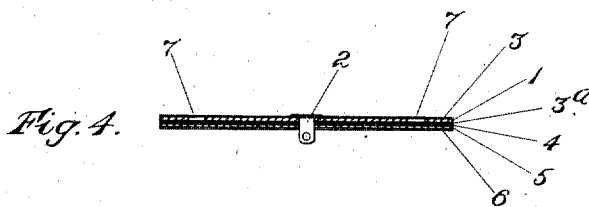
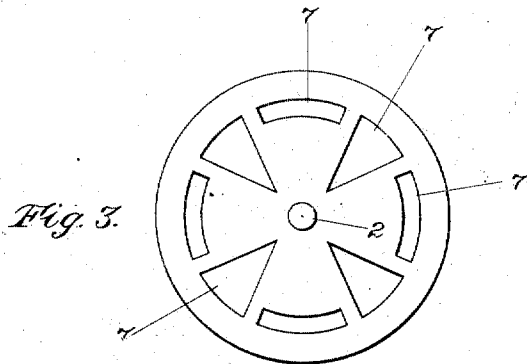
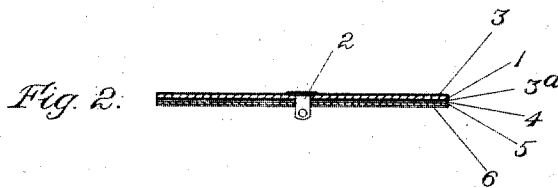
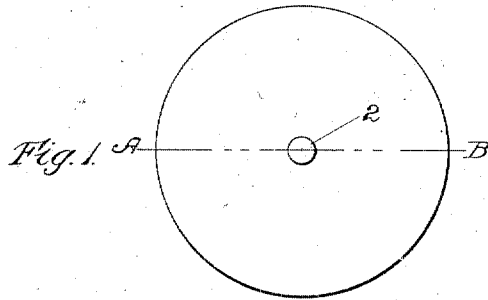


1,001,968.

Patented Aug. 29, 1911.



Witnesses:
Oscar F. Hill
Edith A. Neumann.

Inventor:
John H. Massey
by Chas. F. Randall
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UNITED STATES PATENT OFFICE.

JOHN H. MASSEY, OF PROVIDENCE, RHODE ISLAND.

ACOUSTIC DIAPHRAGM.

1,001,968.

Specification of Letters Patent. Patented Aug. 29, 1911.

Application filed May 22, 1911. Serial No. 628,611.

To all whom it may concern:

Be it known that I, JOHN H. MASSEY, a citizen of the United States, residing at Providence, in the county of Providence, State of Rhode Island, have invented a certain new and useful Improvement in Acoustic Diaphragms, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention has relation to acoustic diaphragms such as are employed in talking machines and the like.

It consists in a diaphragm of improved construction and character, the features of which I will first explain with reference to the illustrated embodiments of the invention, and then particularly point out in the claim at the close of this specification.

In the drawings,—Figure 1 shows in plan a diaphragm embodying the invention, and Fig. 2 is a view thereof in cross section in the plane of the line A—B of Fig. 1. Figs. 3 and 4 are views similar to Figs. 1 and 2, showing another embodiment of the invention.

In the construction of my diaphragm I employ a disk 1 of paper material, which latter I prefer to metal, as being more durable than the latter, not subject to oxidation, and giving better tone results. I have shown combined with the said disk a so-called cross-head 2 for service when the diaphragm is used in a machine requiring a diaphragm to have such cross-head. Diaphragms for use in machines not requiring cross-heads in connection with the diaphragms will be made without cross-heads.

To the surfaces of the disk 1 I apply coatings 3, 3', of bronze powder in lacquer. Thereby a firm, smooth, and waterproof sur-

facing is provided, and the durability of the article increased, and better tone results are secured.

To the bronze coating 3' at the inner side of the paper disk I apply a coating 4 of shellac, and before such coating dries I apply thereto a layer 5 of tissue paper. The shellac gives a harder surface, and the tissue paper serves to reinforce and help the tone. To the exposed face of the tissue paper layer 5 I apply a final layer or coating 6 of shellac. This gives a hard firm waterproof finish to the inner surface of the complete article.

In some cases the diaphragm may have made therein holes or perforations 7, 7, Figs. 3 and 4, of varying shapes and proportions in the paper disk 1, which are bridged by the tissue paper 5, although usually the said disk will be unperforated as in Figs. 1 and 2.

Practical experience with my improved diaphragm shows that it yields a much greater volume of tone with clearer articulation than in the case of many of the diaphragms heretofore in use.

What is claimed as the invention is:

An acoustic diaphragm consisting of a disk of paper material, bronze coatings upon the two faces of such disk, a coating of shellac upon one of such bronze coatings, a layer of tissue paper upon such coating of shellac, and a coating of shellac upon the exposed face of the tissue paper.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. MASSEY.

Witnesses:

CHAS. F. RANDALL,
NATHAN B. DAY.