

J. P. MINTON.
RECEIVER SHIELD.
APPLICATION FILED MAR. 27, 1918.

1,396,771.

Patented Nov. 15, 1921.

Fig. 1.

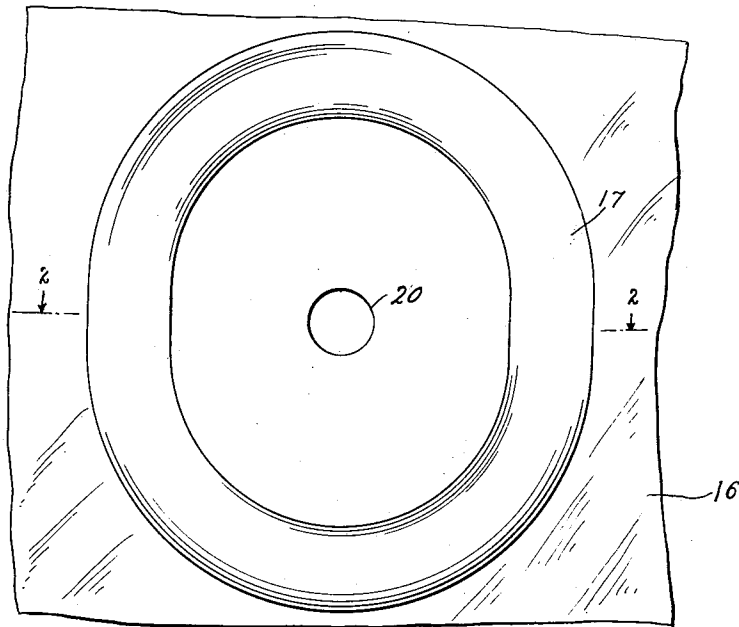
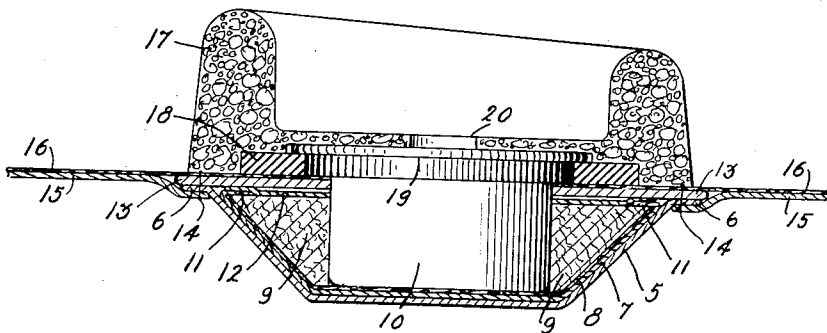


Fig. 2.



Inventor:
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by *J. E. Roberts* Atty.

UNITED STATES PATENT OFFICE.

JOHN P. MINTON, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

RECEIVER-SHIELD.

1,396,771.

Specification of Letters Patent.

Patented Nov. 15, 1921.

Application filed March 27, 1918. Serial No. 224,968.

To all whom it may concern:

Be it known that I, JOHN P. MINTON, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Receiver-Shields, of which the following is a full, clear, concise, and exact description.

This invention relates to telephone receivers and more particularly to a means for shielding the receiver casing from the effects of extraneous noises which would otherwise interfere with the satisfactory receiving of incoming messages.

In order to permit the accurate receiving of comparatively weak fluctuating voice currents, it becomes necessary in many cases to resort to the shielding of the telephone receiver to prevent the casing being set in vibration by vibrations set up as a result of the violent disturbances occurring nearby, and also to prevent such vibrations from reaching the ear directly. Such, for example, is the case in connection with the telephone apparatus used by aviators where the violent disturbances set up by the exhaust cause the vibration of the casing of the ordinary type of head receiver and prevent satisfactory conversation unless the receivers are properly shielded.

It is therefore the object of this invention to provide an improved method of shielding receivers to prevent interference by extraneous vibrations, and to accomplish this object a feature of the invention resides in the employment of a shield of metal foil for the reflection of sound waves originating outside of the receiver casing. While this feature is shown in connection with a receiver support particularly suitable for aviators' helmets, the combination of this support with a helmet forms no part of the present invention, being shown and specifically claimed in a copending application of Fred D. Waldron, Serial No. 228,393, filed April 13, 1918.

This and other features of the invention are clearly shown in the accompanying drawing in which Figure 1 is a plan view of a receiver support embodying this invention; and Fig. 2 is a cross-sectional view along the line 2—2 of Fig. 1 showing in detail the construction of the support and the method by which it is attached to the aviator's helmet.

Referring to the drawing, there is provided a cup-shaped member 5 formed of comparatively stiff leather, the outer edge 6 of which is formed to lie in a plane parallel to the central portion of the cup. The inner side of this cup is lined with a metal foil 7, lead foil approximately five thousandths of an inch thick having been found to be very efficient for this purpose. To afford mechanical protection to the metal foil there is next provided a layer of heavy cloth or drilling 8. A ring 9 of soft felt is next provided, the inner diameter of this ring being so dimensioned as to allow the insertion of the receiver 10 which is of the ordinary watch case type. The upper edge of the foil 7 is turned over, as shown at 11—11, and ring 12 of metal foil, preferably lead, completes the metal shield about the receiver. Next to the ring 12 is placed a ring 13 of stiff leather to afford mechanical protection to the metal foil and also to add a certain amount of rigidity to the receiver support and permit its being secured to the helmet. This support, as described, is now fastened into the aviator's leather helmet of the well-known type by stitching as shown at 14 through the leather of the helmet 15—15, the edges 6—6 of the leather cup 5, the leather ring 13 and the eiderdown helmet lining 16.

For the purpose of excluding all outside noises, there is provided an ear-piece 17, preferably of sponge rubber and having mounted therein a ring 18 of soft gum rubber, which because of its greater rigidity, permits the ear-piece being secured as shown to the shouldered hard rubber cap 19 of the receiver 10. An aperture 20, in alinement with a similar aperture in the receiver cap, permits the efficient operation of the receiver. In the structure as described, the receiver casing is almost entirely inclosed in the soft metal shield by means of which sound waves coming from sources outside of the receiver are reflected and thus prevented from setting the receiver casing in vibration. The soft felt packing serves as a further aid in absorbing whatever sound waves pass through the metal lining. In practice, it has been found that receivers shielded in the manner described may be used very efficiently for aeroplane service, whereas receivers not protected by the lead shield are affected to such a degree by outside vi-

brations as to make conversation very unsatisfactory.

What is claimed is:

- 5 1. In combination with a telephone receiver, means for preventing external vibrations from reaching the receiver casing, said means including a shield of metal foil.
2. In combination with a telephone receiver, means for preventing external vibrations from reaching the receiver casing, said means including a shield of lead foil.
- 10 3. In combination with a telephone receiver, a pocket support for said receiver, and a metallic lining for said pocket support adapted to prevent external vibrations from reaching the receiver casing.
- 15 4. In combination with a telephone receiver, a pocket support for said receiver, a

lining of lead foil for said pocket support for causing the reflection of external sound waves, and additional means within said support for causing the absorption of external sound waves. 20

5. A support for an acoustic device comprising a cup-shaped member in which said device is removably positioned, a lining of metal foil for said member to shield the device from external vibrations, and additional means inclosed within said lining for holding the device in position and causing the absorption of external vibrations. 25 30

In witness whereof, I hereunto subscribe my name this 25th day of March, A. D. 1918.

JOHN P. MINTON.