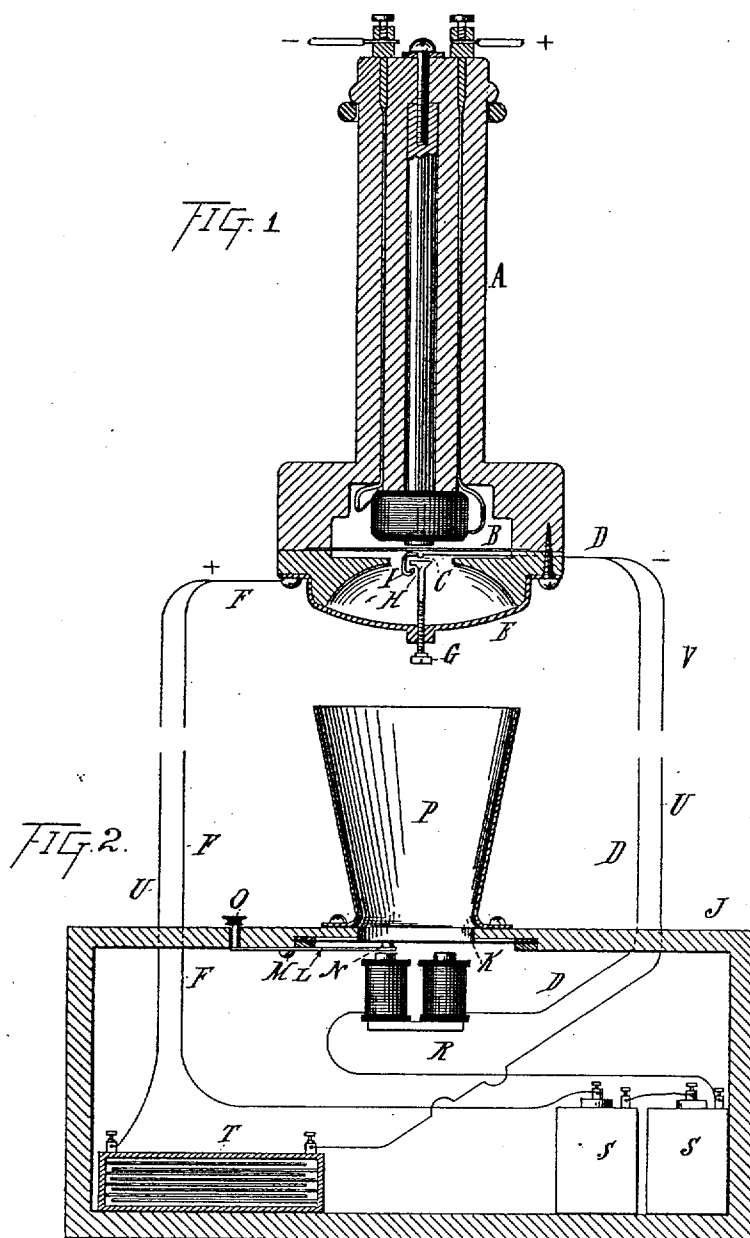


(No Model.)

E. E. WEAVER.
TELEPHONIC RELAY.

No. 463,207.

Patented Nov. 17, 1891.



WITNESSES:

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EPHRAIM E. WEAVER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
LEWIS O. HOWELL, JR., OF SAME PLACE.

TELEPHONIC RELAY.

SPECIFICATION forming part of Letters Patent No. 463,207, dated November 17, 1891.

Application filed February 18, 1891. Serial No. 381,987. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM E. WEAVER, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Telephonic Relays, of which the following is a specification.

My invention relates especially to means and mechanism used in transmitting and reproducing spoken words and sounds, and has for its object the provision of a device whereby the tones at the receiving end of the line may be greatly amplified and made much more distinct than is possible by the use of the receiving-instruments now employed.

