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METHOD OF PROVIDING A PRINTING WHEEL FOR PRINTING A CODE ON INSULATED WIRE

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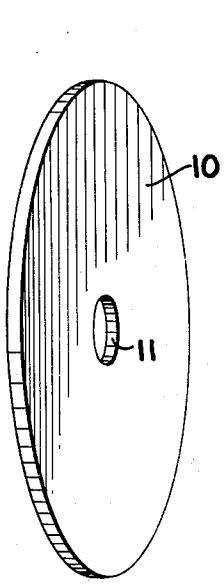


FIG. 1

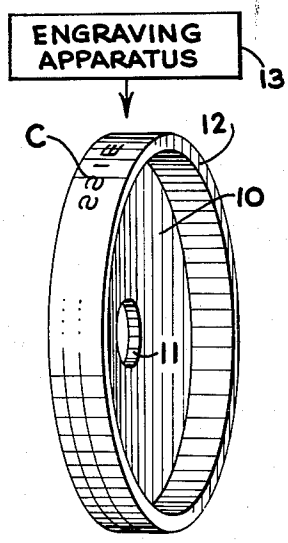


FIG. 2

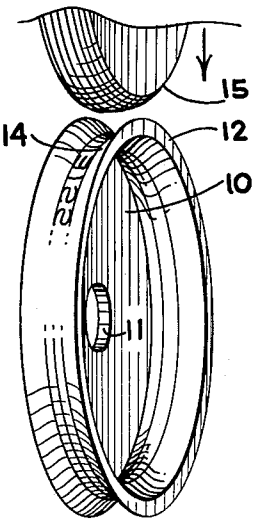


FIG. 3

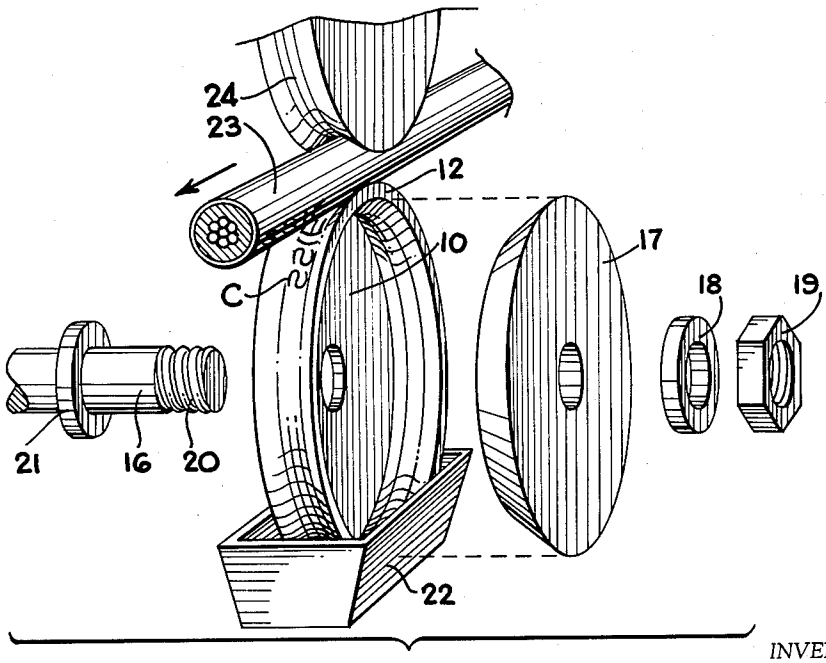


FIG. 4

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1 Claim. (Cl. 101—401.2)

This invention relates to a novel method of making a printing wheel for printing a desired code on insulated wire to facilitate identification of the wire.

It is common practice to provide a printed code on the insulated portion of a wire for identification purposes. Normally the printing is achieved by means of a printing wheel in the form of a solid disc member having an angular groove in its peripheral edge of proper cross-sectional shape to cradle the wire insulation. A suitable code is engraved in this groove. A pressure roller cooperates with the printing wheel to sandwich the wire between the periphery of the printing wheel and the pressure roller. Simple drawing of the wire through the wheel and roller will cause the printing wheel to roll along a longitudinal length of the wire. Ink may be provided for the printed code on the printing wheel such as by a dip tank through which a peripheral portion of the printing wheel passes during the printing operation.

