

(No Model.)

H. T. HOLTZ.

STARTING AND STOPPING DEVICE FOR PHONOGRAPHS.

No. 463,990.

Patented Nov. 24, 1891.

Fig. 1.

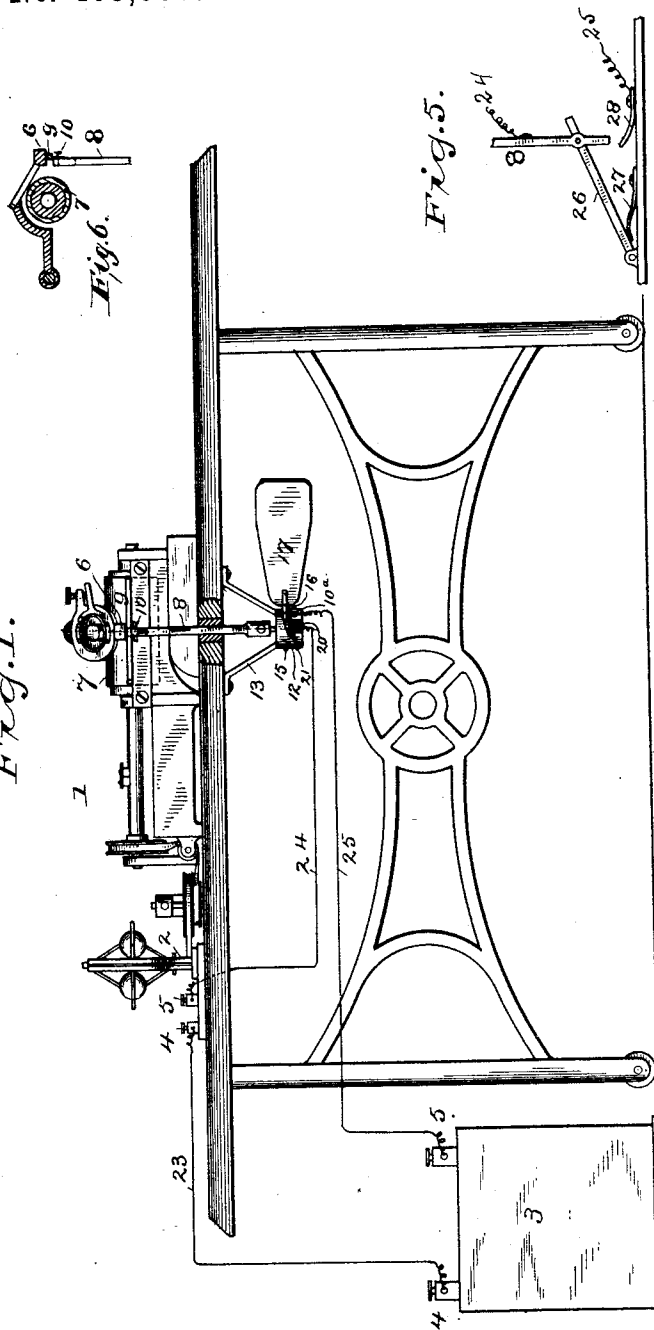


Fig. 5.

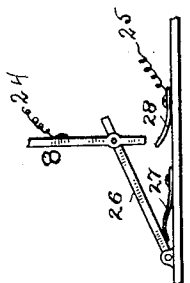


Fig. 4.

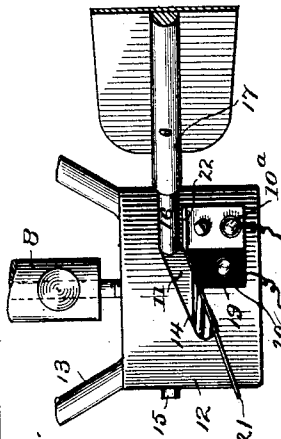
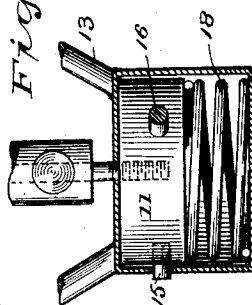
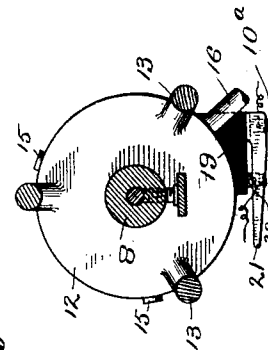


Fig. 3.

Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY T. HOLTZ, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR OF ONE-HALF TO WILLIAM M. LERCH, OF BALTIMORE, MARYLAND.

STARTING AND STOPPING DEVICE FOR PHONOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 463,990, dated November 24, 1891.

Application filed July 11, 1891. Serial No. 399,197. (No model.)

To all whom it may concern:

Be it known that I, HENRY T. HOLTZ, of the city of Washington, in the District of Columbia, have invented certain new and useful Improvements in Starting and Stopping Devices for Phonographs or Talking-Machines, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce improved means of starting and stopping phonographs, by which their working speed and accuracy may be increased with a saving of electricity, which is the motive power ordinarily employed in operating them. The method now in general use is to operate by hand an electric switch and by the same means a separate lever which carries the diaphragm of the machine. Care must be taken in securing repetition of the recorded speech that the machine is well in motion before the needle on the diaphragm comes in contact with the inscribed cylinder, and in order to accomplish this the motor must be first set in motion before the diaphragm is lowered.

