

No. 785,746.

PATENTED MAR. 28, 1905.

T. H. MACDONALD.
GRAPHOPHONE REPRODUCER.
APPLICATION FILED SEPT. 7, 1904.

Fig. 1.

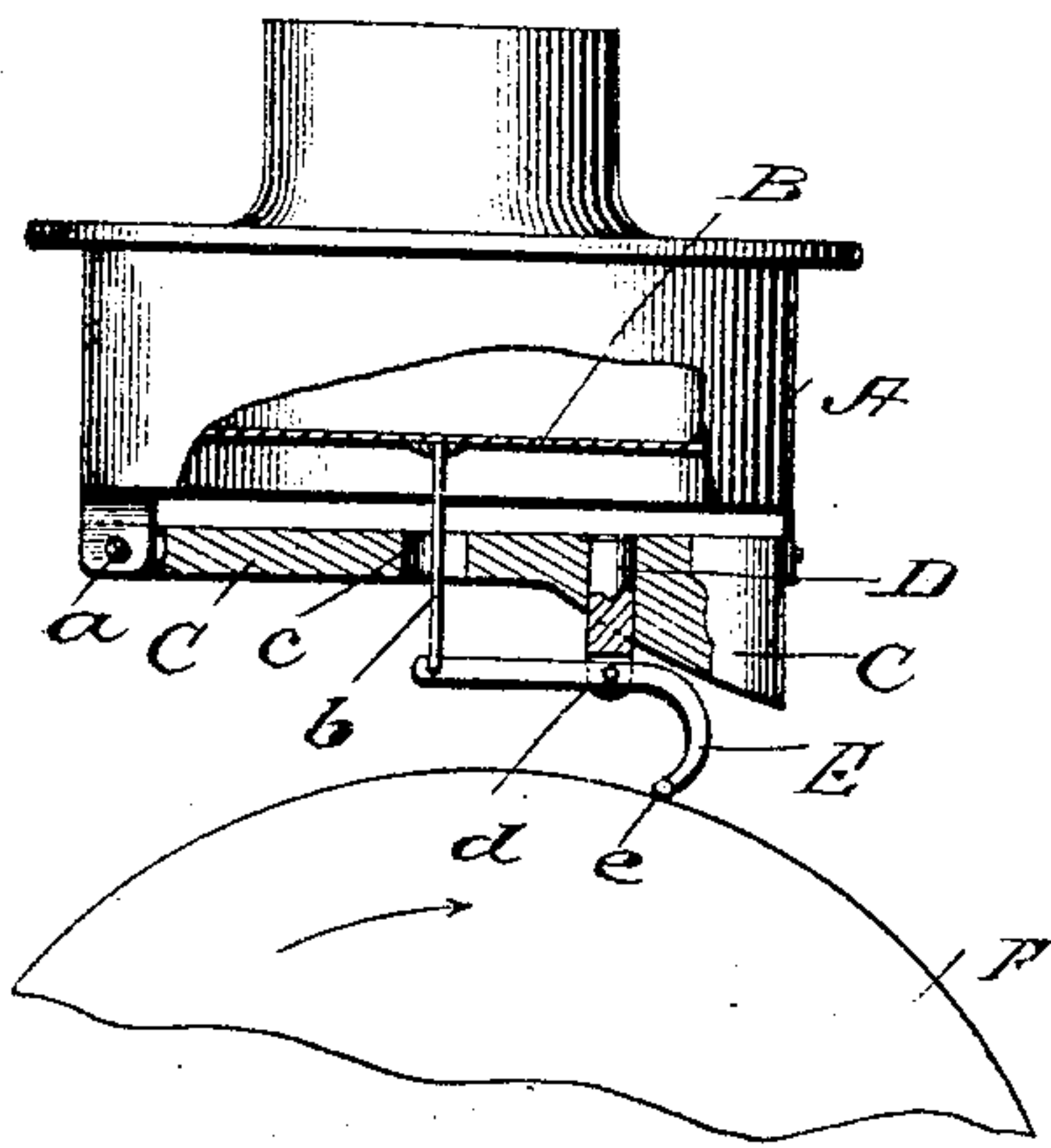


Fig. 2.

