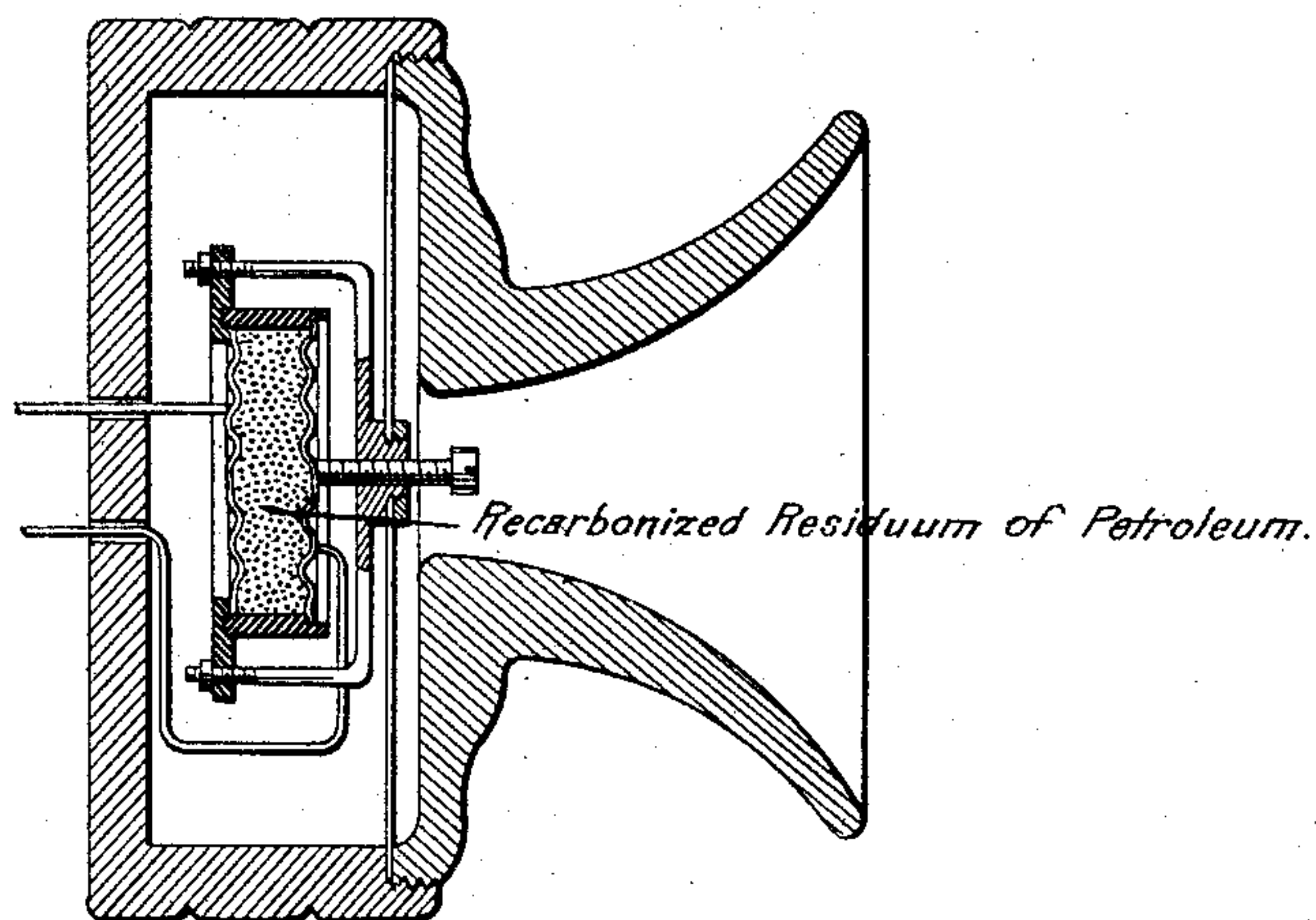


(No Model.)

T. McCOURRAY.
TELEPHONIC OR ANALOGOUS ELECTRODE.

No. 533,729.

Patented Feb. 5, 1895.



Witnesses:
A. M. Parkins.
J. H. Libbey.

Inventor:
Thomas McCourray,
by Lemuel Goldborough
Attys.

UNITED STATES PATENT OFFICE.

THOMAS MCCOUBRAY, OF NEW YORK, N. Y.

TELEPHONIC OR ANALOGOUS ELECTRODE.

SPECIFICATION forming part of Letters Patent No. 533,729, dated February 5, 1895.

