

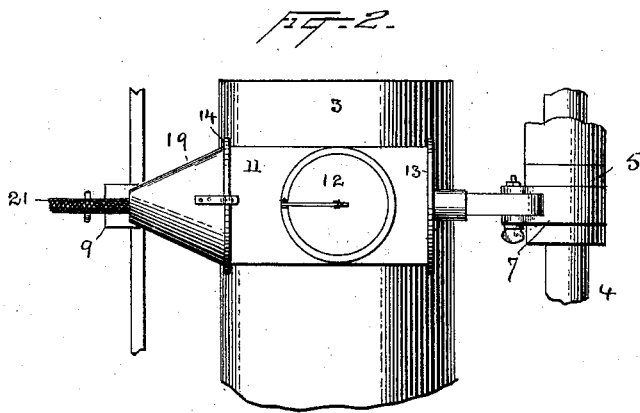
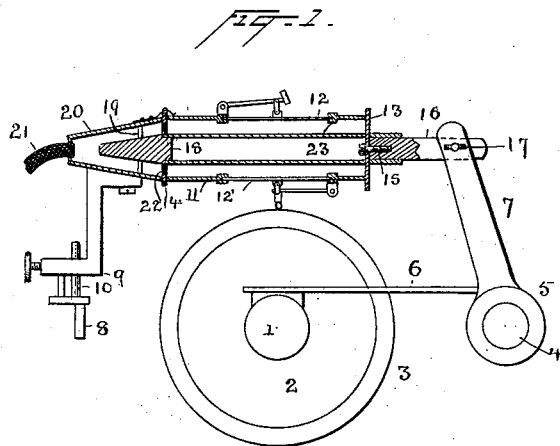
(No Model.)

2 Sheets—Sheet 1.

T. A. EDISON.  
PHONOGRAPH.

No. 605,667.

Patented June 14, 1898.



Witnesses  
Norris A. Clark.  
Nicholas F. Oberli

Inventor  
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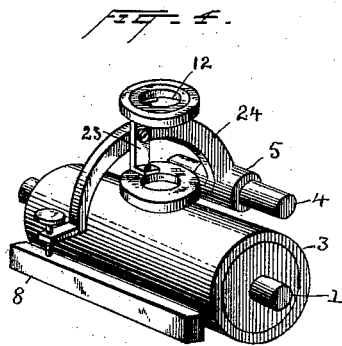
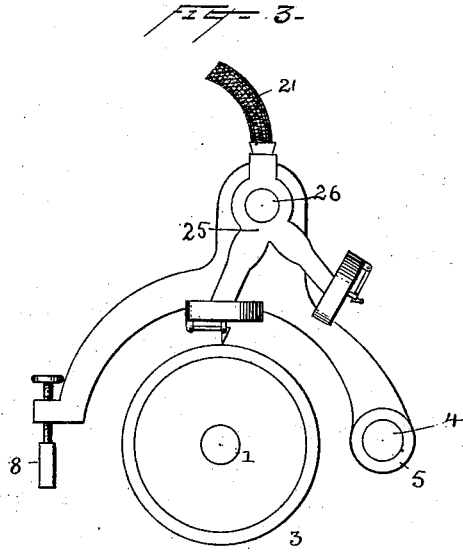
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# UNITED STATES PATENT OFFICE.

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

## PHONOGRAPH.

SPECIFICATION forming part of Letters Patent No. 605,667, dated June 14, 1898.

Application filed December 3, 1890. Renewed February 4, 1897. Serial No. 622,021. (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. 890,) of which the following is a specification.

This invention relates to means for throwing a phonograph-recorder out of operative position and throwing the reproducer into operative position, or vice versa, in that class of phonographs which have a separate diaphragm for the recorder and for the reproducer. I have heretofore proposed to support the two diaphragms and the recorder and reproducer, respectively, in the two sides of a spectacle-frame, which frame is pivoted so that it can be swung from one side to the other, usually in a plane nearly tangential to the surface of the phonogram-blank, to bring either diaphragm in communication with the speaking or hearing tube. This arrangement is described and claimed in my Patent No. 386,974, dated July 31, 1888. The present invention provides an improved apparatus to accomplish the same result as the spectacle-frame. In two forms of this apparatus the recorder and reproducer are mounted on a supporting-frame or a tube which is adapted to be rotated, preferably, in a plane at right angles to the direction of rotation of the phonogram-blank, and is not merely adapted to be swung back and forth, as is the old spectacle-frame, and in another form a swinging frame is employed.

In the accompanying drawings, which illustrate the invention, Figure 1 is a sectional view of an apparatus, showing the invention.

Fig. 2 is a plan view thereof, and Figs. 3 and 4 are views of modified forms.

