No. 717,429. Patented Dec. 30, 1902.

K. B. MILLER

TELEPHONE RECEIVER.

(Application filed June 22, 1900.)

(No Model.)

Fig. 1

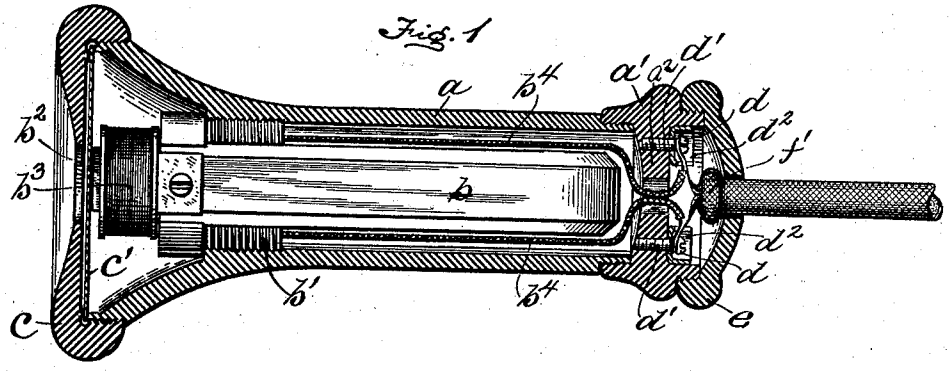


Fig. 2

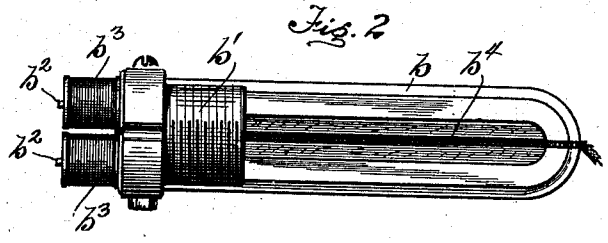


Fig. 3

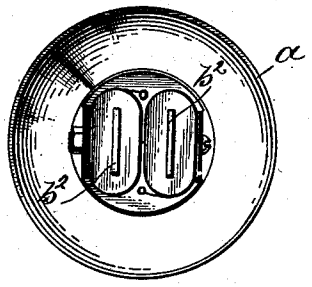


Fig. 4.

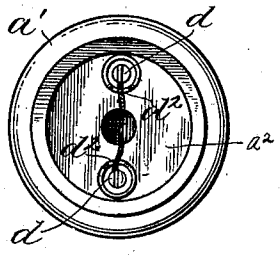
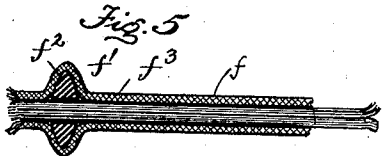


Fig. 5



Witnesses:
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Atty's.

UNITED STATES PATENT OFFICE.

KEMPSTER B. MILLER, OF CHICAGO, ILLINOIS, ASSIGNOR TO KELLOGG SWITCHBOARD AND SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TELEPHONE-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 717,429, dated December 30, 1902.

Application filed June 22, 1900. Serial No. 21,148. (No model.)

To all whom it may concern:

Be it known that I, KEMPSTER B. MILLER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, 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.

My invention relates to a telephone-receiver, my object being to provide an improved form of construction for the casing or shell of the receiver whereby the binding-posts and other electrical connections at the rear of the receiver may be wholly inclosed and protected.

In accordance with my invention I provide upon the casing or shell of the receiver at the rear end thereof a transverse wall or partition through which the conductors extending to the magnet-coils may pass, a removable cap or cover being adapted to fit upon the end of the casing whereby the binding-posts and other non-insulated electrical connections may be inclosed between the partition and the removable cover. This arrangement allows none of the metallic parts to be exposed and removes all danger of receiving shocks from careless handling.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 is a sectional view of a telephone-receiver embodying my invention. Fig. 2 is a view showing the magnet removed from the casing or shell. Fig. 3 is a view of the forward end of the receiver, showing the diaphragm and the earpiece removed. Fig. 4 is a view of the rear end of the receiver, showing the removable cover removed. Fig. 5 is a sectional view of the flexible connecting-cord from which the receiver is adapted to be suspended.

Like letters refer to like parts in the several figures.

