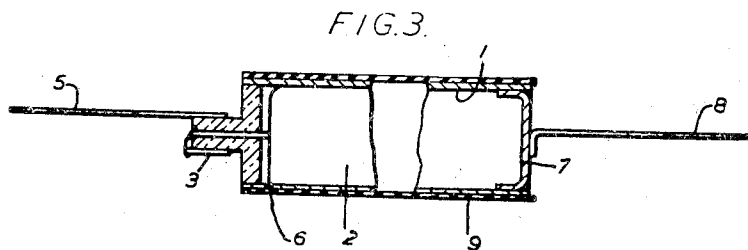
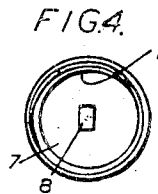
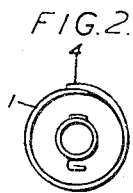
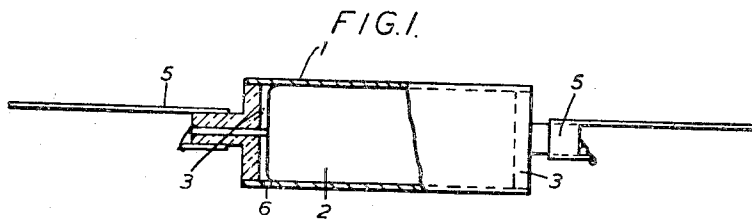


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R. M. BARNARD
ELECTRICAL CONDENSER
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2,452,540



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UNITED STATES PATENT OFFICE

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ELECTRICAL CONDENSER

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4 Claims. (Cl. 174-77)

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This invention relates to tubular electrical condensers for tropical use.

According to the invention the condenser casing comprises a rolled metallic tube made of hard brass or other springy metal and having an overlapping soldered seam, the ends of the tube being closed by annular end caps. One or both of the end caps may be made of ceramic material in which case the surface adjacent the tube is coated with silver to permit the making of a soldered joint.

The objects and advantages of the invention will be pointed out in the following detailed description.

Two examples of condensers according to the invention are illustrated in the accompanying drawing in which:

Figure 1 is a side elevation partly in section of one embodiment.

Figure 2 is an end elevation.

Figure 3 is a side elevation partly in section of a second embodiment, and

Figure 4 is an end elevation.

Referring first to Figures 1 and 2 the casing for the paper condenser unit 2 which may be of any suitable construction comprises a pair of ceramic end caps 3 and a tubular metal case 1 consisting of a rolled tube with an overlapping side seam 4. The tube 1 may for example be made of springy brass. The leads from the condenser unit 2 pass through holes in the end caps 3 and are soldered to clench type terminals 5 of the kind disclosed in the copending application of R. M. Barnard and R. J. M. Andrews bearing Serial No. 717,137, and filed December 19, 1946, and is fitted onto the cylindrical extension of the end caps 3. A filling hole 6 is provided in the tube 1. The edges of the ceramic end caps 3 are silvered where the ends of the tube 1 overlap them and the joints at these places are soldered. The overlapping seam 4 in the tube 1 is also soldered.

An unimpregnated condenser unit 2 may be used and the case may be subjected to an air pressure test before it is filled with petroleum jelly or other suitable medium through the hole 6 which is afterwards sealed.

In the modified construction shown in Figures 3 and 4 only one ceramic end cap 3 and one insulated terminal 5 are employed. At the other end the tube 1 is closed by a pressed metal end cap 7 which is soldered into it. A terminal 8 is brazed or welded to the cap 7. Since in this construction the tube 1 constitutes one terminal of the condenser it is surrounded by an insulating sleeve 9.

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The condensers according to the invention have the following advantages resultant upon the use of the rolled tube 1 with the overlapping side seam.

(1) It enables the manufacturing tolerances on both the ceramic end cap or caps and the tube to be widened, since the tube is formed up to be slightly smaller in diameter than actually required and can open out to fit the cap or caps. The wide limits permitted on the ceramic end caps enables them to be made as "wet pressings" with a considerable reduction in tool and manufacturing costs.

(2) The springy nature of the tube enables the condenser to be completely assembled with its paper condenser unit, ceramic end plates and terminals and then soldered in one operation. This may permit the complete assembly to be soldered by dipping it in a bath of molten solder.

What is claimed is:

1. An electrical condenser comprising a condenser unit surrounded by a casing consisting of a pair of end caps and a rolled metallic tube having an overlapping axial soldered seam said end caps being overlapped by said tube at the extremities thereof and being soldered thereto.

2. An electrical condenser according to claim 1 in which both said end caps are made of ceramic material and are provided with a silver coating on those portions of their surfaces where a soldered joint is made with the said tube.

3. An electrical condenser according to claim 1 in which one of said end caps is made of metal and the other of ceramic material and said tube is surrounded by a sleeve of insulating material.

4. An electrical condenser comprising a casing formed of a rolled metallic tube made of springy metal and having an overlapping soldered seam, and a pair of end caps, which close the respective ends of said tube, at least one of said end caps being of ceramic material.

R. M. BARNARD.

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