May 14, 1935. F. HENDEY 2,001,491

PROCESS OF AND APPARATUS FOR MARKING

Filed Dec. 23, 1932

Fig. 1

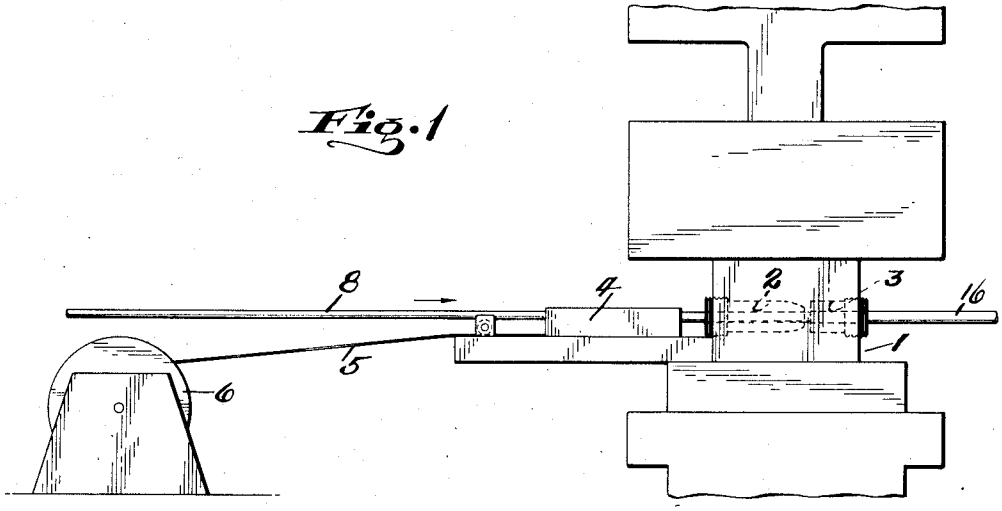


Fig. 2

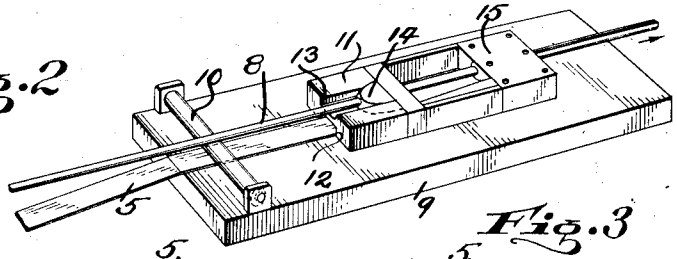


Fig. 3

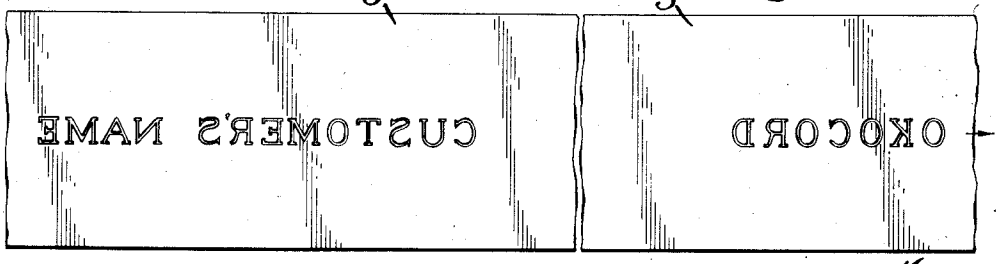


Fig. 4

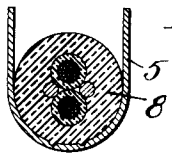


Fig. 5

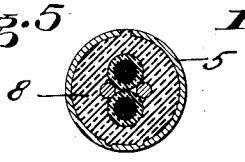


Fig. 6

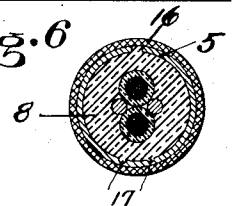


Fig. 7

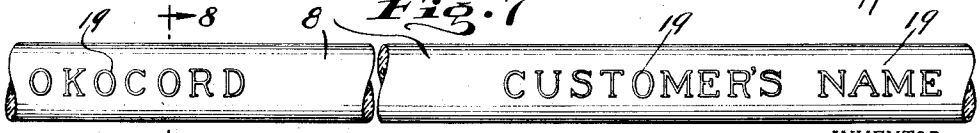
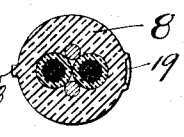