Within the forward portion a of the shell or casing is mounted the magnet b, which carries a threaded portion b', adapted to engage the threads on the interior wall toward the forward end of the casing. Pole-pieces b^2 b^2 are provided at the ends of the magnet, upon which are mounted the magnet-coils b^3 b^3. The earpiece c is adapted to screw upon the threaded forward end of the casing, and the diaphragm c' is adapted to be clamped between the earpiece and the end of the casing. Upon the rear portion a' of the casing, which may or may not be integral with the forward portion a, though shown threaded thereto, a transverse wall or partition a^2 is provided, which is preferably an integral part of the said rear portion of the casing. The partition a^2 is provided with an opening centrally located, through which pass the conductors b^4 b^4, extending to the magnet-coils b^3 b^3. The ends of these conductors are connected, respectively, with the binding-posts, which consist of cups d d, adapted to be held in position by means of the screws d' d', which engage tapped holes provided in the transverse wall or partition. The cups d d are provided with slots d^2 d^2 upon one side for the passage of the ends of the conductors b^4 b^4. The removable cap or cover e is provided with threads adapted to engage threads on the portion carrying the transverse wall a^2. The flexible supporting-cord f is provided at the end with an enlargement or transverse projection f', which serves to receive the weight of the receiver, to thereby remove any strain which might otherwise be imposed upon the electrical conductors when the receiver hangs from the suspending-cord. This enlargement preferably takes the form of a button f^2, provided with a central aperture through which the conductors or strands of the flexible cord are adapted to pass, the braid or covering f^3 of the flexible cord being woven around the exterior of the button f^2 to firmly secure the same in position.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a telephone-receiver, the combination with a shell or casing, of a permanent magnet therein having a screw-threaded part at its forward end adapted to engage the like part in the shell or casing and be securely held thereby when the magnet is screwed firmly

into position within the casing, a transverse wall or partition at the rear of the magnet forming part of the inclosing shell or casing and having a single aperture therethrough, electric connections mounted upon the outer face of said wall or partition, pole-pieces for said magnet mounted at its forward end, coils upon said pole-pieces, conductors passing from the said coils back through the bore of the shell or casing and thence through said aperture in the wall or partition and thence to said connections, a diaphragm at the forward end of the casing or shell in front of the pole-pieces, a cap secured to the forward end of the shell and protecting said diaphragm, a removable cap at the rear end of the shell or casing adapted to inclose said electric connections, said cap or cover having an aperture through which a receiver-cord is adapted to pass and the electric conductors of which are connected with said electric connections, said single aperture in the transverse wall or partition serving to permit screwing the magnet into position without twisting and entangling the electric conductors from the said coils, substantially as described.

2. In a telephone-receiver, the combination with an insulating-shell having a flaring forward end and a longitudinal bore, of a permanent magnet mounted within the bore of the shell and having a screw-threaded part at its forward end adapted to engage a like part at the forward end of the shell and to be securely held thereby, pole-pieces secured to the forward end of said magnet, coils located upon said pole-pieces, a diaphragm extending across the flaring end of the said shell, an insulating-cap threaded upon said forward end and adapted to secure said diaphragm in place as well as to cover and protect the same, a transverse wall or partition at the rear of the magnet forming a part of the shell and having a central aperture therein, conductors extending from the coils at the forward end of the magnet back to the rear end and through said aperture, said aperture serving to prevent twisting and entangling said conductors when the magnet is screwed into position, binding-posts mounted upon the outer face of said wall or partition, and a removable cap secured to the rear end of said shell and inclosing said binding-posts, said cap having an aperture through which the receiver-cord extends, the conductors of the receiver-cord being adapted to be connected with said binding-posts; said shell, the cap at the forward end, and the cap or cover at the rear end constituting a casing having an exterior wholly of insulation whereby none of the metallic parts are exposed and all danger of receiving shocks by reason of careless handling is removed, substantially as described.

3. In a telephone-receiver, the combination with a shell or casing of insulation having an enlarged or flaring end, a permanent magnet within said casing having a screw-threaded part at its forward end adapted to engage a like part in the interior of the shell to secure the same firmly in position therein, pole-pieces upon the forward end of said magnet, coils upon said pole-pieces, conductors extending to the rear end of the casing from said coils, a diaphragm carried upon the forward end of said casing, a cap screw-threaded upon said forward end to clamp the diaphragm in place and to protect the same, a transverse wall or partition at the rear of the permanent magnet forming an integral part of the rear portion of the shell or casing, a central aperture in said partition through which the said conductors pass, said central aperture serving to prevent twisting and entangling the said conductors when the permanent magnet is being screwed into position, binding-posts mounted upon the outer face of said wall or partition, a removable cap or cover threading upon the rear end of said casing and inclosing said binding-posts to shield and conceal the same, said cap or cover having an aperture, a receiver-cord passing through said aperture and having its electrical conductors connected to said binding-posts, the said cord having a button upon the inside of the cap or cover to support the weight of the receiver and take the strain off the electrical connections, substantially as described.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

KEMPSTER B. MILLER.

Witnesses:
KEENE H. ADDINGTON,
HENRY W. BELFIELD.