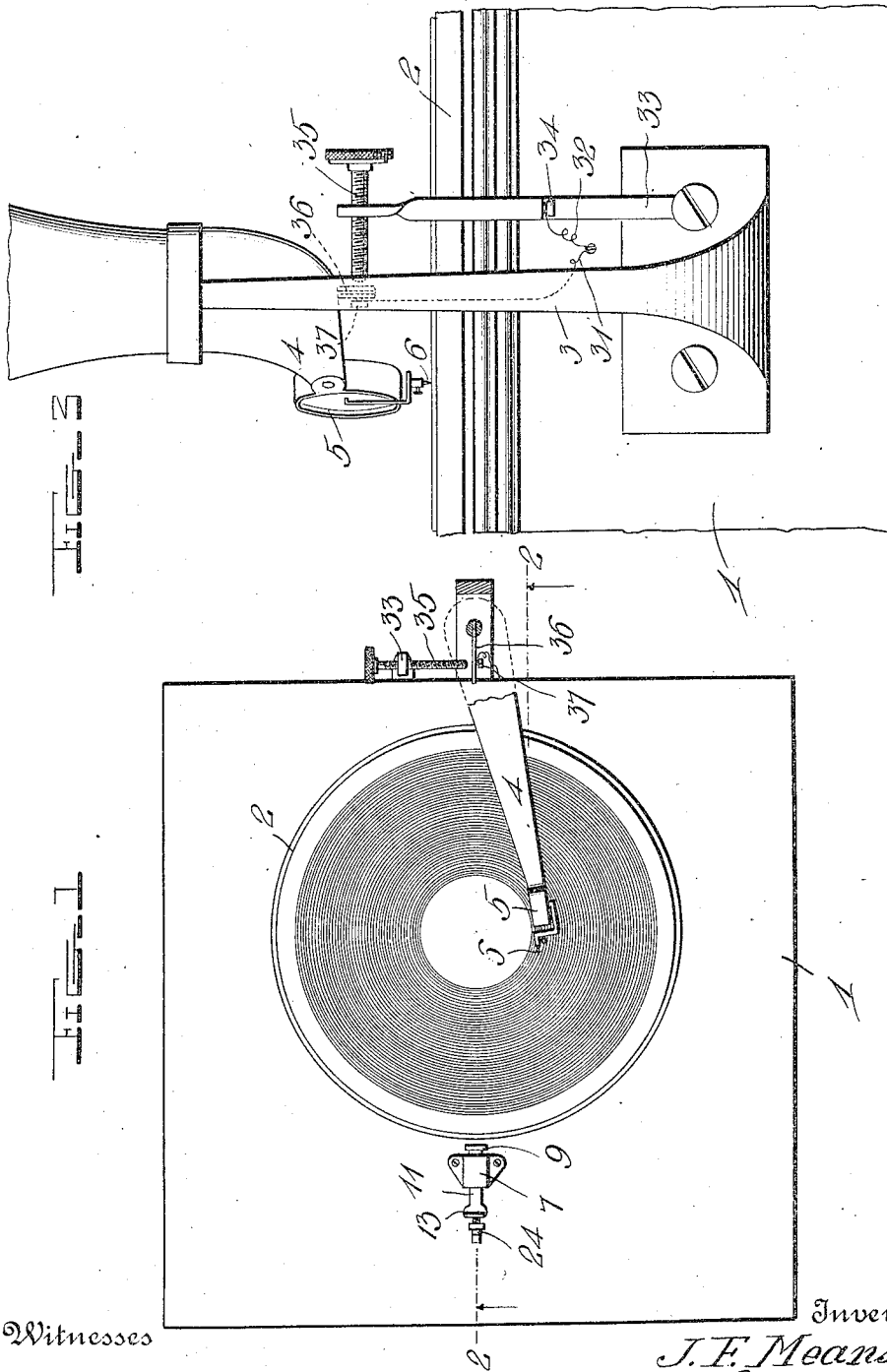


J. F. MEANS.
ELECTRIC BRAKE FOR GRAPHOPHONES.
APPLICATION FILED APR. 18, 1910.

981,935.

