

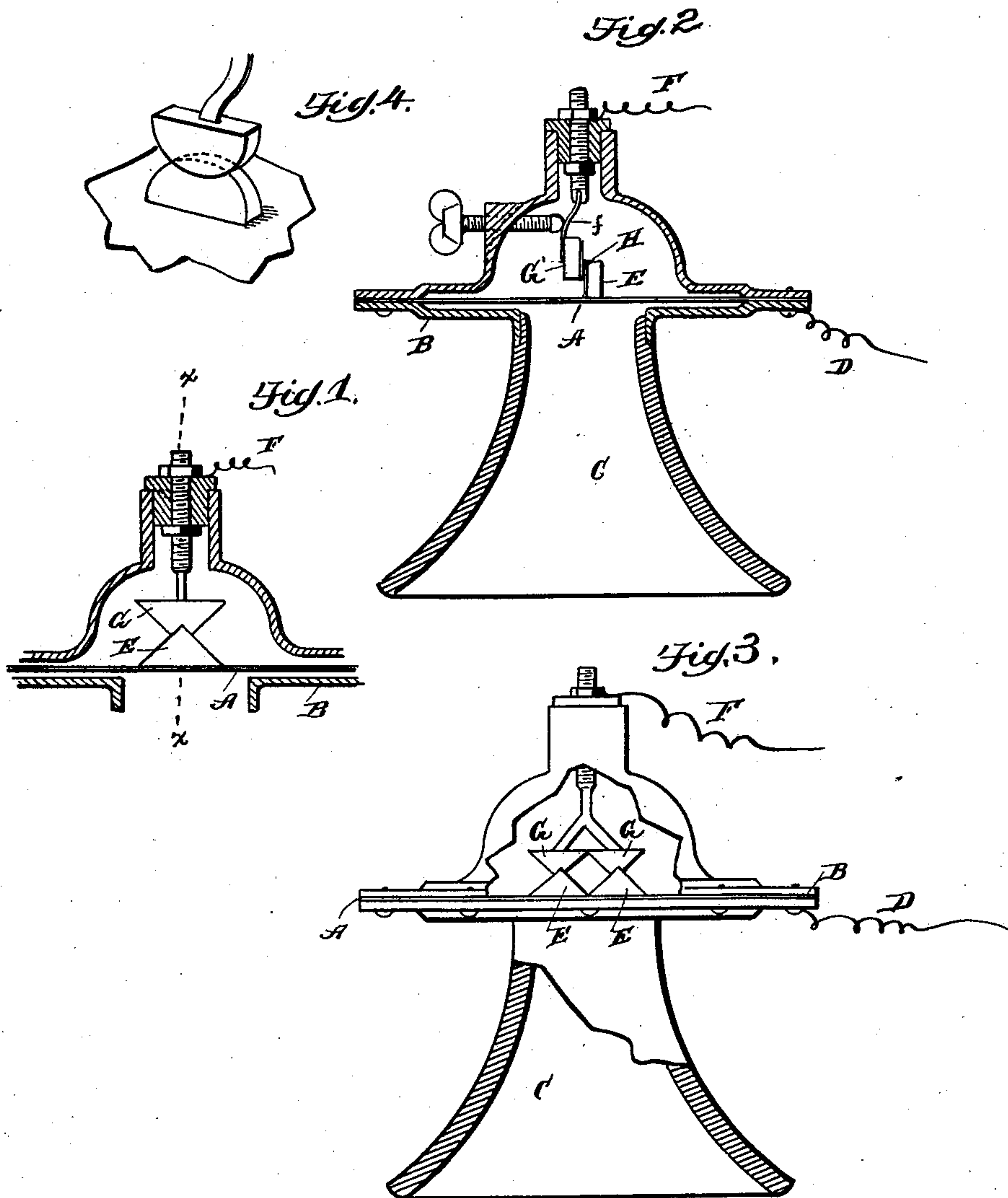
No. 606,852.

Patented July 5, 1898.

T. F. AHERN.  
TELEPHONIC TRANSMITTER.

(Application filed June 19, 1897.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## TELEPHONIC TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 606,852, dated July 5, 1898.

Application filed June 19, 1897. Serial No. 641,418. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS F. AHERN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Telephone-Transmitters; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists of a new and useful improvement in telephonic transmitters for producing sound by means of varying electric currents, of which the following is a specification.

Figure 1 is a partially sectional view of a telephone-transmitter, showing the carbon contacts. Figs. 2 and 4 are modifications thereof. Fig. 3 is a transverse section on line *x x* of Fig. 1.

In the drawings, A is a metal plate fastened to the frame B in such manner as to be allowed to vibrate.

C is the mouthpiece, by means of which the sound-waves are conveyed to the metal plate A.

D is one of the lines which connects with the plate A.

E is a carbon electrode attached to the center of the metal plate A and which forms the terminal electrode of the line D. This carbon electrode consists of a plate or plates, preferably semicircular or triangular, as shown in Figs. 1, 2, and 4, although the contact-plates may be segments of a circle.

F is the corresponding line, which leads into the receiver in the usual form and by means of the spring *f* carries a corresponding carbon plate G, as shown in the drawings.

It will be noticed, as shown in Fig. 1 and in cross-section in Fig. 3, that the two plates are adjacent to each other and that the apex of one passes by the apex of the other to a slight extent and that the interior side face of one is in contact with the interior side face of the other, as shown in Fig. 3 at H. The springs *f* enable the force of the pressure of

this contact to be adjusted, the thumb-screw being merely a convenient means for doing this. Other means might be adopted with equal advantage.

It will be noticed that the novel feature consists in the use of two substantially triangular carbon electrodes, each of which consists of a plate of carbon, the electrodes being in frictional contact upon their respective triangular sides, which contact can be adjusted to such a degree as will produce the best results, and the vibrations of the diaphragm A enlarging or diminishing the carbon surfaces in contact.

In Fig. 3 a modification of this is shown by simply employing a multiplicity of angular carbon points attached to the diaphragm and also a corresponding multiple for the opposite electrode, held in the body of the receiver, so that a multiple of angular points are in contact in the manner specified in Figs. 1 and 2. It is obvious that this might be extended to the construction of Fig. 4.

In Fig. 2, G G are the electrodes, attached to the body of the receiver, and E E the carbon, attached to the plate.

The operation of this device is as follows: The vibration of the plate A will cause the surfaces of the carbon in contact to vary in area to accord with the vibrations, and this variation in area is largely increased by the substantially triangular faces in contact. This varies the resistance to the passage of the electric current, which causes (by appropriate mechanism, all of which is well known) a corresponding variation in vibrations in the receiver of the opposite telephone set in the usual manner.

What I claim is—

1. An electric telephone-transmitter or analogous device to be operated by varying electric currents, consisting of two substantially triangular carbon electrodes placed in frictional contact, the area of which is varied by the sound-vibrations of the diaphragm carrying one of the electrodes, substantially as described.

2. An apparatus for reproducing sound by means of a varying electric current, consist-



ing of a vibrating plate carrying a triangular  
carbon electrode placed in frictional contact  
with the triangular face of an opposite carbon  
electrode, from one to the other of which the  
5 electric current is caused to pass, substan-  
tially as described and for the purpose set  
forth.

In testimony whereof I sign this specifica-  
tion in the presence of two witnesses.

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