

H. S. MATTISON.

TRANSMITTER.

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967,217.

Patented Aug. 16, 1910.

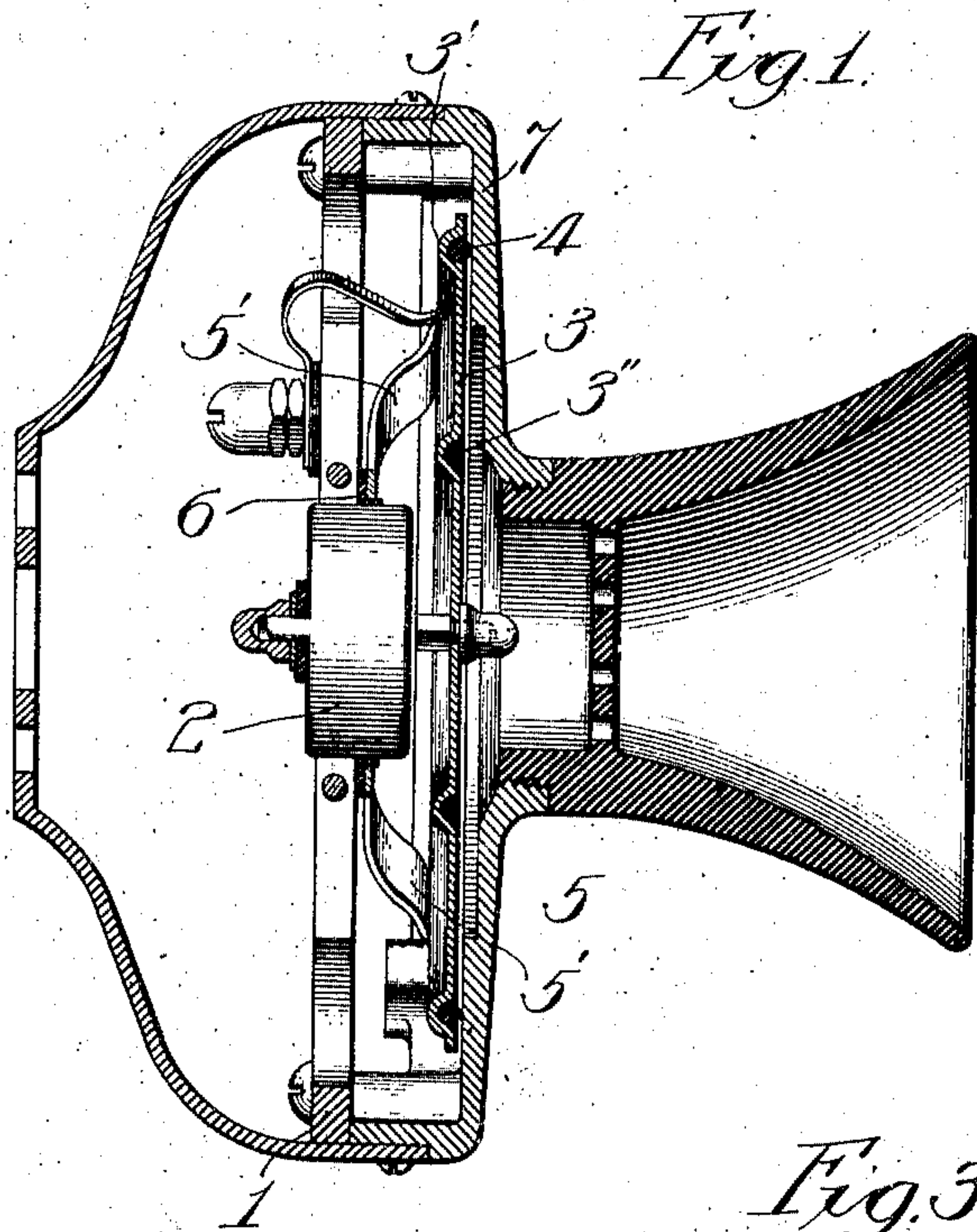


Fig. 2.

