

March 2, 1926.

C. W. DENNY ET AL.

1,574,958

RADIO APPARATUS

Filed August 13, 1923

Fig. 1.

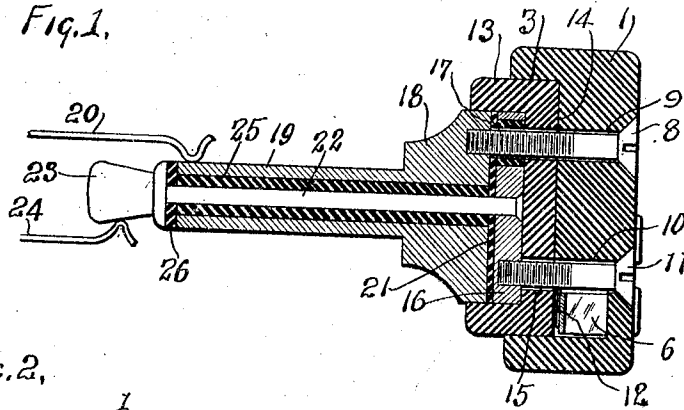


Fig. 2.

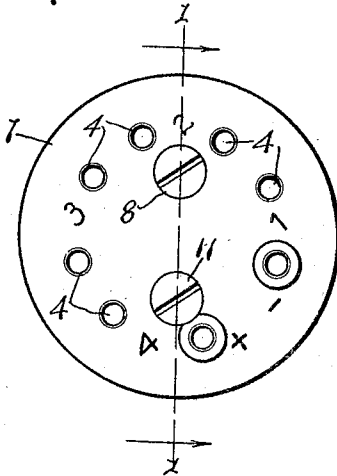


Fig. 3.

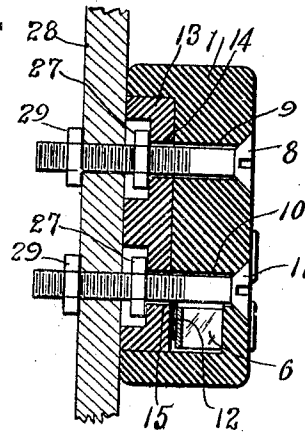


Fig. 4.

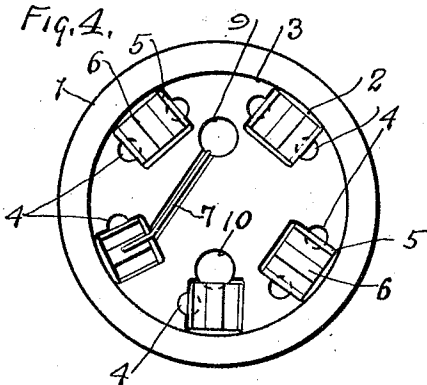
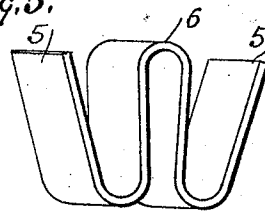


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES W. DENNY, WILLIAM E. McLAUGHLIN, AND GEORGE HELWIG, OF MIDDLETOWN, OHIO, ASSIGNORS TO THE BARKELEW ELECTRIC MANUFACTURING COMPANY, OF MIDDLETOWN, OHIO, A CORPORATION OF OHIO.

RADIO APPARATUS.

Application filed August 13, 1923. Serial No. 657,174.

To all whom it may concern:

Be it known that we, CHARLES W. DENNY, WILLIAM E. McLAUGHLIN, and GEORGE HELWIG, citizens of the United States, residing at Middletown, in the county of Butler and State of Ohio, have invented certain new and useful Improvements in Radio Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

Our invention relates to radio apparatus, and, in particular, to an attachment for phones.

It is the object of our invention to provide a readily assembled plug or post for radio phones.

It is an additional object to provide such a plug or post for the reception of phone tips for a plurality of phones, so that the phone tips will be held positively in perfect electrical engagement.

Referring to the drawings:

Figure 1 is a section through the phone plug on the line 1—1 of Figure 2.

Figure 2 is a front elevation of the plug or post.

Figure 3 is a section of similar character to that of Figure 1 through the parts arranged as a post mounted on a panel.

Figure 4 is a rear view of the spring-retaining cup, showing the arrangement of springs and connections. This cup is the same whether used in a phone plug or in a post.

Figure 5 is a perspective of one of the W-shaped springs.

Referring to the drawings in detail:

1 is a spring-retaining cup in the base of which there are a plurality of radially disposed depressions designated 2. These depressions are adjacent the periphery of the cup at the base of the wall 3, which forms the wall of the cup. In each of these depressions there is located one of the springs shown in Figure 5, with the free ends disposed upwardly toward the bottom of the cup. Intersecting a portion of these depressed areas is a plurality of apertures 4, which extend from the front of the spring-retaining cup through to the bottom thereof, so that the phone tips can pass completely through these apertures into the base of the phone cup if desired. In doing so, the phone tips come in contact with the free

ends 5 of the springs 6, and by moving these springs laterally a broad and firm engagement is effected between the springs and the phone tips, thus making a perfect electrical contact, whether one or both phone tips are in position with respect to any given spring.

