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W. C. JONES

1,717,158

SOUND REPRODUCER

Filed April 18, 1928

FIG. 1.

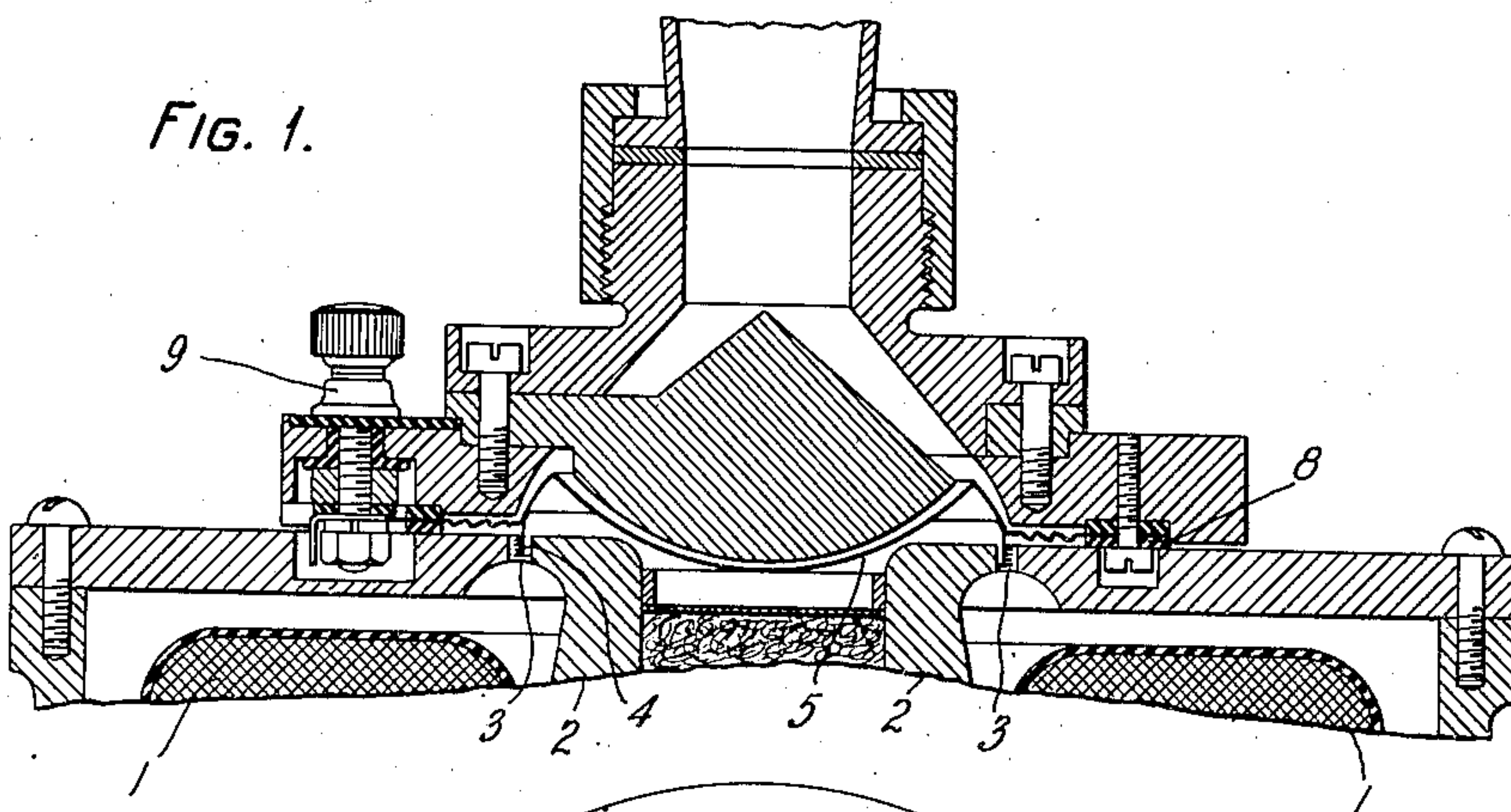


FIG. 2.

