C. T. MASON.

TELEPHONE RECEIVER.

APPLICATION FILED SEPT. 12, 1910.

1,031,947.

Patented July 9, 1912.

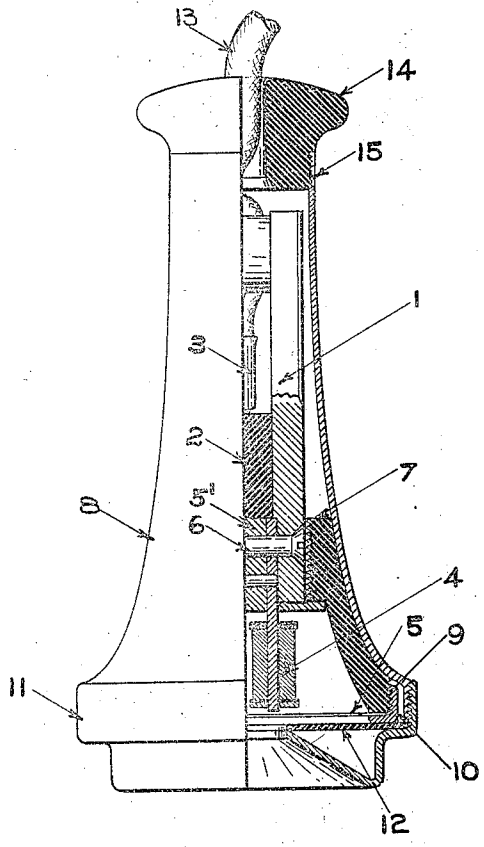

FIG. 1.

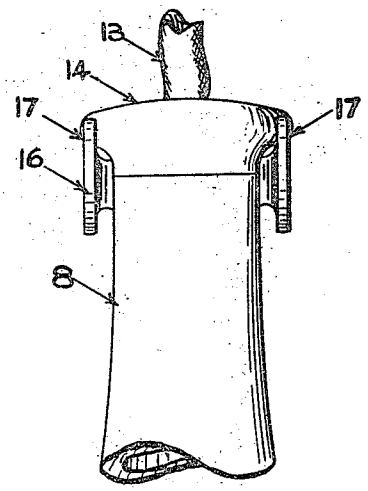

FIG. 2.

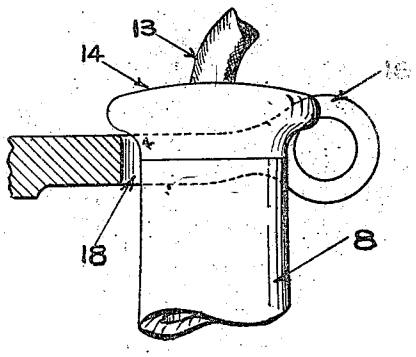

FIG. 3.

WITNESSES:

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TELEPHONE-RECEIVER.

1,031,947. Specification of Letters Patent. Patented July 9, 1912.

Application filed September 12, 1910. Serial No. 581,611.

To all whom it may concern:

Be it known that I, CHARLES THOMAS MASON, a citizen of the United States, residing at Sumter, in the county of Sumter and State of South Carolina, have invented certain new and useful Improvements in Telephone-Receivers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to telephone receivers, and consists of means whereby the operative part of the instrument is incased in a metallic shell which holds the parts firmly in position, and obviates the expense and trouble caused by the breakage of rubber or other shells heretofore used and the cost of replacing same.

I further provide means for insulating the working parts and the conducting cord from the metallic shell so that it is not only impossible for the user to receive an electrical shock from handling the instrument, but contact between the metallic shell and the telephone switch hook is prevented.

I also provide a simple and cheap form of adjustment, thereby cheapening the manufacturing cost.

In the accompanying drawing, Figure 1 is a vertical longitudinal view partly in section, of a receiver illustrating my invention. Fig. 2 is a front view of a receiver hanging on a telephone switch hook lever. Fig. 3 is a side view of the receiver and switch hook, the switch hook lever being shown partly in section.

