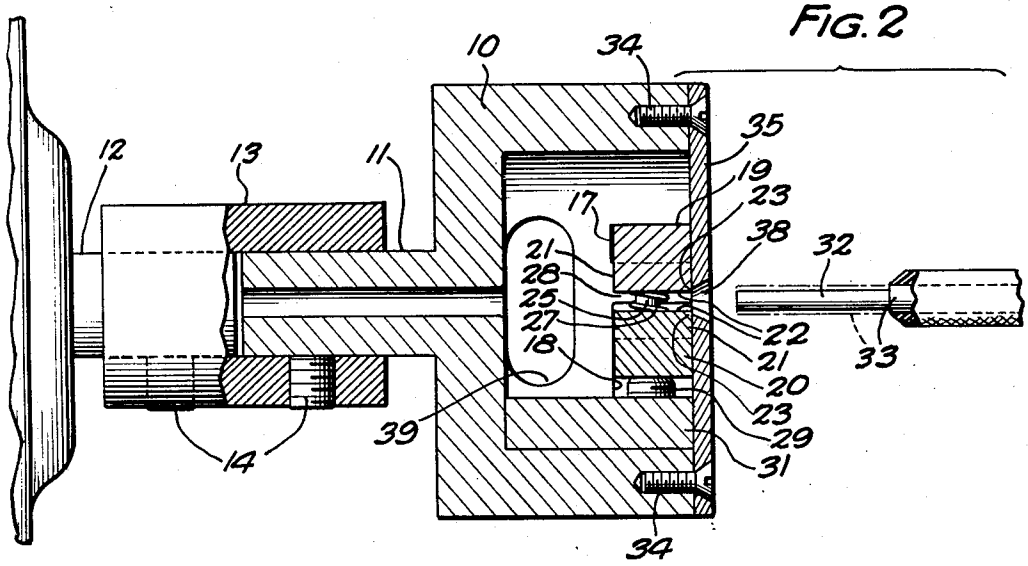
Nov. 14, 1950 J. F. BARTUSEK 2,530,219

DEVICE FOR REMOVING AN INSULATING COATING FROM COATED WIRE

Filed June 10, 1944

FIG. 2



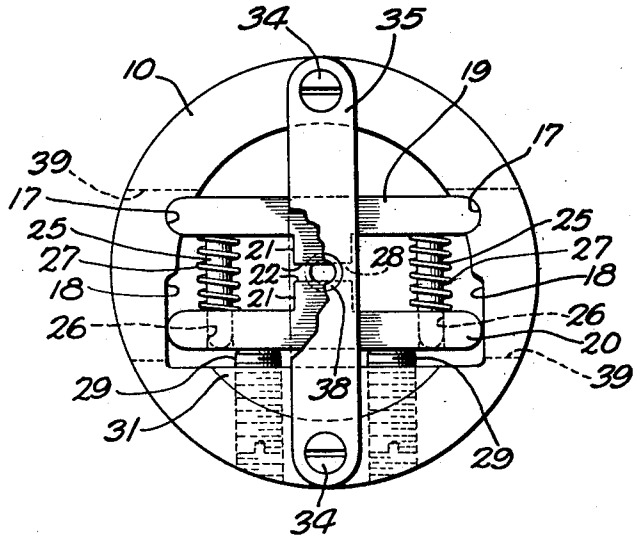


FIG. 1

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DEVICE FOR REMOVING AN INSULATING COATING FROM COATED WIRE

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5 Claims. (Cl. 15—3)

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This invention relates to devices for removing an insulating coating from coated wire and more particularly to a rotary type device for removing an outer insulating coating from multiple coated wire.

An object of this invention is the provision of a simple and practicable device for efficiently removing an outer insulating coating from multiple coated wire without removal or injury to the adjacent coating.

