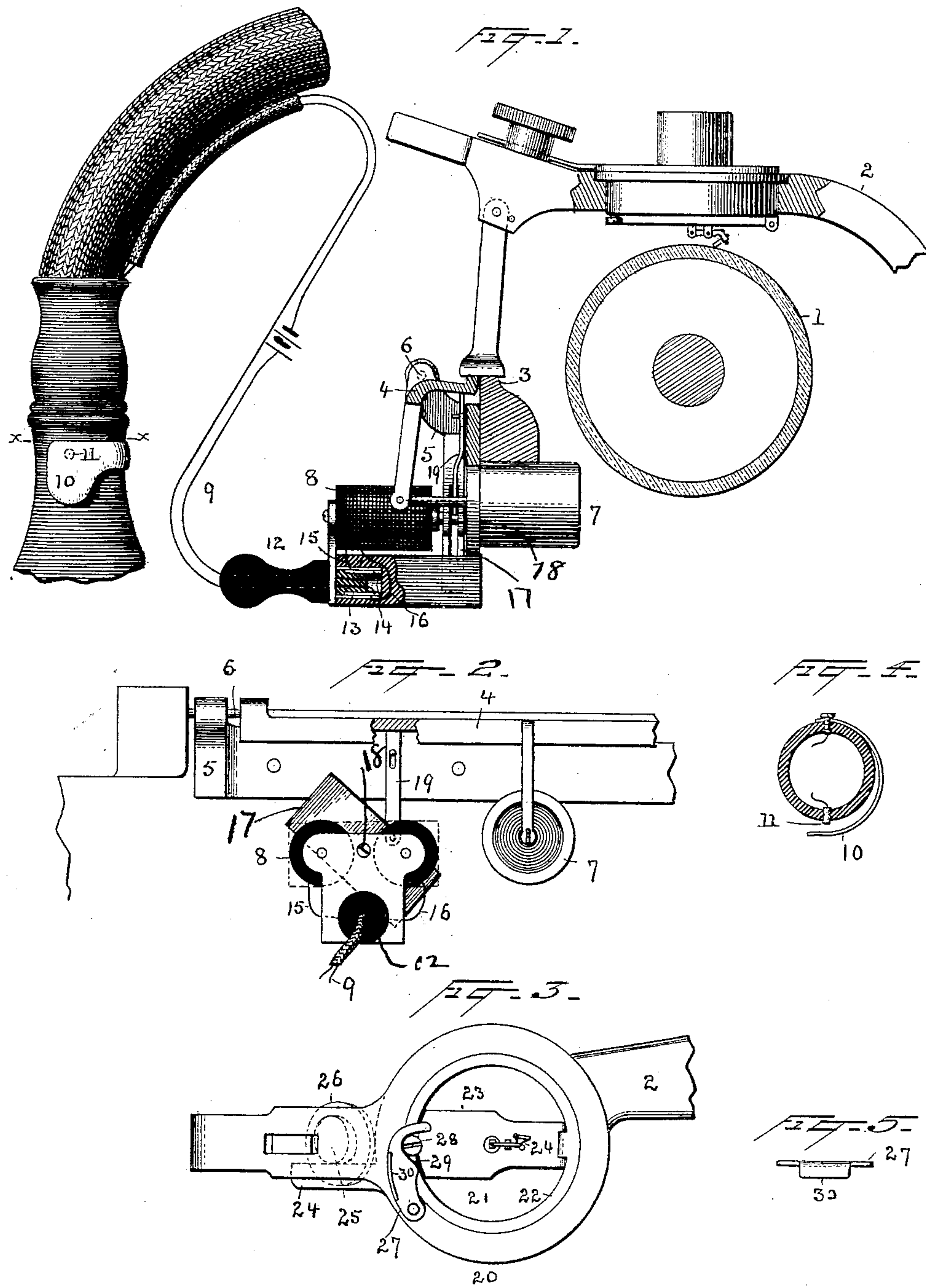


(No Model.)

T. A. EDISON.  
PHONOGRAPH.

No. 496,191.

Patented Apr. 25, 1893.



Witnesses  
Morris A. Clark,  
At. F. Oberly.

Inventor  
T. A. Edison  
By his Attorneys  
Dyer & Seely.



# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, NEW JERSEY.

## PHONOGRAPH.

SPECIFICATION forming part of Letters Patent No. 496,191, dated April 25, 1893.

Application filed February 9, 1891. Serial No. 380,712. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, a citizen of the United States, residing at Llewellyn Park, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Phonographs, (Case No. 907,) of which the following is a specification.

The objects of this invention are to enable the user of the phonograph to stop or start the recorder while in the act of speaking into the phonograph without moving the feed arm to or from the feed screw by the hand, and without opening the motor circuit, as has heretofore been necessary, and to control the position of the recorder and reproducer while turning off the surface of a blank, as hereinafter set forth.

In the accompanying drawings which illustrate the improvement, Figure 1 is a view showing the recorder resting on a phonogram blank, a section of the speaking tube and the mechanism for raising the recorder from the blank. Fig. 2 is a face view of a portion of the devices shown in Fig. 1. Fig. 3 is a view of the recorder and reproducer looking from the under side. Fig. 4 is a section on line  $xx$  of Fig. 1, and shows the circuit controller; and Fig. 5 is a side view of one of the parts shown in Fig. 3.

The phonogram blank 1 is mounted on a cylinder which is revolved in the ordinary or any suitable manner. The rocking holding arm 2 which supports the recorder and reproducer is connected with a guide sleeve, which sleeve has a feed arm engaging with a feed-screw in the usual or any suitable manner not necessary to be illustrated in this case. Near one end of the arm 2 is attached the presser foot adapted to bear on and move along the guide rest 3.

