

1,006,833.

W. W. DEAN.
TELEPHONE RECEIVER.
APPLICATION FILED NOV. 1, 1909.

Patented Oct. 24, 1911.

Fig. 1

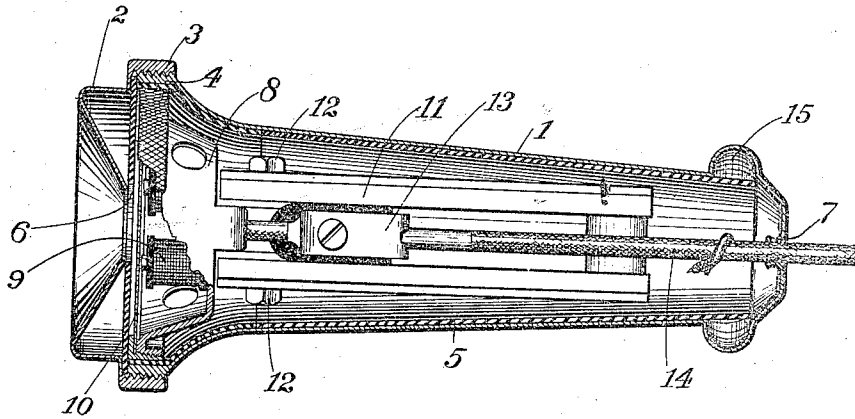


Fig. 2

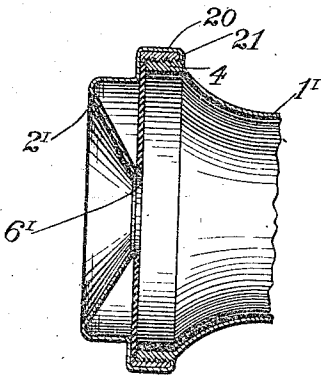
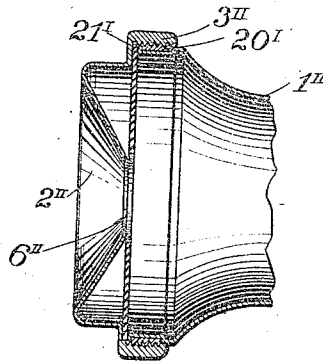


Fig. 3



Witnesses

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By

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UNITED STATES PATENT OFFICE.

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TELEPHONE-RECEIVER.

1,006,833.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Original application filed October 8, 1908, Serial No. 456,760. Divided and this application filed November 1, 1909. Serial No. 525,747.

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 a certain new and useful Improvement in Telephone-Receivers, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This application is a division of my application 456,760, filed October 8th, 1908.

My invention relates to telephone receivers, and has for its object the construction of a receiver shell of metal which shall accomplish all the purposes heretofore secured in connection with shells for such instruments and having the additional advantage of lightness, durability, improved appearance and cheapness.

Heretofore, receiver shells have commonly been made from insulating material of one form or another which, generally speaking, is very brittle in nature, and, therefore, easily broken. To avoid this difficulty the shells have usually been constructed of considerable thickness, with the result that they are both clumsy and heavy. The thickness to which it is was necessary to make these shells, made the use of metal prohibitive. By my invention I construct these shells of thin sheet metal and upset them at the edges and cut threads in the upset parts. These threads are adapted to cooperate with the threaded portion of the receiver cap. This receiver cap may be constructed in one piece, or it may be constructed in a manner similar to the body portion of the shell; that is, it may be upset and threaded at the edge. If preferred, a cap of insulating material may be used in connection with the metal shell instead of the metallic cap which is referred to.

In constructing my improved receiver shell, I make use preferably of forming dies to form suitable sheet metal into the desired conformation. In order to be readily manipulated so as to assume the form required, the sheet metal used must be preferably relatively thin. This thin metal, however, is not adapted to be threaded, since the

threads would be either so fine as to be of no use or else would cut through the thin sheet of metal. Furthermore, the threaded portion would not possess sufficient rigidity to permit the operation of cutting the threads or to readily engage the cooperating threaded part. By my invention I eliminate this difficulty by upsetting the edge of the shell and cutting threads in this upset portion which is thick enough to permit the cutting operation and to bear threads large enough for practical purposes. The end of the shell is reinforced by the upsetting operation so that it may readily engage the threaded portion of the companion part without buckling or bending. The shell is thus made of material thin enough to be sufficiently light for all practical purposes and at the same time furnish a practical joint.

In connection with the use of sheet steel for forming the main portion of the shell proper and the cap, I employ a protecting varnish or coating, as, for example, enamel or japan to thoroughly protect the steel from the contact of moisture. In addition to the insulation thus secured by the enamel coating within the shell, I employ separate insulating means between the shell and the cooperating mechanism of the receiver contained therein. I find that vulcanized fiber answers admirably for this purpose, although other insulating material may be used, if desired.

