July 5, 1932. A. NYMAN 1,865,640

ELECTRICAL CONDENSER

Filed June 24, 1926

Fig. 1

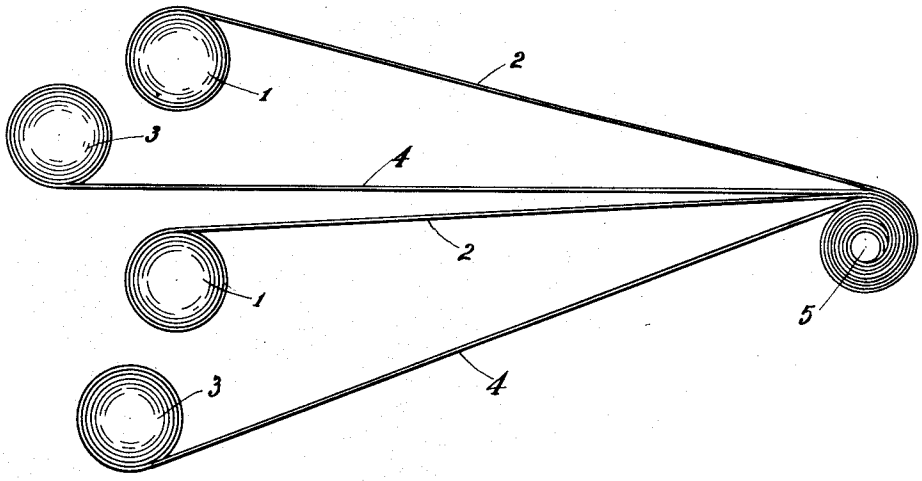


Fig. 2

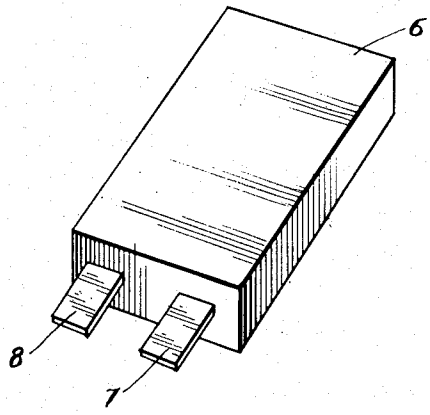
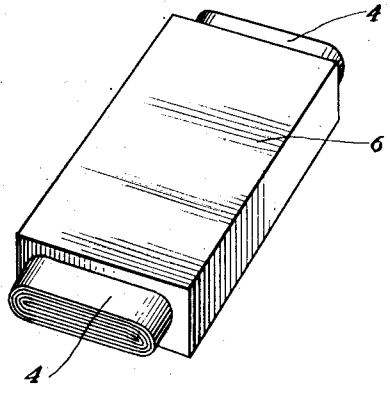


Fig. 3



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UNITED STATES PATENT OFFICE

ALEXANDER NYMAN, OF NEW YORK, N. Y., ASSIGNOR TO DUBILIER CONDENSER CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

ELECTRICAL CONDENSER

Application filed June 24, 1926. Serial No. 118,310.

This invention relates to improvements in electrical condensers, particularly electrical condensers which are made by rolling or winding conductive elements separated by insulation, into a compact body to be given the required size and shape.

An object of my invention is to provide an electrical condenser which can be produced by winding sheets of metal foil separated by insulation in the form of sheets of rubberized cloth. Paper is frequently employed in condensers of this description and I find that by the substitution of rubberized cloth, the insulation losses of the condenser can be reduced and a superior condenser is afforded.

The nature of the invention will be clear from the following description together with the accompanying drawing which shows one or more ways in which the invention can be practiced; but the disclosure is, of course, explanatory only, and I reserve the right to make changes without departing from the principle of the invention to the full extent indicated by the broad and general meanings of the terms in which the appended claims are expressed.

In the drawing,

Figure 1 is a side view showing how a condenser can be made up according to my invention, and

Figures 2 and 3 show types of such condensers in finished form.

In practice, rubberized cloth, which may be muslin covered with rubber in uncured form, is wound up on reels 1 from which the rubberized cloth in the form of sheets is drawn as indicated at 2.

The numerals 3 in Figure 1 indicate similar rolls or reels of metal foil in the form of sheets or strips 4. The rolls 1 alternate with the rolls 3 so that the sheets or strips of metal foil with the insulating cloth between them can be secured to a rod and wound up thereon; one of the strips of 4 being the innermost layer, with the insulation between the foils, and a strip or sheet 2 of insulation being wound up on the outside of the body of the condenser on the rod 5.

The cloth 2 with the rubber thereon uncured can be employed for the reason that the rubber can be vulcanized after the condenser is finished, provided the metal foil 4 will stand the necessary temperature. Of course, as many sheets of foil and sheets of cloth will be included as required to give the condenser the necessary capacity.

A condenser of this type may be formed by winding or rolling in the usual way now employed to produce rolled or wound condensers. When sufficient metal foil and rubberized cloth is wound upon the rod 5, the strips are cut and the body of the condenser on the rod is removed and finished. In the course of finishing, it may be pressed to impart to it the shape shown in Figure 2 and part of the sheets of foil 4 of one polarity will be connected to one terminal 7, projecting out of the body of the condenser 6; and the sheets of foil 4 of opposite polarity will be joined to a similar projecting terminal 8.

If desired, the condenser may be so wound that the edges of the sheets of foil project at opposite ends, as indicated in Figure 3, so that the terminals of a circuit in which this condenser is to operate, can be attached to the projecting edges of the rolled sheets 4.

By the inclusion of rubberized cloth instead of paper I secure an insulating material which has a higher dielectric constant than paper, is more durable than paper and makes the losses in the condenser smaller.

In practice the rubberized cloth will be wound up to a slight extent on the rod 5 before the winding of the sheets of foil 4 commences. This method will cover the rod 5 with the rubberized cloth 2 before the winding of the sheets of foil 4 begins thereon and thus the ends of the sheets 4 are properly insulated in the condenser.

When the condenser is finished by vulcanization after the body thereof has been rolled and given its final form, it becomes a solid compact mass without moisture, recesses, or air-pockets therein.

Having described my invention, what I believe to be new and desire to secure and protect by Letters Patent of the United States is:—

1. A condenser comprising armature elements separated by a sheet of fibrous insulat-

ing material, and having a filler of rubber comprising in combination with said fibrous materal dielectric means for the condenser.

2. A condenser comprising a roll of foils of opposite polarity separated by strips of insulating fabric, and a rubber filler permeating said insulating fabric and the interior of the condenser body and comprising in combination with the fabric dielectric means for the condenser.

3. A condenser comprising a roll of foils of opposite polarity separated by strips of fibrous insulating material, and a rubber filler permeating said insulating material and the interior of the condenser body and comprising in combination with the fibrous material dielectric means for the condenser, the rubber being vulcanized to form an integral unit.

In testimony whereof I affix my signature.

ALEXANDER NYMAN.