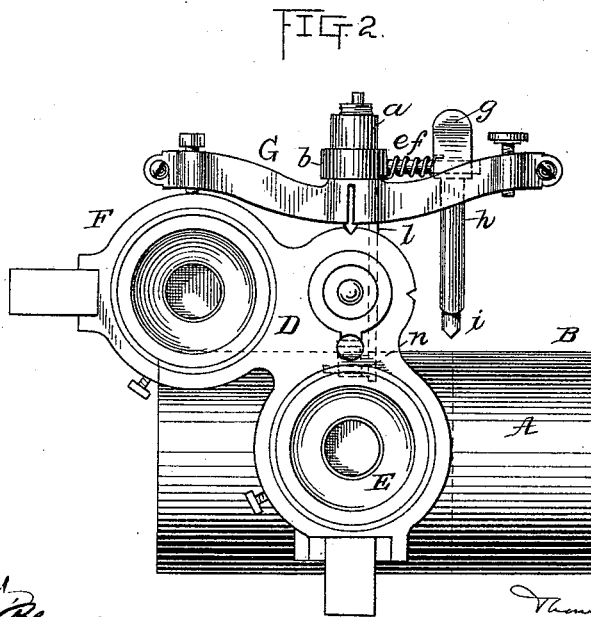
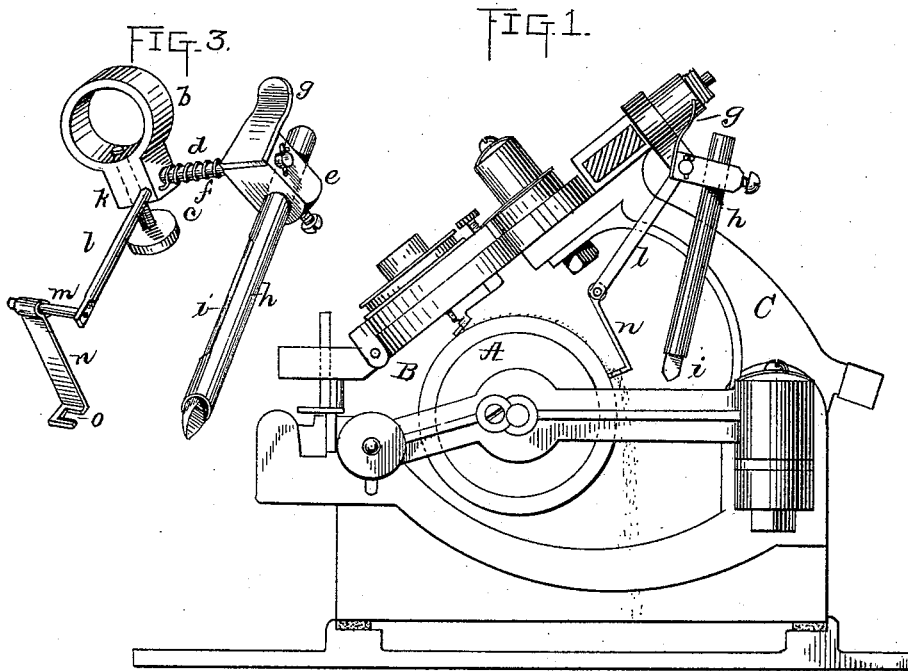


(No Model.)

T. A. EDISON.
PHONOGRAPH.

No. 437,426.

Patented Sept. 30, 1890.



Witnesses
Ed. Howland
William P. Ryan

Inventor
Thomas A. Edison
By *L. S. Atterneys*

UNITED STATES PATENT OFFICE.

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

PHONOGRAPH.

SPECIFICATION forming part of Letters Patent No. 437,426, dated September 30, 1890.

Application filed August 10, 1889. Serial No. 320,400. (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. 842,) of which the following is a specification.

The object of my invention is to increase the effectiveness and convenience in use of the phonograph. More especially my object is to provide means for indicating upon the record a point at which a pause is made in dictating to the instrument, and also to provide means for removing from the phonogram-surface the fine chips or shavings which are produced by the cutting action of the recording-point.

The first of the above-named objects I accomplish by means of a marking-pencil, which is adjustable to and from the phonogram-surface. When a pause is made in the operation of the machine, such pencil is moved momentarily against the phonogram, and makes a mark thereon, which indicates the point on the record where the pause occurs, so that the operator can go back to this point when he recommences speaking.

The second object I accomplish by means of a wiper hung to the frame of the instrument and resting constantly, when the parts are in operative position, against the cylinder and in line with the recording-point and moving with the parts which carry the recording-point, so that it wipes or scrapes from the surface the chips or shavings referred to.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is an end view of a phonograph provided with devices embodying my invention; Fig. 2, a front elevation of the cylinder and spectacle-frame thereof, and Fig. 3 a perspective view of the parts which embody my invention detached from the machine.

