Sept. 20, 1927. 1,642,688

A. MOSS

FIXED CONDENSER

Filed July 14, 1925

Fig. 1.

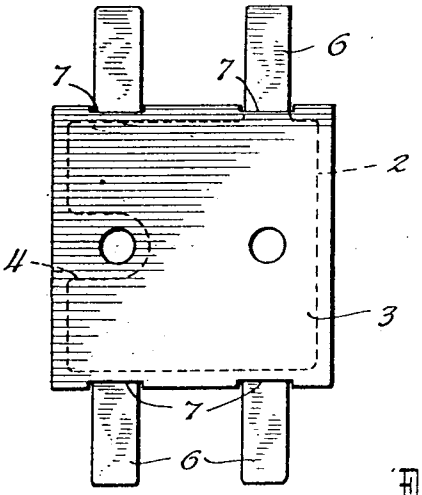


Fig. 2.

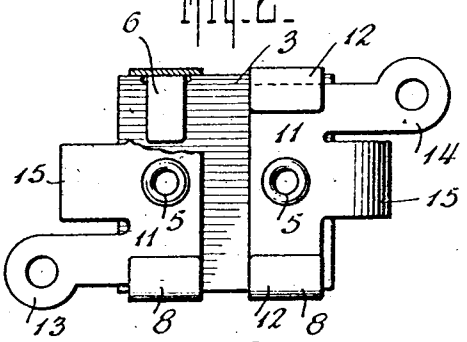


Fig. 3.

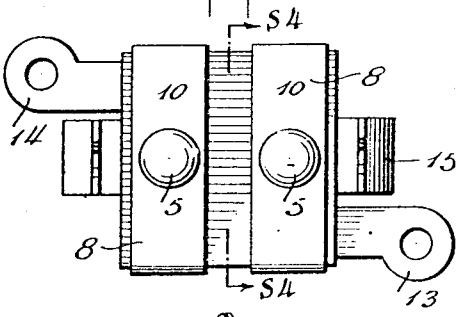


Fig. 4.

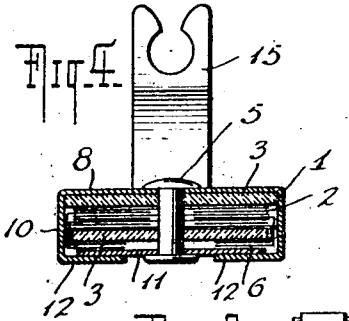


Fig. 5.

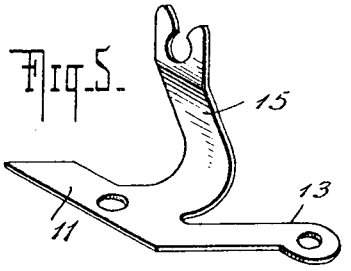
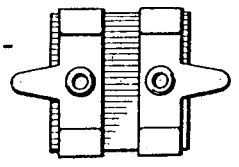


Fig. 6.



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UNITED STATES PATENT OFFICE.

ARTHUR MOSS, OF NEW YORK, N. Y., ASSIGNOR TO ELECTRAD, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

FIXED CONDENSER.

Application filed July 14, 1925. Serial No. 43,511.

This invention relates to fixed condensers, and while the present embodiment of the invention is specially designed and adapted to meet the constantly increasing demand for such condensers in radio receiving apparatus, it will be understood that its use is not limited and may be extended to other electric circuits, without material change or modification.

The present day fixed condenser consists of a "stack", formed of alternate sheets of conducting and nonconducting material, such as metal foil and mica; the conducting sheets being connected, at opposite ends of the stack, in alternating relation, either by being provided with terminal extensions which are clamped together, or having terminal rivets, solid or tubular, extending through the "stack" and making contact at each end with every other sheet of the conducting material.

As a protection to the "stack" against rough or careless handling and to strengthen and stiffen it for connection between spring terminal clips, binding posts or the like, the stack is reinforced by the addition of heavy outer plates of bakelite or other insulating material and to secure such an assembly together, metal clamps of various kinds are used.