In accordance with the above object, the present invention, in one embodiment thereof, as applied to the removal of an insulating enamel coating from tin coated wire, comprises a rotary cup-shaped head, coupled to and driven from a high speed motor shaft, the head carrying therein two steel spaced plate-like members having laterally extending aligned portions with parallel smooth and adjacent faces having a normally fixed spacing therebetween for engaging the coated wire at opposite peripheral portions, one at each side of the rotary axis of the head and extending at right angles thereto. One of the members is removably held in a fixed position and the other member is adjustable to and from the companion member, springs arranged between the members maintaining them in their predetermined spaced relation and such space between the opposed faces of the members which frictionally engage the coated wire being predeterminedly less than the diameter of the wire with the coatings thereon. A plate attached to a forward annular end face of the head and extending at right angles to the plate-like members serves to maintain the members in lateral position thereon, the plate being provided with a tapered aperture coincident with the axis of the head for guiding the manually inserted wire to and into the space between the plate-like members. In operation, the end of the wire previously skinned of fabric insulation is inserted into the guide aperture, whereupon the coating first engages the opposed outer edges of the revolving plate-like members, and then into the space between the members and then withdrawn and, by shearing and frictional action upon the enamel on the wire, the enamel is removed from the wire without injury to the tin coating.

Other objects and advantages of this invention will more fully appear from the following detailed description taken in conjunction with the accompanying drawing, in which

Fig. 1 is a front elevation, partly broken away, of a device embodying the features of the invention for removing an insulating coating from coated wire, and

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Fig. 2 is a central vertical section through the device of Fig. 1, showing a wire with the insulating coating removed after insertion and withdrawal from the device.

Referring now to the drawing in detail, 10 indicates a cup-shaped member having a hollow central spindle 11 at its left end, which is attached directly to a motor shaft 12 by means of a sleeve coupling 13 and set screws 14. The inner peripheral face of the cup-shaped member 10 at opposite sides of the longitudinal axis thereof is formed with sets of depressions 17 and 18. Closely fitted in the depressions 17 are opposite ends of a plate-like member 19 and slidably fitted in the depressions 18 for movement to and from the member 19 is a plate-like member 20. Each of the members 19 and 20 is provided intermediate its ends with projections 21 having parallel and smooth opposed faces 22 and opposed outer edges 23, which, in the operation of the device, lie in the path of the coating on the wire. Since the member 19 is held in a fixed position at one side of the longitudinal axis of the cup-shaped member, the face 22 thereof is likewise predeterminedly arranged in fixed position thereat. Fixed to the member 19 adjacent its opposite ends are pins 25 having their outer ends slidably fitted in apertures 26 in the member 20. Surrounding the pins 25 are coiled compression springs 27, which abut at opposite ends the opposed faces of the fixed and slidable members 19 and 20, respectively. In order to maintain a predetermined spacing 28 between the opposed, parallel and smooth faces 22 of the members 19 and 20 and to take up for wear on the faces, within certain limits, a pair of adjustable micrometrically threaded screws 29 are threaded through the wall of the cup-shaped member 10 and an insert piece 31 fixed in a suitable manner to the inner peripheral face of the member. The inner ends of the screws 29 bear against the outer flat face of the slidable and adjustable plate-like member 20 and serve as stop members therefor which, due to the action of the springs 27, are held in constant engagement with the screws and thus the normally fixed space 28 between the faces 22 is maintained in the operation of the device. With this arrangement, the space 28 between the opposed parallel and smooth faces 22 of the members 19 and 20 may be micrometrically adjusted for a particular diameter of a wire 32 having an insulating enamel coating 33 thereon which is to

be removed from its end. The space 28 between the faces 22 should be equal to the diameter of the wire 32 including its tin coating so that only the enamel coating 33 will be removed without injury to the tin coating. To the outer or forward annular end face of the cup-shaped member 16 is centrally fixed, by screws 34, a plate 35, which is disposed at right angles to the members 19 and 20 and which serves to retain the members from moving laterally out of their respective depressions 17 and 18 in the operation of the device. The plate 35 is formed with a tapered aperture 38, which is coincident with the rotary axis of the member 16 for the purpose of guiding the end of the wire 32 into the space 28 between the faces 22 of the members 19 and 20. Diametrically opposite slots 39 are formed in the circular wall of the member 16 at its inner end, through which the removed insulating coating 33 may pass by centrifugal action to prevent too great an accumulation thereof in the member 16.

