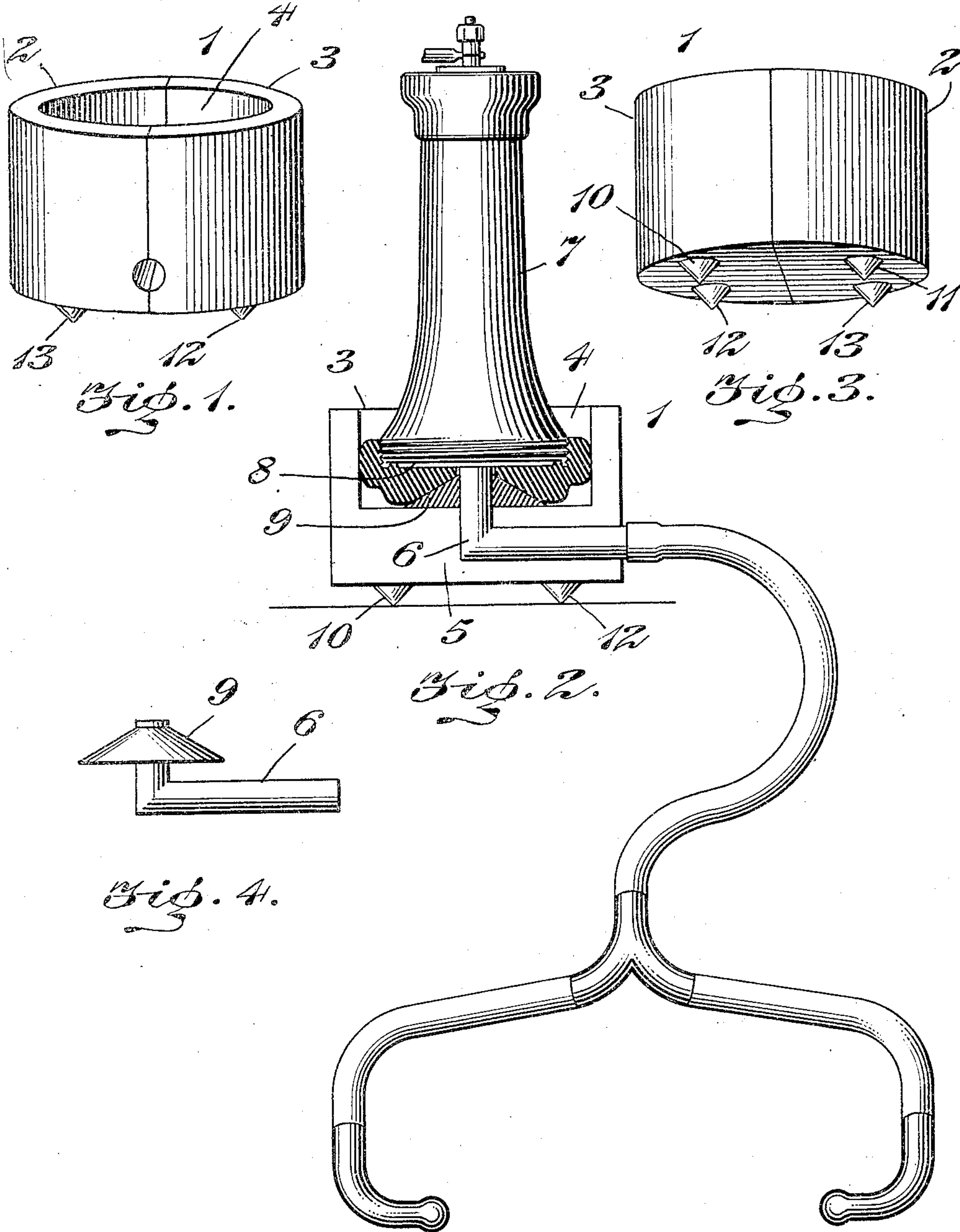


No. 897,718.

PATENTED SEPT. 1. 1908.

W. R. DANIELS.
TELEPHONE INSTRUMENT.
APPLICATION FILED APR. 10, 1908.



WITNESSES

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TELEPHONE INSTRUMENT.

No. 897,718.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed April 10, 1908. Serial No. 426,412.

To all whom it may concern:

Be it known that I, WILFORD R. DANIELS, a citizen of the United States, and a resident of borough of Brooklyn, city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Telephone Instruments, of which the following is a specification.

My invention relates to telephone instruments.

It has for its object to produce a means whereby the sound produced in a telephone receiver may be collected and directed to the ear, and at the same time greatly magnified. It has often been found that the sound produced in telephone instruments is so faint that it cannot be heard. This is especially true in connection with long distance telephony. This is also true when there is imperfect connections and leakage of current, etc. By my invention all of the vibrations of the telephone receiver diaphragm are greatly magnified in their sound producing effect and any slight response of the telephone receiver to weak voice currents can be heard by the user of my invention although it may not be heard at all without the use of the invention.

The invention consists in producing a sound magnifier which will increase the volume of sound that may be produced in a telephone receiver.

The invention also consists in providing a means for collecting the sound and a means for directing it to the ears of the user.

The invention also consists in providing a sounding block and a collector located in the block which will collect the sound produced in the block and in the telephone receiver.

