

G. B. CROUSE AND I. H. MILLS.
RECEIVING PANEL.
APPLICATION FILED MAR. 10, 1919.

1,370,093.

Patented Mar. 1, 1921.

Fig. 3.

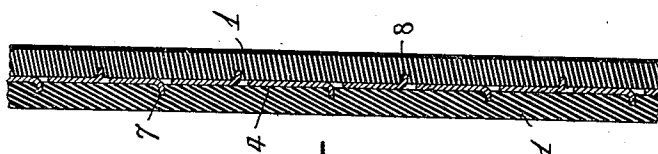


Fig. 2.

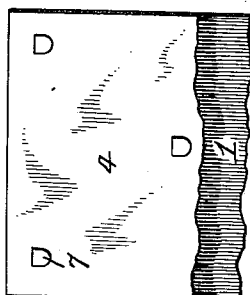


Fig. 5.

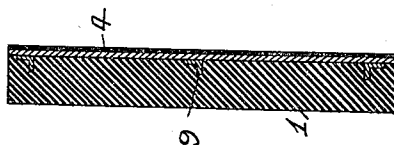


Fig. 6.

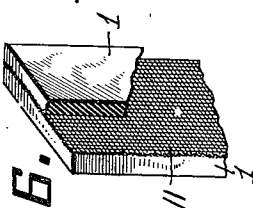


Fig. 4.

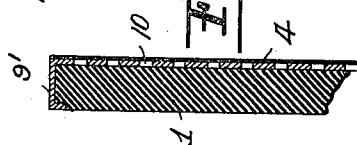
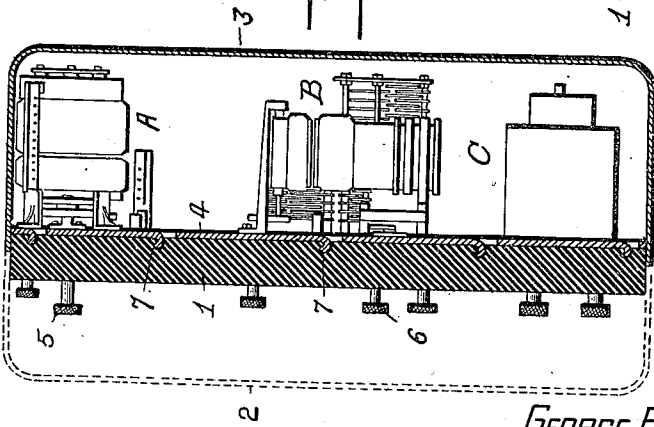


Fig. 1.



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RECEIVING-PANEL.

1,370,093.

Specification of Letters Patent.

Patented Mar. 1, 1921.

Application filed March 10, 1919. Serial No. 281,783.

To all whom it may concerns

Be it known that we, GEORGE B. CROUSE and ISAAC H. MILLS, citizens of the United States of America, residing at 493 Washington Ave. and 51 Clark St., Brooklyn, N. Y., respectively, in the county of Kings and State of New York, have invented certain new and useful Improvements in Receiving-Panels, of which the following is a specification.

This invention relates to instrument panels. More specifically it relates to receiver panels employed in radio telegraphy, or telephony.

It is well known in the radio art that electrical radiation, comprising electrostatic and electro-magnetic components originating in various electrical machines and apparatus, which may be in the vicinity of the receiver, permeates the surroundings medium and sets up certain erratic disturbing effects which interfere with the proper and intended operation of the receiver.

One of the purposes of this invention is effectively to shield the instruments by combining a metallic screen with the panel or board upon which the instruments are mounted. The stray electrical radiation is thus prevented from passing through the panel and absorbed or reflected before reaching the instruments.

Another object is so to combine the metallic screen with the panel as to form a mechanically stiff and rigid structure.

With the above and other objects in view, the invention has relation to a certain construction and combination of parts, an example of which is described in the following specification, pointed out in the appended claims, and illustrated in the accompanying drawings, wherein;

Figure 1 shows a conventional type instrument panel with its cover, the view being in vertical section.

Fig. 2 is an elevation view of a panel with a screen applied thereto, such as a copper plate secured to the surface of the panel.

Figs. 3, 4, 5, and 6, illustrate different methods of combining the metal screen or sheet with the panel.

