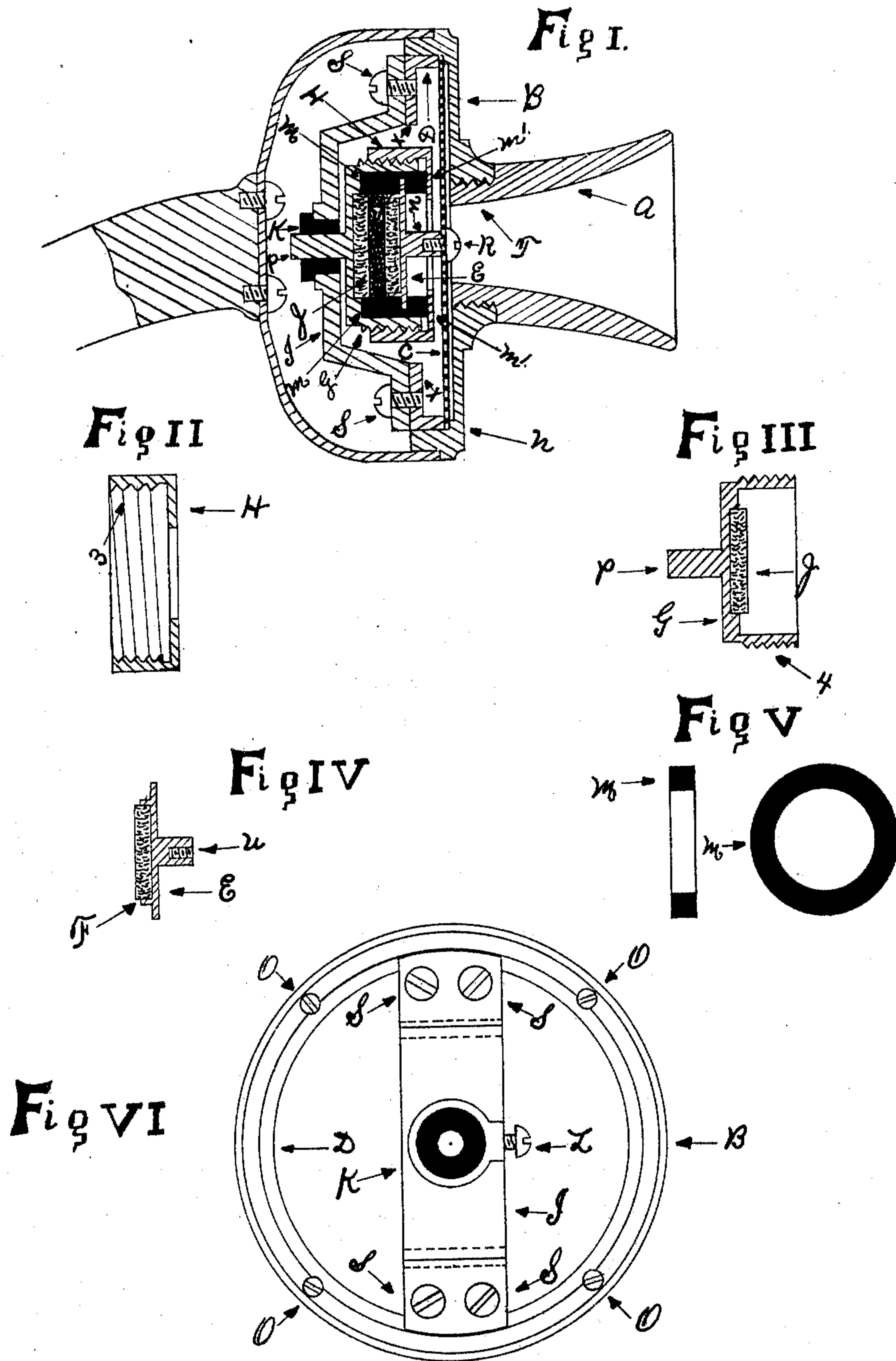


No. 759,094.

PATENTED MAY 3, 1904.

J. I. GEMMILL.
TELEPHONE TRANSMITTER.
APPLICATION FILED AUG. 28, 1901.

NO MODEL.



WITNESSES:

Edward P. F. Burns
James R. Gemmill (Sr.)

INVENTOR
James I. Gemmill.

UNITED STATES PATENT OFFICE.

JAMES I. GEMMILL, OF CLEVELAND, OHIO.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 759,094, dated May 3, 1904.

Application filed August 28, 1901. Serial No. 73,593. (No model.)

To all whom it may concern:

Be it known that I, JAMES I. GEMMILL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga, and in the State of Ohio, have invented certain Improvements in Telephone-Transmitters, of which the following is a specification.

My object is to improve the quality of voice transmission and effectively seal the chamber containing the carbon surfaces and granules against moisture.

I accomplish the above objects by the use of practically springs placed to exert pressure in opposition to each other upon the moving electrode, and as my construction permits of one or both of these springs being made of rubber or similar material I can effectively seal the chamber against moisture, as shown in accompanying drawings, which form a part of this specification.

Like letters refer to like parts in all the figures.

Figure I shows a sectional view of a transmitter, illustrating the application of the spring-rings M M and M' M'. Fig. II represents a detailed view of the retaining-ring H which serves to hold the parts of the electrode-chamber in place. Fig. III represents a sectional view of the electrode-chamber and the stationary electrode J. Fig. IV shows the active electrode; Fig. V, details of the spring-rings; Fig. VI, a rear view of the transmitter with the outer containing-cup removed.

