C. F. AND W. H. SMITH.

ELECTRIC CONDENSER.

APPLICATION FILED MAY 17, 1920.

1,395,931. Patented Nov. 1, 1921.

Fig. 4.

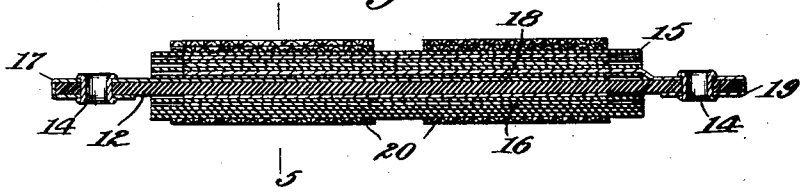


Fig. 5.

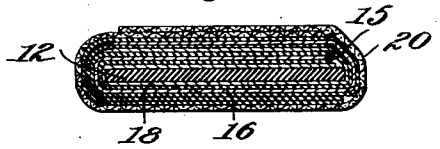


Fig. 1.

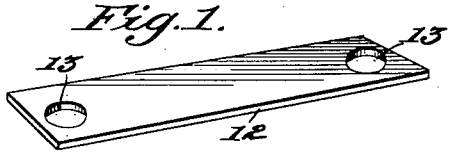


Fig. 2.

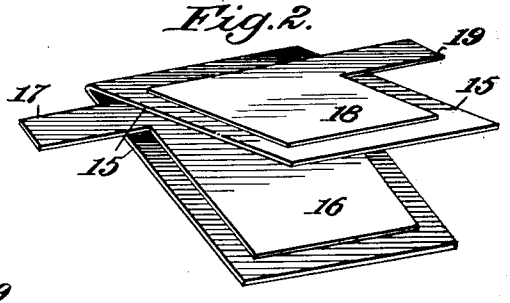


Fig. 3.

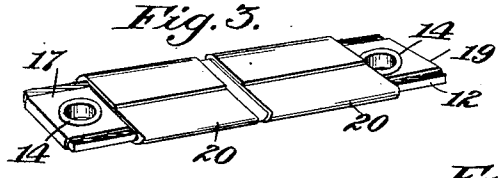
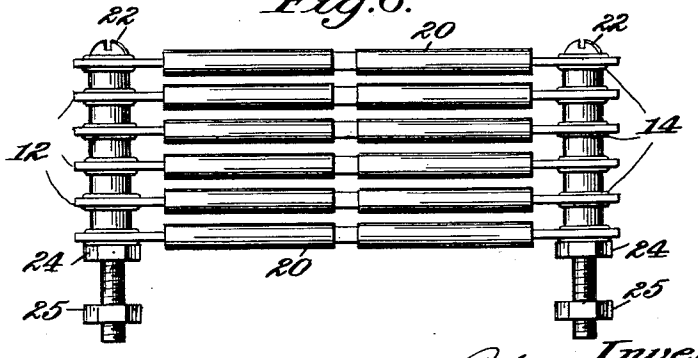


Fig. 6.



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UNITED STATES PATENT OFFICE.

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ELECTRIC CONDENSER. REISSUED

1,395,931. Specification of Letters Patent. Patented Nov. 1, 1921.

Application filed May 17, 1920. Serial No. 382,090.

To all whom it may concern:

Be it known that we, CHARLES F. SMITH and WILLIAM H. SMITH, citizens of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented or discovered certain new and useful Improvements in Electric Condensers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has for its object to provide an electric condenser primarily intended for use in wireless telegraphy, but also adapted for other uses, and which is simple in construction and effective and durable in use. To this end each condenser, or each condenser unit, comprises a base or body portion of thin vulcanized fiber board, around which is wrapped dielectric waxed paper in contact with which are sheets of metal foil (lead, copper, tin, aluminum or any other metal foil) folded over the ends of the said base or body portion and secured to the latter preferably by brass eyelets. Over the wrapping of waxed paper encircling strips of muslin or the like are preferably pasted thereto, thus holding the waxed paper wrapping to the base or body portion of the condenser unit, all as will hereinafter more fully appear.

