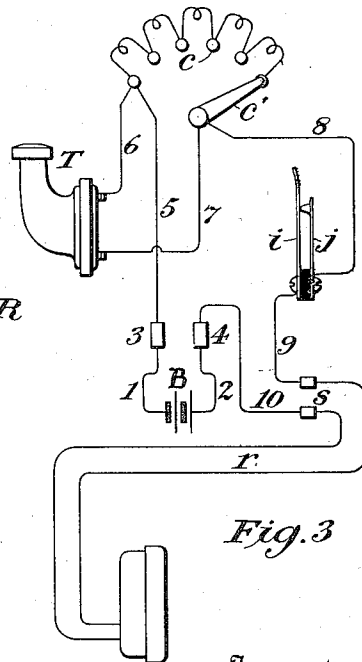
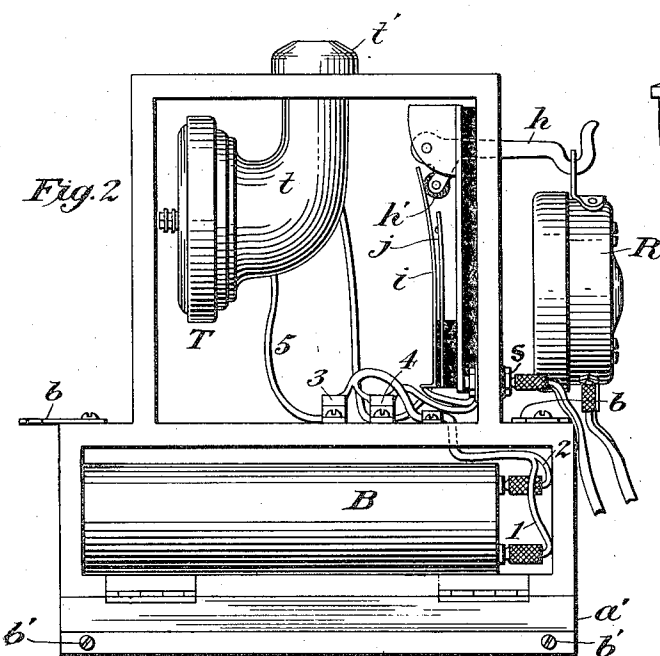
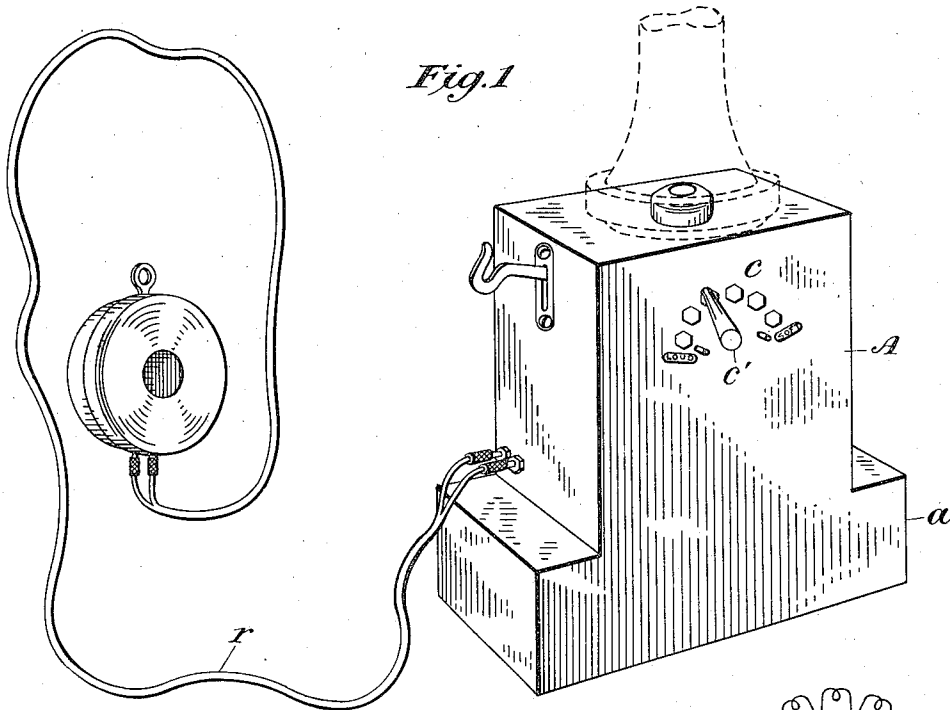


L. SCHER.  
 TELEPHONIC APPARATUS.  
 APPLICATION FILED NOV. 7, 1916.

1,280,556.

Patented Oct. 1, 1918.



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By his Attorneys

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# UNITED STATES PATENT OFFICE.

LOUIS SCHER, OF NEW YORK, N. Y., ASSIGNOR TO GENERAL ACOUSTIC COMPANY, A CORPORATION OF NEW YORK.

## TELEPHONIC APPARATUS.

1,280,556.

Specification of Letters Patent.

Patented Oct. 1, 1918.

Application filed November 7, 1916. Serial No. 129,921.

*To all whom it may concern:*

Be it known that I, LOUIS SCHER, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Telephonic Apparatus, of which the following is a full, clear, and exact description.

This invention relates to telephonic apparatus, the object being to provide a loud-speaking portable telephonic apparatus which will enable persons with impaired hearing to satisfactorily use the ordinary telephone.

