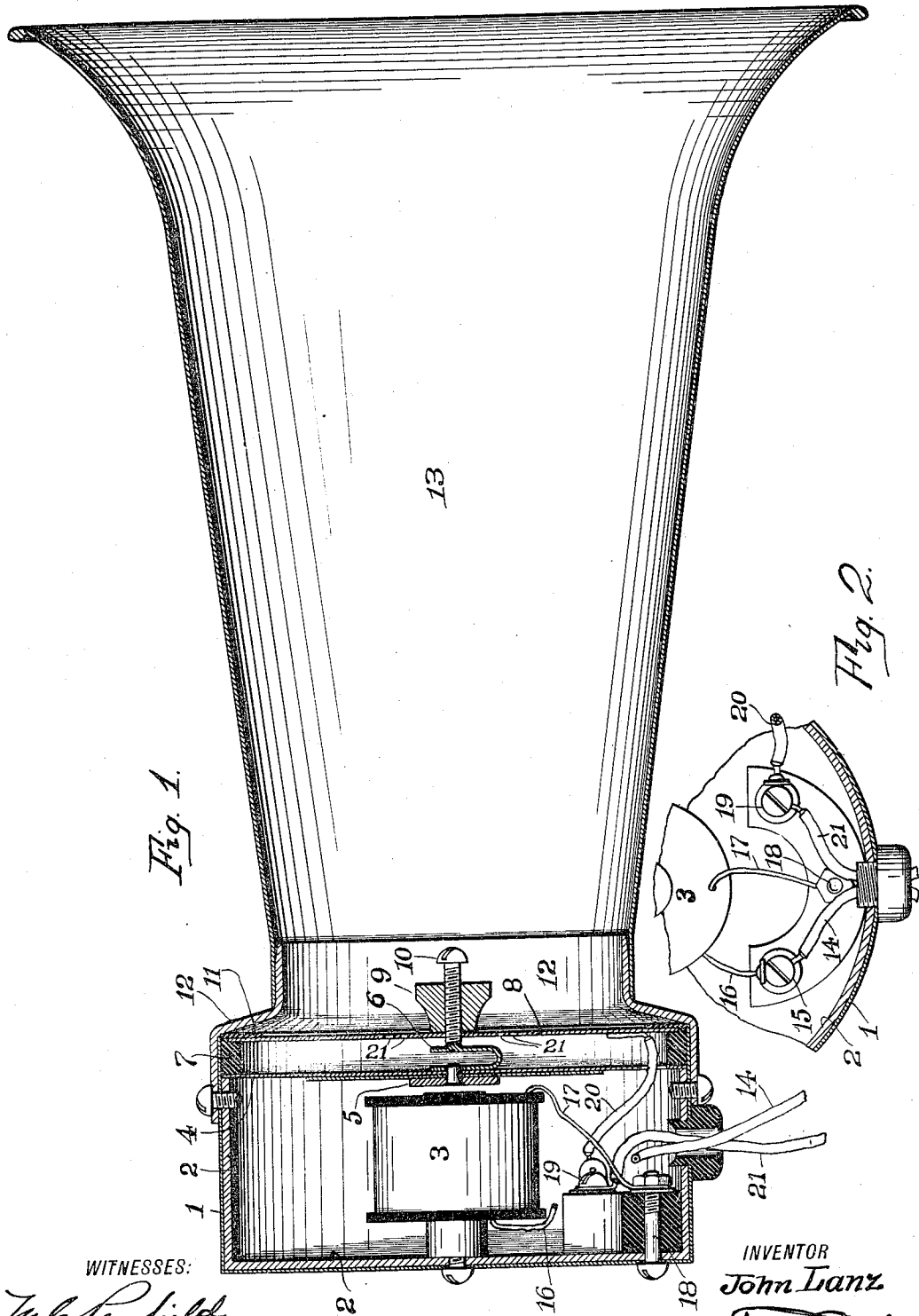


981,864.

J. LANZ.
ELECTRIC HORN.
APPLICATION FILED AUG. 18, 1910.

Patented Jan. 17, 1911.



WITNESSES:

W. H. Kenfield.
M. J. Longden.

INVENTOR

John Lanz

BY

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN LANZ, OF DANBURY, CONNECTICUT, ASSIGNOR TO THE ROGERS TELEPHONE & ELECTRIC COMPANY, OF DANBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRIC HORN.

981,864.

Specification of Letters Patent.

Patented Jan. 17, 1911.

