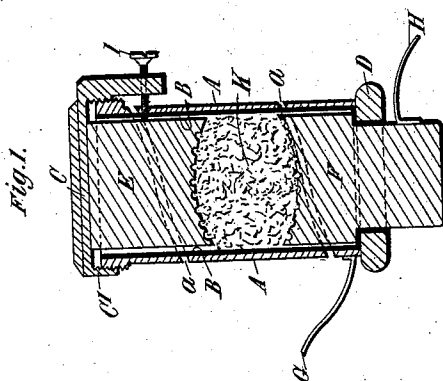
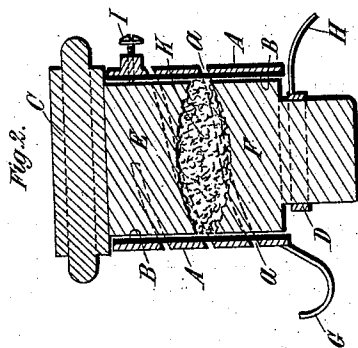


(No Model.)

M. KOTYRA.
TELEPHONIC TRANSMITTER.

No. 575,896.

Patented Jan. 26, 1897.



Witnesses:
Jno E. Barker
B. M. Peoples

Inventor:
Maxymilian Kotyra
by his attorney
James Pease

UNITED STATES PATENT OFFICE.

MAXYMILIAN KOTYRA, OF LONDON, ENGLAND.

TELEPHONIC TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 575,896, dated January 26, 1897.

Application filed November 17, 1896. Serial No. 612,418. (No model.) Patented in England April 1, 1895, No. 6,654.

To all whom it may concern:

Be it known that I, MAXYMILIAN KOTYRA, electrical engineer, a subject of the Emperor of Russia, residing at 24 Queen Victoria Street, in the city of London, England, have invented certain new and useful Improvements in Telephonic Transmitters, (for which I have obtained a patent in Great Britain, No. 6,654, bearing date April 1, 1895,) of which the following is a specification, reference being had to the accompanying drawings.

The object of the present invention is the construction of a telephonic transmitter based upon the use of granulated carbon or other suitable conducting substance.

The novelty of the invention consists in inclosing the granulated conducting substance in a case consisting of a helix of cylindrical or conical form and having the desired axial length. The metallic ribbon or wire out of which the helix in question is wound may have a rectangular, square, circular, oval, or other suitable section. The helical case is lined with some suitable and flexible insulating material. At the ends of the case there are fixed metal stop ends carrying carbon blocks, solid or in sections, as the case may be. One of these blocks is insulated, while the other of them is in electrical communication with the respective metallic stop end. The carbon blocks, after they have been fixed to the two stop ends, leave a wide space between them, which is filled with the granulated conductor above mentioned. The said space or cavity is filled more or less tightly with the grains of the conducting substance. Suitable mechanical devices are provided by means of which these grains can be pressed together more or less in the manner indicated. Conductors adapted to transmit current are fixed to the carbon blocks.

The improved transmitter is fixed in the ordinary way upon the vibrating diaphragm of the apparatus. It will now be perceived that as a result of the principle of construction which is specified above there is obtained a vibratory organ capable of variable resistances and endowed with extreme sensi-

tiveness, a sensitiveness which can be regulated at will and as may be required.

In the accompanying drawings, Figure 1 is a vertical section of a transmitter constructed according to my invention, and Fig. 2 is a vertical section of a slightly-modified construction. I wish it to be understood that these figures are only typical illustrations, and consequently are not to be taken as limiting the invention to the details of construction illustrated.

A is the case, formed by the helical winding of a flat band of copper or other metal. The same result is obtained by cutting a helical slot *a* in a metal tube of the proper length.

B is the internal lining of flexible insulating material, preferably of thin silk fabric.

C and D are the metallic stop ends which carry the carbon blocks E and F. The block E is in electric communication with the stop end C, while the block F is insulated. The result is also obtained by making the stop end D of ebonite, for example, or by suppressing it altogether, as indicated in Fig. 2. The granules K occupy the cavities between the blocks E and F, more or less closely.

G and H are the conducting-wires. They are connected to the case A and the insulated block F, respectively.

Perfect electric communication between the block E and the case A is guaranteed by the set-screw I.

The pressure brought to bear by the blocks E and F upon the granules K can be regulated by the screw-threaded cap C'. (See Fig. 1.) The block F being fixed in its position, it will easily be understood that screwing the cap C' down squeezes the granules closer together, and unscrewing it allows them to separate to some extent, thereby diminishing or increasing the vibration of the granules, and, consequently, the sensitiveness of the transmitting organ.

It must be distinctly understood that the present invention includes any modification in the details of the construction illustrated and above described.

What I claim is—

1. A granular telephone-transmitter comprising a vibratory helical case, carbon blocks at each end of the case, and granular microphonic material between the blocks.

5 2. A granular telephone-transmitter comprising a vibratory helical case, conducting blocks at its ends, granular microphonic ma-

terial between said blocks, and pressure adjusting and regulating devices therefor. 10

In testimony whereof I have hereunto set my hand this 22d day of September, 1896.

MAXYMILIAN KOTYRA.

Witnesses:

E. DUCHAMP,
PAUL PÂQUET.