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

4 is a guide-rod on which the sleeve 5 is adapted to slide. To said sleeve is connected the usual feed-arm 6 and also an upward extension 7, forming a part of the recorder and reproducer carrying arm. At the opposite side of the blank is a guide-bar 8, on which the end 9 of the recorder-carrying arm is adapted to bear, preferably through or by means of the automatic determining devices

10 of the character described by me heretofore. Between the two ends of the carrying-arm is inserted a hollow tube or frame 11, of any desired shape in cross-section. In different sides of this tube or frame, preferably diametrically opposite each other, are placed diaphragms 12 12', to which are connected the recorder and reproducer, respectively. The tube or frame is supported between two plates or disks 13 14, the former being adapted to rotate on the bearing 15, which is shown screwed into the end of the rod or bar 16, which in turn is united with arm 7 by means of a bolt or other suitable device 17. The opposite disk is adapted to turn on one end of the plug 18, which is supported by means of braces 19 within the cone-shaped sleeve 20. This latter sleeve is secured to the section 9 of the feed-arm and moves along with it.

21 is a hearing or speaking tube communicating with the conical sleeve 20, and through the same communicating with the interior of tube 11, the disk 14 being provided with slots or openings 22 for the purpose of allowing the passage of the air-waves. The disk 14 is also provided with means for holding it in the desired position. This means may consist of notches in the edge of the disk and a spring secured to sleeve 20 and adapted to bear in said notches. Within the tube 11 is preferably placed a second tube 23.

With the arrangement above described it will be seen that the hollow frame or tube supporting the recorder and reproducer forms a part of the supporting-arm and that the speaking and hearing tube is always in connection with the hollow arm and with the recorder or the reproducer carried thereby.

To use the device, supposing the reproducer to be in position on the phonogram-blank, as shown in Fig. 1, the tube is turned—for example, by grasping the disk 14—through one hundred and eighty degrees. In this position the recorder will occupy the position first occupied by the reproducer and the locking-spring will fall into a second notch in the disk 14. When the act of recording is completed, another half-turn may be given to the tube or frame, thus again reversing the position of recorder and reproducer.

In Fig. 4 the recorder and reproducer are mounted at opposite ends of an arm 23, which

is pivoted at its center to the arm 24. The friction at the pivot is sufficient to hold the recorder and the reproducer in position when they are set for use. By turning 23 on its pivot in either direction the recorder can be thrown out of operative position and the reproducer into such position, or vice versa.

In Fig. 3 the recorder and reproducer are mounted on the frame 25, pivoted on 26, and having passages leading to the recorder and the reproducer. The speaking and hearing tube 21 is always in communication with said passages. The pivot 26 is on the recorder and reproducer carrying arm, and the frame 25, carrying the recorder and reproducer, swings in a plane directly crossing the phonogram-blank.

Having thus described my invention, what I claim is—

1. A combined recording and reproducing device for phonographs, comprising a reversible diaphragm-holder, a recording-point on one side and a reproducing-point on the other side, whereby by reversing the holder either the recording or reproducing point may be brought into operative position, substantially as set forth.

2. The combination, in a phonograph having a suitable phonogram-blank, of a hollow structure, and recording and reproducing devices in different sides thereof, said structure being arranged to move on its axis to bring the recorder or the reproducer into operative position, substantially as described.

3. The combination with a support for a phonograph recorder and reproducer, consisting of a tube, of said recorder and reproducer mounted in different sides of the tube, substantially as described.

4. The combination of a support for a phonograph recorder and reproducer, consisting of a tube mounted to rotate in different sides of which said recorder and reproducer are mounted, and an inner tube, substantially as described.

5. The combination of a support for a phonograph recorder and reproducer, consisting of a tube mounted to rotate, in different sides of which said recorder and reproducer are mounted, said tube being connected to the phonograph-feeding devices, substantially as described.

6. A recorder and reproducer carrying arm,

a portion of which is tubular in combination with the recorder and reproducer, substantially as described.

7. A recorder and reproducer carrying arm having end sections and a journaled tube interposed between said sections in combination with a recorder or reproducer supported by the tube, substantially as described.

8. The combination of a support for a phonograph recorder and reproducer, consisting of a tube mounted to rotate, and a speaking or hearing tube communicating with one end of said tube, substantially as described.

9. The combination of a support for a phonograph recorder and reproducer, consisting of a tube mounted to rotate, an inner tube, and a speaking or hearing tube communicating with the space between the two tubes, substantially as described.

10. The combination with a guide-rod, a sleeve thereon to which the recorder-supporting arm is connected, and a guide-bar on which the arm bears, of said supporting-arm, and a recorder and reproducer mounted on different sides thereof but movable into and out of operative position, substantially as described.

11. The combination with a support mounted to rotate repeatedly in the same direction, of a phonograph-recorder on one side thereof, and a reproducer on another side, substantially as described.

12. The combination, with a support movable repeatedly in the same direction, of a recorder thereon at one side, and a reproducer thereon on a different side, and means for holding the support in the position to which it is turned, substantially as described.

13. In a talking-machine, the combination with the carriage and the tablet-carrying cylinder, of a pivoted holder adapted to carry a recording and transcribing diaphragm and so formed that said diaphragms will be held in a different plane with respect to each other, and means for bringing either of said diaphragms into contact with the tablet, as and for the purpose set forth.

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

TIIOS. A. EDISON.

Witnesses:

JOHN F. RANDOLPH,  
W. PELZER.