

A. P. PINKLER,
TELEPHONE TRANSMITTER.
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1,330,391.

Patented Feb. 10, 1920.

Fig. 1.

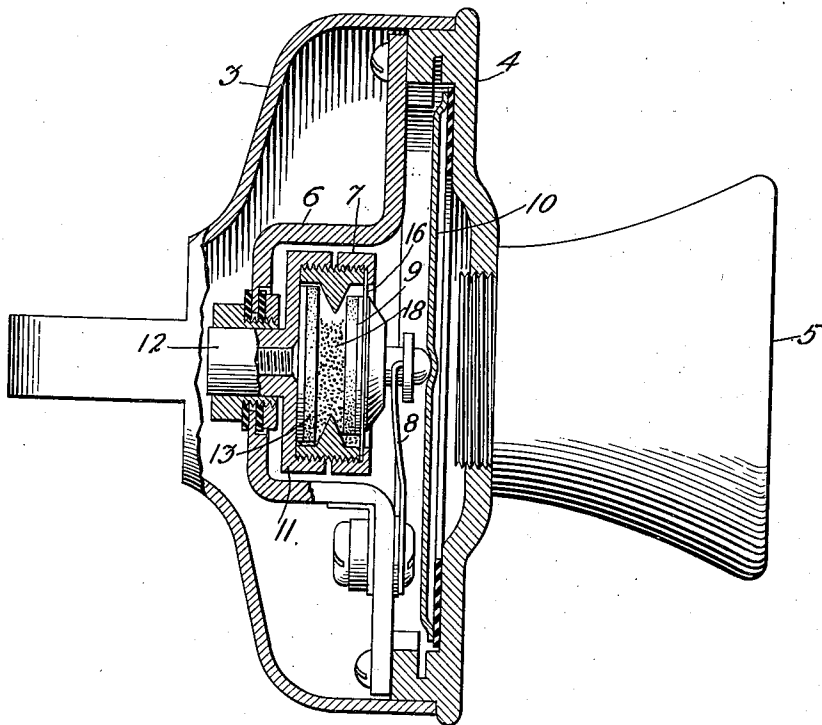
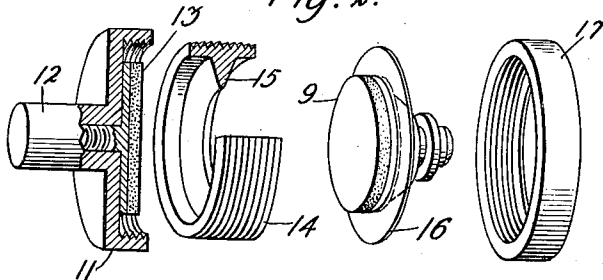


Fig. 2.



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UNITED STATES PATENT OFFICE.

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TELEPHONE-TRANSMITTER.

1,330,391.

Specification of Letters Patent.

Patented Feb. 10, 1920.

Application filed March 2, 1917. Serial No. 151,998.

To all whom it may concern:

Be it known that I, ARTHUR P. PINKLER, a citizen of the United States, residing at Ridgefield, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Telephone-Transmitters, of which the following is a full, clear, concise, and exact description.

This invention relates to telephone transmitters, and in particular it relates to an improved type of microphonic element or transmitter button wherein comminuted material, such as granular carbon, is used as the medium of variable resistance.

Its object is the construction of the current in the granular material to a path so located with respect to the fixed and movable electrodes of the button that the current therein will be subjected to a maximum variation, under the influence of electrode motion, without the use of small electrode surfaces and the burning difficulties inherent in such use.

To this end, the invention, as applied to the usual cylindrical type of transmitter button, provides, on the wall of the carbon chamber, an inwardly projecting flange or rib, which, being insulated from the granular material, constricts the central current path in the button to an opening or channel whose cross-sectional area is less than the area of either the front or rear electrodes. The invention, therefore, while presenting in general the advantages of construction and high transmitting efficiency of the transmitter of Palmer Patent No. 1,132,613, presents an improvement over that construction in that to obtain the required concentration of the current, it is no longer necessary to employ a small electrode surface for the rear or stationary electrode.

The invention will be more clearly understood by reference to the accompanying drawings, in which Figure 1 shows the transmitter of this invention in partial cross-section; and Fig. 2 shows in extended form the general construction of the transmitter button or microphone element.

Referring to the drawing, 3 is a transmitter casing having a front plate 4 threaded to receive the usual transmitter mouthpiece 5. The front plate 4 also carries the bridge member 6 in which the microphone

element or transmitter button 7 is adjustably supported. A damping spring 8 is also carried by the bridge 6, and serves to hold the movable electrode member 9 and the diaphragm 10 against the front plate 4. The damping spring and diaphragm construction will be more clearly understood by reference to Scribner Patent No. 1,050,304.

Referring in detail to the construction of the microphone element or transmitter button which is the subject of this invention, 11 is a cup-shaped member having a shank 12 for attachment to the bridge 6 in the usual manner. The member 11 carries the rear or stationary electrode 13 of the transmitter, and is threaded to receive a collar or annular member 14. This member 14 may be of insulating material, or it may be of metal with the inner surface coated with an insulating japan or other insulating coating. It has an inner annular projection or flange 15, preferably of V-shaped cross-section. The front electrode member 9 carries the usual flexible annulus 16 of mica or other suitable material, and forms the front closure for the button chamber, being held to the member 14 by the usual threaded ring 17. In the construction as shown the flange 15 is seen to project into the granular mass beyond the peripheries of both the front and rear electrodes. This has the effect of increasing the current path between the peripheries of the electrodes, and therefore serves to eliminate the path of low resistance and consequent high current density which obtained in the transmitter of White Patent No. 485,311. This low resistance path at the base of the carbon chamber has been found to have a rather serious shunting effect on the active current path in the button, and to introduce a transmission loss. The present invention, while retaining all of the benefits derived from the large electrode surfaces of the White transmitter, restricts the current in the transmitter button to the central part of the granular mass, thereby eliminating the shunting effect of the low resistance path through the button and conning the current flow to that part of the granular mass which is subjected to the maximum agitation due to sound waves impinging on the diaphragm 10.

What is claimed is:

1. In a telephone transmitter, an electrode chamber, two electrodes spaced apart

within said chamber, comminuted material between said electrodes, and an annular insulating projection of V-shaped cross section on the wall of said chamber whereby
5 the current flow in said material is centrally restricted.

2. In a telephone transmitter, an electrode chamber, two electrodes spaced apart in said chamber, comminuted material be-
10 tween said electrodes, and an annular pro-

jection of V-shaped cross-section on the wall of said chamber, and intermediate said electrodes for restricting the current flow therebetween to a path whose central cross-sectional area is less than the area of either 15 of said electrodes.

In witness whereof, I hereunto subscribe my name this 1st day of March A. D., 1917.

ARTHUR P. PINKLER.