

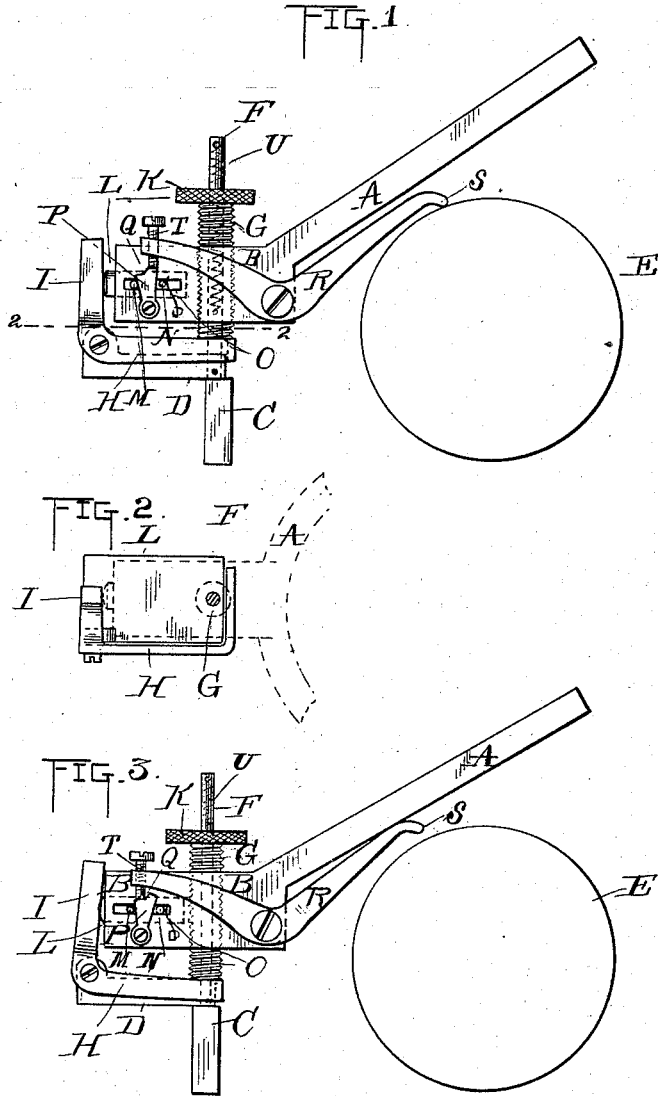
(No Model.)

T. A. EDISON.

AUTOMATIC DETERMINING DEVICE FOR PHONOGRAPHS.

No. 406,574.

Patented July 9, 1889.



WITNESSES:  
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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. 406,574, dated July 9, 1889.

Application filed February 11, 1889. Serial No. 299,459. (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. 827,) 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 point 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 particularly to that form of device referred to in said application, wherein a determining-point adapted to strike the surface of the phonogram-blank as the spectacle-frame is lowered is held in that position until a lock is operated by hand to fix the relation of the parts, the movement necessary to lock the parts operating a tripper to trip the determining-point, so that it will be moved away from the surface of the wax and prevented from wearing such surface; and the invention consists in the several novel devices and combinations of parts, hereinafter explained, and pointed out in the claims.

In the accompanying drawings forming a part hereof, Figure 1 is a side elevation of a form of automatic determining device embodying my invention, showing the determining-point in contact with the phonogram-blank and the locking mechanism and tripper ready to be operated to lock the parts and remove the determining-point from the phonogram. Fig. 2 is a section through the line 2 2 of Fig. 1; and Fig. 3 is a view similar to Fig. 1, but showing the parts after the locking and tripping have been effected.

The spectacle-frame A, bearing the recording and reproducing points, is similar in construction and mode of operation to the spectacle-frame described in my application above referred to, and comprises two arms, but one of which B is shown in the drawings, one arm B being provided 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 rigidly upon the lower end of a bar F, which passes up through the center of the screw-threaded bar G, working through the arm B of the spectacle-frame. A spring U 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.

Upon the presser-foot D, at one side thereof, is pivoted a rocking arm H, which viewed in plan shows substantially three sides of a parallelogram with an arm I perpendicular to one of the sides. The screw-threaded bar G is provided with a thumb-nut K, and its lower end just overlaps one side of the arm H, as shown in Fig. 2, so as to communicate to it its downward motion. This bar G effects the locking of the spectacle-frame and connected parts, it being capable of rotation so that it will contact with the presser-foot D, as shown in Fig. 3, thereby locking the parts from further descent.