To attain the desired end my invention consists, essentially, in the combination, with the diaphragm of a magnetic telephone-receiver, of two contact-pieces interposed in a local circuit, wherein is placed a magnet and diaphragm by which the sounds received by the first-named instrument are greatly augmented. A condenser is connected with the local circuit, and a damper for modifying the intensity of the sounds is arranged to engage with the said diaphragm.

My invention also involves certain other novel and useful combinations or arrangements of parts and peculiarities of construction and operation, all of which will be hereinafter first fully explained, and then pointed out in the claims.

In the drawings, Figure 1 is a longitudinal sectional view of a Bell telephone wherewith one part of my invention is employed. Fig. 2 is a vertical sectional view of my relay-instrument, showing the location and arrangement of all the parts.

Like letters of reference wherever they occur indicate corresponding parts in all the figures.

I have shown a Bell telephone with my improvements connected thereto, as such an instrument is well known; but it is obvious that my device may be employed with any kind of receiving-instrument of the class to which my invention relates without departing from the spirit of my invention.

A is a Bell telephone of the usual construction. This instrument, for the purpose of convenience of illustration, is shown as in

close proximity to the remaining portions of my invention; but in practice it would occupy the usual position on the call-box, some distance from the relay mechanism.

The diaphragm B bears a carbon button C, which is electrically connected with the positive wire D of a local circuit.

Over the usual ear-orifice or mouth of the telephone I place a metal bridge, cover, or crown E, having electrical connection to the negative wire F of the local circuit.

G is an adjustable screw mounted in the crown-piece E and arranged to move toward or away from the carbon-button C. This screw is provided with a platinum contact-piece H.

I is an extension of the circuit-wire D, which passes partially around the contact-piece H.

I have shown the crown-piece E as made of metal and the wire F brought in electrical contact therewith; but, if desired, the crown-piece may be made of non-conducting material and the wire F connected to the screw G.

J is a box or case, in the top of which is fixed a diaphragm K.

L is a bar, pivoted at the side of the diaphragm at M, bearing at its inner end a contact-piece N and at its other extremity a manipulating-knob O. By turning this rod on the pivot the contact-piece N will impinge upon the diaphragm near to or farther away from the center, thus regulating the amount of vibration therein and consequently increasing or diminishing the volume of the reproduced tone at the pleasure of the user.

P is a resonator surrounding the opening in the box J, over which the diaphragm K is located.

In order to prevent rupture of the local circuit at the contact in the telephone and to reduce the quantity of the local current, I place a condenser T at a convenient point, the conductors connected therewith, U and V, being joined to the conductors of the local circuit D F near the telephone A, as indicated in Fig. 1.

When constructed and arranged in accordance with the foregoing description, the operation of my device is as follows: The telephone occupies the usual position upon the switch-hook and after a call has been received

and returned in the usual manner it is hung up in any convenient position. When sounds are being received, the mechanical vibration of the diaphragm B will be taken up by the local circuit through the medium of the contact-pieces C I H, and the magnet R in the local circuit will cause the diaphragm K to reproduce the tones, amplifying them, rendering them clear, loud, and distinct.

10 Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a device of the character herein specified, the combination, with the telephone-receiver provided with the usual diaphragm and bearing a carbon-button, of the bridge or crown piece over the mouth thereof, the adjustable screw therein bearing a platinum contact-piece, and the connections to a local battery, substantially as shown and described.

2. A telephonic relay in which is comprised a receiver provided with a diaphragm whereon is fixed a carbon contact-piece connected to a local circuit and provided with a curved extension, as shown, an adjustable contact-piece placed above the carbon button and connected to the local circuit, a bridge or crown fixed over the mouth-piece of the receiving-telephone, a relay-box wherein is placed a diaphragm surrounded by a resonator, a damper having contact with said diaphragm, a battery in the local circuit, and a condenser also having connection with the local circuit wherein is placed an electro-magnet, the whole combined and arranged to operate substantially as shown and described.

EPHRAIM E. WEAVER.

Witnesses:

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