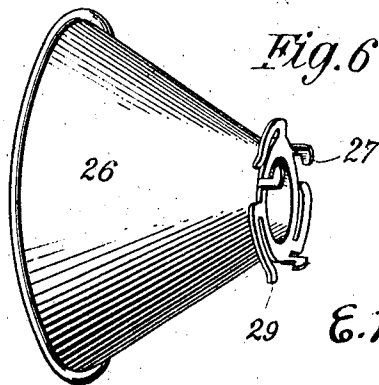
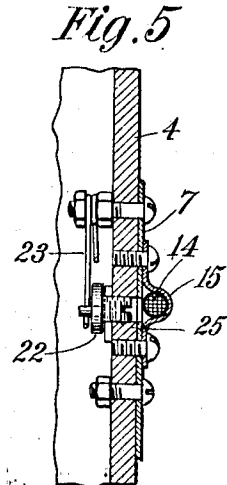
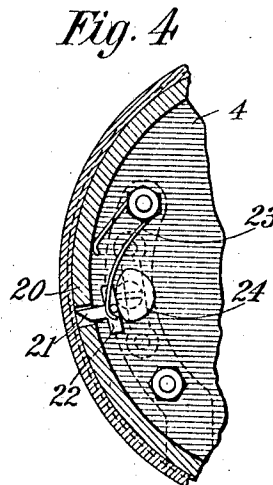
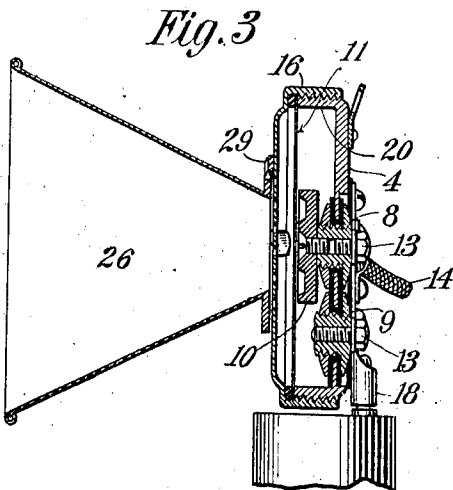
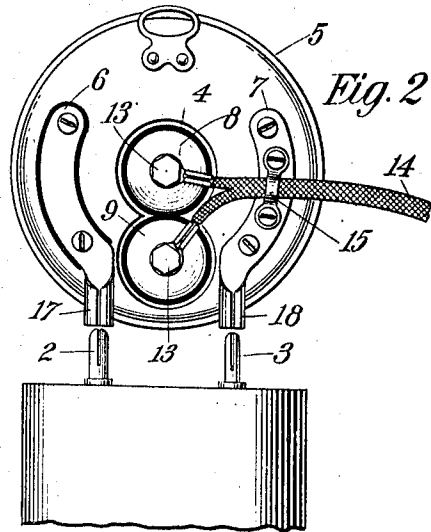
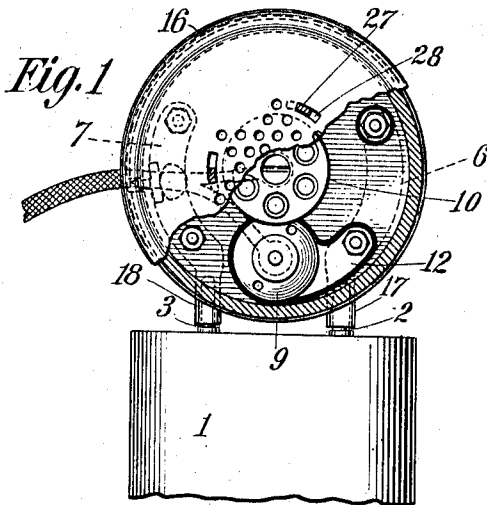


E. W. SCHNEIDER.
 DEVICE FOR AIDING THE HEARING.
 APPLICATION FILED FEB. 11, 1910.

1,040,429.

Patented Oct. 8, 1912.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR AIDING THE HEARING.