The perpendicular arm I of the rocking arm H abuts against a piece L, which is a bolt working loosely in the arm B, provided with pins M N, which project laterally from it through a slot in the side of the arm B and against the latter of which pins bears a flat spring O. Between the projecting ends of these pins on the outside of the arm B is pivoted a tripper P, which is formed with a depressed portion Q on its upper extremity.

R is the bell-crank lever bearing upon the arm adjacent the phonogram-cylinder, having at one end the determining-point S and at the other end a position-screw T, the point of which rests on the tripping-piece P at all times.

When ready to begin operations, the adjusting-screw of the determining-lever will rest on the high portion of the tripper, and the locking mechanism will be so adjusted as to lock the parts at the same time the tripper is operated. When the parts are in this po-

sition, the downward tension of the spring U will project the presser-foot D to its lowermost limit with relation to the bar B, so that when the presser-foot comes in contact with the guide-rest its further movement is arrested and the bar B descends by gravity in opposition to the spring U, thereby acquiring a gentle downward movement. In the downward movement of the bar B the determining-point S will be brought into contact with the phonogram-blank. When this occurs, the operator by hand turns the bar G until its lower end is brought into contact with the rocking arm H. The further rotation of the bar G will rock the arm H, thereby projecting the bolt L toward the bar G, and with it the pins M N, which in turn move the tripping-piece P, on which the end of the position-nut T of the lever bearing the determining-point rests. The face of the high portion of the tripping-piece is of such length that as the locking of the parts is being effected the position-screw will fall from it into the depressed portion thereof, thereby relieving the determining-point from rigid contact with the phonogram-blank, whereby the surface of the blank is saved from mutilation or scratching. The bottoming of the bar G on the presser-foot D locks the parts in the determined position.

When the lever bearing the determining-point is to be used to determine another adjustment, it will be raised out of the depression on the tripping-piece, and the spring O will project the bolt L and tripping-piece P back to the position they occupied when operations began.

What I claim is—

1. In a phonograph, the combination, with the recorder and reproducer frame movable toward and away from the phonogram-surface, a guide-rest, and an adjustable presser-foot supporting the said frame from the guide-rest, of a determining-point carried by said frame and making contact with the phonogram-surface, a lock locking the spectacle-frame operated by hand after the determining-point touches the phonogram-surface, and a tripper tripping the determining-point out of contact with the phonogram-blank operated by the operation of the lock, substantially as specified.

2. In a phonograph, the combination, with the recorder and reproducer frame movable

toward and away from the phonogram-surface, a guide-rest, and an adjustable presser-foot supporting the said frame from the guide-rest, of a lever and a determining-point carried by said lever and making contact with the phonogram-surface, a lock locking the spectacle-frame operated by hand after the determining-point touches the phonogram-surface, and a tripper tripping the determining-point out of contact with the phonogram-blank operated by the operation of the lock, substantially as specified.

3. In a phonograph, the combination, with the recorder and reproducer frame movable toward and away from the phonogram-surface, a guide-rest, and an adjustable presser-foot supporting the said frame from the guide-rest, of a lever and determining-point carried by said lever and making contact with the phonogram-surface, a lock locking the spectacle-frame operated by hand after the determining-point has contacted with the phonogram, comprising a bar on the presser-foot, a screw-threaded bar in the spectacle-frame surrounding the bar on the presser-foot, and through which said bar is free to slide, and said presser-foot, substantially as specified.

4. In a phonograph, the combination, with the recorder and reproducer frame movable toward and away from the phonogram-surface, a guide-rest, and an adjustable presser-foot supporting the said frame from the guide-rest, of a lever and determining-point carried by said lever and making contact with the phonogram-surface, a lock locking the spectacle-frame operated by hand after the determining-point has contacted with the phonogram, comprising a bar on the presser-foot, a screw-threaded bar in the spectacle-frame surrounding the bar on the presser-foot, and through which said bar is free to slide, and said presser-foot, a tripper for withdrawing the determining-point from the phonogram-blank operated by the movement for operating the lock, comprising a rocking lever, sliding bolt, and tripping-piece, substantially as specified.

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

THOMAS A. EDISON.

Witnesses:

W. PELZER,

D. H. DRISCOLL.