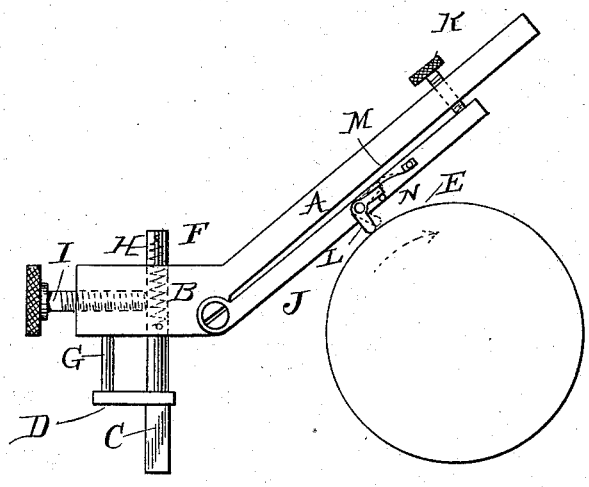
(No Model.)

# T. A. EDISON.

## AUTOMATIC DETERMINING DEVICE FOR PHONOGRAPHS.

No. 406,575. Patented July 9, 1889.

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# UNITED STATES PATENT OFFICE.

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

## AUTOMATIC DETERMINING DEVICE FOR PHONOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 406,575, dated July 9, 1889.

Application filed February 11, 1889. Serial No. 299,460. (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 new and useful Improvement in Automatic Determining Devices for Phonographs, (Case No. 828,) of which the following is a specification.

In my application, (Case No. 818,) Serial No. 296,420, filed January 15, 1889, I have described a preferred form of device for determining automatically the exact position of the recording and reproducing points on the phonogram-cylinder, whether thick or thin, and referred in general terms to other forms of device to accomplish the same purpose which I had tried.

My present invention relates to an automatic determining device employing a pivoted determining-point adapted to be rocked or canted by the rotation of the phonogram-blank to enable it to ride lightly over the surface of said blank without mutilating the same; and my invention consists in the devices and combinations of parts hereinafter explained, and pointed out by claims.

In the accompanying drawing, forming a part hereof, the single figure represents a side elevation of a form of device embodying my invention, the pivoted determining-point being shown in full lines in determining contact with the phonogram-blank and in broken lines in the position it assumes when the blank is rotated in the direction of the arrow.

A represents the spectacle-frame carrying the recorder and reproducer. It is similar in construction and mode of operation to the spectacle-frame described in my application above referred to. It has attached to it two arms, but one of which B is shown in the drawings, one arm for each eye of the frame. These arms project forward over the guide-rest C, and each arm is provided with a presser-foot D, which bears upon the guide-rest and supports the spectacle-frame as it moves in a definite relation to the phonogram-blank E.

The presser-foot D is a plate mounted upon the lower end of a bar F, which passes up through the arm B, said plate being provided also with a pin G, to prevent its turning on the guide-rest. A spring H is connected to a pin at the upper end of the bar F and with another pin upon the side of the arm B, and, drawing downwardly upon the bar F, tends to project the presser-foot downwardly to the lowermost limit of its movement.

I is the locking-bolt, which is operated by hand after the determining-point has come in contact with the phonogram-blank, to lock the parts in the determined position.

Pivoted to the arm B is a lever J, upon the free end of which a set-screw K bears to adjust the lever as may be found necessary. On the lever J is pivoted an L-shaped rocking piece L, one arm of which forms the determining-point and the other arm of which is acted on by a flat spring M to throw the arm forming the determining-point into a perpendicular relationship with the phonogram-blank when the blank ceases to revolve. A pin N serves to limit the movement of the rocking arm away from the blank.

In operation, as the spectacle-frame is lowered, the bar F will be projected to its lowermost position with reference to the bar B by the tension of the spring H. As soon as the presser-foot mounted on the bar F strikes the guide-rest its motion is arrested, but the downward motion of the spectacle-frame continues against the tension of the spring H, thereby producing an easy motion, which is communicated to the determining-point, thereby obviating a jarring contact of the determining-point and phonogram-blank, which might result in injury to the blank. The rocking determining-point is now in the perpendicular position shown in full lines in the drawing. The descent of the spectacle-frame will bring the determining-point into contact with the phonogram-cylinder. When this occurs, the operator locks the parts in this position by means of the locking-bolt I, and the cylinder is set in operation. The revolving cylinder, with which the determining-point is in contact, cants the piece bearing that point into the position shown in dotted lines in the drawing and the determining-point will ride over the surface of the phonogram-blank lightly without mutilating it. As soon as the spectacle-frame is raised from the phonogram-blank the spring M throws the determining-point into the perpendicular, ready to effect a new determination.

What I claim is—

1. In a phonograph, the combination, with a movable frame, a guide-rest, and adjustable presser-foot, of a pivoted determining-point adapted to ride in a canted position on the surface of a revolving phonogram, substantially as specified.

2. In a phonograph, the combination, with a movable frame, a guide-rest, and adjustable presser-foot, of a pivoted L-shaped piece, one arm of which forms a determining-point, and the other arm of which is operated upon by a spring to throw the determining-point into the perpendicular when the phonogram ceases to revolve, and said spring, substantially as specified.

3. In a phonograph, the combination, with a movable frame, a guide-rest, and adjustable presser-foot, of a pivoted determining-point adapted to ride in a canted position on the surface of a revolving phonogram, and a lock locking the movable frame, operated by hand after the determining-point comes in contact with the phonogram, substantially as specified.

4. In a phonograph, the combination, with a movable frame, a guide-rest, and adjustable presser-foot, of a lever bearing a pivoted determining-point and an adjusting-screw for said lever, substantially as specified.

This specification signed and witnessed this 1st day of February, 1889.

THOMAS A. EDISON.

Witnesses:
W. PELZER,
D. H. DRISCOLL.