Referring now more in particular to the drawings, the numeral 1 designates one form of instrument panel used in radio receiving. It is further pointed out that a device or panel constructed as here described might

find a use in X-ray work as a protector to the operator, by incorporating a lead plate therein and using it as a shield. A front and back metal cover 2 and 3 are employed to protect the instruments in use from physical damage or wear and tear. When the radio set is in use the front cover will necessarily have to be removed so that access may be had for adjustment and operation of the instrument set. At this time the instruments are subjected to the disturbing effect of electrical radiation which may pass through the panel unless a metal shield is provided. The shield 4 in connection with the metal cover 3 forms a metallic inclosure completely incasing the instruments against electrical radiation.

This screen 4 is applied to either the front or rear surface of the panel. In Fig. 1 the screen is applied to the rear of the panel and adjacent the instruments. The instruments are shown mounted upon the back of the panel, and are fitted with the usual form of adjusting screws and knobs which pass through the panel and are available for adjustment from the front side of the panel, as at 5 and 6. The instruments here shown represent a conventional set of radio instruments, or telephony set, and as the instruments do not materially bear on the subject of invention they are not described in detail but are pointed out in general by reference characters A, B and C, and being different instruments of the radio receiver set. The metallic sheet or plate 4 has punched therein all necessary holes and openings for receiving the parts and fittings which pass through the panel from the instruments to the adjusting means of the front. The sheet 4 is secured to the panels by embedding the struck up portions 7 in the molded material during the process of molding the panel. During the manufacture of the panel the plastic material is shaped in molds and forms and during this process the struck up portions are pressed into the plastic material before it hardens thus securing the plate 4 firmly to the molded panel.

Fig. 3 and the remaining views illustrate various ways of combining the metal screen with the panel. The panel itself is usually molded of a selected insulating material such as bakelite dilecto, micarta and the like. The metal sheet, perforated plate, or gauze material may be combined with the panel

during the manufacturing process and placed within the panel form prior to introducing the insulating material in a liquid or plastic state into said mold or form.

5 When the material is hardened and removed from the form the metal sheet will be embedded in the panel and become an integral and strengthening embodiment with the panel construction.

10 Another method of combining the two materials is to form the projections or struck up portions on the screen or plate by punching up portions of the metal, as indicated by 7 and 8. These projections may be turned 15 out on both sides of the plate and then molded into the mass of material and totally incased therein as specifically shown in Fig. 3. In this way the plate may be secured within the panel. Angle members 9 may be 20 secured to the screen and incased in the molded material, and likewise the edges of the shield or screen may be turned up and become fixed in the mold of the panel as indicated at 9 and 9' in Figs. 4 and 5. Per- 25 forated or gauze screens 10 and 11 may also be employed to advantage in a panel as shown in Figs. 4 and 6.

A panel constructed as above disclosed forms an effective shield and barrier to all 30 stray electromagnetic and electrostatic fields, and thus may well be employed as a receiving panel in the art of radio telegraphy, telephony or in other arts where the conditions are similar. Furthermore the screens or 35 shields form an effective strengthening or reinforcing means for the panel imparting great rigidity and mechanical strength thereto. As explained above the metallic shield may be secured either within or on 40 either the front or back surface of the panel. If secured on the front it provides a surface upon which legends or indicia may be etched.

45 Having described our invention what we desire to claim and secure by Letters Patent is;

1. An instrument panel comprising in combination, a panel of insulating material, and a metallic sheet molded within said ma-

terial, for mounting radio instruments and 50 for shielding said instruments from stray radiation, electromagnetic, and electrostatic induction from outside sources.

2. An instrument panel comprising in combination, an insulating member used as 55 a base, a metallic sheet, a plurality of projections formed on said metallic sheet, and said projections molded into the insulating base to secure it thereto, for the purpose of shielding radio and telephony instruments 60 from stray electrical radiation.

3. An instrument panel comprising in combination, a molded material used as a base upon which radio or telephony instru- 65 ments may be installed, a metallic gauze molded into the base, for the purpose of forming a shield for protecting radio and telephony instruments from stray electric radiation.

4. A molded receiver panel for mounting 70 radio and other delicate instruments comprising in combination, a molded insulating material upon which the instruments may be installed, a gauze material, tongues formed 75 on said gauze material and embedded within the insulating material, so as to secure the materials together for protection of the instruments from stray electrical radiation.

5. A molded receiver panel for mounting 80 radio and telephony instruments comprising in combination, molded insulating material, a metallic screen, tongues formed on said metallic screen and embedded within the insulating material, so as to secure the metallic screen and insulating material together 85 for protecting the instruments from stray electrical radiation.

6. A radio receiving device comprising in combination, a panel of insulating material, and a metallic shield embedded therein. 90

7. In an electrical instrument panel, a sheet of metallic screen and insulating material secured on both sides thereof.

In testimony whereof we have affixed our signatures.

GEORGE B. CROUSE.
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