Application filed August 9, 1894. Serial No. 519,911. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MCCOUBRAY, a citizen of the United States, residing at New York, in the county of New York and State
5 of New York, have made a new and useful Invention in Telephonic or Analogous Electrodes, of which the following is a specification.

My invention is directed particularly to improvements in that type of telephonic electrodes known in the art as Hunning's transmitters in which the transmitter is composed of a mass of comminuted particles of conducting material, usually powdered carbon or the
15 like, and its objects are, first, to devise an electrode of this type which shall be free from the objectionable feature of packing or assuming a solid nature when in use; second, to devise an electrode of the type indicated which
20 shall have increased conducting qualities and be free from the absorption of moisture, thus rendering the apparatus more efficient in the transmission of articulate speech, musical tones, and other sounds.

For purposes of illustration, I have shown in the accompanying drawing, as one instance of its employment in practice, the position occupied by the electrode material claimed herein, in a telephone transmitter of the construction shown and described in Letters Patent No. 527,214, granted to me October 9, 1894.

I have discovered that a residuum from petroleum, from petroleum tar which is taken from the stills in irregular shaped lumps, and
35 usually of a honey-combed form is capable of producing, when prepared, as hereinafter described, an electrode for telephonic apparatus of great efficiency. I take this residuum of petroleum or petroleum tar in its crude form
40 as it is taken from the stills and crush it or reduce it to a granular form. I then pass it through a sieve of say forty (40) meshes per square inch for the purpose of removing the finer particles. I then place those particles
45 which have thus been passed through this sieve in a second sieve having say seventy (70) meshes per square inch and remove in this manner all of the finer particles, retaining only those particles which will not pass
50 through the meshes of the latter sieve. I then take an iron retort, preferably of cylindrical form, and having at its upper end an

outlet pipe, and I partially fill this retort with the granulated powder as prepared. I then cover the powder with plumbago so as to exclude the air and place the retort in a bed of live coals to a point near the top of the vessel, bringing it preferably to a red or almost white heat. The material as thus heated gives off a gas which ignites at the mouth of the outlet pipe and continues to burn until the volatile matter has been all driven off. In this manner I ascertain, when the material has reached approximately the proper point of carbonization. This gives me a powder of fairly uniform grain and of about the hardness of glass with well defined edges. The material is then removed from the retort and is ready for use and is placed in telephonic transmitters in a manner well understood by those skilled in the art.

I do not limit myself to the above method of carbonization of the residuum of petroleum distillation, as it might be carbonized, if preferred, in the form in which it comes from the stills but a greater heat and a longer time would be required to effect such carbonization, or to drive off the volatile gases, and my claims include such method; nor do I limit myself to the above described treatment of a residuum of petroleum, such as petroleum tar, so as to make it a conductor of electricity particularly adapted for use in the telephonic art, as I believe it is broadly new with me, in the art of telephony, to utilize such a residuum when properly treated so as to make it a conductor of electricity; nor do I limit myself to any special manner of utilizing the powder as thus prepared, as it obviously might be utilized in telephonic receivers or in any manner in which analogous powders are used in the art of telephony.

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

1. The described method of preparing a carbon powder from the residuum of petroleum distillation, consisting in crushing or grinding said material into a powder-like form and then subjecting the powder to carbonization.

2. The described method of preparing a carbon powder from the residuum of petroleum distillation, consisting in crushing or grinding said material into a powder-like form, and

then sizing the powder and finally carbonizing it.

3. The described method of preparing a carbon powder from the residuum of petroleum distillation, consisting in crushing or grinding said material into a powder-like form, then passing the powder through a sieve of given mesh and again separating the finer particles from the coarser, and finally carbonizing the particles retained in the second sieve.

4. A telephonic electrode made from a residuum of an oil, such as petroleum, which residuum has been previously treated so as to make it a conductor of electricity.

5. A telephonic electrode consisting of comminuted particles of a carbon residuum of an

oil, such as petroleum, which residuum has been previously treated so as to make it a conductor of electricity.

6. A telephonic electrode made from the carbon residuum of an oil such as petroleum, which residuum is re-carbonized.

7. A telephonic electrode composed of comminuted particles of the carbon residuum of an oil such as petroleum, which particles are re-carbonized.

In testimony whereof I have hereunto subscribed my name this 6th day of August, 1894.

THOMAS MCCOUBRAY.

Witnesses:

C. J. KINTNER,

M. M. ROBINSON.