Patented Jan. 17, 1911.

2 SHEETS—SHEET 1.



Witnesses

E. C. Clarke

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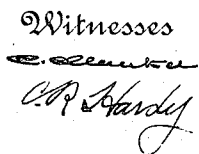
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981,935.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN F. MEANS, OF OIL CITY, PENNSYLVANIA

ELECTRIC BRAKE FOR GRAPHOPHONES.

981,935.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed April 18, 1910. Serial No. 556,000.

To all whom it may concern:

Be it known that I, JOHN F. MEANS, a citizen of the United States, residing at Oil City, in the county of Venango and State of Pennsylvania, have invented new and useful Improvements in Electric Brakes for Graphophones, of which the following is a specification.

This invention relates to improvements in electric brakes for graphophones.

The prime object of the invention is to provide an improved construction of electric brake mechanism for graphophones whereby the machine will be automatically stopped.

Another object is to provide means whereby the circuit closing mechanism of the electric brake releasing mechanism may be adjusted to operate the brake when the needle has reached any desired place on the record.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings: Figure 1 is a plan view of a disk graphophone with parts broken away and showing the application of the invention; Fig. 2 is a vertical section of the same on the line 2—2 of Fig. 1; Fig. 3 is a rear view; Fig. 4 is a vertical section of a portion of the machine showing the brake releasing mechanism on an enlarged scale; and, Fig. 5 is a similar view showing an end elevation of the electromagnets for operating the brake releasing devices.

Referring more particularly to the drawings 1 denotes the cabinet in which are arranged the motor and operating mechanism. Above the cabinet and revolvably mounted therein is a turn table 2 on which the record disks are arranged and operated. On one side of the cabinet is secured the horn supporting bracket 3 in the upper end of which is pivotally mounted the sound transmitting horn 4 which carries the reproducer 5 having the record engaging needle 6. These parts may be of the usual or any desired construction and do not form a part of the present invention.

My improved brake mechanism comprises

a brake cylinder 7 which is mounted in any suitable position on the cabinet adjacent to the edge of the turn table 2. In the cylinder 7 is slidably mounted a brake piston or plunger 8 carrying on its outer end a brake shoe 9 which is adapted to be forced into engagement with the edge of the turn table for the purpose of stopping the same. The plunger or piston 8 is projected and held in an operative position by means of a coiled spring 10 arranged around the rod or stem 11 of the piston within the casing 7 as shown. The outer end of the rod or stem 11 extends through and projects beyond the outer end of the cylinder 7 and has formed therein a stop notch 12 with which when the plunger is in a retracted or inoperative position is adapted to be engaged a suitable catch whereby said plunger is held in an inoperative position. The outer end of the rod or stem 11 is preferably turned upwardly to form a handle 13 whereby the plunger may be retracted.

The catch for holding the plunger in a retracted position comprises a cylinder 14 which may be arranged in any suitable position and is here shown as being set into the top of the cabinet. Slidably mounted in the cylinder 14 is a piston or plunger 15 having on its outer end a stop finger 16 which is adapted to engage the notch 12 in the brake plunger rod when the latter is in a retracted position. The plunger or piston 15 is provided with a stem or rod 17 which projects through the inner end of the casing. Around the stem or rod 17 within the casing 14 is arranged a coiled projecting spring 18 the pressure of which is exerted to normally force the plunger outwardly in the cylinder thus moving the stop finger 16 to a position for engaging the notch 12 in the brake plunger rod.

The outer end of the rod or stem 17 of the catch plunger is operatively connected by a right angular arm 19 with the armature 20 of an electromagnet 21 which may be arranged in any suitable position and which is here shown as being arranged in the cabinet 1 and supported by a bracket or hanger 22 secured to the inner side of the top of the cabinet. The armature 20 is preferably hingedly connected to the bracket 22 as shown at 23.