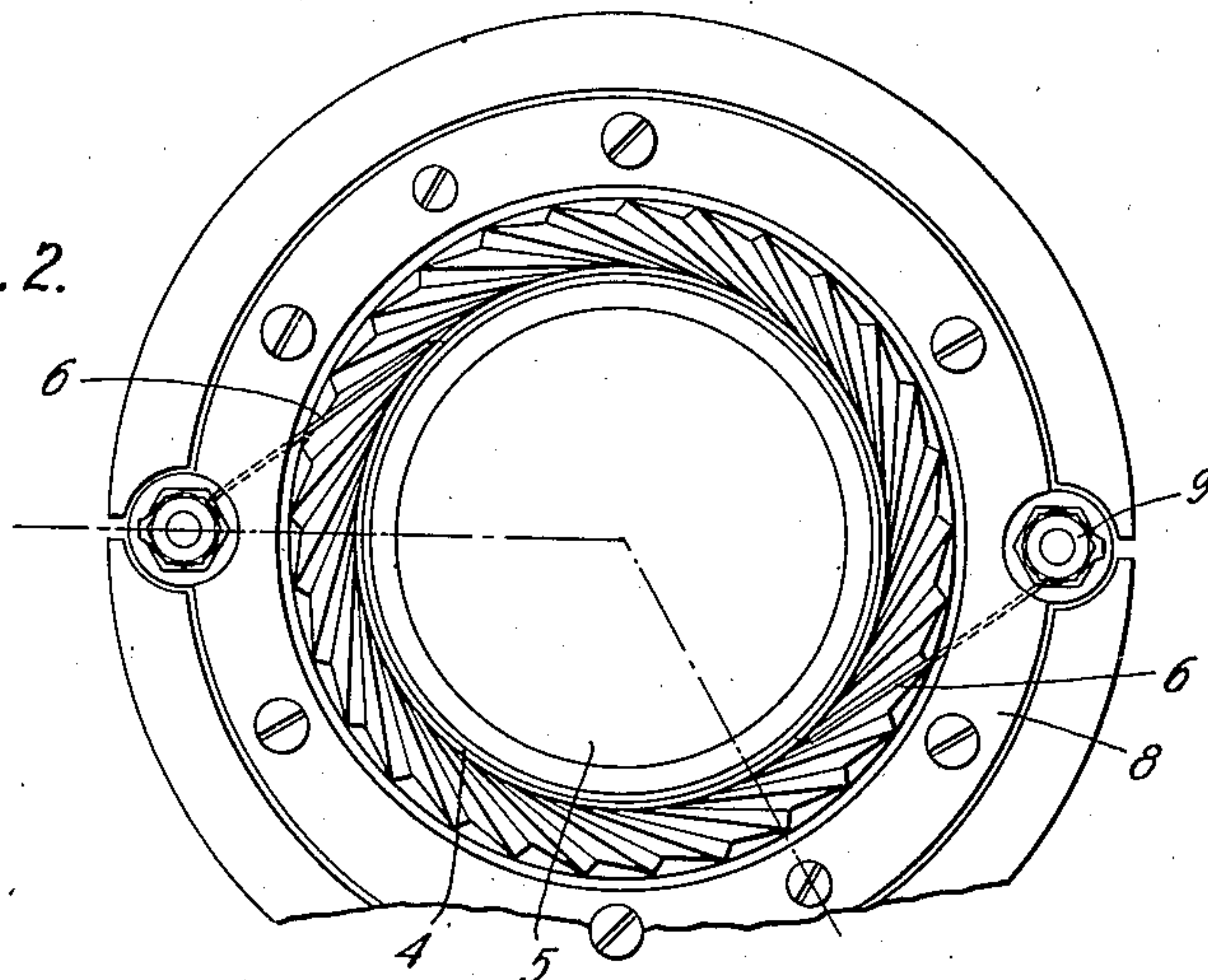
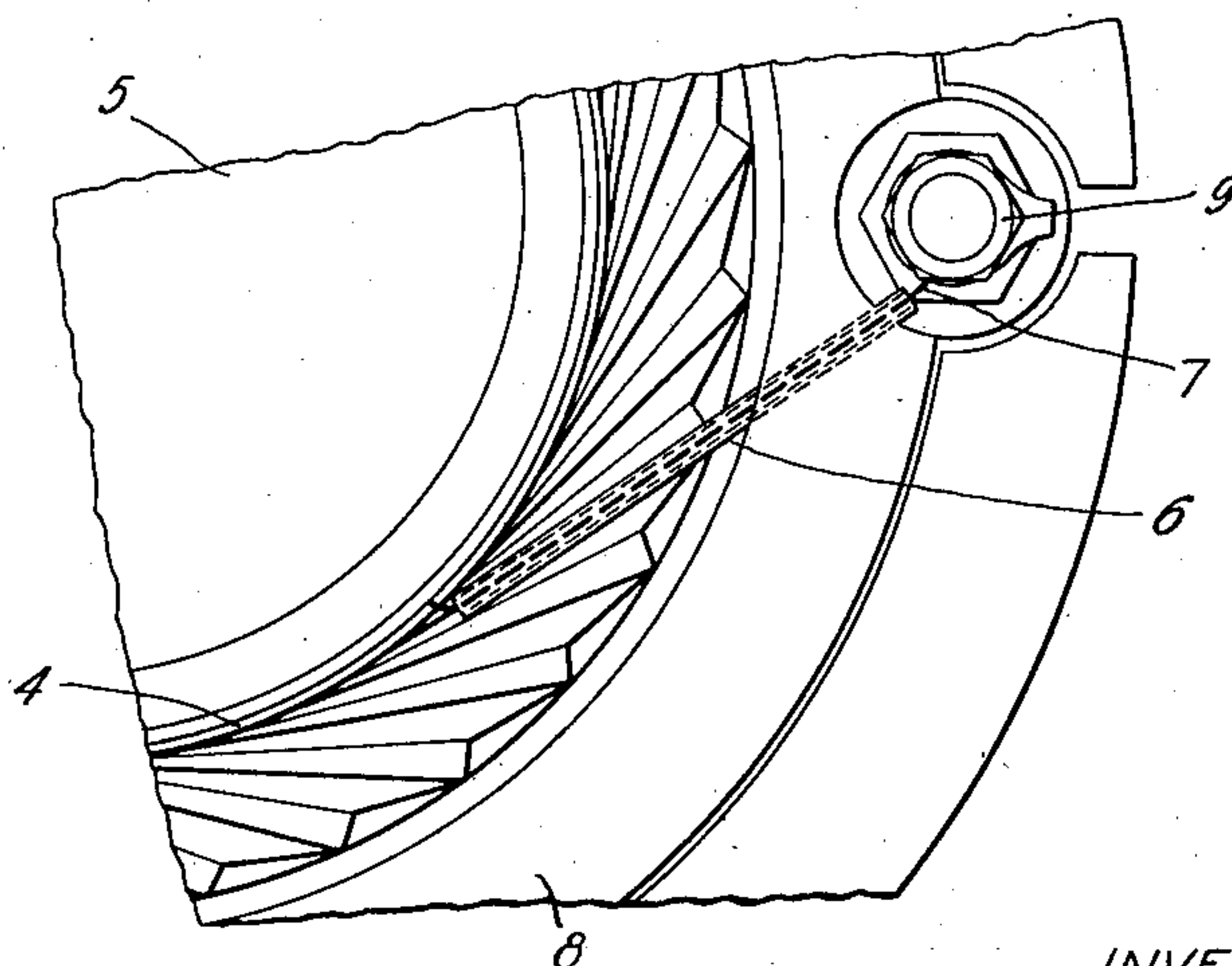