1,040,429.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed February 11, 1910. Serial No. 543,243.

To all whom it may concern:

Be it known that I, EUGENE W. SCHNEIDER, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Devices for Aiding the Hearing, of which the following is a full, clear, and exact description.

My invention relates to apparatus for aiding the hearing, operating on the telephone principle, and pertains more particularly to the devices for receiving the sound waves, and translating the same into pulsating electric current for transmission to the earpiece or receiver.

The chief object of the invention is to provide improved devices for the purpose, whereby the manipulation and use of the device will be simplified, so as to make a user's lack of skill or knowledge less liable to result in derangement or imperfect operation of the apparatus.

The preferred form of the invention is illustrated in the annexed drawing, in which—

Figure 1 is a front view of the transmitter and battery properly connected or assembled, with part of the transmitter casing and diaphragm broken away. Fig. 2 is a rear view of the same, with the transmitter disconnected from the battery. Fig. 3 is a vertical section, showing also the mouth-piece or sound collector. Fig. 4 is a detail plan view showing the lock for locking the removable transmitter cover in place. Fig. 5 is a side view of the parts shown in Fig. 4, viewed from the left of such figure. Fig. 6 is a perspective view of the mouth-piece or sound collector.

The battery, designated by 1, is preferably of the dry type, and has a pair of terminals 2, 3, extending upwardly from its top, one of these terminal plugs being of smaller diameter than the other, as shown.

On the solid metallic back 4 of the transmitter 5 are two strips of metal 6, 7, fastened thereto by screws as shown, while between the said strips are two insulated binding devices 8, 9, each consisting of a short bolt with a wide flat head, held in place by a flat nut on the inner side of the transmitter-back. The device 8 is at the center of the transmitter back and carries at its inner end the carbon electrode or cup 10 containing the usual carbon pellets, not shown, in contact with the diaphragm 11. The other binding device, 9, is electrically

connected by a metal strip 12 to the member 6, which latter is insulated from the back of the transmitter, as shown. Both binding 60 devices are insulated from the transmitter casing, and both carry binding screws 13 for securing the conductors 14 of the receiver (not shown). In order to relieve the conductors of as much strain as possible at 65 the binding screws and prevent raveling of the outer wrapping where the conductors branch, the cord is clamped or bound firmly upon one of the transmitter terminal strips by means of a cleat or clip 15 fastened to 70 the clip by screws, as shown.

With the cap 16, which holds the diaphragm in place, tightly screwed up so as to bring the diaphragm into close contact with the casing, and the inner nuts on the 75 binding devices firmly set up, it will be found that the transmitter is hermetically sealed. Moisture, dust, and other foreign matter are thus effectually excluded. At the same time the connections of the receiver 80 cord are outside, thus permitting the ready renewal of the cord when desired, without the necessity of opening the transmitter and thereby exposing the inner parts to injury or derangement of adjustment.

The projecting ends of the strips 6, 7, 85 are bent into hollow cylindrical sockets, as shown, at 17, 18, adapted to slip over the terminal posts 2, 3, as illustrated in Fig. 1. To disengage the parts it is only necessary 90 to give a firm pull on the transmitter, as will be readily understood. In order to insure that in replacing the transmitter the terminals thereof will always be connected to the same battery terminals, one of the 95 latter and the corresponding transmitter terminal are made slightly larger than the others, as shown in Fig. 2.

The circuit from the battery and back of same can now be readily traced. Beginning 100 at the battery terminal 2, the course of the current is through the transmitter terminal 17—6, strip 12, binding device 9, through one of the conductors 14 to the receiver and back through the other to binding device 8. 105 cup 10, diaphragm 11, transmitter-back 4, transmitter terminal 7—18, and battery terminal 3.

One of the chief sources of trouble in connection with devices of this character heretofore has been tampering with the device 110 by the user, in the effort to examine the interior or to effect a readjustment of its parts, etc. In order to prevent such tamper-

ing suitable locking means are provided, as for example the devices shown in Figs. 3 and 4, which will now be described.

