

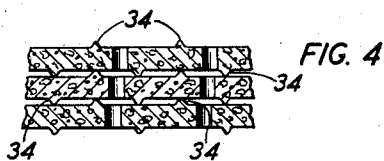
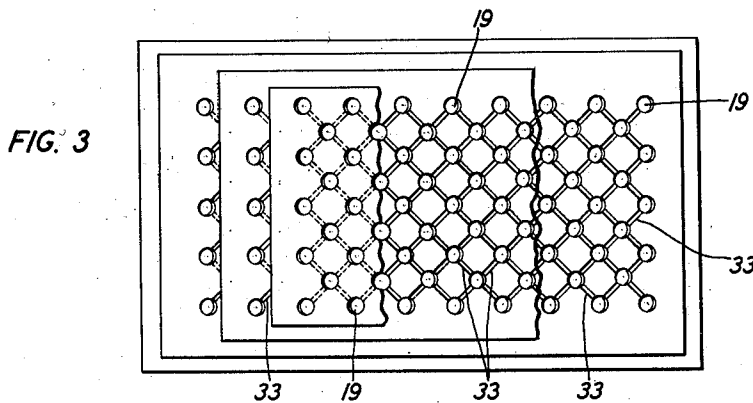
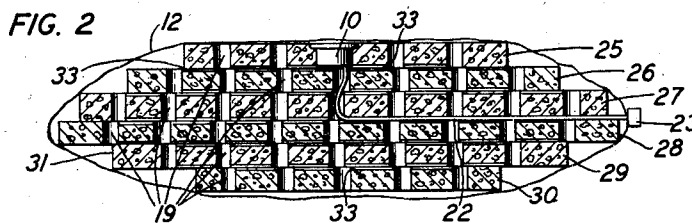
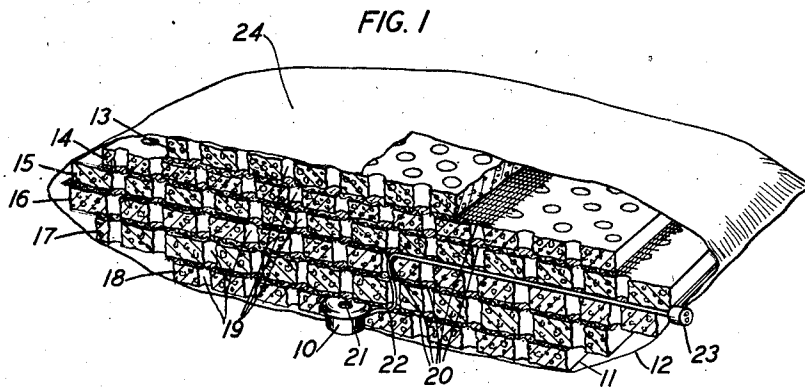
Nov. 3, 1936.

J. J. KUHN

2,059,588

ACOUSTIC DEVICE

Filed Oct. 12, 1933



INVENTOR
J. J. KUHN
BY
Walter C. Kiesel
ATTORNEY

UNITED STATES PATENT OFFICE

2,059,588

ACOUSTIC DEVICE

John J. Kuhn, Elizabeth, N. J., assignor to Bell Telephone Laboratories, Incorporated, New York, N. Y., a corporation of New York

Application October 12, 1933, Serial No. 693,260

6 Claims. (Cl. 179—182)

This invention relates to acoustic devices. More particularly, it relates to acoustic devices of the sound reproducing type which enable one person to listen to a radio or other program without disturbing others in the same vicinity.

An object of the invention is to enable a person who wishes to listen to a radio or other program to do so without disturbing or annoying others in the same vicinity.

A further object is to enable a person to use a pillow type telephone receiver for long or for short periods with a maximum of comfort.

A feature of this invention comprises an acoustic device having a cushioning member containing air passages extending therethrough.

A further feature comprises an acoustic device having such a cushioning member and containing, also, air passages extending at an angle to the first mentioned passages, the air passages providing ventilation.

Another feature of this invention comprises an acoustic device having a cushioning member adapted to have the user's head rest thereagainst and comprising superposed layers of cushioning material.

Still another feature comprises an acoustic device having such a cushioning member in which each layer contains a plurality of air passages extending from one surface to another.

A further feature comprises an acoustic device having such a cushioning member in which air passages extending longitudinally between the layers are provided.

This invention is embodied, preferably, in an acoustic device comprising an envelope or cover of a soft, pliable material, for instance, of fabric, containing a plurality of superposed layers of a soft, yielding, resilient material, such as sponge rubber, and a telephone receiver embedded in the resilient material. Each layer contains a plurality of perforations, and the various layers are arranged so that all the perforations are not covered, continuous air passages between the outermost surfaces of the outermost layers being provided. One or each of the adjacent surfaces of the layers may be grooved, or provided with raised or ridged portions, or coarsely woven fabric may be inserted between the layers, to provide air passages extending at an angle to the first mentioned passages.