Fig. 8



INVENTOR.
Fred Hendey.
BY
Riddle, Margeson and Harnidge.
ATTORNEYS.

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UNITED STATES PATENT OFFICE

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PROCESS OF AND APPARATUS FOR MARKING

Fred Hendey, Passaic, N. J., assignor to The Okonite Company, Passaic, N. J., a corporation of New Jersey

Application December 23, 1932, Serial No. 648,568

6 Claims. (Cl. 18—13)

This invention relates to improvements in methods of and apparatus for applying markings such as trade-marks, customers' names, etc. to electric cords and cables covered with rubber or other composition, rubber hose, etc.

I am aware that attempts have been made prior to my invention to apply markings to rubber cords and cables, but such methods require special apparatus, in the nature of special lead press cores, etc. which add materially to the cost of the operation.

One of the objects of the present invention is the provision of a method and apparatus wherein changes in the lead press are unnecessary, and whereby the desired marking is applied in a single operation.

In the practice of my invention I first provide a strip, preferably a metal alloy such as lead and tin rolled to a thickness say of 12 or 14 mils. The strip is of a width slightly less than the circumference of the insulation to be marked. The strip is then passed between a pair of metal wheels the periphery of one of which is provided with the desired words, letters, characters, symbols or other identifying indicia slightly raised thereon. These letters or indicia are in the normal order of reading from left to right so that the strip in passing between the wheels will be provided with an imprint of the letters or indicia in reversed order, or in other words they will read from right to left on the strip.

The marking strip may then be rolled up on a reel ready for use and placed in juxtaposition to another reel carrying the cable to be marked. The marking strip and cable are then passed through a forming device by which the cable is enveloped in the marking strip to the extent permitted by the width of the strip, which, as above pointed out, is narrower than the circumference of the article to be marked.

The cable thus partially enveloped passes from the forming device into a lead press where a temporary lead sheath is extruded in a well known manner about the cable and strip, the temporary lead sheath being left in place until the vulcanization of the insulation has been completed after which the sheath and marking strip are removed.

In the accompanying drawing:

Fig. 1 is an elevational view of an apparatus suitable for the practice of my invention;

Fig. 2 is a perspective view of the forming device.

Fig. 3 an elevation of a section of the metal marking strip;

Fig. 4 is a sectional view showing the strip partly formed about the cable;

Fig. 5 is a sectional view similar to Fig. 4 with the metal strip bent about the cable;

Fig. 6 is a sectional view of the cable and strip after the lead sheath has been applied;

Fig. 7 is an elevational view of a section of the marked cable; while

Fig. 8 is a sectional view of the marked cable on the line 8—8 of Fig. 7.

Referring to the drawing in detail, 1 designates a lead press having the usual die members 2 and 3.

Adjacent the lead press is a forming device 4 for receiving the previously prepared metal strip 5 from a reel 6 and for receiving also the insulated cable or cord 8 as will be hereinafter explained.

The forming device 4 illustrated more or less diagrammatically in Fig. 2 comprises a base 9 carrying a guide roller 10 and block 11. The block 11 is provided with a longitudinal groove 12 for receiving the marker strip 5 and with a superimposed longitudinal groove 13 for receiving the cable 8. The groove 13 is provided with a guide member 14, the cable 8 passing through this member, while the metal strip 5 passes below. The marking strip and cable then pass into a die 15 which bends the marking strip into a U-shape about the cable as illustrated in Fig. 4.