Extending through an opening in the 5 flange 20 of the transmitter back 4 is a sharply pointed finger 21, having an enlargement or cross-member 22 at its inner end. This device rests loosely on the back 4 adjacent to the conducting strip 7, and is 10 held in place by a spring 23 which engages a stud 24 on said device and hence serves also to hold the same in engagement with a cam 24 lying over said strip. The cam is carried on a stem 25, screw-threaded in 15 the transmitter back directly under the cleat 15; the outer end of the stem being slotted, as shown, to receive a screw driver. Before the instrument is sent to the user the cam is turned so as to throw the finger 21 out 20 into the groove between two of the threads on the cap 16, and the cleat 15 is replaced, thereby concealing the stem 25. If now the user attempts to unscrew the cap, turning it counter-clockwise as viewed in Fig. 4, the 25 finger 21, biting into the soft metal of the cap, will engage the same firmly and prevent further turning movement in either direction. It is then necessary, in order to remove the cap, to remove the cleat 15 and 30 turn the cam or tumbler 24, of which the user is in ignorance. If the instrument is then returned to the maker with complaint as to its performance, the fact that the user has been attempting to tamper with its interior parts is at once apparent from the 35 condition of the locking devices.

The flaring sound collector or mouth-piece 26 is provided at its smaller end with three equidistant hooks 27, and the cover 40 or cap 16 is provided with a similar number of slots 28, so that when the hooks are inserted in the slots and the mouth-piece given a partial turn it will be securely but removably attached to the transmitter. The 45 mouth-piece is also provided with three spring arms 29, to engage the transmitter cap and urge the mouth-piece outwardly therefrom, so that the resulting frictional engagement of the hooks with the inner surface of the cap will effectually prevent acci- 50 dental detachment of the mouth-piece or sound collector.

From the foregoing description of the preferred embodiment of the invention it 55 will be seen that the device permits easy and quick substitution of a fresh battery for an exhausted battery. There is practically no strain on the receiver cord at the points where its conductors are connected to the 60 transmitter, so that liability of the conductors being broken thereat, or of the electrical connection being impaired, is practi-

cally eliminated. If the cord should become unsightly by reason of wear, a new cord can be substituted with but slight trouble by 65 removing the clip or cleat 15, and loosening the binding screws 13. Moreover, the device is simple and the construction is such that it may be made strong enough to withstand the careless usage to which devices of the kind 70 are very apt to be subjected. At the same time the device is of convenient form for carrying in the pocket and is slightly in appearance. The detachable sound collector also adds to its convenience, and the cover 75 lock prevents meddling with and possible irreparable injury to interior parts.

Of course it is to be understood that the invention is not limited to the embodiment herein specifically described, but may be embodied in various forms without departure 80 from its proper scope as defined by the appended claims.

I claim:

1. In an apparatus for aiding the hearing, 85 in combination, a telephonic device having a casing provided with a removable cover, and a cover lock inclosed within the casing and operated by the movement of the cover in attempting to remove the same. 90

2. In an apparatus for aiding the hearing, in combination, a telephonic device having a casing provided with a removable cover, a cover lock inclosed within the casing and 95 operated by the movement of the cover in attempting to remove the same, and means operable from outside the casing for controlling said lock.

3. In an apparatus for aiding the hearing, in combination, a telephonic device having a 100 casing provided with a removable cover, a cover-lock inclosed within the casing, means operable from outside the casing to control the lock, and electrical terminals to connect the telephonic device with a source of cur- 105 rent, said terminals carried by the casing and arranged to conceal said lock controlling means.

4. In an apparatus for aiding the hearing, in combination, a telephonic device having a 110 casing provided with a screw-threaded removable cover, a lock inclosed within the casing and having a part extending into engagement with the cover whereby rotary movement of the cover will cause the said 115 part to grip the cover and prevent removal of the same, and means operable from outside the casing for controlling the lock.

In testimony whereof I affix my signature in the presence of two subscribing witnesses. 120

EUGENE W. SCHNEIDER.

Witnesses:

M. LAWSON DYER,
S. S. DUNHAM.