4 is a tilting bar pivoted at each end to a suitable support or bracket as indicated at 6.

7 is a dash pot connected with the tilting bar to steady and regulate the movement of said bar. Below the tilting bar, supported in any suitable manner, is an electro magnet 8 included in a circuit 9 extending to a circuit controller on the speaking tube in a position convenient to be operated by the hand which holds said tube to the mouth. The circuit controller in the form illustrated consists of

a spring 10 connected to one wire of the circuit and a pin 11 connected to the other wire of the circuit. These wires terminate in a plug 12 having two conducting plates 13, 13, adapted to make contact with two corresponding plates in the socket into which the plug is inserted. The two socket plates are connected respectively to the two terminals 15, 16, of the magnet, as indicated in Figs. 1 and 2.

17 is an armature for the magnet and has a centrally located pivot 18. This armature is connected by means of a link or rod 19 with the tilting bar 4. The upper end of 19 preferably merely rests against said bar, although it may have a pivotal connection. When the circuit is open the weight of the recorder arm resting on the tilting bar is sufficient to depress the tilting bar and armature into the position shown in Figs. 1 and 2, but when the circuit is closed by pressure on the spring 10, the armature 17 is caused to turn on its pivot taking the position shown in dotted lines in Fig. 2, thereby raising the inner edge of the tilting bar and moving the recorder from the phonogram blank. It will be understood that this motion also disengages the feeding device of the phonograph. When the operator desires to proceed with his dictation, he moves his finger from the spring 10 allowing the circuit to open, and the parts resume their normal position. A battery is shown in the circuit 9 but in practice a branch from the motor battery will ordinarily be used.

In using the phonograph after a record has been made on the blank, it is often desired to remove said record in order that the blank may be again used. In some phonographs the mechanism is so arranged that the old record can be cut off and a second record made on the blank just behind the cutting off tool, but in certain other phonographs the entire surface must be cut off before the second record is made on the blank. In this form of phonograph I find it very desirable that the recorder and reproducer should be raised entirely away from the surface of the blank during the operation of cutting off the old record. I therefore provide a support for the plate on which the recorder and reproducer are mounted. As illustrated in Fig. 3, the rocking holding arm 2 terminates in a ring 20 which carries the diaphragm 21 and dia-



phragm support 22. To this support is pivoted a plate 23 which carries the recorder and reproducer 24 arranged in a well-known manner, so that when in one position the recorder  
5 bears on the phonogram blank, and when in another position the reproducer bears on said blank.

24 is an arm connected with 22, and 25 is a cam which can be moved by the milled head  
10 26 for moving the arm 24 to adjust the position of the reproducer onto the line of record.

27 is a plate, preferably struck up from a piece of sheet metal, pivoted at one end to the ring 20. The opposite end is adapted to  
15 project under the plate 23.

28 is a screw or pin projecting from 22 and movable therewith when the diaphragm and diaphragm support are turned to change the position of the recorder and reproducer. Plate  
20 27 is provided with a cam surface 29 against which 28 bears as it is moved in the manner above described. Plate 27 is provided with a downward projection 30 to serve as a handle for moving the plate in one direction.

25 The operation of the device just described is as follows: In the position shown in Fig. 3 the diaphragm is supposed to be turned to bring the reproducer over the bearing surface of the phonogram blank. The plate 27 is,  
30 however, pushed inward so that its end rests under the plate 23 and supports it so that the reproducing point does not actually touch the blank. This is the position occupied during the cutting off of an old record. When  
35 said operation has been completed the arm 24 is moved away from the cam 25 thereby turning the diaphragm and its support and moving pin 28 against the cam surface 29, thereby automatically withdrawing the end of plate  
40 27 and allowing plate 23 to descend so that the recorder shall rest on the surface of the blank. To again move the plate 27 under 23 the extension 30 is pressed by the finger of the operator, since the pin 28 does not operate  
45 on the cam surface in its reverse movement.

Having thus described the invention, what I claim is—

1. In a phonograph, the combination with the rocking holding arm, the guide rest there-  
50 for, and the tilting bar, of an electro-magnet controlling the position of the tilting bar, a circuit including said magnet, and a circuit

controller in said circuit, substantially as set forth.

2. In a phonograph, the combination with 55 the rocking holding arm, the guide rest therefor, and the tilting bar, of an electro-magnet, a movable armature therefor, a mechanical connection between said armature and said tilting bar, a circuit including said magnet, 60 and a circuit controller in said circuit, substantially as set forth.

3. The combination, in a phonograph, of a recorder and reproducer carried by a single support, which support can be turned to bring 65 either the recorder or reproducer into operative position, a movable plate adjacent to said support and projecting or adapted to project under it, and a pin movable with the support and pressing against said plate to move it, 70 substantially as described.

4. The combination in a phonograph, of a recorder and reproducer carried by a single support, which support can be turned to bring 75 either the recorder or reproducer into operative position, a movable plate having a cam surface and adapted to project under the recorder and reproducer support, and a pin movable with said support and pressing against said cam surface to move the plate, 80 substantially as described.

5. The combination of a plate supporting a phonograph recorder or reproducer, or both, a movable ring upon which the plate is supported, a pin movable with the ring, and a 85 pivoted plate adapted to extend under the recorder support having a cam face against which the pin bears to move the plate, substantially as described.

6. The combination of a plate supporting a 90 phonograph recorder or reproducer, or both, a movable ring upon which the plate is supported, a pin movable with the ring, and a pivoted plate adapted to extend under the recorder support having a cam face against 95 which the pin bears to move the plate in one direction, and a handle for moving it in the reverse direction, substantially as described.

This specification signed and witnessed this 4th day of February, 1891.

THOS. A. EDISON.

Witnesses:

E. J. BERGGREN,  
L. O. WEBER.