The several drawings illustrating my invention are as follows:

Figure 1 is a longitudinal cross-section of the receiver shell of my invention containing the receiver parts and showing both the shell and cap to be upset at the edge. Fig. 2 is a modification showing the shell upset and a receiver cap carrying the threaded ring. Fig. 3 is another modification showing the cap upset and the shell proper bearing a threaded ring.

Referring now to the drawings and to the embodiments of my invention there shown, I have illustrated at 1 the receiver shell upset and threaded at the edge 4. As a companion portion, a receiver cap 2 upset and threaded at 3. Within the shell I show a substantially cylindrical fiber insulator 5. The end

of this is closed by a perforated disk 6 of insulating material. The receiver shell is perforated for the passage of the conductor cord at 7, the edges of the perforation being bent around to prevent the chafing of the cord. The receiver cap, located within the ear end, is shown at 8, the electro-magnets at 9, the diaphragm at 10, the permanent magnets at 11. At 12 I show nuts for clamping the parts together.

13 is the terminal tip. The conductor cord leading to this tip is shown at 14.

A hollow flange 15 is formed of the end of the receiver shell. When the receiver is hung up, this flange catches upon the receiver hook and retains the receiver in place thereon.

It will be seen that all portions of the shell and cap, except the upset edges, are made of very thin material and it will be readily apparent that this material is too thin to bear the threads which have been cut upon the upset portions.

At Fig. 2 I show a shell 1' upset and threaded at 4', a cap 2' and insulating disk 6' between the two. The cap is folded over at 21, embracing a threaded ring 20 which is set within the edge of the cap and which coöperates with the threads upon the upset portion of the shell to unite the two parts.

In Fig. 3 I show a shell part 1'' folded over at its edge at 21' so as to form a channel in which is located a threaded ring 20'. The cap is shown at 2'' and the perforated insulating disk 6'', between the two parts. The cap is upset and threaded at 3'' to engage the threaded ring upon the shell to unite the two parts.

While I have shown my invention in these particular embodiments, I do not wish to be limited thereto, as it will be obvious to those skilled in the art that numerous and extensive departures from the form and details 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 the preferred embodiment and the two modifications which have been shown.

I claim:

1. A telephone receiver shell consisting of two elements, one of which is the body portion of the shell and the other a cap, each of such elements upset and threaded at one end, such threaded portions adapted to engage each other.

2. In a telephone receiver shell, a body portion and a cap, the body portion constructed of sheet material too thin and light to bear threads of sufficient size for a practical joint, upset at its ends to a thickness sufficient to bear such threads and threaded on such upset portion, said threaded por-

tion adapted to engage the cap to unite the two.

3. In a telephone receiver shell, a body portion and a cap portion, each constructed of sheet material too thin and light to bear threads of sufficient size for a practical joint between the portions, each upset at its end to a thickness sufficient to bear such threads, and each threaded upon said upset portion, said threaded portion adapted to engage to unite the parts.

4. In a telephone receiver shell, a body portion and a cap portion, one of said portions constructed of material too thin to bear threads of sufficient size for a practical joint between the portions, such portion upset at its end sufficiently to admit of threads of such size and threads cut in the upset portion, such threaded portion adapted to engage the companion part to unite the two together.

5. In a telephone receiver shell, a body portion and a cap portion, one of said portions constructed of material too thin to bear threads of sufficient size for a practical joint between the portions, such portion upset at its end sufficiently to admit of threads of such size and threads cut in the upset portion, such threaded portion adapted to engage the companion part to unite the two together, and a layer of insulating material within the body portion.

6. In a telephone receiver shell, the combination of a body part constructed of material too thin to bear threads, said shell being of a substantially tubular shape expanded at one end into a substantially frusto-conical shape and open at said end, the edges of said open end being upset and threaded and a cap adapted to engage said threads to unite it to the body portion, a telephone receiver in said shell and an insulating disk clamped between said shell and said cap.

7. In a telephone receiver shell, the combination of a body part constructed of material too thin to bear threads, said shell being of substantially tubular shape expanded at one end into a substantially frusto-conical shape and open at said end, the edges of said open end being upset and threaded and a cap adapted to engage said threads to unite it to the body portion, the other end of the shell being perforated for the conductor cord and the edges of the perforation turned up to prevent chafing of the cord.

8. In a telephone receiver shell, the combination of a body part constructed of material too thin to bear threads, said shell being of substantially tubular shape expanded at one end into a substantially frusto-conical shape and open at said end, the edges of said open end being upset

and threaded and a cap adapted to engage
said threads to unite it to the body portion,
such body portion perforated for the re-
ceiver cord and being folded upward and
5 outward at such perforations so as to pre-
vent chafing of the receiver cord.

In testimony whereof I affix my signature

in presence of two witnesses this 29th day
of Oct., 1909.

WILLIAM W. DEAN.

Witnesses:

F. O. RICHEY,
A. D. T. LIBBY.