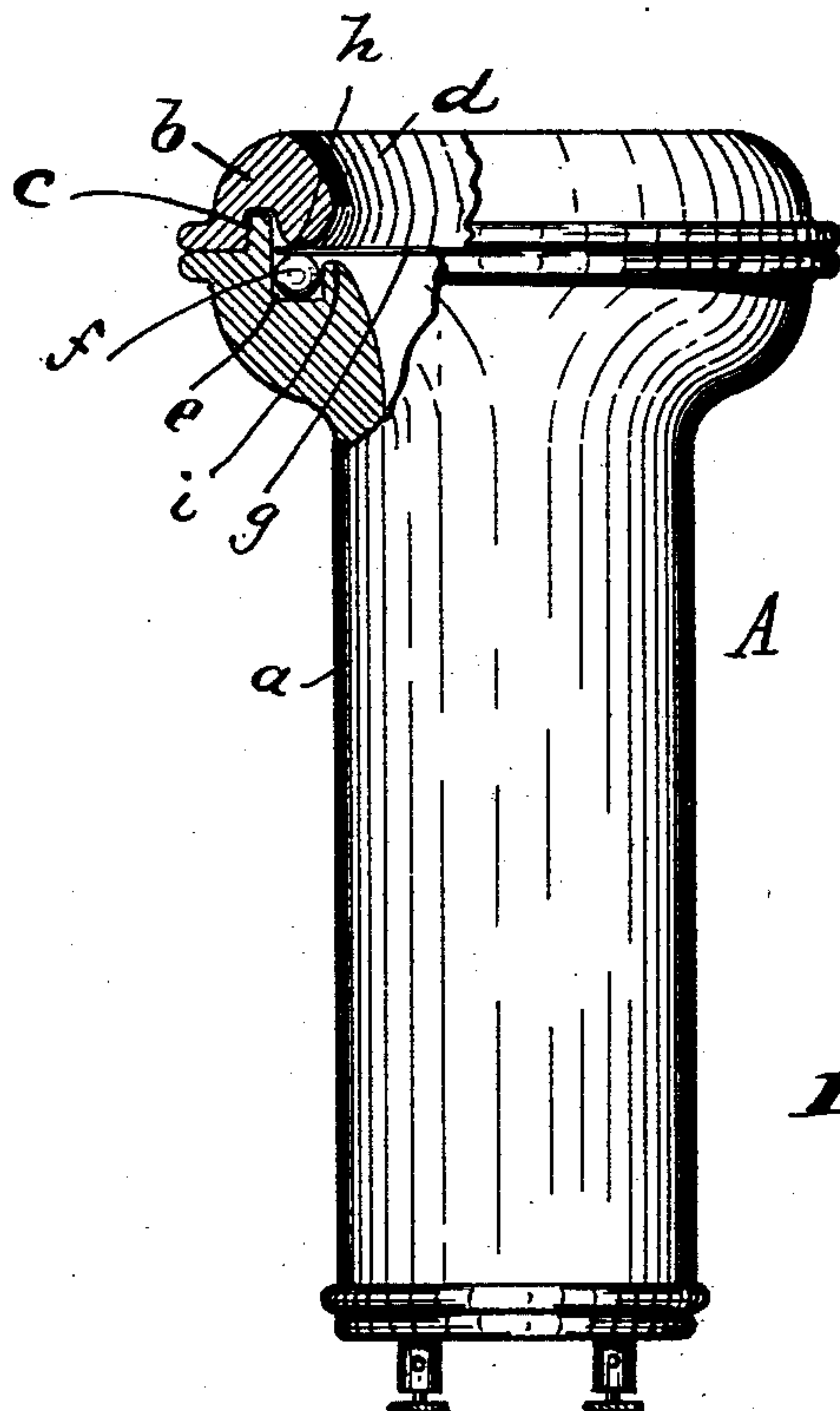


(No Model.)

