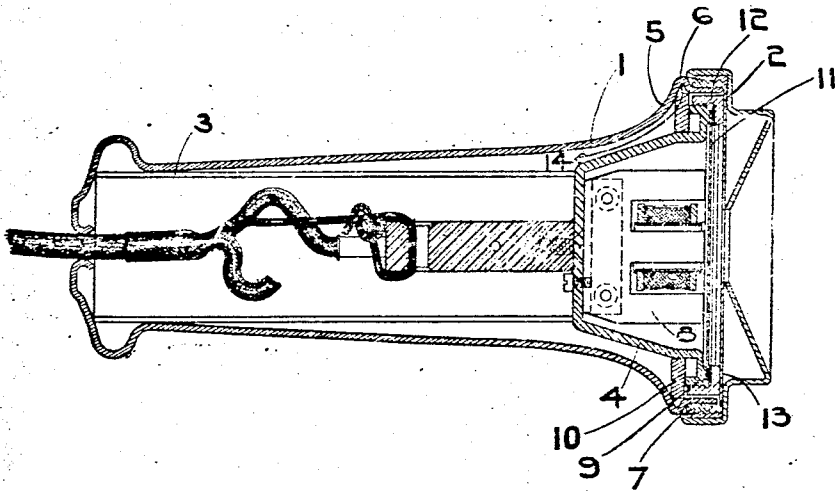


W. W. DEAN.
TELEPHONE RECEIVER.
APPLICATION FILED MAR. 7, 1910.

964,622.

Patented July 19, 1910.



Witnesses.
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UNITED STATES PATENT OFFICE.

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TELEPHONE-RECEIVER.

964,622.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM W. DEAN, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Telephone-
5 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
10 make and use the same.

My invention relates to telephone receivers used in connection with subscribers' telephone sets. More particularly, I have
15 produced such an instrument incased in a metallic shell in such a way that it is firmly held therein. Hitherto most receiver shells have been constructed of hard rubber or some composition. These shells have con-
20 siderable body to them into which it is convenient to drive screws or other means for fastening the receiver into the shell. Another method of fastening and holding the receiver in the shell consists in clamping the
25 edge of the cup and the diaphragm between the edge of the shell and the ear cap. This method is impractical where a metallic shell is used, because of the conductivity of the latter. If insulation heavy enough to guard
30 against grounding the metallic shell and subjecting the user to a shock were used, the combined insulation, diaphragm and cup edge would be too bulky to be conveniently
35 clamped between said parts. In other receivers the heavy shell has been cut away to form a shoulder below the edge of the shell and the edge of the cup clamped between this shoulder and other parts. This
40 obviously is likewise impracticable where a metallic shell is used. As none of these methods is available for metallic shells, unless some convenient means for securing the receiver within the shell could be devised, the use of a metallic shell would be imprac-
45 tical. Owing to the large losses due to breakage of rubber and composition shells and the still more expensive trip to renew the same, a shell as highly indestructible as a metal shell is desirable. I have pro-
50 vided a sheet metal shell which is folded over near one end to form an abutment. Beyond this fold the shell is bent back again to form an annular ring, then extended about to its edge parallel to its gen-
55 eral direction. Within the shell against the

abutment I place an annular insulating member. The receiver cup is placed within this insulating member fitting within and held by the same. The ear cap is then fastened on the shell clamping the cup down
60 against the abutment.

My invention will be best understood by reference to the following description when taken in connection with the accompanying
65 illustration showing one specific embodiment thereof, while its scope will be more particularly pointed out in the appended claims.

The figure represents a section taken along the longitudinal axis of the receiver.

Referring now to this figure, 1 is a receiver shell made of sheet metal which is folded outward near one end at 5 forming an abutment upon the interior of the shell. The metal is then bent over at 6 forming an
75 annular ridge on the outside and an annular groove 14 on the interior; the shell then extends to its end, in the general direction thereof. A threaded ring 7 is fastened upon the end of the shell. A cylinder of insu-
80 lating material 3 is placed in the inside of the shell. The receiver cup or support 1 carrying a receiver 8 is placed within the shell. A part 9 projects from the edge of the cup and when the same is within the
85 shell, engages the abutment 5 to determine the position of said cup therein. An insulating annular member 10 is placed against the abutment to insulate the receiver cup therefrom. The edge thereof is jammed up
90 in the groove. This member may be heavy and strong enough to perform some of the functions of the abutment. This is true in the form of my invention shown in the illus-
95 tration. The receiver diaphragm is shown at 11. A threaded ring 12 clamps this diaphragm against the cup. An insulating disk 13 is placed upon the threaded ring 12 and the ear cap screwed upon the shell. The cap clamps the edge of the support be-
100 tween itself and the abutment holding the receiver support securely within the shell. In the form shown the cup does not engage the shell or its parts except at the clamping parts, thus making it almost impossible to
105 ground the shell.

Obviously I may use any form of support for my receiver and may clamp any part of it convenient for that purpose between the abutment and the cap. When the cap 2 is
110

fastened upon the shell, the insulating disk 13 is clamped between the ring 12 and the cap.

While I have shown my invention in this particular form it will be obvious to those skilled in the art that numerous and extensive departures from the form and details of the apparatus here shown may be made without departing from the spirit of this invention, the same being herein shown solely for the purpose of clearly illustrating one specific embodiment thereof.

I claim:

1. In a telephone receiver, a metallic receiver shell made of thin sheet metal having an open end, the walls of said shell being folded over near said open end to form an abutment, a receiver cap adapted to be connected to said shell, a receiver support adapted to be clamped between said abutment and said cap to hold it in position in said shell, and a receiver supported by said support.

2. In a telephone receiver, a metallic receiver shell made of thin sheet metal having an open end, the walls of said shell being folded over near said open end to form an abutment, a receiver cap adapted to be connected to said shell, a receiver support, an annular flange thereon, said support adapted to be positioned in said shell by clamping the flange between said cap and said abutment.

3. In a telephone receiver, a metallic receiver shell made of thin sheet metal having an open end, the walls of said shell being folded over near said open end to form an abutment, a receiver cap adapted to be connected to said shell, a receiver support adapted to be clamped between said abutment and said cap to hold it in position in said shell, and means to insulate said support from said shell interposed between the clamping surfaces.

4. In a telephone receiver, the combination of a shell made of thin sheet metal, said shell folded over near one end to form an abutment, an annular ring resting against said abutment and serving as an insulator, a receiver support, a part of said support resting against said annular ring and a receiver cap adapted to be attached to said shell and to clamp said part against said ring to hold said support in said shell.

5. In a telephone receiver, the combination of a shell made of thin sheet metal, said shell being folded over near one end to form an annular groove, an annular ring mounted in said groove, a receiver support adapted to engage said ring when said support is placed in said shell, and a cap fitting over the end of the shell to clamp said support in said shell.

6. In a telephone receiver, the combination of a shell made of thin sheet metal folded over near one end to form a groove, an annular ring mounted in said groove, a receiver support having an annular flange thereon, and a receiver cap adapted to clamp said flange against said ring to hold said support securely in said shell and a receiver carried by said support.

7. In a telephone receiver, the combination with a metallic shell having an open end, said shell being folded over near one end to form an abutment, a receiver support, means on said support for engaging said abutment, means for clamping said engaging means against said abutment to retain said receiver support in place in said shell, and means for insulating said support from said shell.

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

WILLIAM W. DEAN.

Witnesses:

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