

No. 755,506.

PATENTED MAR. 22, 1904.

Z. J. LE FEVRE.

DIAPHRAGM FOR SOUND PRODUCING INSTRUMENTS.

APPLICATION FILED JAN. 9, 1904.

NO MODEL.

Fig. 1

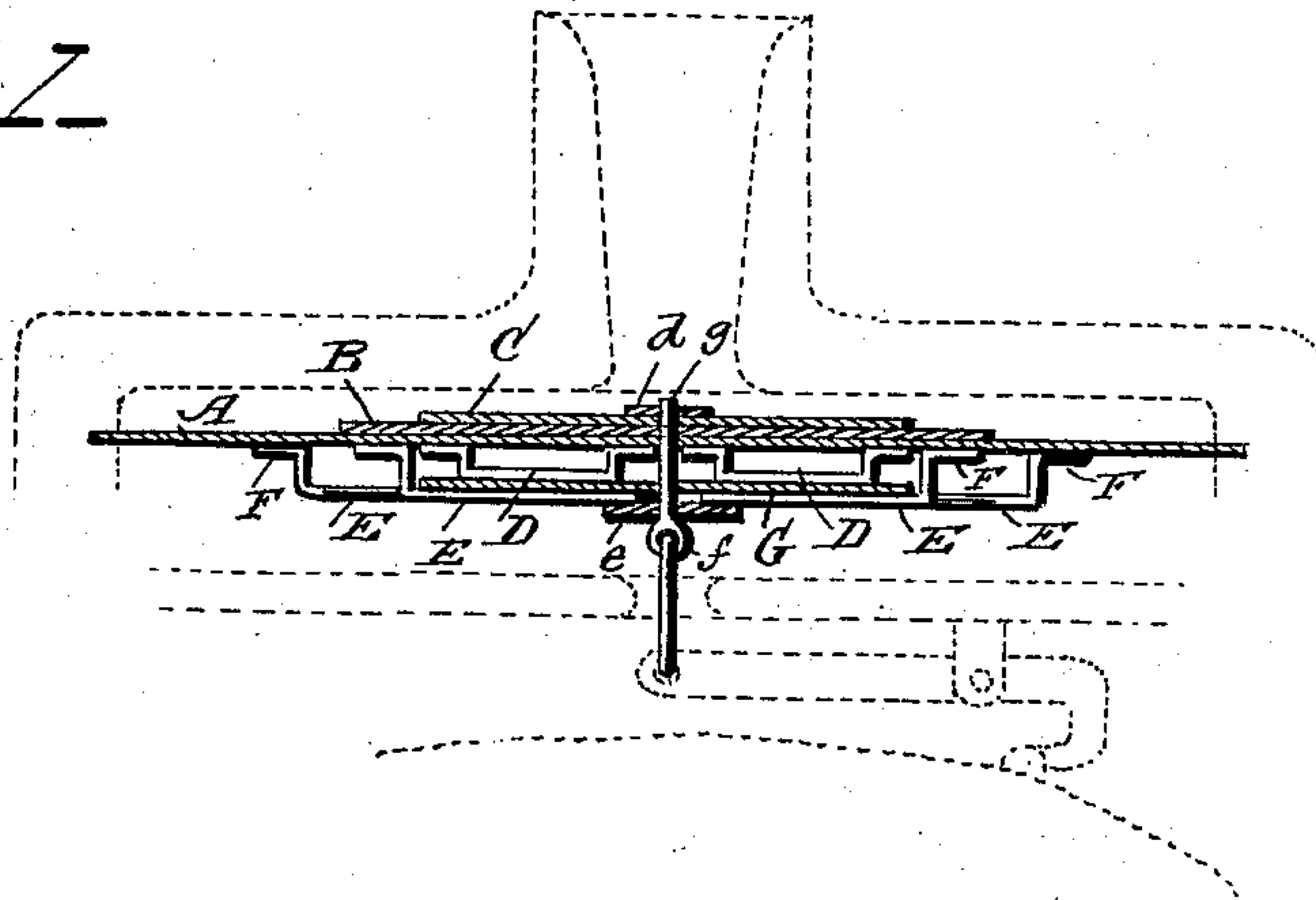


Fig. 2

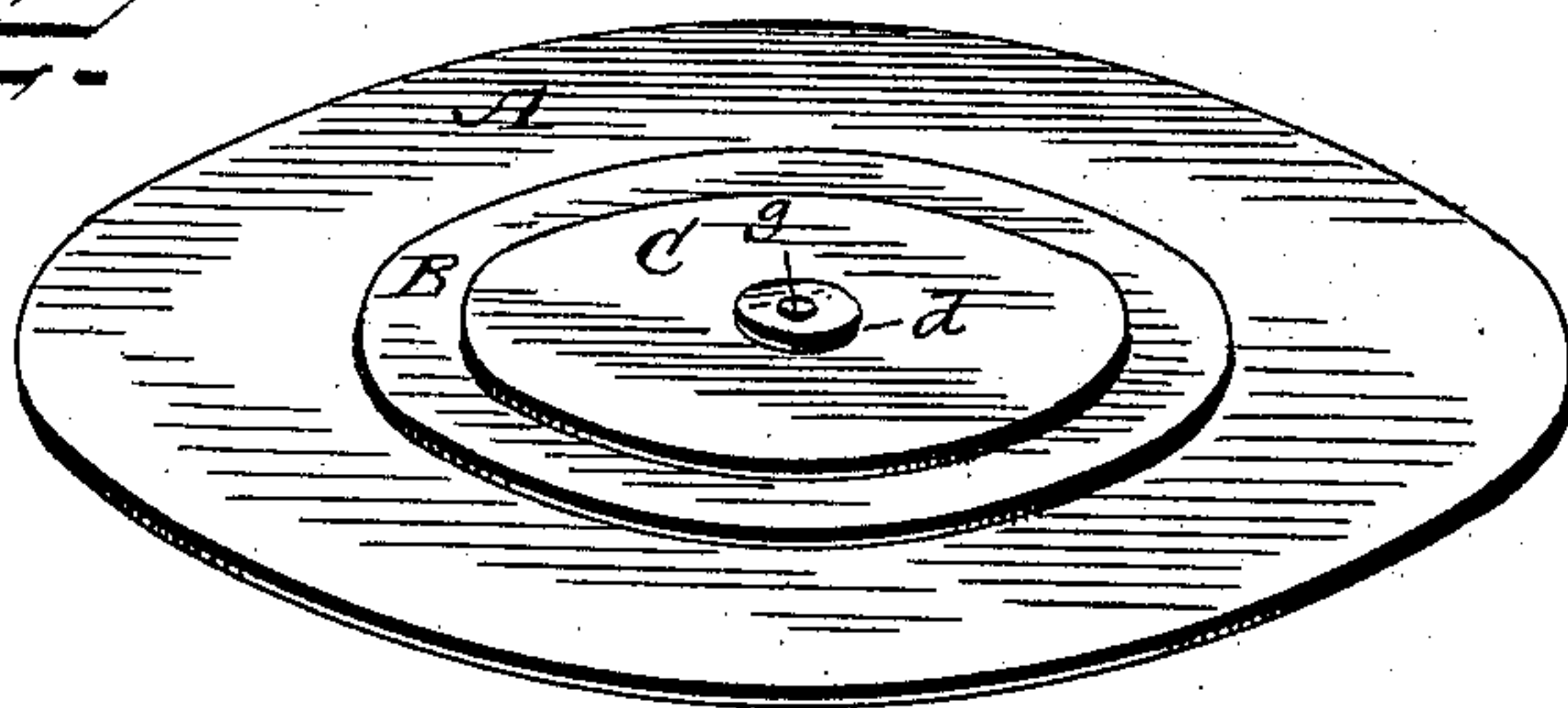


Fig. 3

