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M. F. H. GOUVERNEUR ET AL

1,733,729

METHOD OF CASTING LINK TYPE INSULATORS

Filed Dec. 11, 1924

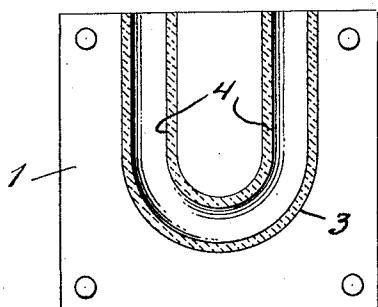


Fig. 1.

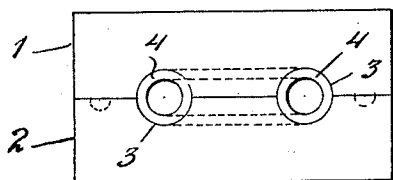


Fig. 2.

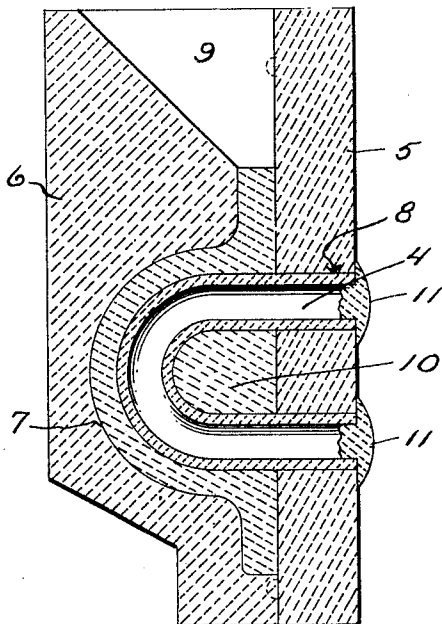


Fig. 3.

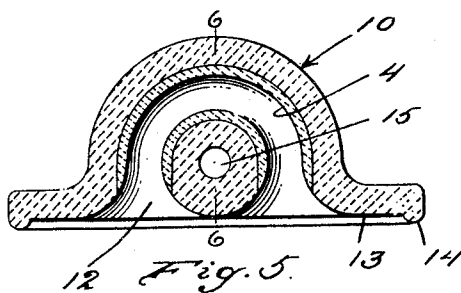


Fig. 5.

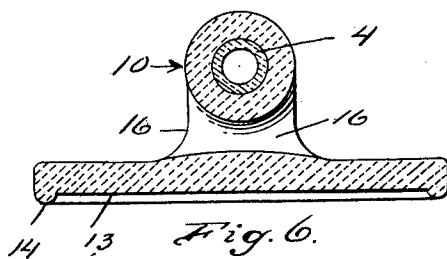
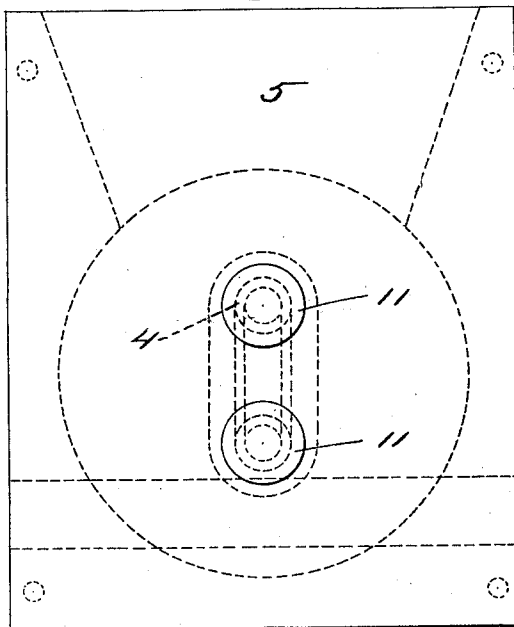


Fig. 6.

Fig. 4.



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METHOD OF CASTING LINK-TYPE INSULATORS

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This invention relates to a method of molding or casting insulators of the link type.

The principal object of the invention, generally stated, is to provide a novel method of casting link type insulators so that the puncture distance may be greatly increased over this type of insulator when formed from plastic clay in the usual manner, and at the same time to avoid the many disadvantages of the unequal drying of porcelain clay of different thickness.

Insulators of the general type mentioned have been almost universally formed by subjecting plastic porcelain clay to pressure in a centering press, but the difference in the rate of drying of unequal thicknesses of clay has necessarily limited the product so formed to very small variations in thickness and hence limited this spacing of the parts of opposite potential to a minimum. Numerous efforts have been made to cast insulators of this type but have for the most part been unsuccessful since heretofore no method has been devised by which the opening could be formed in the insulator without detriment to the finished insulator.

The object of the invention, more particularly stated, is to provide a method of making a link type insulator by casting it about a previously made hollow core element in such position within a suitable mold of a porous nature that substantially all the surfaces will be in contact with the walls of the mold at the same time and consequently dry uniformly, thus avoiding unequal strains. After the casting has dried to the so-called leather-dry state it is removed from the mold and drilled or otherwise formed with a hole concentric with the bight of the U-shaped core element to define a link, and the other finishing steps, such as shaping the surfaces, dressing out of the holes and the entrances to the core member, are performed.

To the attainment of the foregoing and other objects and advantages, the invention consists in the various steps and the utilization of the mold members to be hereinafter more fully described and pointed out in the claims hereunto appended.