In the accompanying drawing Figure 1 is a detail view of the base or body portion of a condenser unit.

Fig. 2 is a perspective view showing the manner of assembling the metal foil and waxed paper parts of the unit.

Fig. 3 is a perspective view of a completed unit.

Figs. 4 and 5 are longitudinal and transverse sections, respectively, of the improved condenser unit.

Fig. 6 is an elevation showing a number of condenser units suitably mounted.

Referring to the drawing, in which some of the thin parts are necessarily somewhat exaggerated for clearness of illustration, 12 denotes the fiber board base or body of the improved condenser unit, said base or body being provided with holes 13 to receive eyelets 14. A strip of waxed paper dielectric 15 is preferably folded, as shown in Fig. 2; and, placed between the folds of the said dielectric, is a sheet of metal foil 16 having a lead 17, while on top of the folded dielectric is a second similar sheet of metal foil 18 having a lead 19. The sheets 16 and 18 of metal foil are smaller in size than the sheets or plies of the folded dielectric, so that the edges of the latter extend beyond the sheets of metal foil to prevent short circuiting. Fiber board is preferably used for the base or body of the improved condenser unit for the reason that it is stiff and is not softened or affected by moisture, as ordinary pasteboard would be.

The dielectric paper and the sheets of metal foil are then wrapped around the fiber base or body portion 12, the leads 17 and 19 of the metal foil being folded over the ends of the said base or body portion. The wrappings just referred to are then covered by a paster or pasters, 20, of thin muslin or other sheet material, which securely hold the said wrappings in place on the body of the condenser unit. Eyelets 21, preferably of brass, are inserted in the holes 12 of the base 12, these eyelets being for the reception of screws or bolts 22, on which are mounted nuts 24, to be screwed up against the lower side of the body 12 of the lowermost condenser unit when a number of the units are assembled, as shown in Fig. 6. The said screws or bolts 22 are also preferably provided with nuts 25 by which the assembled condenser units may be fastened to a suitable panel or the like when the condenser is mounted in place for use. The condenser units are spaced apart on the screws or bolts 22 by collars or sleeves 23. It will be understood that the assembly of condenser units, as shown in Fig. 6, affords a convenient manner of utilizing the invention, as each unit is, in itself a complete condenser.

The improved condensers or condenser units, when completed, are tested by a microfarad meter, and each unit or grid is labeled, to show capacity, which is determined by the length of the body and breadth and thickness of the waxed paper dielectric.

From the foregoing it will be understood that the invention provides an electric condenser of simple construction which has been found to be very efficient and durable in use.

Having thus described our invention, we claim and desire to secure by Letters Patent:

1. An electric condenser unit comprising a base or body of thin fiber board and a

wrapping of dielectric and metal foil encircling said base or body, the sheets of metal foil being smaller in size than the sheets or plies of dielectric, said sheets of metal foil having leads which are folded around the ends of the fiber base or body, and means for securing the wrapping of dielectric and metal foil in place about said base or body.

2. An electric condenser unit comprising a base or body of thin fiber board and a wrapping of dielectric waxed paper and metal foil encircling said base or body, the sheets of metal foil being smaller in size than the sheets or plies of waxed paper, said sheets of metal foil having leads which are folded around the ends of the fiber base or body, and means for securing the wrapping of dielectric and metal foil in place about said base or body.

3. An electric condenser unit comprising a base or body of thin fiber board and a wrapping of dielectric waxed paper and metal foil encircling said base or body, the sheets of metal foil being smaller in size than the sheets or plies of waxed paper, said sheets of metal foil having leads which are folded around the ends of the fiber base or body, and a securing wrapper or paster passing around the wrapping of waxed paper and metal foil.

In testimony whereof we affix our signatures.

CHARLES F. SMITH.
WILLIAM H. SMITH.