For this purpose the invention consists of a complete, loud-speaking telephonic set mounted in a portable box or casing and so constructed that an ordinary telephone receiver can be placed in operative relation with the transmitter of the apparatus, whereupon the sounds delivered by the ordinary telephone will be augmented and may be distinctly heard by a person whose hearing may be impaired when he places the loud-speaking receiver of the set to his ear. The apparatus also includes a regulator by which the degree to which the received sounds are augmented may be controlled to suit the degree of deafness of the person using the apparatus, and to compensate for the varying voltage or resistance caused by weather or other conditions.

The invention will be described more in detail with reference to the accompanying drawing, in which—

Figure 1 is a perspective view of the portable apparatus showing the receiving telephone thereof dismantled and ready for application to the ear;

Fig. 2 is a rear elevation of the apparatus with the back plate of the casing removed to show the internal mechanism; and

Fig. 3 is a diagram of the circuits.

The apparatus comprises essentially a transmitter T, a receiver R and a battery B. These devices are located in a casing A of rectangular shape, having a base *a* within which the battery alone is located. The transmitter T is a highly sensitive instrument whose diaphragm chamber communicates with the atmosphere through a horn *t*, the outer small end of which extends through the horizontal top plate of the casing A and terminates in a perforated button *t'*, which is of such shape as to make a close fit with the

central orifice in the face of an ordinary telephone receiver, such as is commonly used in most short and long distance systems. The receiver R is a sensitive, loud-speaking instrument, which normally hangs upon the hook *h*, but when in use is removed from the hook and placed to the ear, this receiver being connected with the other apparatus by the flexible conducting cord *r*, the terminals of which are respectively plugged into sockets in the frame of the receiver and into sockets *s* in the side wall of the casing A, as shown. The hook *h* is provided with a roller *h'* inside of the casing A, which acts upon a conducting spring blade *i*, to hold the same out of contact with a companion blade *j* when the receiver is on the hook. The two blades are fixedly mounted within the casing and insulated from each other and form a part of the circuit of the device, as will be explained. The battery compartment may have a hinged door *a'*, as shown in Fig. 2 affording easy access to the battery, which door may be latched in its closed position by hooks *b*, engaging screws *b'*.

On the front wall of the casing A or elsewhere is fixed a row of contacts *c*, and a pivoted contact arm *c'* adapted to make or break connection with the contacts *c* successively. These contacts are the terminals of resistance coils and the device in fact constitutes an ordinary controlling rheostat, accessible to the operator. The circuits are as follows: Two wires 1 and 2 lead from the terminals of the battery to two posts 3 and 4, respectively, within the casing. From the post 3 a wire 5 leads to one terminal of the rheostat and from the same terminal a wire 6 leads to one terminal of the transmitter. From the other terminal of the transmitter a wire 7 leads to the contact arm *c'* of the rheostat and from the said arm a wire 8 leads to the spring blade *j*. From blade *i* a wire 9 leads to one of the sockets *s* in the side wall of the casing to which the receiver is connected, thence the circuit leads through the cord *r* to the receiver and back to the other socket *s*, thence by wire 10 to the battery terminal 4. It will thus be seen that the battery current when the circuit is closed will divide between the rheostat and the telephonic transmitter in a proportion depending upon the position of the arm *c'*, which allows more or less of the current to short

circuit the transmitter. It will also be seen that under normal conditions, that is, when the apparatus is not in use and the receiver is on the hook, the battery circuit is open  
 5 between the blades *i* and *j*, and there is no consumption of current. The operation is as follows: A person who finds it necessary to use an apparatus of this character will keep it close at hand for ready use in con-  
 10 nection with his regular service telephone. When the regular telephone is to be used its receiver is placed on top of the casing A in the position shown in dotted lines, Fig. 1, where it will rest with its central orifice di-  
 15 rectly over the button *t'*. The user will then remove the receiver R from the hook and place it to his ear. Sounds then produced by the regular receiver will in passing through the horn *t* be amplified and will  
 20 act vigorously upon the diaphragm of the transmitter T. The variations of current of the battery B will traverse the circuit between the transmitter T and the receiver R and will be amplified to an extent depending  
 25 upon the position of the controlling rheostat. The sounds reaching the ear of the user will thereby be much louder than those given out by the regular receiver and he will be able, by speaking into the regular tele-  
 30 phone transmitter, to carry on conversation with satisfaction and comfort. The horizontal top plate of the casing A, through which the small end of the horn *t* projects, affords a convenient table or rest for the  
 35 service telephone receiver while at the same time insuring that the necessary close relation of the service receiver and the end of the horn is effected. In this way the ampli-

fyng or larger end of the horn may be presented to the transmitter while the smaller  
 40 end which fits closely into the orifice of the service telephone receiver will collect all the delicate vibrations from the latter, which will then be amplified by the horn before they act upon the diaphragm of the sensitive  
 45 transmitter.

I claim:

1. A portable telephone set comprising a casing or frame, a telephone transmitter, re-  
 50 ceiver and battery located thereon, an amplifying horn one end of which is in communication with the transmitter, and a support or table for a second telephone receiver, with which the other end of said horn is asso-  
 55 ciated.

2. A portable telephone set comprising a transmitter, a receiver and battery in circuit with each other and an amplifying horn the larger end of which is presented to the  
 60 transmitter while the smaller end is exposed to receive sounds, and a support for a telephone receiver, associated with the smaller end of the horn.

3. The combination of a telephone trans-  
 65 mitter, an amplifying horn to the larger end of which said transmitter is permanently attached, a telephone receiver movable with respect to the transmitter and adapted to be mechanically connected at will to the smaller end of said horn in order to deliver  
 70 sounds thereto, and a second receiver in circuit with said transmitter, substantially as described.

In witness whereof I subscribe my signature.

LOUIS SCHER.