Referring to Fig. I, a diaphragm C is placed in the front piece B, which is shaped as shown to receive and support it at the perimeter. The said front B is also adapted to receive the ring D. Screws O O O O (shown in Fig. VI) are so placed in the front B that the heads engage the ring D and serve to press the ring D down upon the diaphragm, whereby the diaphragm is firmly clamped at the perimeter between the ring D and the head B, as shown in Fig. I. A suitable mouthpiece A is fixed or attached to the front B in any of the methods as shown in Fig. I. The ring D, Fig. I, has the extensions *xx* to receive the bridge I, which is fastened in place by the screws S S. Fig. VI, further illustrates the said bridge

I and screws S S S S. The bridge serves to support the resistance-button of the transmitter. The resistance-button consists of the metal receptacle G, with the stationary electrode J attached to the bottom and in electrical connection therewith, as illustrated in Fig. III. In the receptacle is placed a ring formed similar to M, Fig. V, but of suitable thickness in order to space properly the distance between the carbon surfaces, as shown at M M, Fig. I. Upon the said ring M M is placed the movable electrode F, which is supported by the suitably-formed metal piece E. Fig. IV shows the construction of same in detail, and hereinafter the carbon plate F and the metal carrier E will together be referred to as the "movable" electrode. A ring M' M', Fig. I, similar to that shown in Fig. V is placed upon the moving electrode, and a retaining-ring H, Fig. I and shown in detail in Fig. II, is adapted to screw over the receptacle and clamp contents of receptacle in place and thereby giving the moving electrode an equipoise or balance between the two spring members, the tension of which can be regulated by the degree to which the whole is compressed by the retaining-ring H. I make use of the term "spring members" as descriptive of rubber sponge, as the function of which is to spring.

A suitable resistance-varying medium, usually of carbon granules, is placed in the space V, Fig. I, between the electrodes J and F. An extension P on the receptacle G, Fig. I, allows of fastening the same to the bridge I. An insulating-bushing K prevents an electrical contact between the two. An extension W on the movable electrode serves to connect the same to the diaphragm C, to which the connection is completed by the screw R.

Referring to Fig. VI, the screw L serves to close the walls of the bushing K upon the extension P, thus holding the receptacle G, Fig. I, stationary.

The rings M M and M' M', Fig. I, are preferably of rubber or other similar material. I use sponge-rubber for this purpose, which is rubber filled with a multitude of small cells, rendering it exceedingly soft and elastic.

The use of this particular form of rubber I claim as new in telephone-transmitters. By means of the ring H the pressure on the spring-rings M M and M' M' can be regulated. It is obvious that either one of the said rings M M or M' M' can be made of any other form of spring, such as metal springs of suitable shape used in place of one of the said rings M M or M' M', and I make the same the subject of the accompanying claims. To provide for sealing the carbon surfaces, together with the granules, in space V, Fig. I, from moisture, either one of the rings M M or M' M' must be of some material similar to rubber, and in the preferred form, which I show in Fig. I, I make both rings of "spongerubber."

The method of attaching the bridge I to the ring D instead of to the front B, as is the common practice, allows of removing the transmitter movement from out of the head B entire, whereby the diaphragm may be removed and a new one replaced without materially altering the adjustment of the button in the bridge I, greatly facilitating repairs.

Having described my invention in full, what I claim as new, and wish to secure by Letters Patent, is—

1. In a telephone-transmitter the combination of a front piece adapted to receive a diaphragm and a ring adapted to slide within the rear of said front piece, in combination with the bridge, sustaining the resistance-button, and four screws, placed in the edge of the said front piece, the heads of said screws adapted to engage the edge of said ring, to hold the whole combination; (the diaphragm, the ring and attached bridge, with the resistance-button,) within the aforementioned front piece; all as shown and described.

2. In a telephone-transmitter button the combination of a receptacle containing the stationary electrode, an annular elastic ring

surrounding said electrode, suitable resistance-varying medium, nearly filling space inclosed by said elastic ring and a moving electrode resting upon said elastic ring, with a spring bearing upon said moving electrode whereby the elastic ring being of suitable material, such as rubber, the space containing the resistance-varying medium is hermetically sealed.

3. In a telephone-transmitter the combination of a receptacle, containing the stationary electrode, an annular elastic ring surrounding said electrode, suitable resistance-varying medium nearly filling space inclosed by said elastic ring, a moving electrode resting upon said elastic ring and an elastic ring adapted to bear upon said moving electrode with pressure whereby the elastic ring between the moving electrode and the receptacle being of a suitable material such as rubber, the space containing the resistance-varying material is hermetically sealed.

4. In a resistance-button for a telephone-transmitter, the combination of a receptacle, a stationary electrode mounted in said receptacle, an annular spacing-ring surrounding said electrode, resistance-varying medium nearly filling space inclosed by said spacing-ring, a moving electrode resting on said spacing-ring, another spacing-ring resting on said moving electrode and a flanged ring, adapted to screw over said receptacle in manner described, to clamp said spacing-rings and moving electrode in place whereby the distance between the stationary electrode and the moving electrode can be accurately spaced.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 20th day of August, A. D. 1901.

JAMES I. GEMMILL.

Witnesses:

FRED. S. GEER,
CLARA B. GIBSON.