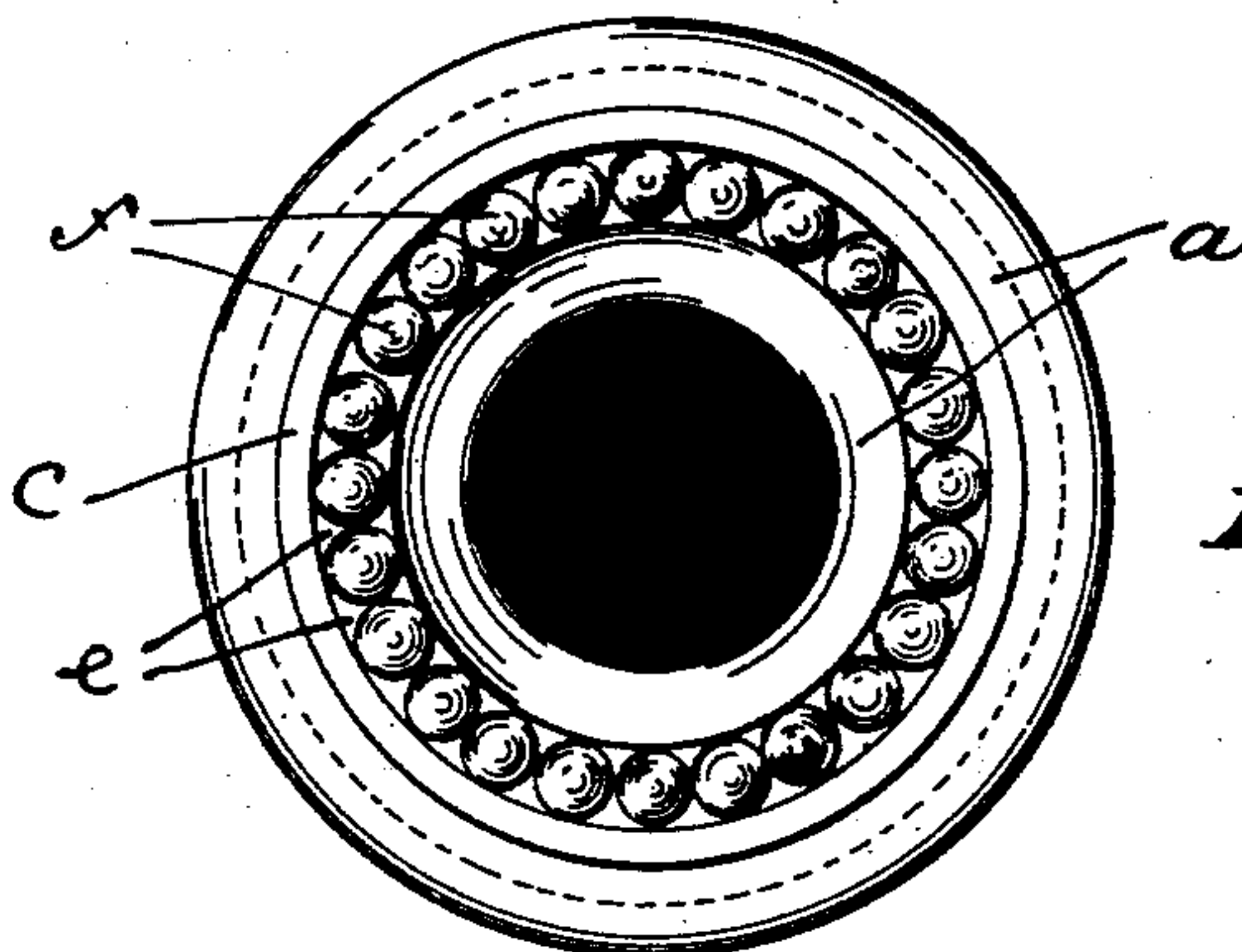
A. GARTNER.  
TELEPHONE.

No. 569,018.

Patented Oct. 6, 1896.



*Fig. 1.*



*Fig. 2.*

WITNESSES:

*Duncan M. Robertson.*  
*Benjamin Carley*

INVENTOR :

*Alfred Gartner*

BY

*Gartner & Co*

ATTORNEYS

# UNITED STATES PATENT OFFICE.

ALFRED GARTNER, OF NEWARK, NEW JERSEY, ASSIGNOR TO ROBERT BAKER AND JOHN FILMER, OF BROOKLYN, AND EDGAR L. RYDER, OF SING SING, NEW YORK.

## TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 569,018, dated October 6, 1896.

Application filed February 15, 1896. Serial No. 579,411. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED GARTNER, a citizen of the United States, residing in Newark, Essex county, and State of New Jersey, have invented certain new and useful Improvements in Telephones; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a telephone-receiver in which the bearing-surfaces for the diaphragm are greatly reduced, the latter can vibrate more freely, and the transmitted sounds or words can thus be heard very clear and distinct.

The invention consists in the improved telephone-receiver, the bearing-surfaces for the diaphragm, and in the combination and arrangement of the various parts thereof, substantially as will be hereinafter more fully described and claimed.

In the accompanying drawings, in which like letters of reference indicate corresponding parts in the two figures, Figure 1 is a side elevation of a telephone-receiver provided with my improvement with certain portions shown in section; and Fig. 2 a top plan view of Fig. 1, the top piece and the diaphragm being removed.

The telephone-receiver A is made in two sections *a* and *b*, secured together by a screw-thread connection *c* in the usual manner. The section *a* is provided at its upper portion with an annular groove or channel *e*, in which are arranged a series of balls *f* of a size so as to fit snugly into and yet to project over the crest or top *i* of the inner wall of the said channel *e*.

The section *b*, penetrated by the central opening *d*, is provided on its inner portion

with an annular curved flange *h*, which is of a diameter substantially equal to the diameter of the channel *e*. The diaphragm *g* is arranged between the sections *a* and *b* and is held in position by the said balls *f* and the curved annular flange *h*, respectively. By this arrangement the bearing-surfaces for the diaphragm are considerably reduced, and the latter is thus allowed a greater and easier vibration, whereby the sounds or words transmitted can be heard more distinctly than in other phones.

I do not intend to limit myself to the precise construction shown and described, as various alterations can be made without changing the scope of my invention; but

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the telephone-receiver and its diaphragm, of a series of balls arranged in the receiver and forming an annular bearing for one side of the diaphragm, and an annular curved flange also arranged in said receiver and forming the bearing for the other side of said diaphragm, substantially as and for the purposes described.

2. The combination with the telephone-receiver and its diaphragm, of an annular groove or channel arranged in said receiver, a series of balls in said channel and adapted to form the bearing for one side of the diaphragm, and an annular curved flange, of a diameter equal to the diameter of the channel, also arranged in said receiver and adapted to form the bearing-surface for the other side of said diaphragm, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of February, 1896.

ALFRED GARTNER.

Witnesses:

DUNCAN M. ROBERTSON,  
BENJAMIN CARLEY.