

J. H. GRAVELL.
METHOD OF SECURING TOGETHER HEAVY STEEL PLATES.
APPLICATION FILED JULY 26, 1918.

1,296,651.

Patented Mar. 11, 1919.

Fig. 1.

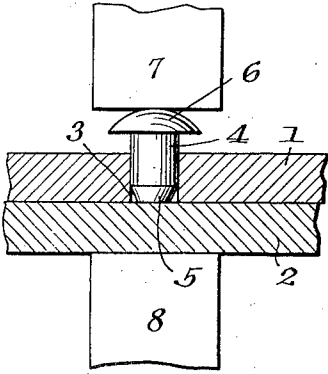


Fig. 2.

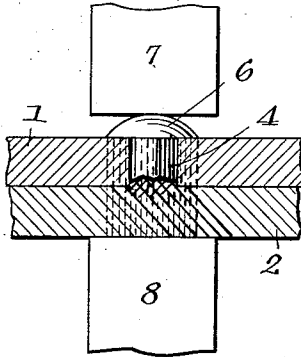


Fig. 3.

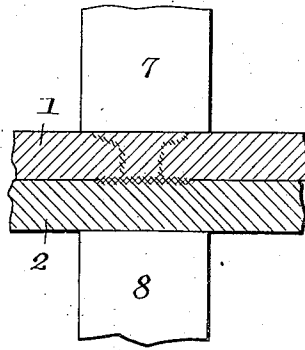


Fig. 4.

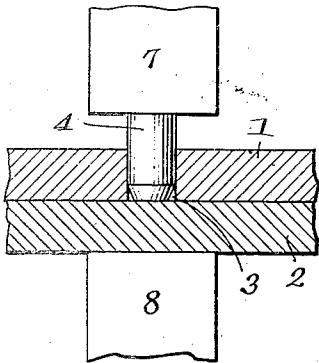


Fig. 5.

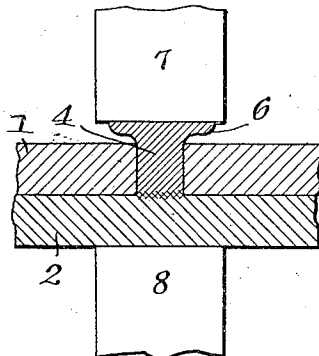


Fig. 6.

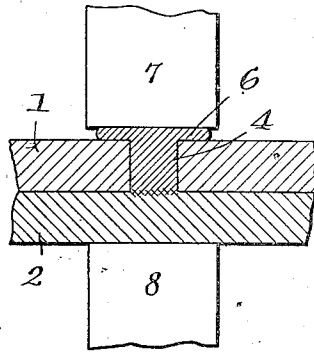
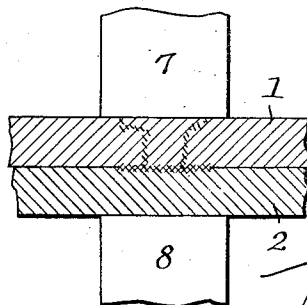


Fig. 7.



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GEORGE L. GRISWOLD, OF BROOKFIELD, ILLINOIS, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CONTAINER FOR ELECTRICAL APPARATUS.

1,296,653.

Specification of Letters Patent.

Patented Mar. 11, 1919.

Application filed December 18, 1916. Serial No. 137,718.

To all whom it may concern:

Be it known that I, GEORGE L. GRISWOLD, a citizen of the United States, residing at Brookfield, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Containers for Electrical Apparatus, of which the following is a full, clear, concise, and exact description.

This invention relates to containers for electrical apparatus and the like, and more specifically to a container suitable for a condenser.

It has for its object a container which is economical to manufacture and which affords protection from mechanical injury and from change in electrical constants due to the entrance of moisture or the effects of temperature changes or rough handling.

A further object is to provide a means for mounting, whereby a condenser or the like may be quickly and easily mounted or removed without resorting to mounting straps, simply by the tightening or loosening of mounting screws.

It oftentimes becomes desirable to mount condensers in places to which access is difficult; especially is this true in the case of condensers used in the circuits of subscribers' telephone stations. Since in the design of these telephone stations it is the general practice to make the apparatus as compact as possible, the condenser is often located without considering the difficulty of mounting. Again, while the condition may be such that little or no trouble is experienced when originally mounting the condenser in the telephone set, the mounting of the other apparatus makes it difficult later to remove this condenser, should occasion arise, without disturbing the other apparatus or the wiring of the set.

