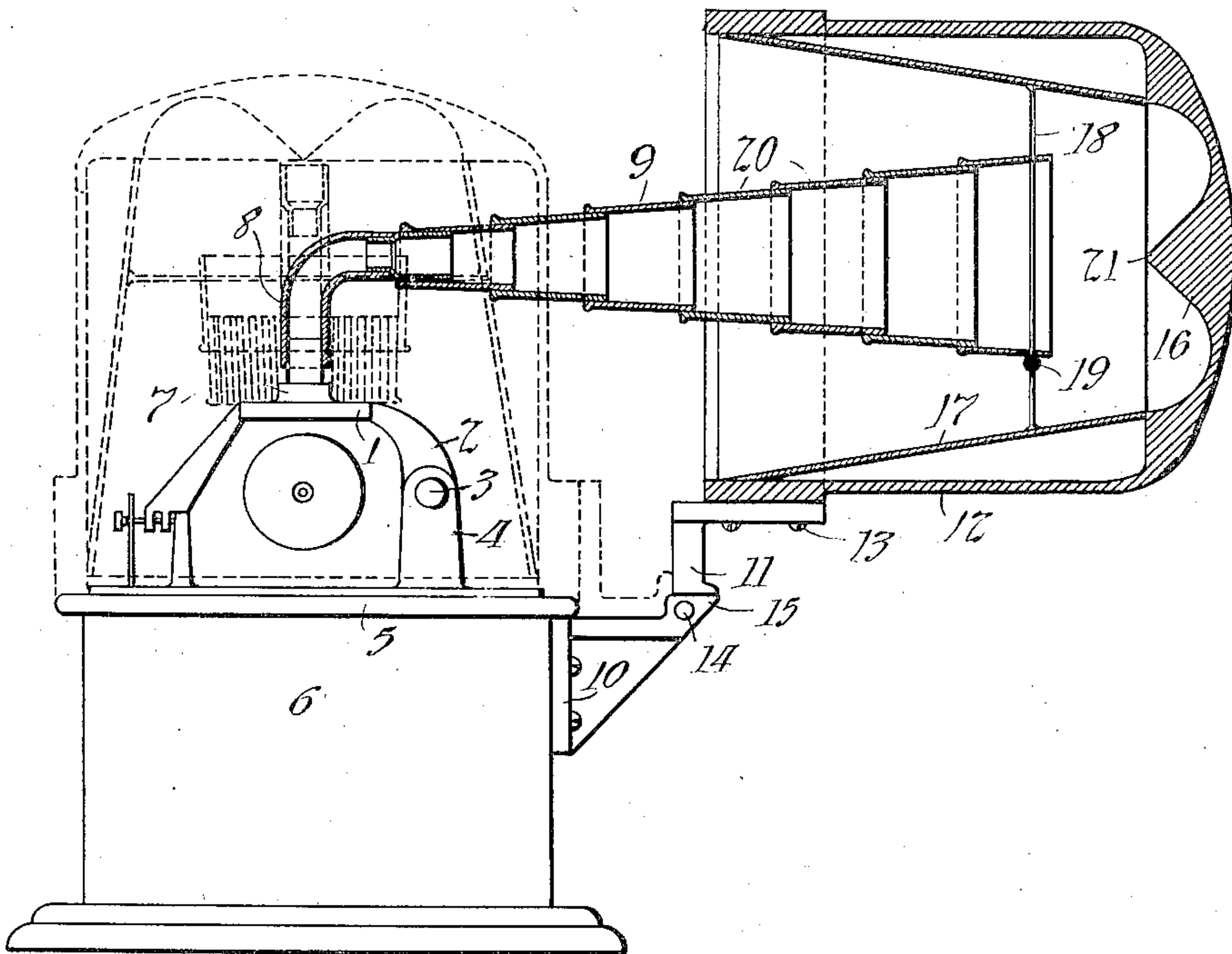


F. L. DYER.  
PHONOGRAPH.

APPLICATION FILED JULY 22, 1909.

951,757.

Patented Mar. 8, 1910.



*Witnesses:*  
Frank D. Lewis  
Dyer Smith

*Inventor:*  
O  
Frank L. Dyer



# UNITED STATES PATENT OFFICE.

FRANK L. DYER, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO NEW JERSEY PATENT COMPANY, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## PHONOGRAPH.

951,757.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed July 22, 1909. Serial No. 509,037.

*To all whom it may concern:*

Be it known that I, FRANK L. DYER, a citizen of the United States, and a resident of Montclair, in the county of Essex and State of New Jersey, have made a certain new and useful Invention in Phonographs, of which the following is a description.

My invention relates to phonographs, and the object thereof is, broadly speaking, the production of a compact and efficient device for the conveying and dissemination of sound in the reproduction thereof. More specifically, my device is an improvement on the invention of Peter Weber disclosed in his application for improvements in phonographs, Serial No. 509,061, filed on even date herewith. In the invention of the said Weber, a structure is provided wherein the cover for the phonograph is pivoted and when in open position may be supported in such position that a sound conveying tube connected with the neck of the reproducer may deliver the sound waves set up by the vibration of the reproducer diaphragm into the interior of the said cover. The cover is provided in its interior with sound deflecting means and means for conveying the sound so deflected smoothly to the open or bottom end of the cover, this sound conveying means within the body of the cover being of such a character as to amplify the sound. In my improvement on this structure, the sound conveying tube consists of telescoping sections supported within the cover, whereby, when the cover is in open position, the tube may be extended into the same to deliver the sound waves from the reproducer against the deflecting means within the cover, while, when the cover is in closed position incasing the phonograph, the sound conveying tube or horn is collapsed within the same. By this construction, sound conveying and amplifying means of sufficient amplification are provided in a compact space when the cover is open, the whole device being self-contained and compact when the cover is closed.