A is the phonogram-cylinder of the phonograph, and B the cylindrical phonogram-blank placed thereon.

C is the rocking holding-arm carrying the spectacle-frame D, which holds the recorder E and reproducer F.

G is the yoke which forms the back-rest for the spectacle-frame. Upon the pin *a* at the

middle of said yoke is placed a collar *b*, secured by a set-screw *c*. From this collar extends a spindle *d*, on the end of which is sleeved a box or frame *e*. On the spindle *d* is coiled a spring *f*, one end of which is attached to the collar *b* and the other end to the frame *e*. The top of the frame *e* is formed as a thumb-piece *g*. The frame *e*, which turns on the spindle *d*, carries the marking-pencil, which preferably consists of a slotted tube *h*, adjustable in which is a stick *i* of the marking material, which is preferably a mixture of paraffine and lamp-black, this being a soft material which will not injure the surface on which it acts.

The operation of this device will be readily understood. When the person using the phonograph pauses for any reason, he momentarily presses the thumb-piece *g*, which throws the point of the pencil forward against the cylinder. The pencil, made as described, makes a smooth black mark on the surface of the revolving cylinder without indenting or scratching such surface, and such mark will indicate the place on the record at which the pause occurred. On releasing the thumb-piece the spring *f* throws the pencil back to its normal position.

Also secured to the lug *k* of the collar *b* is an arm *l*, which extends downwardly toward the phonogram-cylinder behind the recorder or reproducer. Pivoted on a pin *m* at the end of this arm is the wiper *n*, which is preferably a light piece of brass with its end bent at an angle, as shown, so that it rests lightly by its weight against the surface of the phonogram or phonogram-blank.

As is now well known, my phonograph is provided with a cutting-tool for turning off the surface of the blank, and this tool is provided with a chute for conveying away from it the chips or shavings removed by it. I, however, also use a cutting-tool as the recording-point of the phonograph, and this also removes very fine particles of material which stick to the surface of the cylinder, and may impair the record or affect the operation of the reproducing-point. The wiper *n* is designed to remove these particles, and being placed in line with the recording-point and moving with it along the blank the shavings removed thereby strike against the end of said

wiper and are thus removed from the surface, preferably falling through a recess *o* in the bent end of the wiper into the receptacle beneath the machine. The wiper *n* does not require any adjustment for cylinders of different thickness, since it will always swing forward by its own weight until stopped by the cylinder, against which it rests so lightly as not to injure the surface, although sufficiently to remove the light particles.

What I claim is—

1. The combination, with a phonograph having a recorder, reproducer, and phonogram-surface, of a marking-pencil mounted on the phonograph, movable to and from the phonogram-surface and adapted to mark the end of a record without mutilating the recording-surface, substantially as set forth.

2. The combination, with a phonograph having a recorder, reproducer, and phonogram-surface, of a marking-pencil pivotally supported adjacent to the phonogram-surface and movable to and from said surface, and adapted to mark the phonograph-surface without mutilating the same, whereby the end of the record may be indicated, substantially as set forth.

3. The combination, with a phonograph having a phonogram-blank and the usual or suitable operating parts, of an additional marking-pencil mounted on the phonograph and movable to and from the blank, whereby the end of the record may be indicated, substantially as set forth.

4. The combination, with a phonograph having a recorder, reproducer, and phonogram-blank, of a pencil of soft material, such as paraffine and lamp-black, mounted on the phonograph, in definite relation to the recorder and movable to and from the blank, whereby the end of the record may be indicated, substantially as set forth.

5. The combination, with a phonograph having a recorder, reproducer, phonogram-surface, and means for operating the same, of a marking-pencil pivoted to the phonograph in a definite relation to the path of record, and the spring for retracting said pencil, whereby the end of the record may be indicated, substantially as set forth.

6. The combination, with a phonograph having a recording-point, phonogram-surface, and operating mechanism, of the wiper resting lightly against the phonogram-surface continually while the phonograph is in use, substantially as set forth.

7. In a phonograph, the combination, with the cutting recording-point, of a wiper resting against the phonogram-surface in position to remove the loose material formed by the operation of said point and carried by a traveling part so as to move therewith, substantially as set forth.

8. In a phonograph, the combination, with the cutting recording-point, of a loose pivoted plate resting against the phonogram-surface in position to remove the loose material formed by the operation of said point, substantially as set forth.

9. In a phonograph, the combination, with the cutting recording-point, of a wiper resting by gravity against the phonogram-surface in position to remove the loose material formed by the operation of said point, substantially as set forth.

This specification signed and witnessed this 20th day of July, 1889.

THOS. A. EDISON.

Witnesses:

D. H. DRISCOLL,
I. C. BENNETT.