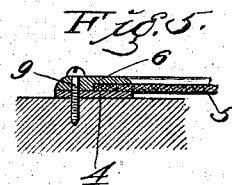
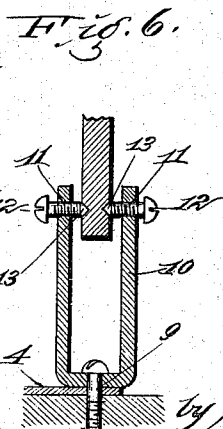
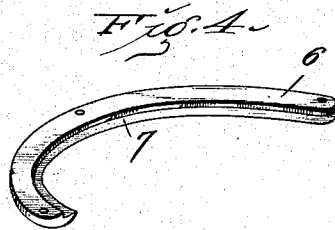
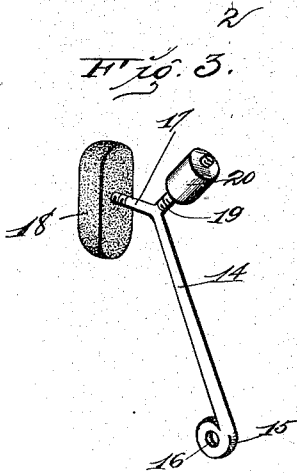
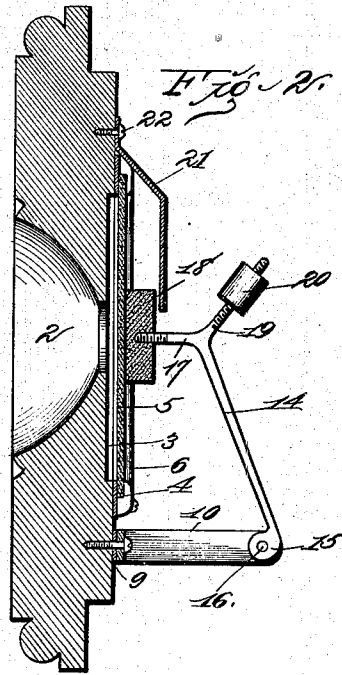
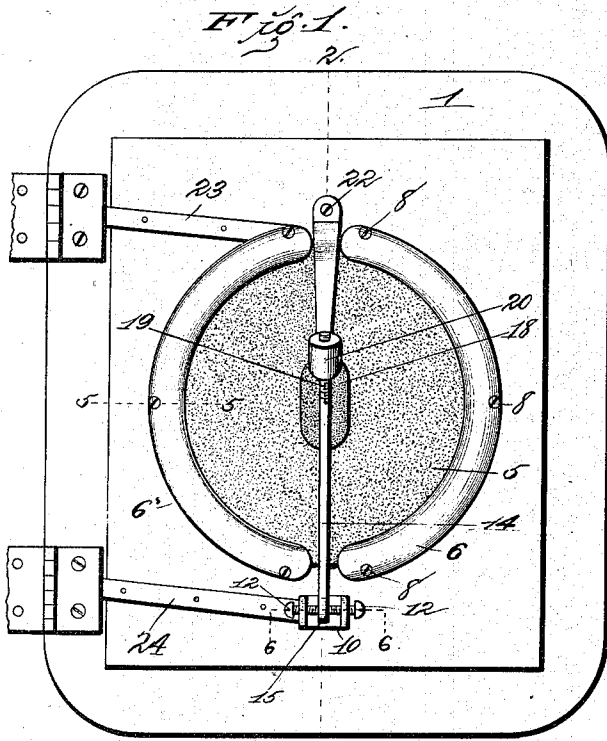


(No Model.)

I. J. KUSEL.
TELEPHONE TRANSMITTER.

No. 552,689.

Patented Jan. 7, 1896.



Attest
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UNITED STATES PATENT OFFICE.

ISIDOR J. KUSEL, OF ST. LOUIS, MISSOURI.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 552,689, dated January 7, 1896.

Application filed April 29, 1895. Serial No. 547,598. (No model.)

To all whom it may concern:

Be it known that I, ISIDOR J. KUSEL, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Telephone-Transmitters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved electric telephone-transmitter; and it consists in the novel construction, combination, and arrangement of parts, hereinafter specified, and designated in the claim.

The object of my invention is to provide an improved transmitter of the class above mentioned, which will possess superior advantages in point of simplicity, durability, and general efficiency.

In the drawings, Figure 1 is a rear elevation of the front face or door of a transmitter-box, the same having my invention applied thereto. Fig. 2 is a vertical sectional view taken approximately on the indicated line 2 2 of Fig. 1. Fig. 3 is a view in perspective of the pivoted arm carrying the carbon button that I make use of in carrying out my invention. Fig. 4 is a view in perspective of one of the semicircular diaphragm-clamps. Fig. 5 is a cross-sectional view taken approximately on the indicated line 5 5 of Fig. 1. Fig. 6 is a cross-sectional view on the line 6 6 of Fig. 1.

I have illustrated only those portions of a transmitter which appertain directly to my invention, the remaining parts being of the usual and well-known construction.

Referring by numerals to the accompanying drawings, 1 indicates the front piece or door of the transmitter-box, the same being constructed of wood or analogous material and with the usual centrally-arranged aperture 2. Formed in the rear face of the front piece or door 1 is a circular depression 3, and concentric with this circular depression 3 and lying directly upon the rear face of the door 1 is a circular metallic ring 4.