The invention consists in other features referred to in the following description shown in the drawings and set forth in the claims.

Referring to the drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a sectional view of my invention, showing the manner in which it is used. Fig. 3 is a bottom view of my invention showing the means for supporting the device. Fig. 4 is an illustration of one of the details of my invention.

1, in Fig. 1 is a cylindrical block which is made of especially selected wood having good phonetic properties. The block is made of oak or mahogany. It is made cylindrical and of two halves, 2 and 3. The two halves are fastened together by screws, by gluing

or otherwise secured together. The sounding block has an opening 4 which extends down into the block a short distance leaving a thick bottom 5, as shown in Fig. 2. The opening 4 is made sufficiently large in order that a telephone receiver, such as shown in Fig. 2, may be placed in the block.

The block of wood constitutes or operates as a sounding board, that is, any vibration that is started in the wood of the block sets the whole block vibrating. Owing to the elasticity of the wood which has special phonetic properties, the particles of the wood have a great amplitude of vibration. Any recurrence of a vibration set up in any part of the block increases the amplitude of vibration of the entire block since it moves synchronously with the portion or portions of the block first receiving the vibration. This causes the block to magnify the sound produced in the telephone receiver.

The block is provided with a right angular tube 6, which is made of solid india rubber or ebonite. This is tightly fixed in the block so that one end of the tube extends a short distance above the bottom of the block and so that it may enter the receiver 7 opposite the center of the receiver diaphragm 8. The tube 6 is incased or buried in the wood of the thick bottom 5 of the block. Semi-cylindrical grooves are cut in the two halves 2 and 3, and if the two halves are brought together when the tube is in position, they tightly fit around the tube and incase or bury it in the wood. A comparatively long air column is thus formed in the body of the block and brings the material of the sounding block in close fitting contact with the rubber tube containing the air column. Any sound that may be produced in the block or any vibration that may be set up in the material of the block is transmitted to the air column contained in the block.

A conical body 9 is located around that portion of the tube 6 which extends a short distance upwards in the opening 4. The conical body 9 is made of solid material. A composition of plaster of paris and hair may be used or solid rubber or ebonite may be used. Preferably the conical body and the right angular tube is made of one piece of ebonite. The conical body 9 rests upon the thick bottom 5, and surrounds the upwardly extending portion of the tube 6. When the telephone receiver is placed in the sounding block, the conical body 9 fits into the con-

cave portion of the ear piece of the telephone receiver. The conical shape body 9 fills up the space formed by the concavity of the telephone receiver instrument. The telephone receiver rests upon the conical body 9 when placed in position for using my invention. The conical body not only fills up the air space but gives a close fitting surface whereby any sound that may be produced in the receiver may be transmitted to the sounding board or block, as well as to the tube. If the tube and the conical shaped body are made of one piece, the transmission and the magnifying effect of the combination are more perfect and more complete. The vibrations of the air produced by the vibrations of the diaphragm in the receiver are directed into the tube 9. As before stated the sounding block operates like a sounding board to receive and magnify any sound that may be produced in the vicinity of the block, especially any sound that may be produced in the telephone receiver and transmit such sound to the air column contained in the tube tightly inclosed and buried in the block. The vibrations of the air column are then transmitted to the ear of the user.

Listening tubes are connected to the tube 6 for conducting the sound produced in the receiver and magnified in effect by the block and which are received thus magnified in the air column of the tube 6, to the ear.

In order to prevent any sound being communicated from any source in the vicinity of the block other than that produced by the telephone receiver, the sounding block may be isolated by cushioned supporting means such as rubber or felt cushions. I have shown a means consisting of four cushions 10, 11, 12 and 13 which are located on the bottom of the sounding block. The cushions support the block and isolate it phonetically from any supporting object such as a standard or desk or table.

The invention may be modified by those skilled in the art without departing from the spirit thereof.

What I claim as new and desire to claim as Letters Patent is as follows:—

1. In a telephone instrument the combination of a sound receptacle, a solid body conforming to the flaring shape of the exterior of the ear-piece of the telephone receiver for collecting the sound produced in the said receiver.

2. In a telephone instrument the combination of a sounding block, a cone-shaped body adapted to support the telephone receiver whereby the sound produced in the receiver may be transferred to the said block.

3. In a telephone instrument the combination of a sounding block, a tube for containing the listening end of a telephone receiver, a solid body adapted to fill the space between the said receiver and the said block to transmit the sound produced in the receiver to the said block.

4. In a telephone instrument the combination of a wooden sounding block adapted to contain a portion of a telephone receiver, a cone located in the said block adapted to support the said telephone receiver and fill the space between the said block and the ear piece of the said receiver, a tube embedded in the said block and located in the center of the said conical surface.

5. In a telephone instrument the combination of a receptacle adapted to contain a portion of a telephone receiver, a disk adapted to support the said receiver and communicate the sound that may be produced in the material of the receiver to the said receptacle.

6. In a telephone instrument the combination of a cylindrical sounding block having a continuous angular tube located in the bottom wall thereof, a solid substantially cone-shaped body, the said block having an opening adapted to receive the said receiver.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILFORD R. DANIELS.

Witnesses:

ISAAC RHEINSTROM,
THOMAS A. MELODY.