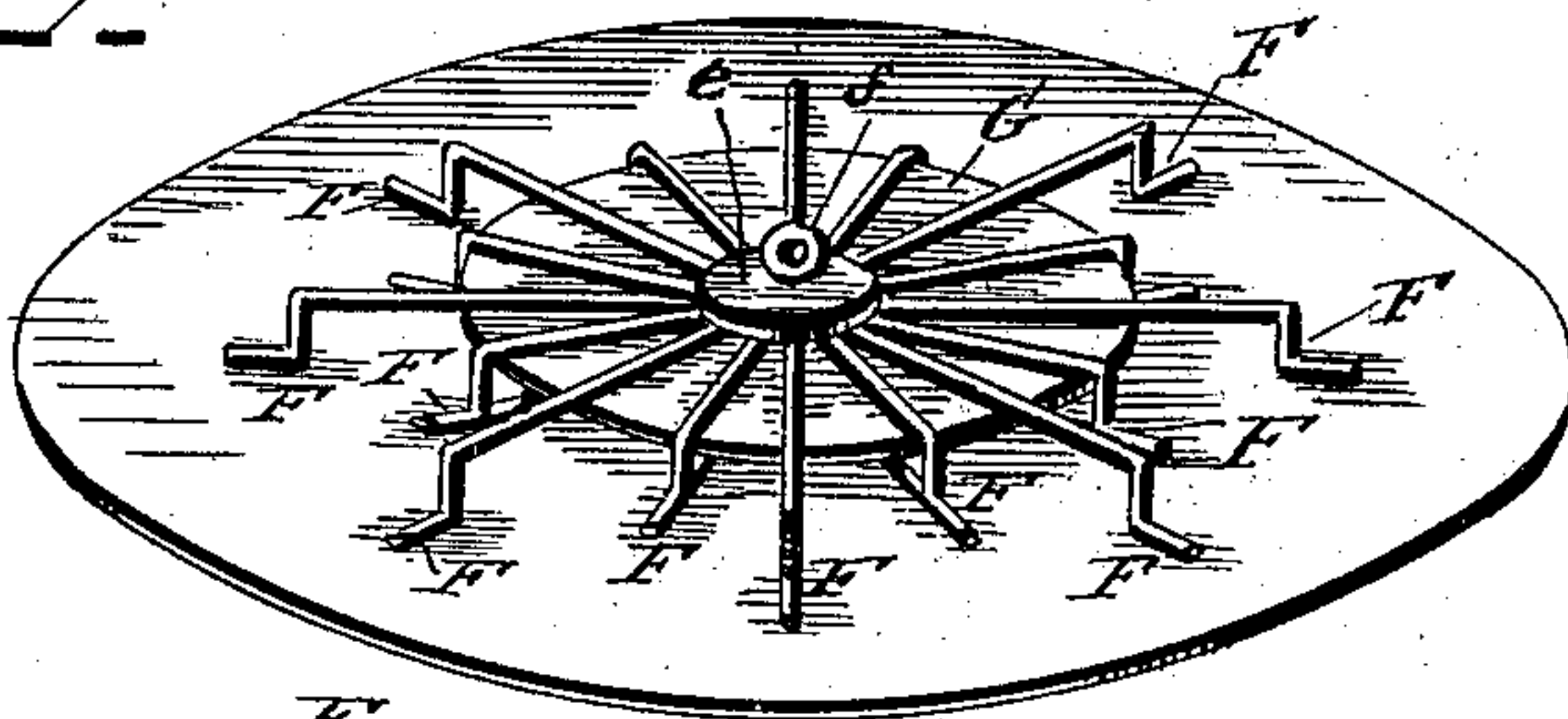
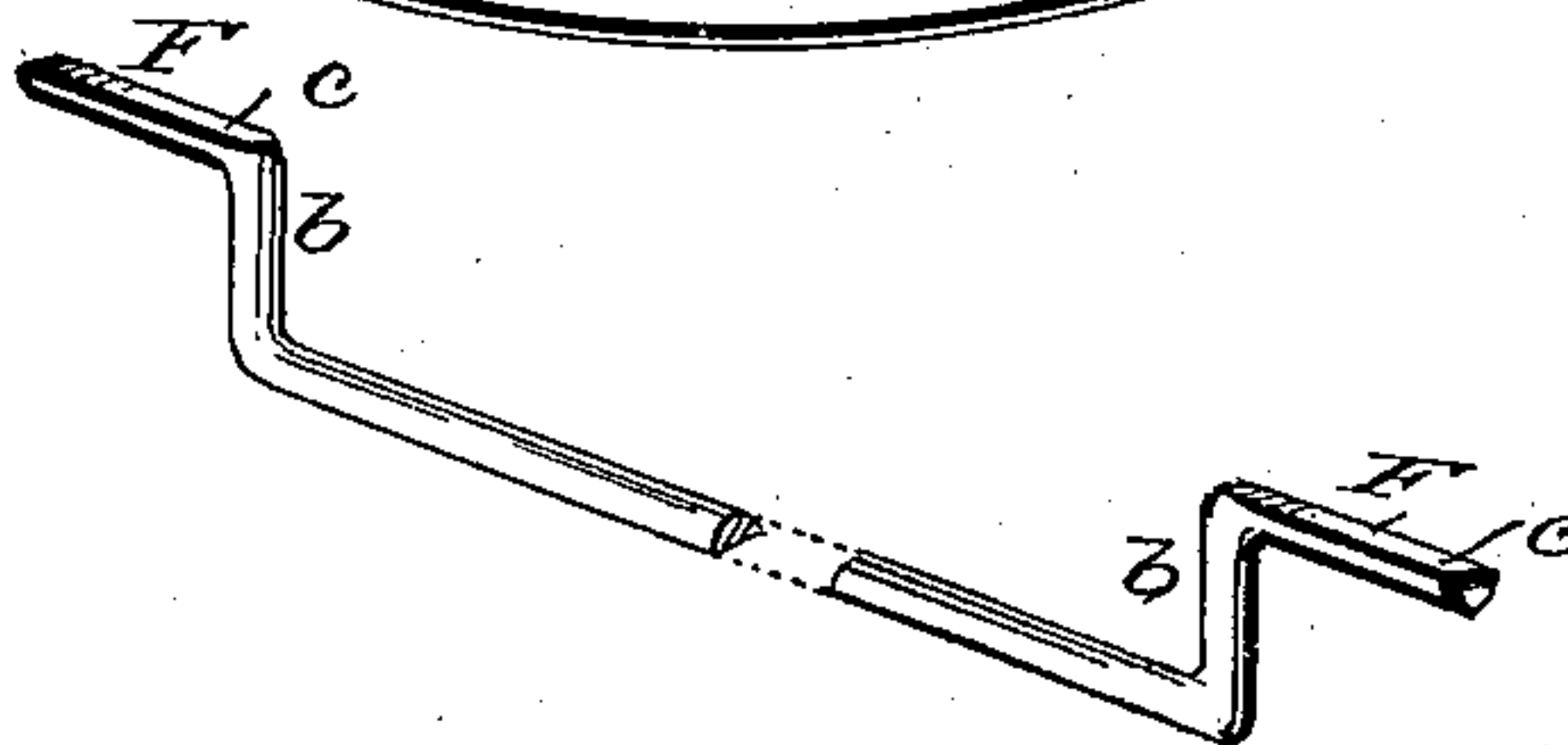


