

(No Model.)

D. DRAWBAUGH.
TELEPHONE ELECTRODE.

No. 540,961.

Patented June 11, 1895.

FIG. 1.

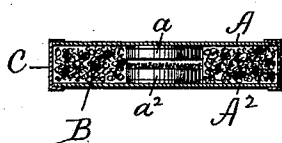
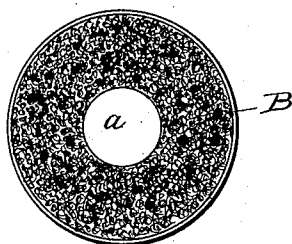


FIG. 2.



Witnesses:

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by

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UNITED STATES PATENT OFFICE.

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TELEPHONE-ELECTRODE.

SPECIFICATION forming part of Letters Patent No. 540,961, dated June 11, 1895.

Application filed February 21, 1895. Serial No. 539,273. (No model.)

To all whom it may concern:

Be it known that I, DANIEL DRAWBAUGH, a citizen of the United States, residing at Eberly's Mill, in the county of Cumberland and State of Pennsylvania, have invented certain new and useful Improvements in Telephone-Electrodes; and I do hereby 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 appertains to make and use the same.

This invention relates to telephone electrodes.

The object is to present an electrode combining the functions of a holder for loose or granular carbon, and a diaphragm or diaphragms, the electrode as presented constituting an article of manufacture that may be made and sold separately from the telephone proper, and which shall be of simple and ready production, of high efficiency in use and operation, and which will not necessitate the employment of a high order of skill to place it in position within the telephone; furthermore, to produce an electrode of the character above designated, in which the contained granular carbon will be held at all times in proper relation to the fixed carbon points of the diaphragms, and in which the holder and diaphragms are hermetically sealed together in such manner as to prevent entrance of moisture to the electrode, and to hold the diaphragms in fixed relation to each other at all times, and, at the same time, allowing such free vibration of the diaphragms as to permit of the accomplishment of their proper function.

With these objects in view, the invention consists in a telephone-electrode constituting a closed casing containing fixed carbon points, a body of interposed granular carbon, and an elastic annulus surrounding the points; furthermore, in a telephone-electrode comprising two diaphragms provided each with a fixed carbon point, the two points being arranged in juxtaposition to and in alignment with each other, an annulus arranged between the diaphragms and surrounding the said points, and an interposed body of granular carbon between the points; furthermore, in a telephone electrode comprising two diaphragms

provided each with a fixed carbon point, the two points being arranged in juxtaposition to and in alignment with each other, an annulus arranged between the diaphragms and surrounding the said points, an interposed body of carbon between the points, and a binder for holding the parts properly assembled; furthermore, in a telephone-electrode comprising two diaphragms provided each with a fixed carbon point, the two points being arranged in juxtaposition to and in alignment with each other, an elastic or spongiform annulus arranged between the diaphragms and surrounding the said points, an interposed body of granular carbon between the points, and a peripherally-arranged binder for holding the parts properly assembled; furthermore, in a telephone-electrode comprising two diaphragms provided each with a fixed carbon point, the two points being arranged in juxtaposition to and in alignment with each other, an annulus constructed of sponge, arranged between the diaphragms and surrounding said points, an interposed body of granular carbon between the points, and a flexible, peripherally-arranged binder for holding the parts properly assembled, and, finally, in the various novel details of construction, as will hereinafter be fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference indicate corresponding parts, I have illustrated one form of embodiment of my invention, capable of carrying the same into effect, although other embodiments may be employed, without departing from the spirit thereof.

In the drawings, Figure 1 is a view in transverse section showing the relative positions occupied by the parts constituting a telephone-electrode constructed in accordance with my invention; and Fig. 2 is a view in horizontal section showing more particularly the contour of the annulus and also one of the carbon points, the body of granular carbon being omitted.

Referring to the drawings, A and A² designate two metallic disks or diaphragms to which are suitably attached, on their inner faces thereof, carbon-points, *a*, and *a*², respectively, between which is interposed a body or

mass of granular carbon. The diaphragms are to be made of any suitable metallic substance, and of sufficient thinness to permit of a proper degree of vibration to accomplish the function for which they are designed.

Interposed between the diaphragm, is an annulus B, which is constructed of sponge, or any other suitable spongiform—that is, soft, elastic, and porous or reticulated or woven substance, such as sponge-rubber, or woven fabric in layers, that combines the properties of resiliency and non-conductivity; but, for reasons of lightness, and ease of manipulation, sponge is, in this instance, preferred. The annulus is of a sufficient thickness to hold the carbon-points at their proper distance apart, as shown in Fig. 1, so as to permit of the granular carbon operating to prevent any make and break of the circuit, with its attendant disagreeable results. The diaphragms are hermetically sealed together by means of a peripheral binding c, which may be of any suitable material, such as paper or other fabric, but, in some instances, a rubber band may be employed. Instead of making both of the diaphragms flexible, I may, in some instances, make one of them rigid, and the other resilient.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A telephone electrode comprising a closed casing, a disk-like annulus filling the space between sides of the casing, carbon buttons within the casing of a size to fit the opening in the annulus, and a body of granular carbon interposed between the said buttons, substantially as described.

2. A telephone electrode comprising two diaphragms, a disk-like annulus filling the

space between the said diaphragms, carbon buttons carried by the diaphragms of a size to fit the opening in the annulus, and a body of granular carbon interposed between the said buttons, substantially as described.

3. A telephone electrode comprising two diaphragms, a disk-like annulus filling the space between the said diaphragms, carbon buttons carried by the diaphragms of a size to fit the opening in the annulus, a body of granular carbon interposed between the said buttons, and a peripherally arranged binder for holding the parts assembled, substantially as described.

4. A telephone electrode comprising two diaphragms, a flat sponge annulus filling the space between the said diaphragms, carbon buttons carried by the diaphragms of a size to fit the opening in the annulus, a body of granular carbon interposed between the said buttons, and a peripherally arranged binder for holding the parts assembled, substantially as described.

5. A telephone-electrode, comprising two diaphragms provided each with a fixed carbon-point, the two points being arranged in juxtaposition to and in alignment with each other, an annulus constructed of sponge, arranged between the diaphragms and surrounding said points, an interposed body of granular carbon between the points, and a flexible, peripherally-arranged binder for holding the parts properly assembled, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL DRAWBAUGH.

Witnesses:

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E. H. PARRY.