The diaphragm 5 which I make use of is constructed of a thin sheet or plate of carbon, although a common metallic diaphragm or a diaphragm made of any material that is susceptible of being vibrated by sound-waves may be made use of. This diaphragm 5 is

placed directly upon the metallic ring 4 and held rigidly in this position by means of semicircular clamps 6, the same being constructed on their under sides with rectangular cut-away portions 7 that are occupied when said clamps are properly positioned by the peripheral edges of the diaphragm 5. Said semicircular diaphragm-clamps are held in proper position by ordinary screws 8 passing through apertures in said clamps, through the metallic ring 4, and into the material of which the door 1 is formed.

Immediately below the center of the diaphragm 5 is fixed by means of a screw 9 or in any suitable manner a U-shaped bracket 10, in the ends of which are formed oppositely-arranged screw-threaded apertures or perforations 11. Passing through these oppositely-arranged apertures 11 are headed pivot-screws 12, the adjacent ends 13 of which are preferably cone-shaped.

14 indicates a pivoted arm, the same being constructed at its lower end with an integral bearing 15, in the sides of which are oppositely-arranged circular recesses 16 and in which the bearing-points 13 of the pivot-screws 12 are adapted to engage. This pivoted arm 14 extends from the bearing 15 upwardly and toward the diaphragm 5 until it reaches a point directly opposite the center of said diaphragm 5. Here it is forked or bifurcated, one arm 17 of said fork or bifurcation extending in a horizontal line direct toward the diametrical center of the diaphragm 5. The end of this fork 17 is screw-threaded, and mounted upon said screw-threaded end is a carbon button 18, the same being preferably constructed with a smooth front face adapted for contact with the face of the diaphragm 5. The other fork 19 of the arm 14 extends outwardly and upwardly from the juncture of said pivoted arm 14 with the arm 17, and said arm 19 is exteriorly screw-threaded its entire length. A metallic weight 20 is provided with a screw-threaded bore or aperture, whereby it is mounted for adjustment upon the screw-threaded arm 19.

21 indicates a thin metallic bracket that is secured by means of a screw 22 or in any suitable manner to the rear face of the door 1 immediately above the center of the diaphragm 5. From thence said bracket is bent out-

wardly and downwardly and terminates a slight distance from and directly in the rear of the carbon button 18. This bracket 21 retains the carbon button 18 in its proper relation with the diaphragm 5 and prevents said button from accidentally dropping away from said diaphragm 5. Usual electrical connections, such as 23 and 24, are made, one to the metallic ring 4 and the other to the U-shaped bracket 10.

It will be observed that the arm 14 and parts integral therewith and carried thereby are so pivoted as that they bodily vibrate, and an important feature of my invention is the location of the pivotal point of said arm 14. This pivotal point is located below and slightly in the rear of the rear face of the diaphragm 5, thus allowing the carbon button 18 on the screw-threaded arm 17 of the arm 14 to rest against the diaphragm 5 by reason of its own weight, thus producing a correct contact between said button and diaphragm with the use of any springs.

The weight 20 is capable of being adjusted upon the arm 19, thereby changing the center of gravity of the pivoted arm 14 and allowing differential contact between the button 18 and the diaphragm 5.

The arm 19 is not long enough to allow at any time the weight 20 to be moved beyond a line drawn vertically through the pivot-centers 16.

The diaphragm 5 forms one electrode of my improved transmitter, as it is in electrical contact with the diaphragm-holders 6 with which the usual conductor 23 is connected. The button 18 constitutes the second electrode, as it is in electrical connection with the second conductor 24.

By my improved means of pivoting the arm 14 and providing the same with an adjustable weight and locating the button 18 upon a screw-threaded fork of the arm 14 the exact contact required to produce perfect results is readily obtained.

The operation of my improved transmitter may be readily perceived, as the sound-waves vibrate the diaphragm 5 in the ordinary man-

ner and vary the contact between said diaphragm and the carbon button, which produces variations in the current with the usual result. The pivot-screws 12 may be manipulated at any time to adjust the movement of the arm 14, and the same may be moved toward each other to compensate for any wear that may occur. Should it be desired to remove the diaphragm 5 at any time, the screw 22 is loosened, the bracket or arm 21 moved to one side, and the screws 8 in one of the semicircular diaphragm-clamps removed. This allows said diaphragm to be readily withdrawn from its proper position.

It is obvious that the exact details of construction herein shown may be slightly varied within the limit of mechanical skill without departing from the scope of my invention.

What I claim is—

The improved telephone-transmitter, comprising a transmitting-diaphragm arranged in a vertical plane, a horizontal stationary U-shaped bracket 10 fixed by a screw 9 at a point immediately beneath the edge of and extending at right angles to said diaphragm, and having the opposite threaded-apertures 11 adjacent its free ends, pivot-screws 12 in said apertures, an arm 14 having opposite bearings 15 at its lower end and pivoted between the said screws and extending upwardly and inwardly to a point on a line with the center of the diaphragm, threaded arms 17 and 19 formed integral with the upper end of said pivoted arm, the arm 17 being horizontal and the arm 19 extending obliquely upward, a carbon-button mounted upon said arm 17, and a weight 20 mounted for adjustment upon the other one of said arms, the arms 17 and 19, button and weight being located interior of a vertical line drawn through the pivot point of said pivoted arm.

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

ISIDOR J. KUSEL.

Witnesses:

M. G. IRION,

JOHN C. HIGDON.