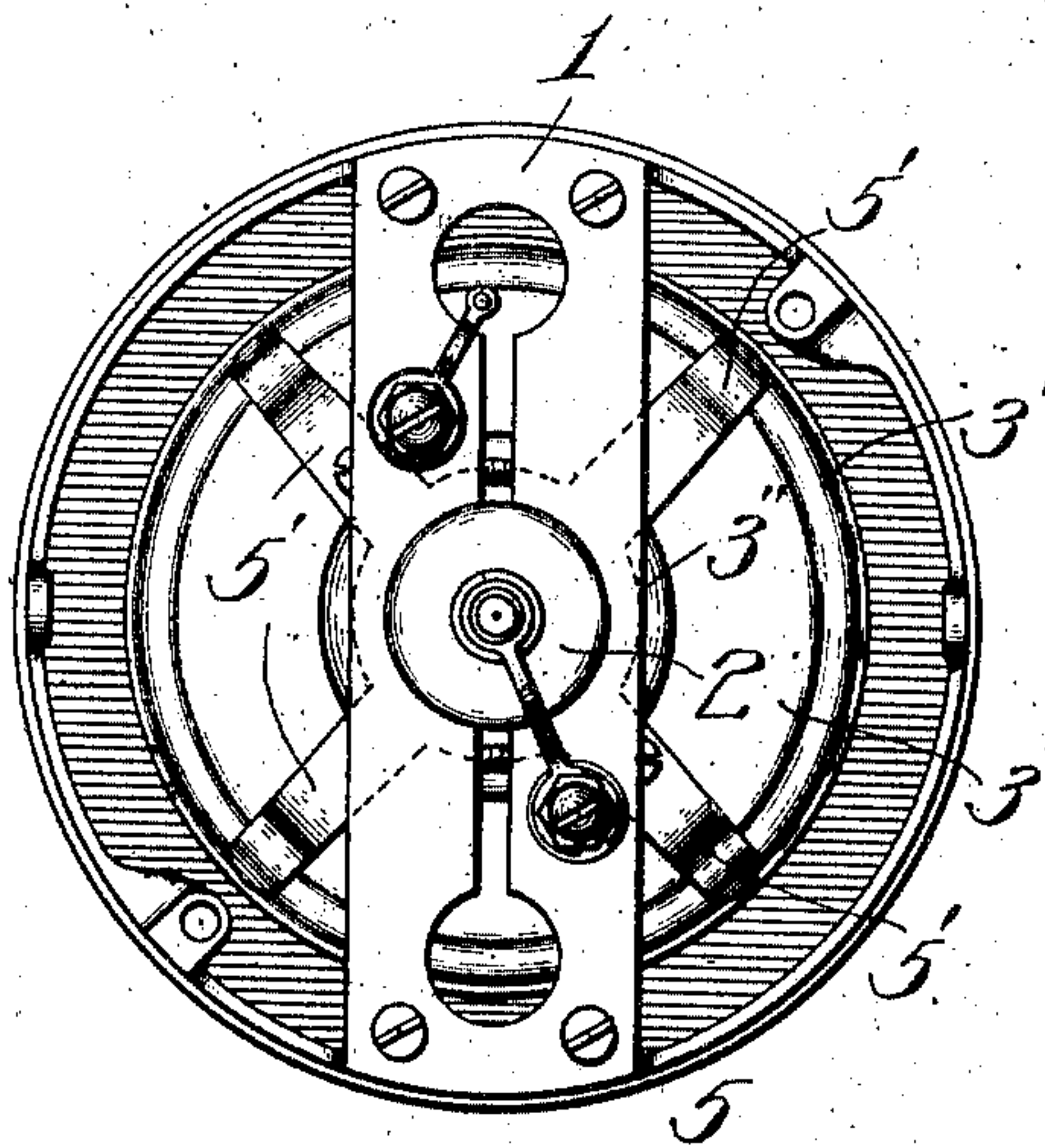