As the necessity for replacing condensers is of common occurrence due to changing over the apparatus for a different type of service, necessitating a condenser of different capacity, or due to the condenser becoming defective as the result of lightning discharge, etc., there is a demand for a more flexible method of mounting than is possible with the type of mounting straps commonly used. There are two types of condenser mounting straps in common use, a U-shaped strap, the span of which is the width of the condenser can, and a straight strap

slightly longer than the condenser. With both types, it usually is necessary to entirely remove the mounting screws when removing the condenser and it is difficult to locate the screw holes when mounting the replacing condenser. There is also a possibility in connection with these types of mounting straps of exerting too great a pressure on the mounting screws and injuring the condenser seals.

To accomplish the object stated and to eliminate the difficulty occasionally experienced in the mounting of condensers, particularly those mounted in subscribers' telephone sets, this invention provides a condenser having an improved metal container so constructed that it can be easily removed by simply loosening the mounting screws, and any pressure exerted on the mounting screws cannot injure the condenser unit or its seal.

This invention will be better understood by referring to the accompanying drawing in which Figure 1 is a perspective view of the proposed condenser mounted on a section of wood work and Fig. 2 is a top view showing more clearly the method of mounting. The condenser after being wound and treated in a standard manner as described, for example, in Pruessman Patent No. 1,127,513 of February 9, 1915, or in any other similar manner, is placed in the metal container 1, which is closed at both ends but open at the back. One end is provided with perforations equipped with eyelets 2, which may be separate parts or may be embossed out of the stock of the container, and through those eyelets are brought out the flexible leads 3 for connecting the condenser unit in the circuit. These leads fit snugly in the eyelets and preferably are equipped with spade terminals 4 to facilitate making circuit connections. After the condenser unit is properly located in the container, connections are made between the flexible leads and the terminal strips connected to the condenser plates and an insulating compound which solidifies at ordinary temperatures is poured into the container extending above and completely surrounding the condenser unit and its terminals. The side edges of the container 1 are bent outward at right angles to form lips or flanges 5, which are engaged by lugs 6 of the cover plate 7, formed in the shape of slots. After the cover

plates and the rivet blank are united together by a homogeneous weld as indicated in Fig. 3.

Instead of initially providing the rivet blank with a head to act as a slug or button to transmit the current and pressure direct through both plates in the intermediate stage of the process, the rivet blank may in the initial stage be a straight shank without a head as indicated in Fig. 4.

In this case the flow of current from one block to the other through the work and the application of pressure causes the outer end of the rivet blank 4 to mushroom and form the head 6 as indicated in Fig. 5 and the current and pressure continuing, the head seats on the plate 1 and acts as in the previously described case to localize the current and pressure in the meeting surfaces of the plates and effect a welding thereof as previously described and as indicated in Fig. 7.

It will be understood that my invention is not limited in any manner except as may be specified in the appended claims.

What I claim as my invention is:

1. The method of securing two members together, consisting in providing a perforated member, passing a rivet blank through said member and into contact with the other member, electrically welding said blank to the second named member, continuing the current and pressure until the head of the rivet engages the perforated member and thereafter to cause the head to act as a slug or button to weld the three members together.

2. The method of securing two members together, consisting in providing a perforated member, passing a rivet blank through said member and into abutted contact with an imperforate surface of the other member, electrically welding said blank to the imperforate member, forcing the rivet head into contact with the perforated member and

passing the heating current and pressure through the members in line with said head to cause the plates to weld direct to each other.

3. The method of securing two members together, consisting in providing one member with a perforation, superposing the members, inserting a rivet blank through the perforation and into contact with an imperforate surface of the other member, electrically welding said rivet to the imperforate member and continuing the current and pressure after the rivet head has become seated to cause the three members to weld together.

4. The method of uniting two plates, consisting in providing a perforated and an imperforate plate, inserting a rivet blank through a perforation in one plate and abutted against the other plate, electrically welding the blank to the imperforate plate and at the same time causing the outer end of the blank to mushroom over on the outer surface of the perforated plate and continuing the current and pressure to weld the plates direct to each other.

5. The method of uniting plates, consisting in superposing a perforated and an imperforated plate, inserting a rivet blank through the perforated plate and into abutted contact with the other plate, electrically welding the blank to the imperforate plate while at the same time causing the blank to mushroom and form a head on the outside of the plate and thereafter continuing the current and pressure to cause the plates to be welded direct to each other by means of said head.

Signed at New York, in the county of New York and State of New York, this 25th day of July A. D. 1918.

JAMES H. GRAVELL.

Witnesses:

F. B. TOWNSEND,
F. E. ROESLER.