

1,040,428.

Fig. 1

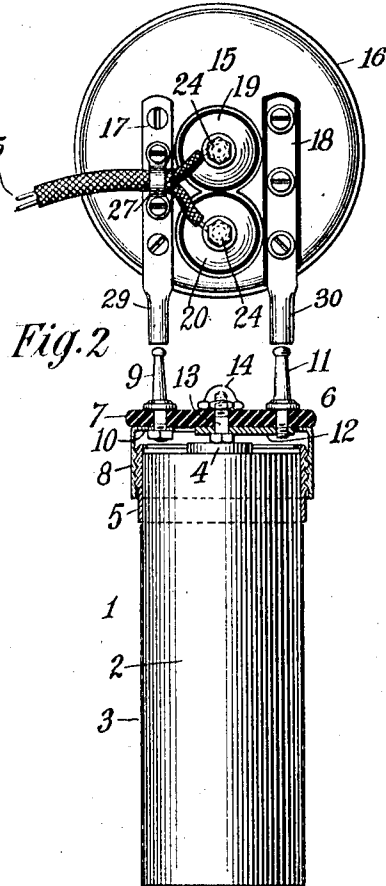


Fig.2

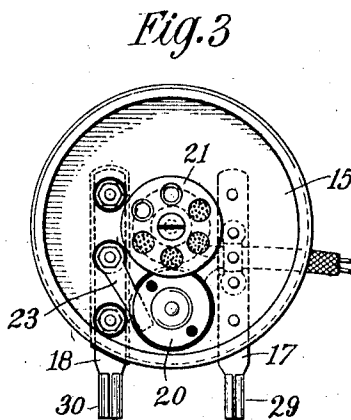


Fig.3

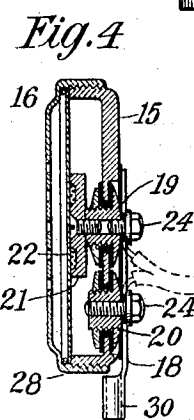


Fig.4

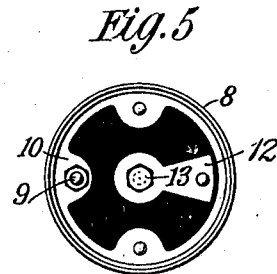


Fig. 5

E.W. Schneider, Inventor
By His Attorneys
Kerr, Page & Cooper

UNITED STATES PATENT OFFICE.

EUGENE W. SCHNEIDER, OF NEW YORK, N. Y., ASSIGNOR TO THE MEARS EAR PHONE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

DEVICE FOR AIDING THE HEARING.

1,040,428.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed May 18, 1908, Serial No. 433,402.

To all whom it may concern:

Be it known that I, EUGENE W. SCHNEIDER, a citizen of the United States, residing at New York, in the 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 specification.

My invention relates to apparatus for aiding the hearing, operating on the telephone principle, and pertains more particularly to the connections of the battery with the transmitting devices.

The chief object of the invention is to provide improved connecting devices for the purpose, which will permit of the battery being instantly and easily connected or disconnected at will. A fresh battery can thus be substituted for an exhausted battery with the greatest ease by even an unskilled person; while the ease with which the substitution can be effected materially simplifies the use of the apparatus and makes 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. Fig. 2 is a rear view of the same, partly in section. Fig. 3 is a front view of the transmitter with the cover and diaphragm removed. Fig. 4 is a vertical cross section of the transmitter. Fig. 5 is an under plan view of the battery cap.

The battery, designated by 1, is preferably of the dry type and is by preference cylindrical in form. The outer casing 2 is of zinc, and forms the negative element. It may be covered with an ornamental and protective covering 3 of paper or other material. The positive element of the cell is electrically connected to a metallic button or disk 4, mounted in insulating material in the top of the casing 2.

