Sept. 6, 1927. 1,641,395

T. MOORE

RECTIFYING RADIO SHIELD

Filed Sept. 15, 1924

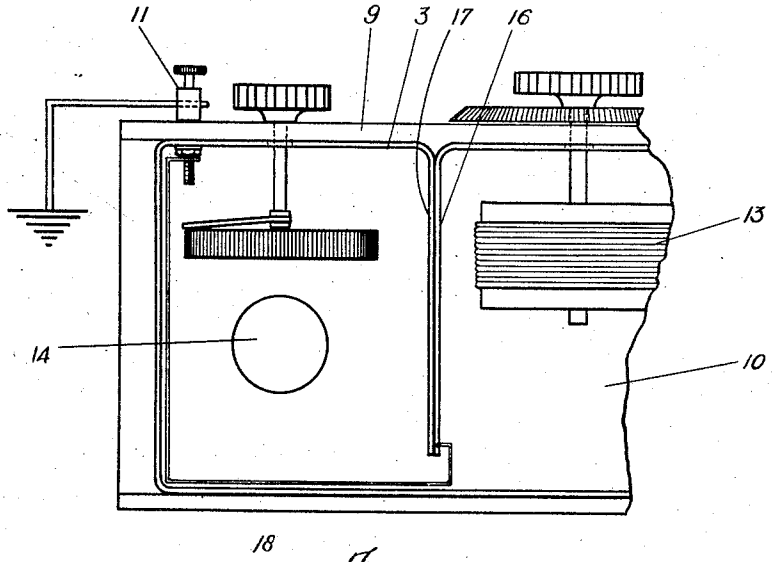


Fig.1.

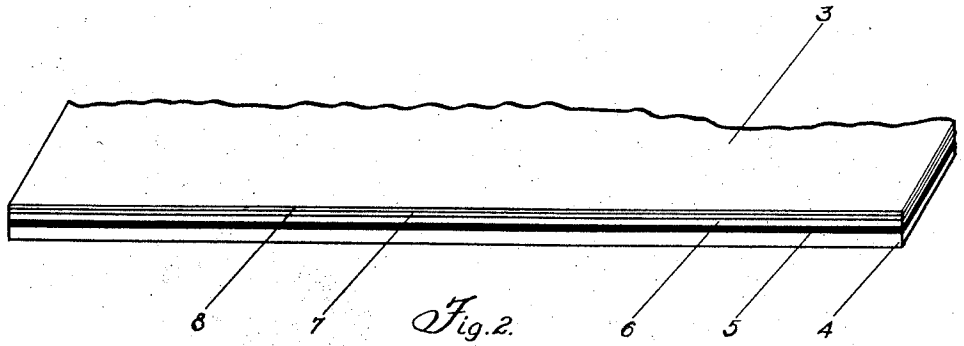


Fig.2.

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RECTIFYING RADIO SHIELD.

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In the building and operation of radio apparatus it has been found advantageous to provide metallic shields suitably grounded for collecting and removing stray currents which may be given off by various parts of the apparatus and for neutralizing the so called body capacity of the operator of the apparatus.

An object of my invention is to provide a radio shield which is simple and inexpensive to manufacture and which may be applied to various uses with a minimum of effort.

Another object is to provide a shield of this character which will rectify stray currents and consequently cause them to be carried to a ground wire with greater rapidity than the present known metallic shields.

Another object of my invention is to provide a device of this kind which is flexible and has greater adaptability to its application to radio apparatus.

These and other objects are attained by the means described herein and disclosed in the accompanying drawings, in which:

Fig. 1 is a fragmental plan view of a radio receiving apparatus having shields of my invention embodied therein.

Fig. 2 is a fragmental view of a shield of my invention showing diagrammatically the relative positions of its component parts. The shield 3 comprises a base 4 which may be of any suitable material such as card-board, fibre, fish paper or the like, such base being preferably thin and flexible. The base 4 is itself a dielectric and has a dielectric coating 5 on its one side. The dielectric may be of any suitable material but is preferably one which may be applied in solution such as shellac, water glass, or any suitable dielectric varnish. A conducting material 6 in a very thin sheet form is next placed over the dielectric substance and is secured thereto by the natural adhesion of the dielectric solution. The conductor material 6 may be tin foil or similar material but is preferably formed of a foil composed of an alloy of one-half block tin and one-half lead. A layer of borax 7 or other suitable salts of like chemical properties in the form of a solution is next applied over the conductor substance, water or alcohol or any other suitable fluid being used to keep the borax in a solution form for easily applying the same over the conductor. Next there is applied over the borax a quantity of aluminum 8 in sheet powdered or flour form. The material thus formed is allowed to stand until the chemical action of the borax and metals has ceased after which the sheet is hardened and unified by means of heat and pressure applied in any suitable manner. The structure thus formed is very flexible and tough but may be cut or drilled with an ordinary pocket knife and is thus very easily worked in applying it to its uses.

When it is desired to apply the rectifying shield 3 of my invention for example to the inside of the dielectric panel 9 of a radio receiving apparatus 10, a sheet of the shielding material is cut and perforated to accommodate the apparatus and instruments that may be applied to the panel by means of glue or shellac or in any other manner that may be chosen by the radio builder. The metallic side of the shield is electrically connected with the ground connection 11 of the radio apparatus as is common in connecting the ordinary electric shield. When it is desired to place a shield between two instruments of a receiving set for example 13 and 14, the shield of my invention has been found to overcome one of the difficulties previously experienced with plain metallic shields. Two of the instruments 13 and 14 for example are giving off electrical energy or stray currents and are each mutually affected by said stray currents emanating from the other instrument. If a plain sheet metal shield is used, these opposed stray currents set up vibrations in the shield which are plainly audible in the radio reception. When it is desired to apply the shield of my invention to a similar condition, two thicknesses of the shielding material 16 and 17 are placed back to back with their metallic sides exposed to the respective instruments 13 and 14. The metallic sides are each grounded independently of one another at any suitable point and by any suitable means such as a wire 18. The shield being in itself a rectifier will collect and carry away the stray currents with greater rapidity and thus eliminate vibration. Due to the presence of the fibre or card-board, any possible vibrations due to external disturbances will also be deadened and rendered inaudible. It will be noted that there has been provided a radio shield which is not only inexpensive of manufacture and easy to apply but which embodies the advantage of a rec-

tifier and thus produces results not attainable by the use of ordinary metallic shields.

What I claim is:

1. As a new article of manufacture a rectifying radio shield in the form of a single sheet.

2. As a new article of manufacture a bimetallic radio shield in the form of a single sheet, the two metallic elements of the shield serving to rectify alternating currents and impulses transmitted thereto whereby opposed stray alternating impulses may be carried away without disturbance.

3. As a new article of manufacture a flexible rectifying radio shield.

4. In a device of the class described the combination with a base of fibrous material, a dielectric, a metallic conductor, a chemical salt and aluminum arranged one upon the other in the order named to form a single sheet.

5. In a device of the class described the combination with a base of fibrous material, a dielectric, tin foil, borax and aluminum arranged one upon the other in the order named to form a single sheet.

6. In a device of the class described the combination with a flexible dielectric base having layers of tin foil, borax and aluminum respectively mounted thereon in the order named for forming a single flexible radio shield.

In testimony whereof, I have hereunto subscribed my name this 12th day of September, 1924.

TOM MOORE.