In using the device above described and assuming that the space 28 between the faces 22 of the members 19 and 20 has been determined and adjusted to provide a normally fixed space for the particular diameter of the enamel insulated wire to be operated upon and that the cup-shaped member is being continuously driven at a high rate of speed, the end of the fabric insulation stripped wire 32 is inserted for a suitable distance through the tapered guide aperture 38 of the plate 35 and pressed into the space 28 between the revolving faces 22 of the members 19 and 20 and then withdrawn. Due to a shearing action of the opposed outer edges 23 of the members 19 and 20 upon the insulating enamel coating 33 as the coated wire is advanced thereagainst and the frictional engagement thereafter of the parallel smooth faces 22 of the members which, as hereinbefore described, are revolving at a high rate of speed, with the enamel coating, it is completely removed from the wire without removing or marring the tin coating thereon.

What is claimed is:

1. A device for removing an insulating coating from a wire by shearing and frictional action comprising a rotary head, a pair of members having a normally constantly fixed operating space between plane wire engaging parallel faces thereof carried by said head, adjustable means for positively limiting a radial outward rectilinear movement of one of said members to provide said fixed space between said members, the other member being fixed, means for yieldably urging said movable member toward said limiting means, and means for rotating said head on an axis passing through the space between said faces.

2. A device for removing an insulating coating from a wire by shearing and frictional action comprising a rotary head, a pair of members having a normally constantly fixed operating space between plane wire engaging parallel faces thereof carried by said head, adjustable means for positively limiting a radial outward rectilinear movement of one of said members to provide said fixed space between said members, the other member being fixed, means for yieldably urging said movable member toward said limiting means, means for rotating said head on an axis passing through the space between said faces, and means for guiding an insulated wire between and into engagement with said faces along the axis of rotation of said head.

3. A device for removing an insulating coating from a wire by shearing and frictional action comprising a rotary cup-shaped member, a pair of plates having a normally constantly fixed operating space between plane wire engaging parallel faces thereof mounted within said member, one of said plates being fixed and the other adjustable, adjustable means for positively limiting a radial outward rectilinear movement of said movable plate to and from said one place to vary and maintain the normal operating fixed space between said faces, means for yieldably urging said movable plate toward said limiting means, and means for rotating said member on an axis passing through the space between said faces.

4. A device for removing an insulating coating from a wire by shearing and frictional action comprising a rotary cup-shaped member, a pair of plates having a normally constantly fixed operating space between plane wire engaging parallel faces thereof mounted within said member, one of said plates being fixed and the other adjustably mounted for movement to and from the other plate, a plurality of means for positively limiting a radial outward rectilinear movement of said movable plate for varying and maintaining a normal operating fixed space between said faces, means for yieldably urging said movable plate toward said limiting means, means for rotating said member on an axis passing through the space between said faces, and means carried by said member for guiding an insulated wire between and into engagement with said faces along the axis of rotation of said member.

5. A device for removing an insulating coating from a wire comprising a hollow rotatable member carrying therein a pair of spaced plates having a normally constantly fixed operating space between opposed smooth faces thereof at each side of the rotary axis of said member for frictionally engaging the insulating coating on a wire, one of said plates being fixed and the other movable to and from the other plate to vary the normal operating space between said faces, adjustable means for positively limiting a radial outward rectilinear movement of said movable plate and maintaining it in desired fixed space relation with the other plate, means for yieldably urging said movable plate toward said limiting means, and means carried by said member for guiding an insulated wire between and into engagement with said faces along the axis of rotation of said member.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
754,209	Ferguson	Mar. 8, 1904
761,634	Hungerford	May 31, 1904
762,180	Michou	June 7, 1904
1,661,180	Johnson	Mar. 6, 1928
1,722,087	Hartman	July 23, 1929
1,749,939	Heller	Mar. 11, 1930
1,784,298	Mahan	Dec. 9, 1930
1,823,989	Sanderson	Sept. 22, 1931
1,867,712	Reitzig	July 19, 1932
2,239,755	Montgomery	Apr. 29, 1941
2,349,897	Wilson	May 30, 1944