For a more perfect understanding of my invention, attention is hereby directed to the accompanying drawing, forming part of this specification, representing an end elevation of a phonograph equipped with my device, the sound conveying tube and the cover being shown in section for the open position of the cover, these parts being

shown in dotted lines in the positions occupied thereby when the cover is closed.

Referring to the drawing, the sound box 1 of the reproducer is carried by the traveling arm 2 which slides upon guide rod 3 mounted in bracket 4 which is supported upon bed plate 5 carried by the supporting cabinet 6, as is common. The neck 7 of the reproducer is connected by a rubber or other elastic connection 8 to the sound conveying tube 9, the end of connection 8 fitting over a reduced diameter of the small end of the sound conveying tube 9 to form a flexible or telescoping connection thereby. The bracket 10 is suitably secured preferably to the rear side of casing 6. Upon this bracket 10 the bracket 11 to which the cover 12 of the phonograph is rigidly secured as by screws 13, is pivoted, as shown at 14. The cover 12 is adapted to swing through a right angle about a pivot 14, the cover being shown in its closed position in dotted lines, and in its open position by the full line structure. It is, of course, obvious that the open position of the cover need not be exactly 90 degrees away from the closed position. The outer end of bracket 10 carrying pivot rod 14 is provided with a nose upon which a corresponding lug on bracket 11 rests when the cover is in open position, supporting means for the cover thus being provided when the cover is moved through approximately 90 degrees from its closed position, or to whatever position the cover occupies when open. It is, of course, obvious that if desired, additional supporting means for the cover when in open position may be provided. The inside of the top of the cover is provided with a sound deflecting surface 16 against which the sound waves conveyed by tube 9 are adapted to be directed and smoothly deflected therefrom to the sound conveying and amplifying surface 17 within the cover by which the sound waves are directed to the open end of the cover. The surface 17 may be tapered as shown, or given any other desired conformation. The tube 9 is preferably supported when the cover is in open position with the large or exit end thereof inserted within the open cover and in position to direct the sound waves against the surface 16. The tube 9 may be supported in such position by any convenient means, as for example, by means of the rod 18 ex-



tending diametrically across the inside of the cover from the upper to the lower portion of the surface 17 and passing through the upper and lower surfaces of the tube 9.

5 The rod 18 is provided with a suitable supporting means for the tube 9, as the enlargement 19, which, as shown in the drawing, is provided on rod 18 immediately below the lower surface of the tube 9. By this means,

10 the tube 9 rests upon the ball or enlargement 19 and may swing pivotally about rod 18. Tube 9 is provided with a plurality of telescoping sections 20, the larger end of each of which fits snugly within the smaller

15 end of the adjoining section. When the cover is in open position, these sections are drawn out to the greatest extent possible to form a continuous tube, the diameters of the respective ends of the various sections

20 being so chosen as to prevent the complete withdrawal of one section from the next. When it is desired to close the cover, the elastic connection 8 is simply removed from its connection with the neck of the repro-

25 ducer, when the cover may be closed, the various sections 20 of the tube 9 then collapsing into the position shown in dotted lines in the figure. Deflecting surface 16 on the inner side of the cover may be of any

30 desired conformation for smoothly guiding the sound waves to the mouth of the cover without loss of the same. As shown in the drawing, this surface preferably consists of two smooth and similar curves extending

35 from apex 21 opposite the axis of tube 9 and delivering sound waves therefrom to the surface 17.

Having now described my invention, what I claim and desire to protect by Letters Patent of the United States is as follows:

40 1. In a sound reproducing machine, the combination with a reproducer and a support therefor, of a cover for the reproducer, means pivotally supporting said cover from

45 the side of said support, whereby said cover may be supported in open position with the vertical axis of the cover in a substantially horizontal plane, said cover being provided with a sound amplifier on the interior there-

50 of, and means for conveying and directing

sound from said reproducer to said amplifier comprising a telescoping sound conveying tube connected to the neck of said reproducer and adapted to be extended into said cover when the latter is in open position, or col-

55 lapsed within the same when the latter is in closed position, substantially as described.

2. In a sound reproducing machine, the combination with a reproducer and a support therefor, of a cover for the reproducer,

60 means pivotally supporting said cover and means whereby said cover may be supported in open position, said cover being provided on the interior thereof with means for deflecting and guiding sound waves impinging

65 on the inner side of said cover to the open end thereof, and means for conveying and directing sounds from said reproducer into the interior of said cover and against said deflecting means, said conveying means com-

70 prising a telescoping tube adapted to be extended into said cover when the latter is in open position and collapsed within the same when the latter is in closed position, substantially as described.

75 3. In a sound reproducing machine, the combination with a reproducer and a support therefor, of a cover for the reproducer, means pivotally supporting said cover and means whereby said cover may be supported

80 in open position, said cover being provided on the interior thereof with means for deflecting and guiding sound waves impinging on the inner side of said cover to the open

85 end thereof, means for conveying and directing sounds from said reproducer into the interior of said cover and against said deflecting means, said conveying means comprising a telescoping tube adapted to be extended into said cover when the latter is in

90 open position and collapsed within the same when the latter is in closed position, and means within said cover for supporting said tube, substantially as described.

This specification signed and witnessed this 9th day of July 1909.

FRANK L. DYER.

Witnesses:

DYER SMITH,  
ANNA R. KLEHM.