

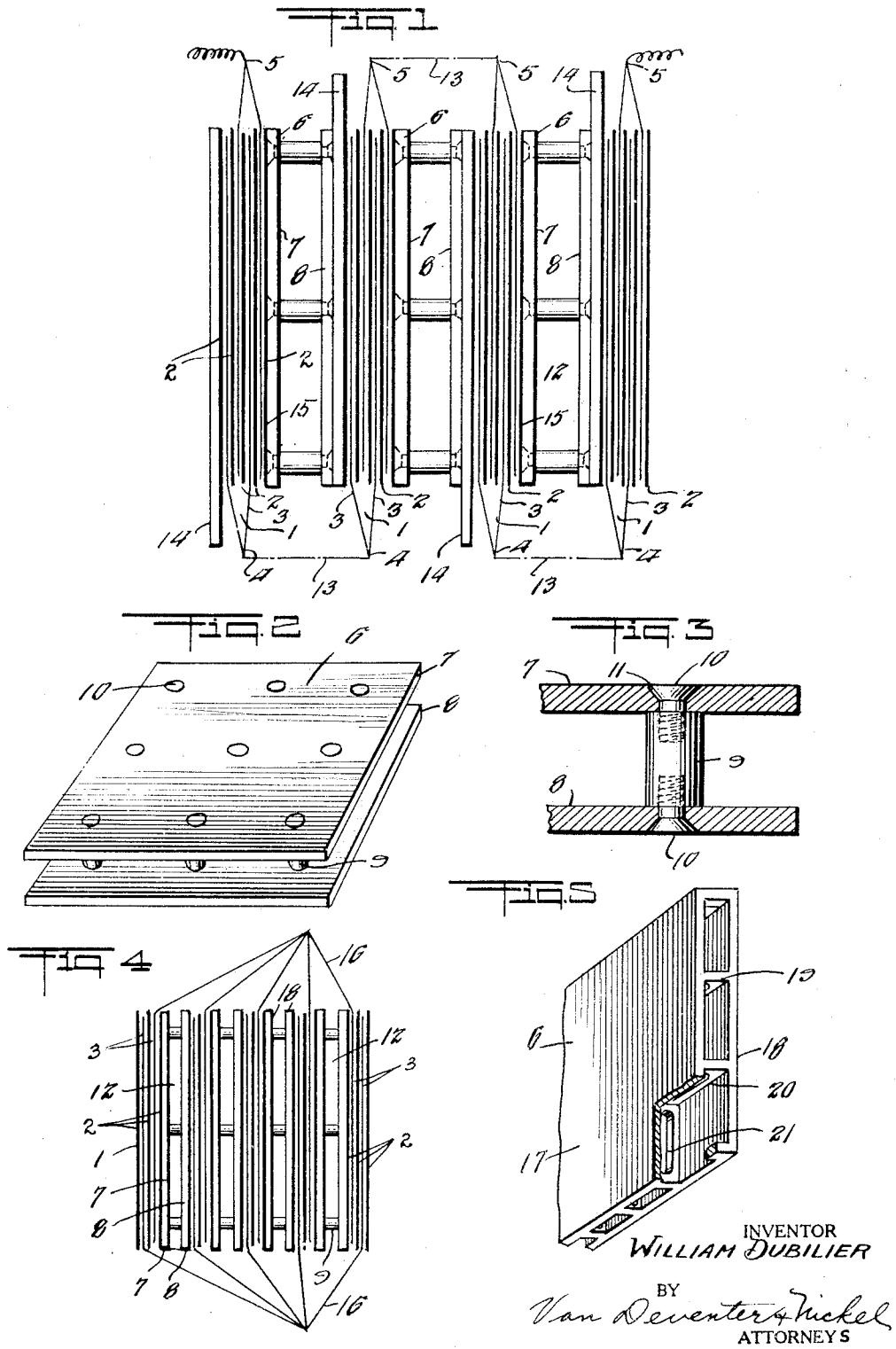
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ELECTRICAL CONDENSER

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UNITED STATES PATENT OFFICE

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ELECTRICAL CONDENSER

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This invention relates to electrical condensers; particularly condensers for radio circuits.

An object of this invention is the production of a condenser comprising a plurality of sections and intermediate spacers, designed to permit a cooling medium to circulate between the sections and through the condenser, to prevent overheating of the latter, and thus facilitate efficient operation.