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To all whom it may concern:

Be it known that I, JOHN LANZ, a citizen of the United States, residing in the city of Danbury, county of Fairfield, and State of Connecticut, have invented certain new and useful Improvements in Electric Horns; and I do 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.

My invention relates to certain new and useful improvements in electric horns and has for its object to provide a device of this description in which the vibrations shall be pronounced and positive, one vibration being produced by a diaphragm vibrated by electrical impulses, while a second diaphragm is mechanically vibrated by the action of the first named diaphragm.

With these ends in view my invention consists in the arrangement and combination of parts hereinafter fully described and then particularly pointed out in the claims which conclude this description.

In the accompanying drawing Figure 1 is a sectional elevation illustrating my improvement and, Fig. 2 a detail broken section showing more particularly the manner of wiring.

Similar numerals of reference denote like parts in both figures of the drawing.

1 is the metal casing preferably provided with a lining 2, and 3 is an electro magnet suitably mounted within said casing. 4 is a diaphragm which rests upon said lining and has secured thereto an armature 5 in proximity to the magnet 3, and secured to the upper face of this diaphragm is a spring contact 6.

Resting upon an insulated ring 7 and separated from the diaphragm 4 by an air space is a second diaphragm 8, to the upper face of which is secured a block 9 through which a screw 10 is driven against the contact 6, and by means of the adjustment of this screw the normal distance between the armature and magnet is determined.

Resting upon the outer perimeter of the diaphragm 8 is an insulating ring 11, and secured to the casing in any suitable manner is the horn nozzle 12, to which latter the horn 13 is attached. The electrical connections are quite ordinary, one wire 14 being connected to an insulated binding post 15

to which latter is likewise connected one end of the magnet winding wire 16, the other magnet wire end 17 being connected with the casing through the medium of any suitable binding post 18; the other electrical wire 21 is secured to the insulated post 19 and a wire 20 connects the latter with the upper diaphragm 8.

When the parts are in normal position the upper diaphragm 8 is always in electrical contact with the lower diaphragm through the medium of the spring 6 and screw 10, and therefore the magnet, the casing and the two diaphragms are always normally in electrical connection with the wire 14, while the return wire 20 to which the battery (not shown) is attached is connected with the upper diaphragm 8, so that it will be clear that when the circuit is closed the magnet will be energized thereby attracting the armature and breaking the contact between the spring 6 and screw 10, whereupon contact will of course be broken with the battery wire and the armature will return to normal position thus vibrating the lower diaphragm 4. On the upward or return movement of the diaphragm 4 the contact spring 6 will strike against the screw 10 and vibrate the upper diaphragm 8 mechanically. This diaphragm 8 is perforated in any suitable manner as shown at 21 in order to afford transmission of sound caused by the vibration of the inner diaphragm.

By the use of my improvement I obtain not only the benefit of the body of air between the diaphragms which is set in motion by the vibration of the lower diaphragm, but the mechanical or positive vibrations of the outer diaphragm greatly accentuates the sound which latter is still further increased and materially softened by reason of the resilient contact between the two diaphragms.

I do not wish to be understood as claiming the use of two diaphragms separated by an air space where the inner diaphragm is vibrated either mechanically or by electrical impulses and the outer diaphragm vibrated by the disturbance of the air.

What I do claim as new and desire to secure by Letters Patent is:—

1. An electric horn, comprising inner and outer diaphragms that are spaced apart and insulated from each other, contact elements carried by said diaphragms and normally

in contact with each other, an electro magnet, and an armature carried by the inner diaphragm within the field of said magnet, whereby the energizing of the latter will
5 effect the vibration of the inner diaphragm and cause the outer diaphragm to be mechanically vibrated.

2. An electric horn, comprising an electro magnet, inner and outer spaced diaphragms
10 insulated from each other, an armature carried by the inner diaphragm within the field of said magnet, contact elements carried by said diaphragms, electrical connections between said magnet, diaphragms and one circuit
15 wire, and electrical connections between the outer diaphragm and the other circuit wire.

3. An electric horn, comprising a casing, an electro magnet supported therein, spaced

inner and outer diaphragms supported with- 20
in said casing and insulated from each other, an armature secured to the inner diaphragm within the field of said magnet, a resilient contact carried by the inner diaphragm, a
25 contact screw carried by the outer diaphragm and normally engaging said resilient contact, and suitable electrical connections whereby when the magnet is energized the inner diaphragm will be vibrated and will
30 thereby effect mechanical vibrations of the outer diaphragm.

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

JOHN LANZ.

Witnesses:

F. W. SMITH, Jr.,
M. T. LONGDEN.