The marking strip together with the cable formed as illustrated in Fig. 4 are fed continuously into the lead press where the forming operation is completed as illustrated in Fig. 5 and where the lead sheath 16 is applied, as illustrated in Fig. 6.

In the extruding of the sheath 16 it will be appreciated that the insulation 8 which is soft and unvulcanized is forced into the depressions forming the identifying indicia as shown at 17 in Fig. 6, and at the same time the insulation is squeezed out between the adjacent edges of the metal strip as hereinbefore mentioned, to form a longitudinal ridge 18 extending continuously lengthwise of the exterior of the insulation 8.

After vulcanization the lead sheath and the marker strip are removed, and the exterior of the insulation will bear in relief the identifying indicia 19 as well as the longitudinal identifying ridge 18 as shown in Figs. 7 and 8.

While I have described a metal alloy strip it is to be understood that I do not wish to be

limited to any particular alloy as it will be obvious that strips of other alloys or even other material may be employed.

It is also to be understood that I do not wish to be limited to the precise apparatus or method herein illustrated and described as various modifications may be made therein without departing from the spirit and scope of my invention.

What I claim is:—

1. The method of applying discontinuous markings to the insulation of electric cables, cords and the like insulated with a soft compound, which method comprises enveloping the article in a strip of smooth material having the desired discontinuous marking impressed therein in definite spaced relation and then extruding a lead sheath with a smooth interior surface about the enveloped article to provide discontinuous markings to the insulation of the article in predetermined spaced relation to each other.

2. The method of applying markings to the insulation of electric cables, cords and the like insulated with a soft compound, which method comprises bending about the insulated article a strip of smooth material having the desired discontinuous markings impressed therein in definite spaced relation, said strip being of a width slightly less than the circumference of the article to provide a continuous longitudinal space between the adjacent edges of the strip and then extruding a lead sheath with a smooth interior surface about the insulated article and strip to provide discontinuous markings and a continuous longitudinal ridge on the surface of the insulation.

3. The method of applying markings to the insulation of electric cables, cords and the like insulated with a soft compound, which method comprises longitudinally bending a strip of smooth material about the insulated article, said strip being of a width slightly less than the circumference of the article and having the desired discontinuous marking impressed therein in definite spaced relation, then extruding a lead sheath under pressure about said article and strip to extrude some of the insulation between the adjacent edges of the strip to form a continuous longitudinal ridge on the insulation and to extrude some of the insulation into the impressions in the strip to provide discontinuous markings on the insulation and thereafter removing the lead sheath and strip from the insulated article.

4. An apparatus for marking insulated electric cables, cords and the like, comprising a metal strip of a width slightly less than the circumference of the insulated cable to be marked, a forming device comprising guiding means for said cable and strip, a die carried by said forming device for bending the strip longitudinally about said cable to substantially enclose the cable in the strip, and a pressure device in juxtaposition to said forming device for receiving said enclosed cable and continously applying pressure thereto to extrude the insulation between the edges of said strip to provide a continuous longitudinal ridge on the surface of the insulation.

5. An apparatus for marking insulated electric cables, cords and the like, comprising a metal strip having the desired marking impressed therein, a forming device comprising guiding means for said cable and strip, a die carried by said forming means for bending the strip longitudinally about said cable to enclose the cable in the strip, and a lead press in juxtaposition to said forming device for receiving said enclosed cable and for continuously applying a lead sheath under pressure to said enclosed cable to extrude the insulation into the impressions in said strip to provide discontinuous markings thereon.

6. An apparatus for marking insulated electric cables, cords and the like, comprising a metal strip having the desired markings impressed therein and being of a width slightly less than the circumference of the insulated cable to be marked, a forming device comprising guiding means for said cable and strip, a die carried by said forming device for bending the said strip into a U-shape about said cable, a pressure device in juxtaposition to said forming device for completing the forming of said strip about said tube and for continuously applying heat and pressure to the strip and its enclosed insulated cable to extrude the insulation between the edges of the strip to provide a continuous longitudinal ridge on the insulation and into the impressions in said strip to provide discontinuous markings on said insulation.

FRED HENDEY.