The present invention has reference particularly to the form and arrangement of these metal clamps and the reinforcing outer plates of the stack.

The accompanying drawings will serve to illustrate constructions suitable for carrying my invention into effect.

In the drawings:

Fig. 1 is a plan view showing the assembly of the stack and the outer reinforcing plates, before the condenser terminals are bent up;

Fig. 2 is a similar view of the completed condenser with one of the clamps broken away to show the bent up condenser plate terminals;

Fig. 3 is a reverse plan view of the condenser shown in Fig. 2;

Fig. 4 is a cross-section on the line s^4, s^4, of Fig. 3;

Fig. 5 is a detail perspective view of a clamp member, and

Fig. 6 is a plan view of a modified form of condenser embodying my invention.

Referring now to the drawings, the stack shown is made up in the usual manner of alternate sheets of mica 1, and metal foil 2, clamped between reinforcing sheets 3, of bakelite or other suitable material.

The sheets of metal foil 2, are given the usual shape by being notched at one end, as indicated at 4, to clear the rivet 5, of the stack and provided at the opposite end with a lug or extension 6.

In the assembly, the metal foil sheets are so arranged that the lugs or extensions 6, thereof, projecting from alternate sheets at opposite ends of the stack, may be brought together to connect the sheets in two series, as is customary in the art.

The usual method of securing the lugs or extensions 6, is to bend them, one upon the other, around the adjacent end of the stack, with their free ends projecting under one of the stack clamps, by which they are held in close electrical contact.

It is desirable and, practically, necessary to guard or shield these condenser plate lugs or extensions from rough handling or accidental blows, etc., as the metal is very thin. This is usually accomplished by causing the stack clamp to entirely enclose the lugs but results in objectionably extending the clamp somewhat beyond the end of the stack proper to accommodate the bulge formed at the edge where the lugs are bent one over the other. As the capacity of these condensers is varied by using a greater or smaller number of plates, the extent to which the stack clamp will be offset by being bent around the plate lugs, will also vary, making it difficult to design an effective machine for applying the clamps.

To avoid this difficulty, I employ reinforcing plates sufficiently oversize, as compared to the condenser plates, to permit notches 7, to be formed at each end to accommodate the bend of the lugs. This enables the clamps to be snugly fitted to the reinforcing plates and insures uniformity in the size of the clamps of condensers of this type for all capacity values.

In small fixed condensers, such as here shown, it is important to firmly and securely clamp the stack assembly, particularly, around the edges, where damage is likely to short circuit the plates.

In meeting this requirement, I provide twin clamps, 8, 8, arranged in parallel rela-

tion to encircle the stack assembly and protect both sides thereof and the edges. As shown, the clamps are secured by rivets 5, which pass through the clamps and the stack assembly, clear of contact with the condenser plates, which, as above pointed out, are notched to provide such clearance.

In addition to these two pressure points, the construction of the clamp employed is such as to provide four additional pressure points, making six in all.

Each clamp consists of two members 10 and 11, one of which is provided with upturned ends 12, designed to be bent over to engage the ends of the cooperating member and form a continuous band or strap, which completely encircles the stack. The four additional pressure points, referred to above, are formed where the lugs of one member of the clamps is bent over to engage the ends of the other member thereof.

To facilitate mounting the condenser and also to provide for readily connecting a grid leak or other resistor unit in parallel therewith, lugs such as shown at 13, or 14, and spring clips 15, are formed in part with one of the members of each clamp.

Having thus described my invention, what I claim is:

A fixed condenser comprising a stack of alternately arranged conductive and dielectric sheets, pressure plate members on opposite ends of said stack, one of said pressure plate members being provided with diametrically opposed edge recesses, lugs contiguous with each of said conductive sheets, the lugs of the sheets of the one polarity being folded over said last mentioned pressure plate member and within the recesses at one end of said plate member, while the lugs of the sheets of the opposite polarity are folded over said last mentioned pressure plate member in the recesses at the other end of said plate member, and U shaped clamp members disposed about said lugs at opposite ends of the stack for subjecting said stack to pressure and establishing connection with the conductive sheets of said condenser.

ARTHUR MOSS.