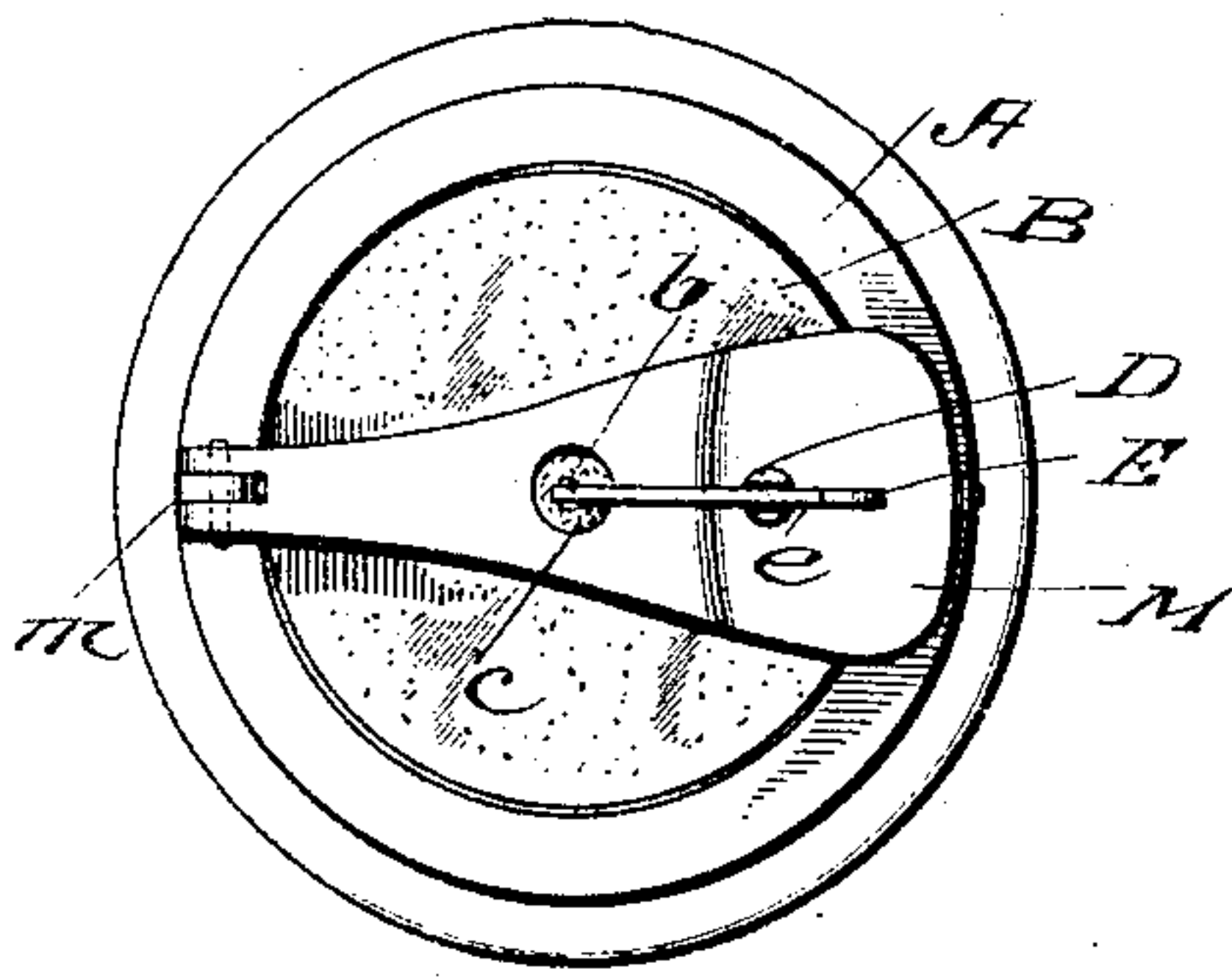
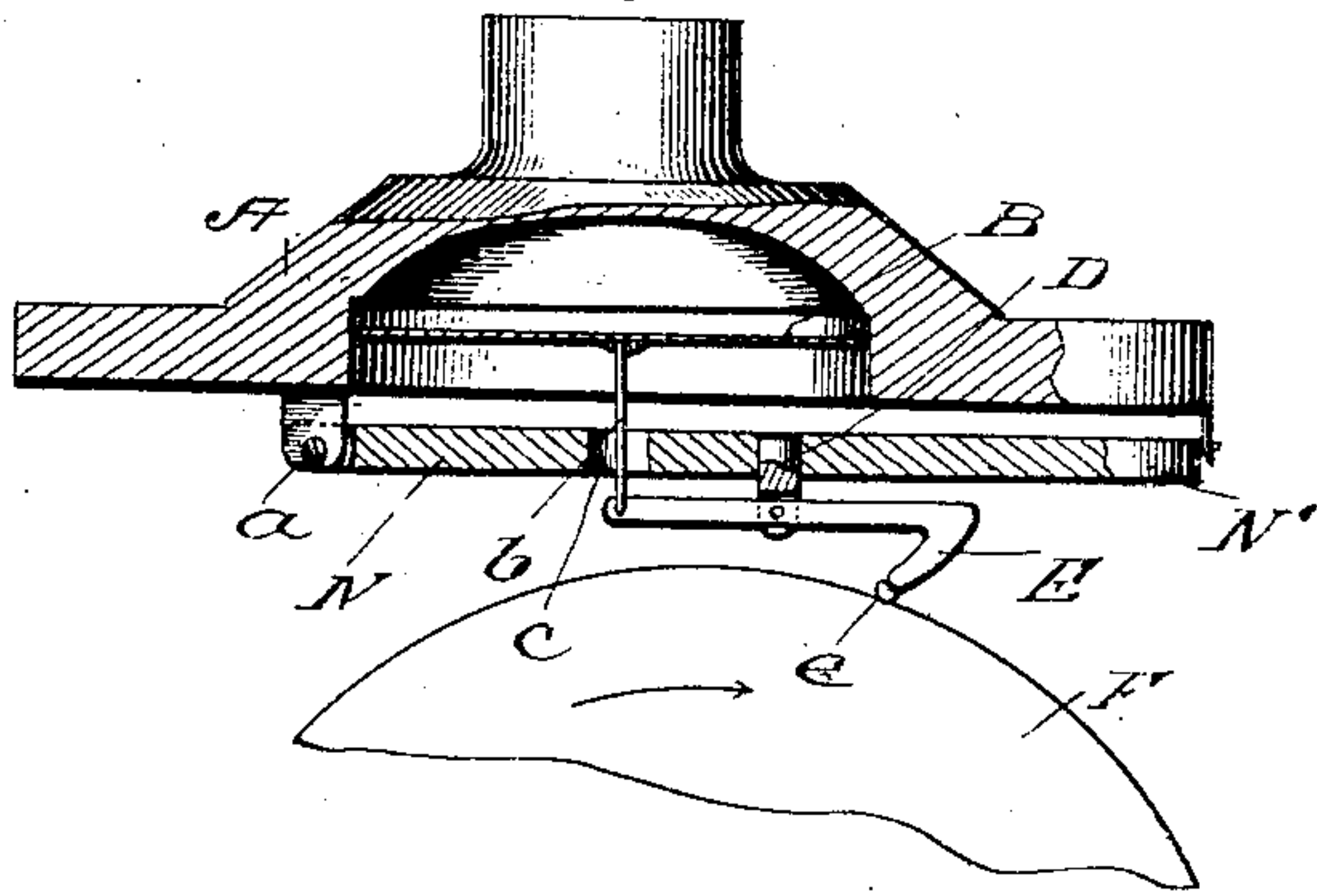