A more complete understanding of this invention will be obtained from the detailed description which follows read with reference to the accompanying drawing, wherein:

Fig. 1 is a perspective view of an acoustic device

embodying this invention, partly in section and partly broken away to show details of construction;

Fig. 2 is a sectional elevation of a modification of the acoustic device of Fig. 1;

Fig. 3 is a plan view of the device of Fig. 2 with the covering and telephone unit removed, various layers being partly broken away; and

Fig. 4 is a sectional view of a fragment of a modification of the multi-layer cushioning member for the pillow type telephones of Figs. 1 and 2.

The acoustic device of Fig. 1 comprises a sound wave reproducer or telephone receiver 10, a soft resilient member or cushion 11 in which the receiver is embedded, and a pillow slip, cover, or envelope 12, preferably of fabric and enclosing the receiver and resilient member. The member 11 comprises a plurality of layers, sheets, or strips 13, 14, 15, 16, 17 and 18, which, preferably, are of sponge rubber. Each layer contains a plurality of openings, passages, or perforations 19, the openings being so spaced that, when the layers are superposed to form the member 11, air passages continuous between the outer surfaces of the outer layers 13 and 18 are provided. The adjacent surfaces of the resilient layers are separated by strips 20 of coarsely woven fabric. The receiver is embedded in the lowermost layer 18, its sound wave passage 21 being substantially in alignment with one of the air passages 19 in layer 17. The conductor cord 22 for the receiver passes through openings 19 in the layers 16 and 17 and extends between layers 15, 16 to terminate in a jack or plug receptacle 23 on the outside of the cover to permit the receiver to be connected in an electrical communications circuit. The interior of the cover 12 not occupied by the cushion member may be filled with kapok or the like. Although the cover would be sufficient to maintain the sponge rubber layers in proper position, to avoid any possibility of their shifting, the layers may be secured together at their edge portions by a suitable adhesive or cement.

The device of Fig. 1 is adapted to be used as a pillow, the head of the user resting against the surface 24 remote from the receiver. It is apparent that ventilation both transverse or vertical and longitudinal or lateral results from the provision of the air passage 19 and fabric spacers 20, respectively, adding greatly to the comfort of the user, any movement of the user's head on the pillow facilitating air flow through the pillow.

Referring to Figs. 2 and 3, there is shown a modification of the acoustic device of Fig. 1.

The superposed layers 25, 26, 27, 28, 29, 30 of resilient material, such as a sponge rubber, comprising the cushion member 31 each contains a plurality of air passages of perforations 19, one or each adjacent surface containing a plurality of shallow grooves 33 connecting the air passages, which air passages are arranged as in the case of the device of Fig. 1 to provide air passage continuous between the outer surfaces of the outer layers 25, 30. The provision of the grooves 33 allows longitudinal or lateral air movement between the layers of the cushion member and obviates the need for the fabric spacers of the structure of Fig. 1. The sound wave reproducer or receiver 10 is embedded in the uppermost or top layer 25 such that sound waves reproduced act directly through the cover 12.

Fig. 4 shows a modification of the cushioning layers or strips of Figs. 2 and 3, integral raised portions or ridges 34 maintaining the strips spaced apart. Although adjacent surfaces of the layers are provided with ridges, it is apparent one only thereof need be so formed.

Although this invention has been disclosed with reference to certain specific embodiments, it will be understood that it is not restricted thereto, but is limited in scope by the appended claims only.

What is claimed is:

1. An acoustic device comprising a telephone receiver, an envelope for said receiver, and means within said envelope constituting a yielding, cushioning member, so that a user may comfortably rest his head on said envelope, said means having a plurality of air passages extending through the member from one surface to another, and a plurality of other air passages extending at an angle to said first mentioned passages.

2. An acoustic device comprising a telephone receiver, and a cushion-like member associated with said receiver, said member adapted to have

the head of a user rest thereagainst and comprising a plurality of superposed strips of resilient material, one or each of the adjacent surfaces of which contains air passages extending longitudinally of the cushion.

3. An acoustic device comprising a telephone receiver, and a pillow-shaped cushioning member, said receiver being embedded therein and said cushioning member comprising a plurality of strips of a resilient material containing a plurality of air passages extending therethrough and spaced apart to provide air passages extending at an angle to said first mentioned air passages.

4. An acoustic device comprising a telephone receiver, a pillow-shaped cushioning member and an envelope for said receiver and cushioning member, said cushioning member comprising superposed layers of resilient material containing a plurality of air passages extending therethrough, one or each of the adjacent surfaces of said layers containing grooves providing air passages extending at an angle to the first mentioned air passages.

5. An acoustic device comprising a telephone receiver, a pillow-shaped cushioning member, and an envelope for said receiver and cushioning member, said cushioning member comprising superposed layers of resilient material containing air passages extending between opposite surfaces thereof and raised portions on one or each adjacent surface of the layers to provide air passages extending at an angle to the first mentioned air passages.

6. An acoustic device comprising a sound wave reproducer, and a head-cushioning member comprising superposed layers of resilient material having perforations therein to provide continuous air passages between the outer surfaces of the outer layers and fabric spacers between adjacent layers.

JOHN J. KUHN.