FIG. 3.



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SOUND REPRODUCER.

Application filed April 18, 1928. Serial No. 270,920

This invention relates to sound reproducers and more particularly to moving coil type amplifying receivers.

In devices of this type a coil of wire carrying currents which represent the sound to be reproduced is placed in a strong magnetic field and the interaction of these currents with the field moves the coil, and consequently the diaphragm to which the coil is attached, in accordance with the current variations. The coil leads are necessarily of very small cross section and often break under the constant flexing action unless special precautions are taken.

The general object of this invention is therefore to prevent the breaking of such lead wires.

In accordance with the general features of this invention the coil leads are run loosely in conduits which extend outwardly to binding posts beyond the periphery of the diaphragm. The conduits are rigidly attached to the diaphragm and vibrate freely with it and the flexing action is thereby distributed over such a length of conductor that breaking is eliminated.

In the drawing Fig. 1 is a sectional view of a moving coil type receiver embodying the present invention;

Fig. 2 is a plan view looking upward at the diaphragm and showing the location of the lead conduits; and

Fig. 3 is a detailed view of the lead wire and conduit arrangement.

In a copending application of E. C. Wentz No. 127,023, filed August 4, 1926 there is described a receiver of the same general type as the one used to illustrate the present invention.

Referring to Fig. 1 a circular field coil 1 is excited to set up a flux in a magnetic circuit 2 in which there is an annular air-gap 3. A coil 4, consisting of a number of turns of fine wire, is rigidly attached to a diaphragm 5.

The current variations corresponding to the sound to be reproduced traverse this coil and by their interaction with the magnetic

field in air-gap 3 impart a corresponding motion to the diaphragm.

Currents are led to the coil 5 through conductors or lead wires 7, 7 which are preferably continuations of the conductor comprising the coil. The lead wires 7, 7 are carried to the terminals of the operating circuit through conduits 6, 6 composed of a light weight insulating material and of sufficient internal diameter to permit free movement of the lead wires 7, 7 when the diaphragm is vibrated.

The conduits 6, 6 are secured to the diaphragm by some suitable cementing substance such as shellac and are preferably long enough to extend under a clamping ring to a point near binding posts 9, 9.

What is claimed is:

1. In a telephone receiver, in combination, a diaphragm, means for producing a magnetic field, a coil rigidly secured to the diaphragm and located in said magnetic field, connecting conductors extending from the coil to points adjacent the periphery of the diaphragm, and conduits secured to the diaphragm through which the connecting conductors extend, the inside diameter of the conduits being greater than the outside diameter of the connecting conductors whereby flexing action of the conductors in response to the vibrations of the diaphragm is distributed over the length of the conductors.

2. In a telephone receiver, in combination, a diaphragm, means for producing a magnetic field, a coil of less diameter than the diaphragm rigidly secured in concentric relation to the diaphragm and located in said magnetic field, conducting leads extending from the energizing coil to the periphery of the diaphragm, and means carried by the diaphragm for supporting the conducting leads in guided but unrestricted vibrational relation to the diaphragm throughout their lengths.

In witness whereof, I hereunto subscribe by name this 4th day of April, 1928.

WARREN C. JONES.