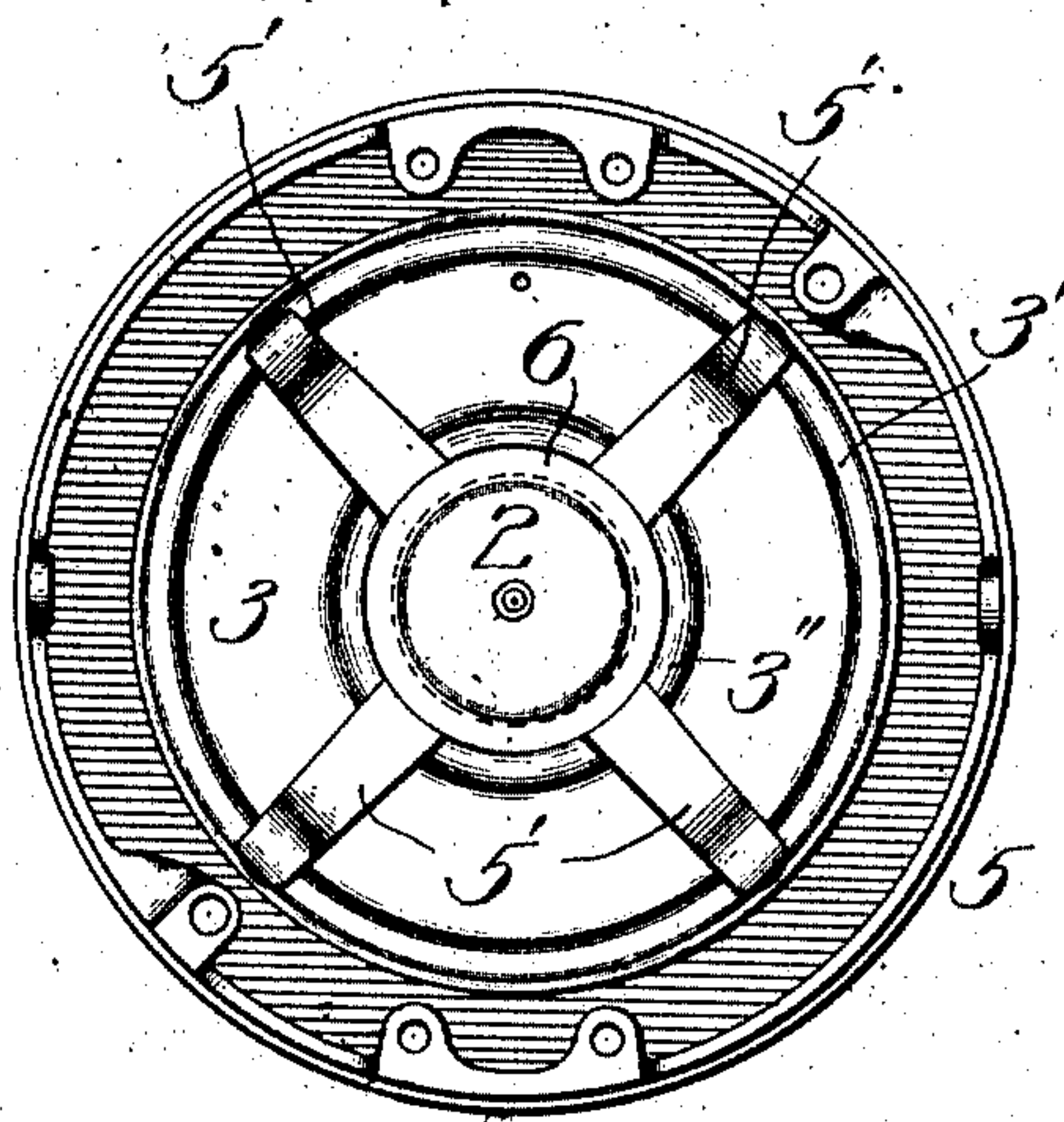