Fig. 4



Witnesses

W. Williamson
M. E. Moore

Inventor

Zephire J. LeFevre

By

Chas. M. Fowler

Attorney

UNITED STATES PATENT OFFICE.

ZEPHIRE JOSEPH LE FEVRE, OF LOS GATOS, CALIFORNIA.

DIAPHRAGM FOR SOUND-PRODUCING INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 755,506, dated March 22, 1904.

Application filed January 9, 1904. Serial No. 188,349. (No model.)

To all whom it may concern:

Be it known that I, ZEPHIRE JOSEPH LE FEVRE, a citizen of the United States, residing at Los Gatos, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Diaphragms for Sound-Producing Instruments; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has for its object to provide a diaphragm for sound-producing instruments especially adapted for use with the reproducers thereof and in which the diaphragm will possess increased strength, more volume of sound obtained with increased sweetness of tone over the instruments with the ordinary diaphragm; and the invention consists in a diaphragm constructed substantially as shown in the drawings, and hereinafter described and claimed.

Figure 1 of the drawings is a sectional elevation of my improved diaphragm, showing the reproducer-head and connections in dotted lines; Fig. 2, a perspective view of the upper side of the diaphragm; Fig. 3, a similar view of the under side thereof; Fig. 4, a detail perspective view of one of the radial braces, showing its flattened sides which come in contact with the disks.

In the accompanying drawings the diaphragm proper comprises three disks A B C of varying diameters and gradually decreasing in circumference from top to bottom, as shown more clearly in Fig. 2 of the drawings, said disks being preferably of mica of the required thinness. These three disks, as above described, are connected together by a suitable cement, one disk lying flat upon the other, and cemented to the under side of the larger disk are radial metal braces D E. (Shown in Figs. 1 and 3 of the drawings.) The several braces D E are flat upon that side which comes in contact with the disk, as shown in Fig. 4 of the drawings, whereby a perfectly firm and secure bearing for the disk is obtained and enabling

the radial braces to be conveniently attached thereto by suitable cement.

The radial braces D E have feet F at their ends, the upper sides thereof being flat, as shown at *a*, which form a bearing and come in contact with the disk A and are secured thereto by cement, as hereinbefore described, said feet connecting with the ends of the brace by angle-arms *b*, so that the feet will be on different horizontal planes with the braces.

The two sets of braces D E are of different lengths, so that the main disk or larger of the three will be equally braced with the others near its outer edge, the disk A having greater strength at its center by the disks B C, as said disks decrease in size, as shown in Fig. 2 of the drawings.

A reinforce-disk G, also of mica, is located between the two sets of radial braces D E, and the contacting surfaces of the braces are flattened, as shown at *c* in Fig. 4 of the drawings, so that the disk will have a firm support and enable the braces to be firmly secured thereto by suitable cement, thereby providing a perfect reinforce to the disk A without destroying its sensitiveness.

A small aluminium washer *d* is placed upon the top of the disk C, and a thin wire *g* extends through the several disks and connects with the washer, and a second washer *e* covers the ends of the braces E to securely hold them to the disk G, and through this disk the wire extends and has an eye *f*, by which it may be connected to the usual reproducer-lever by suitable link.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A diaphragm for sound-producing instruments, comprising a plurality of disks of suitable material and of gradually-diminished diameters secured together, one lying flat upon the other, a plurality of radial braces having its outer ends secured to the larger one of the disks, and a reinforce-disk located between the radial braces and secured thereto, substantially as and for the purpose set forth.

2. A diaphragm for sound-producing in-

struments comprising a plurality of disks of gradually-diminished diameters, one lying flat upon the other and secured together, two sets of radial braces each set being of different
5 lengths and having feet with flat surfaces which are secured to the under side of the larger one of the plurality of disks, and a reinforce-disk located between the two sets of braces, said braces having their surfaces which

come in contact with the reinforce-disk formed flat to facilitate connecting them thereto, substantially as and for the purpose described.

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

ZEPHIRE JOSEPH LE FEVRE.

Witnesses:

J. A. TUDOR,

J. D. FARWELL.