Referring to Fig. 1, I provide the usual magnet structure 1 supporting the insulating block 2, carrying the cord terminals 3, the structure 1 also supporting the pole pieces and magnet coils 4. This structure is the preferred form, but any of the well known forms commercially used in telephone receivers may be used. In the preferred form shown in the drawing, the threaded block 5′ is bolted to magnet 1 by means of screw 6, block 5′ being screwed into the insulating piece 7. It will be observed that by screwing the piece 5′ up or down in piece 7, the adjustment between the pole pieces and coils 4 and the diaphragm 5 may be easily and accurately accomplished thereby obviating the filing and accurate adjustment of the pole pieces heretofore necessary. Insulating piece 7 is so shaped that it snugly fits into the metallic casing 8, and supports the various parts of the receiver structure so that none of them come in direct contact with metallic shell 8, but the entire structure is readily removable from the shell 8 as it is not attached to same in any way.

To provide means for securely holding diaphragm 5 in position I thread the rim of piece 7 as shown at 9, and screw thereon the auxiliary cap shown at 10, thereby clamping the diaphragm 5 firmly to the end of piece 7. To insulate cap 10 and the diaphragm from cap 11 of the metallic shell, I provide an insulating lining 12. The rim of the shell 8 is threaded and cap 11 of metal or any suitable material is screwed thereon, this serving to hold the unit structure just described securely in place. The conducting cord 13 is brought in through an insulating end piece shown in section at 14. This is secured by threads or other suitable means 15 to the metallic shell 8.

From the foregoing it will be seen that the cord, the receiver structure, and the diaphragm, are insulated from the metallic casing at points 7, 12, and 14, therefore, should the electrical circuit through the cord 13 or coils 4 come in contact with the metal parts of the instrument, it would be confined thereto, the outer shell 8 and cap 11 being insulated at all points.

In many telephones the receiver hook switch upon which the receiver hangs when not in use, forms a part of the telephone circuit, or is only lightly insulated therefrom by thin fiber insulation. This being the case, if the metallic shell 8 of the receiver should accidentally become connected to one side of the telephone circuit, and the hook to the other side, when the receiver is hung on the hook, it will cause a disarrangement of the telephone circuits, or when the hook is but thinly insulated, a condition of electrical stress would exist between the hook and shell which would tend to break down the thin insulation. To prevent trouble from this source I so shape the insulating piece 14 that when the receiver is hanging on the hook lever 16 as shown in Fig. 2, the lever comes in contact with the

insulating piece at points 17, and the metallic casing 8 does not touch the lever, a clear space being left all around as shown at 18, Fig. 3.

I am aware that it is not new in a telephone receiver to provide a metal case, but I claim that it is new to have the cord and the operative parts of the receiver insulated from the metal casing and to have said parts removable from the casing without disturbing the adjustment of the diaphragm or removing any screws, and while I have shown only one form of construction, it will be understood that various other forms and methods of assembling can be used without departing from the essential features of my invention.

Therefore, having described my invention, I claim and desire to secure by Letters Patent the following:

1. In a telephone receiver, the combination of an insulating body, a diaphragm clamped thereon, an adjustable block carrying a receiver structure fitting into said insulating body, a metal casing carrying a piece of insulating material on one end and a detachable cap lined with insulating material on the other.

2. In a telephone receiver, an insulating body, a threaded support carrying the receiver parts and adjustable in said body, a diaphragm and means for clamping same to the insulating body, a terminal block and a conducting cord attached thereto, and a metallic casing insulated from the cord and receiver structure, substantially as described.

3. In a telephone receiver a metal case having an insulating tail piece attached to one end, and a metal cap to the other, a magnet structure and coils, pole pieces and cord terminals, a block adjustable in an insulating casing, supporting said pieces and terminals, a diaphragm secured to said insulating casing by a threaded cap, and insulation between said diaphragm cap and the outer metal cap.

4. A unit receiver mechanism, diaphragm, and cord, and means for holding them in their proper relation to each other, said unit mechanism being incased in an insulating cup, a metal outer case and metal cap inclosing the unit mechanism but only in contact with the insulating cup, and an insulating lining for the metal cap.

5. In combination with a bare metallic receiver shell having a relatively large receiver-cord opening, a relatively large bushing secured within said shell and arranged to project relatively far therein, said bushing having its remaining portion arranged to come flush and conform with the outside surface of said shell and elongated and enlarged so as to form a means for supporting insulating and spacing said shell from a receiver hook, said bushing being provided with a passage whereby the receiver cord may pass therethrough and be insulated and spaced from said shell.

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

CHARLES T. MASON.

Witnesses:
F. C. MANNING
E. M. HALL.