One of the springs is connected by a wire 7 to a circuit connecting screw 8, which projects through the aperture 9 in the cup. A similar aperture 10 is provided for the reception of a second connecting screw 11, which is also connected to one of the springs, either by a wire or by a direct engagement therewith. The wire in this case is designated 12.

The cup is adapted to receive a second cup-shaped body designated 13, which also has apertures 14 and 15 for the passage thereof of the connecting screws 8 and 11.

In Figure 1, the cup 13 is utilized to receive the following parts of a plug structure: A plate or disc 16 is mounted in the cup, and directly connected to the screw 11, while the screw 8 is insulated therefrom by an insulating collar 17. This screw 8 passes through the plate 16 and insulating collar 17 into electrical contact with a head 18 of metal, which is connected to a contact sleeve 19, which in turn engages with a spring finger 20 of a jack. The screws 11 and 8 are threaded into a plate 16 and the head 18 respectively, so that the several parts are held in firm engagement with one another. The head 18 and the plate 16 are separated by an insulating disc 21. The plate 16 is further connected by a rivet or pin 22 with a contact head 23, which engages with the other side of the circuit in the form of the spring finger 24 of the jack. This contact head and rivet are insulated from the head and sleeve 18 and 19 by the insulating sleeve 25 and the plate 26. The rivet serves to hold the plate 16 and the head 18 with its sleeve 19, together with the insulations, in rigid position. Thus the whole structure may be placed in the jack or removed bodily.

In Figure 3 a somewhat similar structure is provided in that the cup 13 is used to receive the nuts 27, which are threaded on the screws 8 and 11, for the purpose of retaining the several parts together, so that in this structure the screws also serve the dual func-

tion of an electrical conductor and a locking or retaining means to hold the several parts to one another. The screws pass outwardly through a panel 28, to which the post is attached, and are retained thereon by the lock-nuts 29 which are mounted on the respective screws 8 and 11. The screws therefore become suitable binding posts for other and further electrical connections in the usual manner.

It will be understood that we desire to comprehend within our invention such modifications as may be fairly embraced within it, and as may be found necessary in adapting it to various conditions in the art in the course of the application of the invention.

Having thus fully described our invention what we claim as new, and desire to secure by Letters Patent, is:

1. In a radio attachment for phone tips, a cup-shaped member for receiving phone tips, means in said cup-shaped member for retaining said tips in position, a second cup-shaped member mounted in the first, and means engaging both of said cup-shaped members for retaining them in engagement with one another, and means connecting said retaining means with said phone tips in circuit.
2. In a radio attachment for phone tips, a cup-shaped member having a plurality of depressions in the base of the cup-shaped member and a plurality of phone tip receiving apertures communicating with the depressions, yielding means located in each of said depressions, so that phone tips inserted through said apertures will engage with said yielding means, a second cup-shaped member located within the first cup-shaped member and sealing said depressions to retain said yielding means in position, contact parts carried by said second cup-shaped member and means connected in circuit with said yielding means and phone tips, adapted to make contact with the contact parts to complete the remainder of the circuit, and also adapted to retain the several parts in engagement with one another.
3. In a radio attachment for phone tips, a cup-shaped member having a plurality of depressions in the base of the cup-shaped

member and a plurality of phone tip receiving apertures communicating with the depressions, yielding means located in each of said depressions, so that phone tips inserted through said apertures will engage with said yielding means, a second cup-shaped member located within the first cup-shaped member and sealing said depressions to retain said yielding means in position, contact parts carried by said second cup-shaped member and means connected in circuit with said yielding means and phone tips, adapted to make contact with the contact parts to complete the remainder of the circuit, and also adapted to retain the several parts in engagement with one another, said yielding means consisting of W-shaped springs, the free ends of which engage with the sides of the phone tips.

4. In a radio attachment for phone tips, a cup-shaped member having a plurality of depressions in the base of the cup-shaped member and a plurality of phone tip receiving apertures communicating with the depressions, yielding means located in each of said depressions, so that phone tips inserted through said apertures will engage with said yielding means, a second cup-shaped member located within the first cup-shaped member and sealing said depressions to retain said yielding means in position, contact parts carried by said second cup-shaped member means connected in circuit with said yielding means and phone tips, adapted to make contact with the contact parts to complete the remainder of the circuit, and also adapted to retain the several parts in engagement with one another, said yielding means consisting of W-shaped springs, the free ends of which engage with the sides of the phone tips, and connecting wires attached to respective springs for engaging with the means which retain the several parts to one another to complete the circuit.

In testimony whereof, we affix our signatures.

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