A further object of this invention is the production of a condenser having a plurality of sections and intermediate spacers, which also permit ready assembly of the sections, and access to any one of them that may become defective, or need examination.

With these and other objects in view which may be incident to my improvements, the invention consists in the parts and combinations to be hereinafter set forth, with the understanding that the several necessary elements comprising my invention, may be varied in construction, proportions and arrangement, without departing from the spirit and scope of the appended claims.

In order to make my invention more clearly understood, I have shown in the accompanying drawings means for carrying the same into practical effect without limiting the improvements to the particular constructions, which for the purpose of explanation, have been made the subject of illustration.

In the drawings forming a part of this specification:

Figure 1 is a side elevation illustrating condenser stacks or sections arranged and connected in series with intermediate spacers;

Fig. 2 is a perspective view of one of such spacers;

Fig. 3 is an enlarged detail sectional view showing the construction of such a spacer;

Fig. 4 is a side elevation of a plurality of condenser stacks or sections connected in parallel, with intermediate spacers; and

Fig. 5 is a modified form of the spacer illustrating parallel planes connected by a series of webs.

Referring by numerals to the drawings, 1

represents a plurality of condenser stacks or sections each consisting of dielectric sheets 2 and condenser plates 3, the plates being connected in groups, as at 4 and 5. These stacks are arranged in series with intermediate spacers 6 each comprising two corresponding parallel plates 7 and 8 spaced apart by a series of sleeves 9, preferably non-conducting, internally threaded to receive short screws 10 passing through oppositely disposed apertures 11 in the plates 7 and 8, thus forming an open space 12 between the plates 7 and 8 which admits of a circulation of air or oil for cooling purposes.

In Fig. 1, the successive sections are shown connected in series, as at 13, and in such cases a non-conducting plate 14 is interposed between the condenser sections 1 as well as the spacer 6, with the plates 14 projecting beyond the ends of the spacers and sections alternately in opposite directions, the object being to prevent brush discharge and arcing, due to differences of potential between adjacent sections 1.

It is to be noted that the spacer 6 may or may not be formed of a non-conductive material. In either event, enough dielectric 2 should preferably be employed to separate the spacers from the sides of the sections against which there is no plate 14, as at 15 in Figure 1.

In a condenser having a large current rating, the sides 7 and 8 of the spacer 6 would preferably be formed of conductive material to more readily conduct heat away from the various sections 1.

In Fig. 4 the condenser stacks 1 are illustrated connected in parallel, as at 16. In such cases the nonconducting plates 14 would be dispensed with.

In Fig. 5 is illustrated a modified form of the spacer 6 comprising a shell formed of insulation or in fact any suitable substance, having parallel surfaces 17 and 18 corresponding to the plates 7 and 8. The surfaces 17 and 18 are connected and spaced apart by walls or partitions 19 and similar walls or webs 20, at right angles to the walls 19. These walls are all apertured, as shown at 21, to admit of a free circula-

tion of air or oil for the purpose of cooling the condenser.

The condenser in practice is of course mounted in a suitable frame, if air is to circulate between the sections, or in a casing or container, if a liquid cooling medium is to be employed.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not wish to confine myself to the precise details of construction herein set forth, by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention, or exceeding the scope of the appended claims.

I claim:

1. In a condenser, a condenser section and a spacer comprising two plates, connected together and comprising a circulatory path for a cooling medium for the condenser.

2. In a condenser, a spacer comprising two plates, sleeves holding the plates apart, and studs passing through apertures in the plates and threaded in the sleeves.

3. In a condenser, a spacer comprising two plates, internally threaded sleeves holding the plates apart, corresponding apertures in the plates, and studs passing through the apertures and engaging the sleeves.

4. In a condenser, a condenser section and a spacing unit comprising two spaced apart plates of conductive material connected together, and comprising a circulatory path for a cooling medium for the condenser.

5. In a condenser, a plurality of condenser sections, a spacing unit comprising two spaced apart plates of conductive material connected together by insulating members, and comprising a circulatory path for a cooling medium for the condenser.

6. In a condenser, a plurality of condenser sections, a spacing unit interposed between the sections and comprising two spaced apart plates of conductive material connected together by insulating studs and comprising a circulatory path for a cooling medium for the condenser.

Signed at New York in the county of New York and State of New York this 27th day of February A. D. 1925.

WILLIAM DUBILIER.