Tightly fitting the zinc casing at the top thereof is a threaded metal sleeve or ring 5, adapted to receive a cap 6 consisting of an insulating top or disk 7 and a depending internally threaded metal flange or ring 8. At one side of the cap is a terminal 9 consisting of a tapering metal post having a rounded head. This terminal has a thread-

ed shank extending through the disk or top 7 of the cap and through an inwardly extending lip 10 on the ring 8, to which lip the threaded shank is electrically connected by means of the small nut which serves to fasten the post in position. At the opposite side of the cap is another terminal post, of the same type, designated by 11, the shank of which screws into a short strip of metal 12 on the underside of the disk 7. Extending through the strip 12 and disk 7 at the center of the latter is a short bolt 13, held in place by a cap-nut 14. The bolt 13 bears firmly on the button or disk 4 when the cap 6 is screwed in place. It will therefore be seen that the terminal 11 is in electrical connection with the positive pole of the battery and terminal 9 with the negative pole.

On the solid metallic back 15 of the transmitter 16 are two strips of metal 17, 18, fastened thereto by screws as shown, while between the said strips are two insulated binding devices 19, 20, 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 19 is at the center of the transmitter back and carries at its inner end the carbon electrode or cup 21 containing the usual carbon pellets in contact with the diaphragm 22. The other binding device, 20, is electrically connected by a metal strip 23 to the member 18, which latter is insulated from the back of the transmitter, as shown. Both binding devices are insulated from the transmitter casing as shown, both carry binding screws 24 for securing the conductors 25 of the receiver (not shown). In order to relieve the conductors of as much strain as possible at 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 27 fastened to the clip by screws, as shown.

With the cap 28, 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 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

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 17, 18 are bent into hollow cylindrical sockets, as shown at 29, 30, adapted to slip over the terminal posts 9, 11, as illustrated in Fig. 1. These cylindrical engaging devices are somewhat smaller in diameter than the rounded heads on the terminal posts, so as to spring over the heads and thus be held firmly but yieldingly on the posts. To disengage the parts it is only necessary 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 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 to the battery can now be readily traced. Beginning at the disk or button 4, the course of the current is through the bolt 13, metal plate 12, terminal post 11, transmitter terminal 30—18; strip 23, binding device 20, through one of the conductors 25 to the receiver and back through the other to binding device 19, cup 21, diaphragm 22, transmitter-back 15, transmitter terminal 17—29, battery terminal 9, and ring 8 to the zinc battery-casing 2.

From the foregoing description of the preferred embodiment of the invention it will be seen that the device permits easy and quick substitution of a fresh battery for an exhausted battery, either by screwing the new battery into the cap 6, or, if the new battery is provided with terminal posts, by inserting them into the transmitter terminals. Either operation can be performed with ease and certainty by any user of the device, no matter how great may be his lack of knowledge or skill in the manipulation of electrical devices. There is practically no strain on the receiver cord at the points where its conductors are connected to the transmitter, so that liability of the conductors being broken thereat, or of the electrical connection being impaired, is practically eliminated. If the cord should become unsightly by reason of wear, a new cord can be substituted with but slight trouble by removing the clip or cleat 28 and loosening

the binding screws 27. 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 are very apt to be subjected. At the same time the device is of convenient form for carrying in the pocket and is also slightly in appearance.

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 from its proper scope as defined by the appended claims.

What I claim is:

1. In an apparatus for aiding the hearing, the combination of a telephonic transmitter, a pair of metal strips mounted on the back of the transmitter and constituting the electrical terminals thereof for connection with a source of current, binding devices carried by the transmitter for connecting in circuit therewith the conductors of a receiver, and means carried by one of the said transmitter terminals for clamping such conductors in fixed relation to the transmitter independently of the said binding devices.

2. In an apparatus for aiding the hearing, the combination of a telephonic transmitter, means for connecting the same with a battery, including a pair of terminals one of which is electrically connected with the transmitter casing and the other insulated therefrom, and a pair of binding devices extending through the back of the transmitter and insulated therefrom, and provided with binding screws for connecting to the transmitter the conductors of a receiver, one of said binding devices being electrically connected with the transmitter electrode and the other with the insulated transmitter-terminal.

3. In an apparatus for aiding the hearing, the combination of a telephonic transmitter, means for connecting the same with and supporting it upon a battery, and means for connecting the transmitter with a receiver, comprising binding devices hermetically sealed in the wall of the transmitter casing and provided with binding screws outside of the casing for securing the conductors of the receiver.

EUGENE W. SCHNEIDER.

Witnesses:

ROSE M. MCGAHEY,
MARY E. MAGEE.