Aug. 30, 1938. A. B. BAYLIS 2,128,554

ANTENNA DEVICE

Filed Oct. 26, 1936

Fig. 1

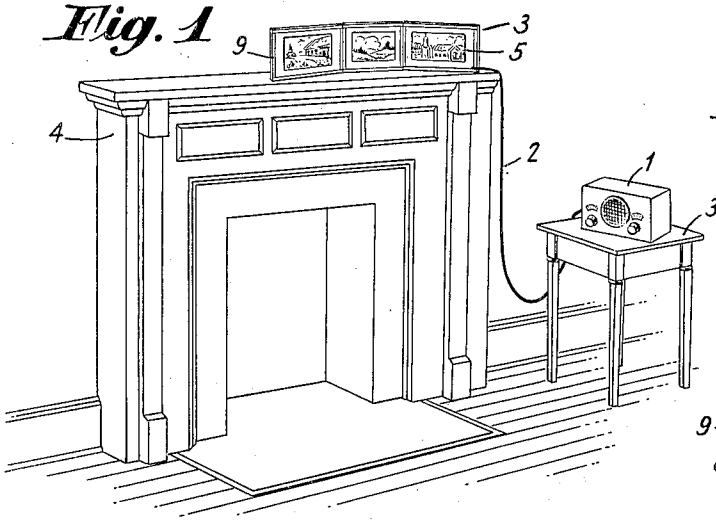


Fig. 2

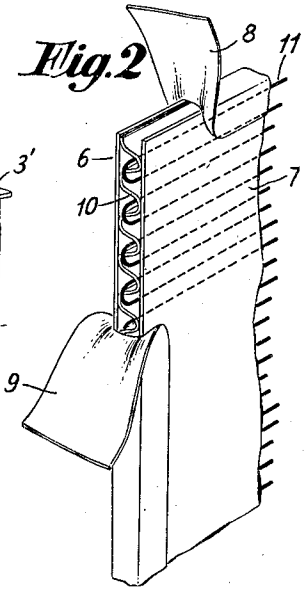


Fig. 3

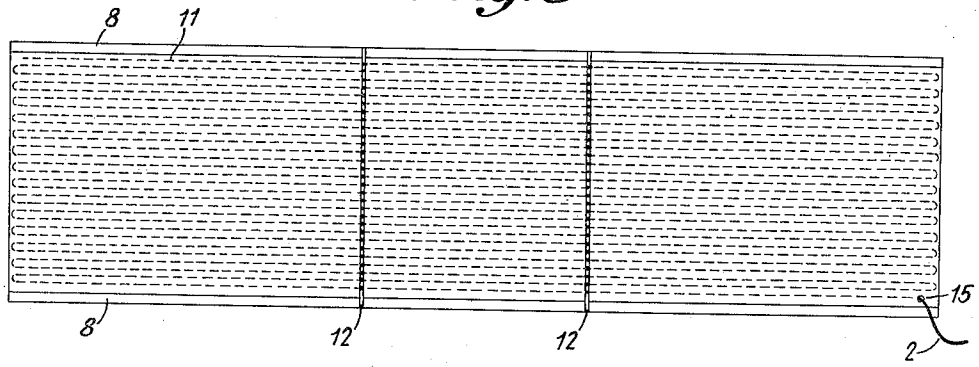
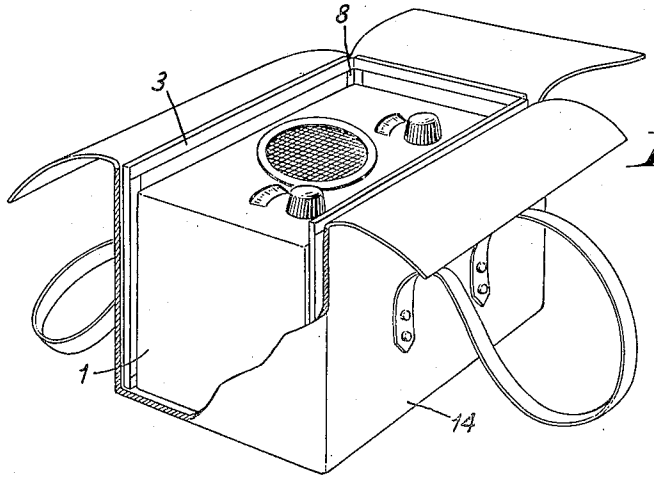


Fig. 4



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2,128,554

UNITED STATES PATENT OFFICE

2,128,554

ANTENNA DEVICE

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Application October 26, 1936, Serial No. 107,580

4 Claims. (Cl. 250—33)

An object of this invention is to provide an antenna for a radio receiver which may be very cheaply constructed and yet is efficient as a collector of energy and also has a good appearance.

A further object is to provide an antenna unit which may be folded up into a small space and upon opening it may be immediately connected to a radio receiver without attaching it to a wall or other support, the unit being self-supporting.

A further object is to provide an antenna unit in which a long length of conductor may be accommodated within a relatively small space by forming the conductor into a plurality of adjacent parallel portions and retaining these portions in space support relation by means of a corrugated member, such as corrugated cardboard. Other objects of the invention will become apparent to those skilled in the art as the description thereof proceeds.

