

(No Model.)

T. B. ROGERS.
ACOUSTIC TELEPHONE.

No. 493,297.

Patented Mar. 14, 1893.

Fig. 1.

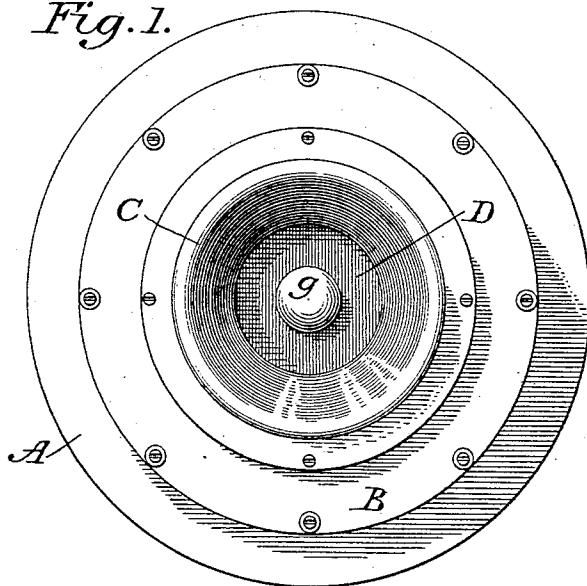
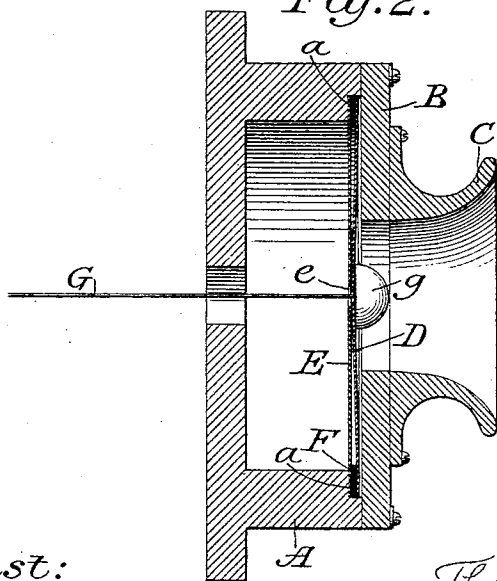


Fig. 2.



Attest:

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UNITED STATES PATENT OFFICE.

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ACOUSTIC TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 493,297, dated March 14, 1893.

Application filed June 3, 1892. Serial No. 435,344. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. ROGERS, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Acoustic Telephones; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to the construction and arrangement of the diaphragms of acoustic or mechanical telephones and has for its object to provide an improved diaphragm which shall transmit the tones of the voice with great clearness, preserving the characteristics of each voice and avoiding altogether the disagreeable accompaniment of metallic vibrations. At the same time I seek to support the non-metallic diaphragm in such a manner that its life is greatly prolonged, it being well known that the single non-metallic diaphragm now commonly used becomes inert and useless after a comparatively short period of use.

In the accompanying drawings: Figure 1 is a front view of an acoustic telephone of ordinary construction except as to the diaphragm. Fig. 2 is a vertical central section of the same.

The box or casing A, the cover-plate B, and the mouth-piece C may be all as usual, the back of the casing A being perforated centrally and its front edge being recessed as at *a* to receive the diaphragm loosely between itself and the cover-plate B. The diaphragm is composed of a non-metallic front or receiving disk D, a rear or supporting disk E of thin metal, and an intervening elastic ring F. The disks are placed loosely within the recess and each is entirely independent of and free from the other. The front disk D is centrally perforated to permit the passage therethrough of the line-wire G, the button *g* of which rests directly upon the non-metallic disk. The metallic disk is also perforated with a larger hole *e* so that the line-wire shall not at any point touch the metallic disk. The disks are formed flat but in use the strain upon the line-wire draws the non-metallic disk against the supporting disk E near the center so that the

former is supported by the latter and is prevented thereby from being flexed too much by the line-wire and from vibrating to an excessive degree. At the same time the metallic disk is nowhere in contact with the line to cause the transmission of metallic vibrations, and the non-metallic disk, having its outer edge separated from the metallic disk by the elastic ring, can vibrate with sufficient freedom to produce the desired effect.

I am aware that an acoustic telephone has heretofore been provided with a compound diaphragm having a facing of metal and a backing of non-metallic material, the facing and the backing being clamped firmly together and being directly in contact with each other at all points of their opposing surfaces, while the button of the line-wire rests directly upon the metallic facing. This construction, however, permits exactly what I seek to avoid, that is, direct contact between the line and the metallic disk and a relatively extensive area of contact between the two disks, without permitting each disk to exercise its own function independently of the other.

I claim as my invention—

1. An acoustic telephone having a diaphragm composed of a non-metallic front disk, a metallic supporting disk therefor, and an elastic ring separating said disks at their edges, substantially as shown and described.

2. In an acoustic telephone, the combination with a casing, a cover-plate and a line-wire and button, of a diaphragm placed loosely between the casing and the cover-plate, said diaphragm being composed of free and independent disks separated by an elastic ring, the front disk being non-metallic and having the button of the line-wire resting thereon, and the rear disk being metallic and entirely free from contact with said line-wire, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS B. ROGERS.

Witnesses:

A. N. JESBERA,
E. A. GREELEY.