Fig. 3.



Inventor

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UNITED STATES PATENT OFFICE.

THOMAS H. MACDONALD, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO
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GRAPHOPHONE-REPRODUCER.

SPECIFICATION forming part of Letters Patent No. 785,746, dated March 28, 1905.

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To all whom it may concern:

Be it known that I, THOMAS H. MACDONALD, a citizen of the United States, residing in Bridgeport, Fairfield county, State of Connecticut, have invented a new and useful Improvement in Graphophone - Reproducers, which is fully set forth in the following specification.

My invention relates to a reproducer of the type employing a "floating weight," upon which the stylus-lever is pivoted; and the invention consists in so proportioning this floating weight that its center of gravity shall be practically coincident with the fulcrum of the stylus-lever.

In the annexed drawings are illustrated embodiments of my invention.

Figure 1 is a side view, partly broken away, of one embodiment. Fig. 2 is a bottom view of a modified form, and Fig. 3 is a section of another modification.

A represents the main portion or head of a reproducer adapted for engagement in a suitable seat upon the carrier, which is fed along the sound-record in the usual manner. B indicates the diaphragm thereof.

C is the floating weight, pivoted to the head at *a* and carrying the fulcrum-post D. Upon this post is pivoted the stylus-lever E, between the inner end of which and the diaphragm B is a connection, preferably a link *b*, that passes through a central aperture *c* in the weight C, while the outer end of the stylus-lever (preferably in the form of a goose-neck) carries the stylus *e*. When the floating weight is an ordinary flat circular plate, as commonly used heretofore, its center of gravity will of course be at its geometrical center in the middle of the aperture *c*. Therefore the pressure exerted upon the stylus (which is located beyond the center of gravity) is not equal to the full weight of the floating weight C. According to my present invention I increase the mass of the floating weight at its free end (farthest away from its hinge *a*) by thickening it, as seen at C', Fig. 1, so that its center of gravity shall be practically coincident with the fulcrum D. Consequently the

entire mass or weight of the floating weight may be conceived of as concentrated into this portion D, where the pressure is applied, and the up-and-down movement of the floating weight C is produced through D without any leverage whatever. Therefore every atom of the mass C tends to resist the quick upward blows upon the stylus *e* caused by the minute normal irregularities of the sound-record, while the slower movement imparted by abnormal eccentricities of the cylinder F can more readily overcome the inertia of weight C, because there is no leverage to counteract. If the center of gravity should be carried appreciably beyond the fulcrum D, there would be undue pressure upon the record and more inertia to overcome, which would tend to wear away the record-surface.

Instead of the precise construction of the floating weight just described I may employ an oval or pear-shaped floating weight M, pivoted at its smaller apex *m*, as in Fig. 2, or there may be a prolongation N' of the floating weight N, as in Fig. 3, or there may be other modifications, the essential feature being that the floating weight (of whatever design) must be so constructed and proportioned that its center of gravity shall be practically coincident with the fulcrum of its stylus-lever.

Having thus described my invention, I claim—

1. In a reproducer for graphophones or other talking-machines, a head carrying a diaphragm, a floating weight pivoted to said head, a fulcrum-post located at the center of gravity of said weight, and a stylus-bar pivoted on said post and connected to said diaphragm.

2. A floating weight for reproducers, having a stylus-lever pivoted thereto at the center of gravity of said weight, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS H. MACDONALD.

Witnesses:

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