For a better understanding of the invention, reference is made to the accompanying drawing in which Figure 1 is a perspective view of the antenna unit shown connected up to a radio receiver,

Figure 2 is a perspective view of one end of the antenna unit,

Figure 3 is a rear view of the antenna unit, and

Figure 4 is a perspective view, partly broken away, showing the antenna within a carrying case of a radio receiver.

Referring to the drawing, the antenna unit **3** is preferably composed of a long strip of corrugated cardboard comprising front and rear walls **7** and **6** which are joined together by the corrugated sheet **10**, these portions being preferably formed of cardboard, or similar fibrous material. As shown in Fig. 3, slits **12** are formed through the rear wall **6** and the corrugated sheet **10** at one or more places intermediate the ends of the unit where it is desired to fold the same, these slits, of course, not extending through the front wall **7**. The antenna wire **11**, which may be of stranded copper fine wire and may have an exterior covering of cotton insulation braiding, is inserted in the upper corrugation with the end of the wire near the upper left hand end of the unit, as shown in Fig. 3. The upper strand of wire is then extended to the right hand end of the upper corrugation and then brought down by means of a small loop into the next lower corrugation, as clearly shown in Fig. 2. This second strand is then extended within the second corrugation to the left hand end of the unit whereupon the wire is laid into the third corrugation and extended to the right hand end thereof. This lacing of the wire back and forth through the successive corrugations is continued until all the corrugations have been filled, the end of the wire then serves as a lead wire **2** being brought out of a small aperture **15** in the wall **6**. It is thereby seen that the antenna consists of a plurality of parallel strands of wire which are maintained in parallel relation by the successive corrugations of the sheet **10**. In order to improve the appearance of the unit, a paper, or cloth binding strip **8** may be cemented to the top edge of the cardboard, as shown in Fig. 2, and the ends may be similarly protected by binding strips **9**. Also a binding strip **8** may be cemented in a vertical position over the portions of wall **7** which are directly opposite the slits **12** to strengthen the unit at these places where it is to be folded. The panels thus formed in the front wall **7** may be decorated in any suitable manner, as by the pictures **5**, in order to enhance the appearance of the unit.

When in use the antenna unit may have the outer panels bent slightly forward so that each of the three panels is in a different plane so that it is self-supporting, as shown in Fig. 1, where it is set up on top of any suitable support, such as a mantelpiece **4** and the lead portion **2** connected to the antenna terminal of radio receiver **1** which may be supported on any suitable support nearby, such as a table **3'**.

I have found that such a unit when made from 2 to 3 feet long and having a height of 6 or 8 inches provides sufficient conductor to pick up a substantial amount of signal energy and to make an efficient antenna. Such a unit is rather cumbersome to transport if not folded up in some manner. I have found that it may be made quite compact and easily transported by folding it so that its walls are at substantially 90° and inserting it within the carrying case **14** of the radio receiver, as shown in Fig. 4. When so placed within the carrying case, it will be seen that the antenna unit serves as a packing or protection for the receiver to prevent its damage or disfigurement from any knocks or blows which may be communicated to the carrying case. With such an outfit, when it is desired to receive radio signals, the operator merely has to remove the receiver and antenna unit from the carrying case, set the antenna unit up on a suitable support near the receiver and connect the lead wire **2** to the antenna terminal of the receiver. The operator is then ready to turn the power on the receiver and to tune in a desired station without the tedious bother of mounting and supporting the usual type of antenna.

While I have shown only a single form of my invention, it is to be understood that its scope is not limited to the form shown but is only intended to be limited by the scope of the following claims and the known prior art.

Having described my invention, what I desire to secure by Letters Patent is:

1. An antenna unit comprising a sheet of corrugated insulation material which is several times longer than its height, means formed in the corrugated sheet whereby it is capable of being supported in an upright position on one of its longer edges, and a flexible conductor having parallel strands extending back and forth between the corrugations.

2. An antenna unit comprising a corrugated sheet of insulation material, front and rear parallel walls for confining the corrugated sheet therebetween, said corrugated sheet being several times longer than its height, a vertical slit formed across one of said walls and the corrugated sheet, and a flexible conductor extending back and forth through the successive corrugations of the sheet, whereby the unit may be easily folded in the region of the slit and supported in an upright position on one of its longitudinal edges.

3. An antenna device comprising a continuous member in the form of a sheet and having a greater longitudinal extent than its height, a conductor carried by said member and wound back and forth to provide an antenna of substantial length, said sheet member having at least one vertical flexible joint at an intermediate portion whereby the sections defined thereby are movable out of line to enable the sheet member to be stood on edge in operative position.

4. An antenna device comprising a continuous sheet member of narrow width and incapable of being self supporting on edge, said sheet member being of greater longitudinal extent than its height, a continuous conductor carried by said member and wound back and forth in a longitudinal direction, said sheet member having a plurality of vertical flexible joints at spaced intermediate portions whereby the sections defined thereby are movable out of line for disposition in different planes to enable the sheet member to be stood on edge in operative position.

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