In the drawings:

Figure 1 is a face view of one section of a split mold for forming the U-shaped tubular core element, the cast core being shown in section.

Figure 2 is a plan view of the mold assembled.

Figure 3 is a vertical section through the separable mold for forming the insulator, the core element being shown in position and the insulator body molded thereabout.

Figure 4 is an elevation looking at one side of the mold.

Figure 5 is a cross section through the finished insulator.

Figure 6 is a section therethrough on the line 6—6 of Figure 5.

Throughout the drawings like parts are designated by like reference characters.

The first step involved in the actual carrying out of the method consists in forming a U-shaped tubular or hollow core element. To accomplish this, a split mold shown in Figures 1 and 2 is employed, this mold including similar sections 1 and 2 having complementary or mating U-shaped recesses or cavities 3 therein which define a U-shaped passage when the sections are assembled and held by any desired means, not shown. The plastic material, such as porcelain clay in a fluid state, is poured into this mold and is allowed to stand for a sufficient length of time to permit it to solidify to the desired thickness at the area of contact with the mold, after which the still fluid center of the mass is poured out. The result is the formation of a U-shaped tube 4, which is permitted to set until it may safely be removed from the mold without distortion. While we have, to clearly illustrate the invention, shown the tube 4 as a separate element in the finished insulator, it will be understood that such is not the case and the tube and insulator core are in reality one.

The second step involves the employment of a mold including members 5 and 6, the latter of which has a cavity 7 therein corresponding in shape to the top of the insulator, and the former of which is plane and formed with a pair of spaced holes 8 of suf-

ficient size to receive the ends of the above described U-shaped tube or core 4. If there are any spaces about the tube ends, such gaps or spaces may be plugged, from either side, with wet clay or other similar material to avoid leakage at the joints. If desired or essential, a centering device or other means may be utilized for holding the tubular core in the proper position, though such is not illustrated. The mold sections or members 5 and 6 are placed together, or assembled, and held by any conventional or preferred means, as is customary in the molding or casting art.

To form the insulator, porcelain clay in a fluid state, or other suitable plastic material, is introduced through the gate 9 and will naturally flow into the cavity 7 and mold itself about the tube to form the piece or body indicated at 10. It is preferable that the gate be of sufficient size that only one filling will be necessary. The fluid or plastic material dries first wherever it comes in contact with the mold, while the center of the piece remains quite soft or even possibly semi-liquid for a time and is filled, as shrinkage takes place, from the surplus contained within the gate.

Ordinarily, the ends of the tube 4 may be left open and as the tube is porous it will conduct away the moisture and dissipate it into the atmosphere, thereby assisting the molded piece in drying at its thickest portion, the center. Should it be found advisable to check or prolong the drying, the ends of the tube may be plugged with wet clay as indicated at 11. If a quicker setting is desired, a forced draft may be introduced through the tube 4 by any suitable means. Attention is directed to the fact that as the fluid material sets almost instantly wherever it contacts with the mold, the joints therein will be filled and effectually sealed. As both sides of the piece which constitute the top and bottom surfaces of the insulator engage the mold at the same time, it is evident that the setting will be uniform so that stresses and strains from unequal drying will be entirely avoided. We have also found that the fluid material enters the pores of the tube and causes such an intimate union or amalgamation therewith that the tube becomes an integral part of the whole.

After the piece has set to a sufficient extent it is removed from the mold and the projecting ends of the tube 4 sheared off. If, during setting, the ends of the tube should shrink together no objectionable results would occur as these ends are to be severed any way. After drying in any ordinary or preferred manner, the entrances to the tube are dressed out in a funnel-shape, as shown at 12 in Figure 5, and the under surface of the piece is dressed off as for instance as illustrated at 13, or treated to have any specific shape preferred, though it is intended that a water drip 14 be provided at the outer edge.

After the piece has been partially dried, a hole 15 is drilled, punched or otherwise formed concentric with the bight portion of the tube 4 and at right angles to the plane thereof, and the ends of this hole are reamed or dressed out in a funnel-shape, as shown at 16 in Figure 6. It will be observed that the hole formed by the tube 4 is a full semi-circle whose center coincides with the center of the hole 15. The shape of the dressed hole 15 with its funnel-shaped ends 16 is such as to provide a semi-circular area where contact occurs between the porcelain and the connecting link, not shown, with which the insulator is associated.

We claim:

1. The method of making a link insulator, consisting in forming a porous tubular core element having spaced arms connected by a curved bight portion, and molding an insulator body about the core, the core element having its ends projecting beyond said body and open to serve as a drying flue.

2. The method of making an insulator consisting in forming a substantially U-shaped tubular porous core element, and molding the insulator about said core element, the ends of the latter being exposed and open whereby it may be utilized as an air flue for drying the center of the piece.

3. The method of making an insulator, comprising forming a curved tubular porous core, casting the insulator body about the core with the ends of the core exposed, and controlling passage of air through the core for regulating the rate of drying of the cast material.

4. The method of making an insulator comprising forming a porous tube and casting the insulator body about the tube with the ends of the tube exposed whereby the tube serves as a flue having controllable communication with the atmosphere whereby the rate of evaporation of moisture passing through the walls of the tube from the cast material may be regulated.

5. The method of making an insulator comprising forming a tubular core of porous material, casting the insulator body about said tube with the ends thereof exposed to the atmosphere, and creating a forced draft through the tube for facilitating evaporation of moisture passing from the cast material through the wall of the tube.

In testimony whereof we affix our signatures.

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