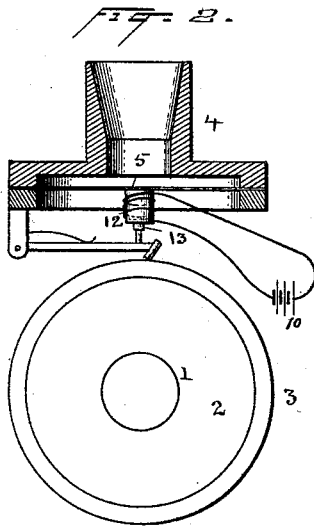
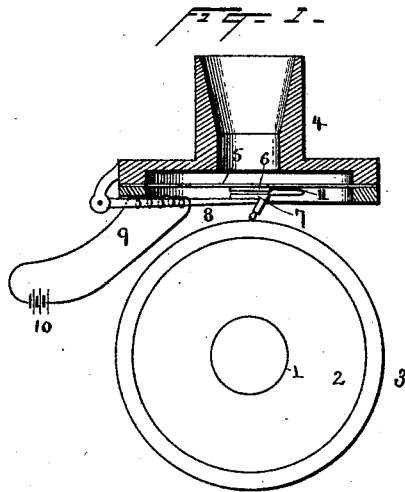


(No Model.)

T. A. EDISON.  
PHONOGRAPH.

No. 500,282.

Patented June 27, 1893.



Witnesses  
Norris A. Clark  
Nicholas F. Oberli

Inventor  
T. A. Edison,  
By his Attorneys  
Syer & Selby.

# UNITED STATES PATENT OFFICE.

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

## PHONOGRAPH.

SPECIFICATION forming part of Letters Patent No. 500,282, dated June 27, 1893.

Application filed December 3, 1890. Serial No. 373,412. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS ALVA 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. 896,) of which the following is a specification.

The present invention relates to means for forming an operative connection between a phonograph diaphragm and a recorder or reproducer, which connection shall effectively transmit the vibrations due to sound waves or the sound record, but shall allow a movement of the recorder or reproducer independent of the diaphragm under the influence of larger irregularities or eccentricities due to imperfection of the phonogram blank or recording surface.

In the accompanying drawings, which illustrate the invention, Figure 1 shows a view partially in section of one form of recorder, and Fig. 2 shows a similar view of a modified form of recorder.

1 is the phonograph shaft, 2 the phonograph cylinder, and 3 a phonogram blank.

4 is the usual mouth piece, or tube to which the mouth piece may be connected, below which is a diaphragm 5. At the center of the diaphragm is a magnetic piece or member 6 cemented to or forming a part of the diaphragm. Below this magnetic piece is a second corresponding member 7, supported on or forming a part of the pivoted recorder arm 8. This arm may be magnetized by means of a coil 9 in circuit with battery 10, or in any other convenient manner. In this form I prefer to connect the pieces 6, 7 by a light spring 11 to supplement the magnetic connection.

In Fig. 2 is shown attached at the center of the diaphragm a coil or solenoid 12, and to the pivoted recorder arm is connected a magnetic core 13.

In the drawings the means for turning the phonogram blank and for feeding the recorder or reproducer lengthwise of the phonogram blank are not shown since they may be of well known construction and are not specifically claimed herein.

The connection described between the re-

recorder or reproducer and the diaphragm is found to faithfully transmit the vibrations due to sound from the diaphragm to the recorder, or in reproducing from the recorder to the diaphragm, but when said recorder or reproducer is moved more slowly by irregularities or eccentricities of the phonogram blank the magnetic connection yields so that the recorder or reproducer moves independently of the diaphragm. Hence the record or the reproduction is substantially independent of such irregularities.

Having thus described my invention, what I claim is—

1. The combination of a phonograph diaphragm or vibrating body, a recorder or reproducer, the diaphragm and recorder or reproducer being connected magnetically, substantially as described.

2. The combination of a phonograph diaphragm, a recorder or reproducer, the diaphragm and recorder or reproducer being slightly separated but connected magnetically, substantially as described.

3. The combination of a phonograph diaphragm, a magnetic member thereon, a recorder or reproducer and a magnetic member thereon, and in operative relation to the first member, substantially as described.

4. The combination of a phonograph diaphragm having a magnetic member, and a recorder and a reproducer having a magnetic arm, substantially as described.

5. The combination of a phonograph diaphragm, a magnetic member at or near its center, a recorder, a magnetic piece connected thereto, and a spring connecting said diaphragm and recorder, substantially as described.

6. The combination of a phonograph diaphragm, a magnetic portion at or near its center, a recorder having a magnetic arm and means for magnetizing it, and a spring connecting said diaphragm and magnetic piece, substantially as described.

This specification signed and witnessed this 1st day of December, 1890.

THOS. A. EDISON.

Witnesses:

JOHN F. RANDOLPH,  
W. PELZER.