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FORM VARNISH DIE

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My invention relates to a die to be used in the operation of applying coating of insulation to a wire and more particularly to the construction of a die for use in the coating of the smaller size wires with a varnish insulation or the like, and has for its object the design of a structure that will eliminate all hand work in its manufacture as all of the die parts can be stamped and assembled by machine.

Another object of the invention is to produce a die that will be more simple to manufacture and to assemble over similar dies now on the market.

In the processing of fine or small wires, the weight of the die is a limiting factor for its use. By using the novel arrangement of fastening the side plates to the base, proper spring tension of the plates at the crown is assured, making it possible to use a much thinner stock thus developing a much lighter die which is very necessary in the application of this die in the spreading of the insulation on the small sizes or wires.

The novel construction also produces a die of known and definite flexibility which will insure a longer life for the dies.

The foregoing and other features of my invention will now be described in connection with the accompanying drawing forming part of this specification in which I have shown my die in its preferred form after which I shall point out more particularly in the claims those features which I believe to be new and of my own invention.

In the drawing:

Figure 1 is an enlarged side view of my die after lapping of the crown.

Figure 2 is a side view of my die at right angles to that shown in Figure 1.

Figure 3 is an end view of my die, looking down from top of Figure 2, showing the crown opening, through which the wire passes.

Figure 4 is an assembly view similar to that shown in Figure 1 before peening of sides of the base.

Figure 5 is an assembly view similar to that shown in Figure 4 after peening of sides and prior to lapping of crown as shown in Figure 1.

Figure 6 is an enlarged view of a section of the adapter, showing three of my dies supported ready for use.

Figure 7 is a diagrammatic sketch of an enameling tower, showing the die as used in the coating of wire with enamel.

In carrying out by invention I employ a die base 11 preferably made of aluminum either die

cast or an embossed stamping. The base is provided with two bezel sides 12 parallel to each other and having centrally located a lug 13 or support extending beyond the bezel.

I assemble with this base two side plates 14, preferably made of phosphor spring bronze as shown in Figure 4. These may be die stamped with a slot 15 adapted to snugly fit over the lug 13. In the crown 16 a hole 17 is provided through which the wire passes after being dipped in the insulation. It will be noted that the crown is longer than it will be in its final shape thus preventing the plates 14 from snugly fitting the sides of the bezel 12. The tip of the lug 13 is then peened drawing the spring sides home in the bezel, all as shown in Figure 5. The crown is then lapped to bring about the required spring tension in the side plates so that they will press against each other with a predetermined pressure.

In use my die is supported as shown in Figure 6 on a comb or arbor 20 carrying teeth 21, a pair of which being adapted to enter between the side plates of the die. Each side plate is provided with a projection 18 which limits the movement of the die on teeth 21.

It will be observed that the novelty of my die is in its construction which permits its parts being stamped and assembled by machine without any change of temper in the spring sides by the drawing of the temper. By using the arrangement of peening the side plates to the base, the original spring tension is retained, thus making it possible to realize a longer life for the dies. This also makes it possible to use a much thinner material for the side plates which reduces the weight of the die, making it suitable for use over a larger range of wire sizes in the smaller brackets.

My die is used in any manner now common to the trade where wire is coated with a varnish type insulation. In Figure 7, I show diagrammatically shuch a drying tower hooked up to insulate a wire in which 31 is the let off reel containing wire 32 to be insulated. The wire is reeved several times over sheaves or drums 33 passing through one side of a tank 34 which contains the substance with which the wire is to be insulated. Directly after the wire is passed through the coating material it passes through the die which is held on the teeth 21 of the comb or arbor 20. As the wire passes through the heating tower 36 it dries and is wound up on a take off reel 37.

I wish it distinctly understood that my form varnish die herein described and illustrated is