Fig. 3.



Witnesses:

John Enders.
Chas. H. Bull.

Inventor:

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By McMeen & Miller
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UNITED STATES PATENT OFFICE.

HANS S. MATTISON, OF LA CROSSE, WISCONSIN, ASSIGNOR TO VOTE BERGER COMPANY,
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TRANSMITTER.

967,217.

Specification of Letters Patent.

Patented Aug. 16, 1910.

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To all whom it may concern:

Be it known that I, HANS S. MATTISON, a citizen of the United States of America, and a resident of La Crosse, county of La Crosse, and State of Wisconsin, have invented a new and useful Improvement in Transmitters, of which the following is a specification.

My invention pertains to telephone transmitters of the type having a variable resistance cell in connection with a sound receiving diaphragm.

My improvement consists in a novel type of diaphragm, and a novel means for holding the diaphragm in place, and for insulating it from the transmitter case.

I provide a corrugated diaphragm having concentric corrugations, whereby the diaphragm is so stiffened as to eliminate its natural vibrations of the lower frequencies, and prevents it from interfering with or modifying the sound waves of speech without the necessity of providing special damping springs, or other means for preventing such objectionable action. In connection with my improved type of diaphragm, I provide a clamping spring having a plurality of clamping points, which holds the diaphragm rigidly with a minimum of apparatus, and with a minimum of expense in construction. I provide also a cheap and resilient insulating member, interposed between the diaphragm and the case, this particular form of insulating member being rendered feasible by my specific type of diaphragm.

In the drawings, Figure 1 shows a section on a central plane, through a transmitter, having my improvements embodied therein; Fig. 2 shows a view from the back, with the case removed; and Fig. 3 shows the same with the bridge and terminals removed.

Like figures refer to like parts throughout the several views.

The transmitter illustrated has a plane split bridge 1, clamping the body of the resistance cell 2. A diaphragm 3 of sheet metal is corrugated with at least two concentric embossed rings, one of which at 3' is near the edge of the diaphragm, and presents its groove surface toward the face plate of the transmitter case. Within the groove of this corrugation is a rubber gasket 4, toroidal in form, and preferably of circular cross-section. This resilient gasket is of such size as to lie easily within the groove, and serves at the same time as a cushion and

as an insulator between the diaphragm and the case; an additional corrugation 3'', which may be pressed in either direction, lies between the corrugation 3' and the center of the diaphragm; more than one such additional corrugation may be provided if desired.

A spring member, having multiple terminals, is provided for holding the diaphragm against the face plate of the transmitter, in order that it may be held in position firmly without placing the auxiliary diaphragm of the carbon cell under strain other than that desired in the final adjustment of parts. This spring member consists of an annular central portion, 5, and a plurality of radial spring fingers 5'. An annular insulating member 6 has a cylindrical portion and a flange, and serves to insulate the spring member from the bridge and resistance cell. The insulating member 6 is made conveniently by pressing from very thin sheet fiber, turning up the cylindrical portion as a flange, upon the annular washer. This insulating member then is retained in its place by the pressure of the spring member upon the bridge. The ends of the spring fingers are formed to embrace the rib of the outer corrugation of the diaphragm, which when viewed from the rear appears as an annular rib which is spanned and pressed upon by the fingers. It will be seen thus that the tension of the fingers 5' is transmitted through the diaphragm and the gasket 4, and then is received by the face plate 7 of the transmitter case, without placing any strain upon the diaphragm. My complete transmitter, therefore, presents a diaphragm free to vibrate in response to sound waves, having no natural periodicities conflicting with the sound waves to be transmitted, and having no tensions other than that arbitrarily placed upon it by the final adjustment of the resistance cell in the transmitter bridge.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. In a telephone transmitter, a diaphragm having a peripheral groove in the face thereof; and a resilient gasket lying partly within said groove and between said diaphragm and the face plate of the transmitter case.

2. In a telephone transmitter, a circular

diaphragm having an annular groove in the face thereof and a toroidal gasket lying partly within said groove and between said diaphragm and the transmitter case.

3. In a telephone transmitter, a circular diaphragm having an annular groove in the face thereof; a toroidal gasket lying partly within said groove and between said diaphragm and the transmitter case; and a spring member engaging said diaphragm and pressing it toward the face of the transmitter case.

4. In a telephone transmitter, a circular diaphragm having an annular groove in the

face thereof and a toroidal gasket lying partly within said groove and between said diaphragm and the transmitter case; and a spring member engaging said diaphragm at a plurality of points upon the back of the diaphragm opposite the gasket, and pressing same toward the face of the transmitter case.

Signed by me at La Crosse, county of La Crosse, and State of Wisconsin, in the presence of two witnesses.

HANS S. MATTISON.

Witnesses:

GUS. LUNDGREN,
JOHN N. WALLACE.