My invention consists in improved combined means of setting the motor in motion at the proper time and depressing the diaphragm—by the pedal extremities, for instance—whereby the hands are left free for transcribing, as upon a typewriter, as more particularly defined in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation of a phonograph with my invention attached. Fig. 2 is a top plan view of the cam mechanism detached. Fig. 3 is a front elevation of the same, and Fig. 4 a central vertical section thereof. Fig. 5 is a view of a modification of my invention. Fig. 6 is a vertical sectional view in detail through the stylus, lever 6, and lifting-rod 8.

Referring to the figures on the drawings, 1 indicates a phonograph provided with a motor 2 and a source of electrical supply 3—as, for instance, a battery.

4 5 indicate binding-posts upon the motor and battery, respectively.

6 indicates the ordinary diaphragm-lever, adapted to carry the diaphragm across the face of the cylinder 7.

8 indicates a vertically-moving bar carried

in suitable bearings in the table and provided with a cross-piece 9, that may be adjusted by means of a thumb-screw 10. This cross-piece extends in the path of the diaphragm-lever and is adapted to raise and lower it at any point of its travel away from or toward the surface of the cylinder. The adjustment of this part of the raising and lowering of the bar 8 is such as to accurately operate the diaphragm-lever.

Any suitable means for raising and lowering the bar may be employed—such, for instance, as a cam mechanism illustrated in Fig. 3 of the drawings, in which a cylindrical head 11 is revolvably fastened to the lower end of the lifting-bar and is fitted within a cylindrical case 12, that is carried by suitable hanging arms 13 beneath the table and is provided in its sides with cam-slots 14, in which work pins 15 16. The pin 16 constitutes one member of the electric circuit, which is completed by the wing-shaped contact-piece 21 when the two are in contact. The cylindrical head 11 may be regarded as a part of the bar 8, being intimately connected with it, as shown in the drawings, and being susceptible of more intimate relation by slight changes of construction if such at any time not inconsistent with my invention should be preferred. One of the pins 16 is provided with a lever-handle 17, that is adapted to be rotated by the knee of the operator. This lever is what I call the “prime mover.” The movement of the pins through their slots tends to raise and lower the head 11, to which they are attached, and to impart the same motion to the lifting-bar 8. The bar is kept in the elevated position by a coiled spring 18, fastened at one end to the cylindrical head and at the other to the cylindrical case.

19 indicates a suitable block of insulating material. 20 indicates a binding-screw passing through the same and establishing electrical communication with the cylindrical case 12 and through that with the cylindrical head 11 and the pin 16.

21 indicates a resilient wing-shaped contact-piece fixed upon the block 19 and insulated thereby. This contact-piece is cut away, as indicated at 22 in the drawings, so that when the pin 16 is in its normal position un-

der the action of the spring 18 they will be separated by a short distance and prevent electrical communication. Throughout the remainder of its extent the contact-piece extends in the path of the pin 16 and presses against it.

In practice one of the binding-posts on the battery is united directly to one of the binding-posts on the motor by a conductor 23. Conductors 24 and 25 respectively connect the other binding-post of the motor and of the battery with the binding-screw 20 and the contact-piece 21, respectively. It is apparent, therefore, that when contact between the pin 16 and the contact-piece 21 is made the motor will be set in motion and when it is broken the motor will cease to run. There is a certain amount of lost motion in rotating the cylinder 11, so that the pin 16 strikes the contact-piece 21 before the bar 8 begins to descend under the operation of the cylinder. By the time its complete descent has been made and the needle on the diaphragm is brought into contact with the surface of the cylinder the motor will have had time to come into perfect operation, so that the machine is ready to do its work instantly as long as the lever 17 is held against the tension of the spring 18. As soon as released it flies back to its normal position under the tension of the spring, leaves the bar 8, elevates the diaphragm, and stops the motor. While this is taking place the operator may transcribe the record of the machine and repeat the operation as often and for as long an interval as is necessary to take down the record readily and with accuracy.

Instead of the means above described for raising and depressing the bar 8, a pedal may be employed, as illustrated in Fig. 5 of the drawings, in which an oscillating foot-piece

26 is attached to the prolonged end of the bar and is kept normally in the elevated position by a spring 27. Electrical communication is established through this pedal and a contact-piece 28 in the same manner and for the same purpose as above described.

I do not claim everything set forth in the above specification as a part of my present invention, having already embodied part of it in my previous application, Serial No. 390,161, filed April 23, 1891.

What I claim is—

1. The combination, with a phonograph, electric motor, and source of electrical supply, of a vertically-movable bar adapted to raise and lower the diaphragm of the phonograph, a pin carried with the bar, a contact-piece in the path of the pin, adapted to make and break electrical communication, respectively, when the pin touches the contact-piece or is separated from it by the raising and lowering of the bar, and conductors between the motor, the source of electrical supply, the bar, and the contact-piece, respectively, substantially as set forth.

2. The combination, with a phonograph, electric motor, and source of electrical supply, of means for making and breaking connection between the motor and its source of supply, one part of said means being directly connected with the diaphragm-lever of the phonograph, whereby its being raised or lowered from the recording-cylinder makes or breaks connection, as set forth.

In testimony of all which I have hereunto subscribed my name.

HENRY T. HOLTZ.

Witnesses:

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