On the cabinet adjacent to the outer end

of the brake plunger rod 11 is a circuit breaker 24 one member of which is in electrical connection with one pole of the magnet 21 by a conducting wire 25 while the other member of said circuit breaker is in electrical connection with a suitable battery 26 by a current conducting wire 27. The battery 26 may be arranged in any suitable manner but is here shown as being arranged in the cabinet 1. In the current conducting wire 27 between the circuit breaker and the battery is preferably arranged a spring contact terminal 28. The opposite pole of the magnet 21 is connected to a spring contact terminal 29 by a current conducting wire 30. With the terminal 29 is connected a current conducting wire 31 which leads to a contact switch hereinafter described. The other terminal of said switch is connected to the battery 26 by a current conducting wire 32. When the brake plunger rod 11 is retracted to an inoperative position and is engaged by the stop finger 16 the outer end of said plunger rod will engage the circuit breaker 24 and close the same.

The circuit closing switch for the electro-magnet as here shown preferably consists of a bracket 33 secured to one side of the cabinet 1. On the bracket 33 is arranged a binding screw 34 with which is connected the terminal of the current conducting wire 32 from the battery. In the upper end of the bracket 33 is adjustably mounted a contact screw 35 which forms one terminal of the switch. The other terminal of the switch is in the form of an arm or bar 36 which is secured to the horn 4 and is moved thereby as the latter swings back and forth over the record with the movement of the needle. In the bar 36 is arranged a binding screw 37 with which is connected the terminal of the current conducting wire 31 of the electro-magnet.

In using the device the horn is first swung over the record until the needle is in position to engage the end of the thread or groove formed in the record after which when the parts are in this position the contact screw 35 is screwed through the bracket 33 until the end thereof comes into engagement with the switch bar 36 carried by the horn. After the screw 35 has thus been adjusted the arm is swung back until the needle is in position to engage the beginning of the thread or groove of the record. The brake plunger 8 is retracted to disengage the brake shoe 9 from the turn table whereby the latter is permitted to revolve. The brake plunger is held in a retracted position by the stop finger 16 as hereinbefore described and when said plunger is retracted the outer end of the plunger rod or bar 11 will close the circuit breaker 24 and hold the same in closed position until the plunger rod is released by the movement of the stop finger. With the

parts in this position the turn table will continue to revolve until the needle has reached the end of the groove or thread on the record or any other point where it is desired to stop the machine at which time the switch bar 36 will be brought into engagement with the contact screw 35 thereby completing the circuit to the electro-magnet thus energizing the same and causing said magnet to attract the armature 20. The movement of the armature will pull the plunger 18 downwardly thereby disengaging the stop finger 16 from the notch 12 in the brake plunger rod thus releasing said rod and permitting the spring 10 to force the brake shoe into engagement with the turn table thereby stopping the latter. When the plunger is thus projected the outer end of the plunger rod 11 will be disengaged from the circuit breaker 24 allowing the members thereof to spring apart and thus again breaking the circuit to the magnet.

By means of my improved brake and switch mechanism it will be readily seen that the machine may be stopped at any desired place on the record. While the brake and its operating mechanism has been herein shown and described as applied to a disk record machine it will be understood that this application is simply shown for illustrative purposes and I do not wish to be understood as confining myself to the use of the switch in this style of machine as the same may be readily applied to a cylinder machine and the brake mechanism arranged thereon in position to engage the record mandrel or other moving part of the machine whereby the machine will be stopped.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claim.

Having thus described my invention what I claim is:

A structure of the character described comprising a cabinet with a turn table thereon, a brake cylinder secured to the cabinet, a spring actuated stem mounted in the cylinder having a plunger thereon, a brake shoe on said plunger adapted to contact with said table, said stem also having a notch therein, a device for holding the above named plunger in retracted position consisting of a cylinder provided with a spring actuated stem projecting through the inner end of the cylinder and having a plunger thereon provided with an upwardly projecting finger adapted to engage said notch, said project-

ing end of the stem having a right angular
arm thereon provided with an armature,
magnets for actuating the same, a sound box,
a swinging arm carrying the same, contacts,
5 one of which is carried by said arm, and a
source of energy for energizing said mag-
nets when said contacts are closed.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

JOHN F. MEANS.

Witnesses:

A. L. CONFER,
F. W. CHASE.