For different diameter insulated wires it is necessary to change the printing wheel to accommodate the wires. Moreover, there must be provided a printing wheel for each code involved. These wheels are relatively expensive and constitute a major cost factor in printing the code on an insulated wire.

With the foregoing in mind, it is accordingly a primary object of this invention to provide a simple method of forming a printing wheel which is considerably less expensive than methods heretofore employed to the end that such printing wheels may be supplied in large numbers for considerably less cost than has been possible heretofore.

Briefly, the method of the invention avoids the use of a solid type printing wheel in the first instance. In accordance with the steps of the method, a flat disc is cut from relatively thin flat stock and its outer periphery then spun over to define an annular flange. The engraving can then be effected on the exterior annular surface of this flange, the width of the flange corresponding to the thickness of presently used printing wheels. In accordance with further steps of the method, after the engraving step has been completed, an annular groove is formed in the exterior surface of the flange. This groove has a cross-section which will conform to the diameter of the insulated wire. Finally, a novel washer shape may be inserted in the cup-like opening defined by the flange to thereby provide the appearance of a solid disc. While carrying out this latter step is not essential to the invention, it is useful in the event an ink trough is employed as it will avoid ink being picked up or caught in the cup opening defined by the exterior annular flange of the disc.

By the foregoing method, less expensive material and less expensive machining operations can be employed to the end that considerable economy is effected in the provision of printing wheels.

A better undertanding of the invention will be had by now referring to the accompanying drawings, in which:

FIGURE 1 illustrates in perspective view a metal disc cut from flat stock in accordance with a first step of the method;

FIGURE 2 represents the appearance of the disc after a second step of the method has been carried out;

FIGURE 3 illustrates further steps in the method; and,

FIGURE 4 is an exploded perspective view illustrating the manner in which a printing operation is carried out on an insulated wire employing the printing wheel formed in accordance with the method of the present invention.

Referring first to FIGURE 1, there is shown a circular disc of metal **10** which is cut from a piece of flat stock. As shown, a center arbor opening **11** is formed in the disc **10**.

In accordance with the method, the disc **10** has its peripheral edge spun over to define an annular flange **12** as shown in FIGURE 2. After the flange **12** has been formed, an engraving apparatus as indicated at **13** is employed to engrave a code C on the exterior surface of the flange.

In some instances, the foregoing steps may be all that are necessary to provide a printing wheel. For example, some insulated wire is of rectangular shape in cross-section and thus a straight line engagement is all that is required. Other wires are of sufficient diameter that the area on which printing is to take place may be considered flat. However, the usual type of insulated wire with which the printing wheel is used has a circular cross-section. Accordingly, and in accordance with a further step of the method, an annular groove **14** is provided in the exterior surface of the flange **12** shown in FIGURE 3. This groove may be formed by urging a roller **15** of proper contouring against the exterior surface of the flange **12** with sufficient pressure to form the groove while spinning the disc **10**.

Referring now to FIGURE 4, the manner in which the printing wheel is used will be clear. The disc **10** is first mounted on an arbor **16**. Thereafter, and in accordance with the final step of the method, a washer **17**, having a tapered periphery is inserted within the flange **12** against the inner flat face of the disc **10**. This washer is of a thickness corresponding to the inner depth of the flange **12** and essentially fills the cup shaped opening defined by the flange. A washer **18** and nut **19** are then received on the arbor **16** and then the nut threaded on the threads **20**. The rear portion of the disc **10** seats against a shoulder **21** provided on the arbor.

When carrying out a printing operation, the lower end of the printing wheel **10** is passed through an ink trough **22** as it rotates to pick up the ink and effect a printing on a wire **23**. A pressure roller **24** is employed to provide pressure on the wire **23**. The wire **23** is simply drawn forwardly in the direction of the arrow thereby rotating the wheel and pressure roller.

The provision of the washer **17** within the cup shaped opening will prevent ink in the trough **22** from being picked up by the interior wall surface of the flange **12** as the wheel **10** rotates. The exterior taper about the periphery of the washer **17** is necessary to accommodate the annular groove **14** when the washer is inserted in face to face engagement with the inner face of the disc **10**.

The foregoing method provides a very economical

printing wheel as compared to conventional type printing wheels formed from solid stock and having an annular groove milled therein. By the method of this invention, it is thus possible to produce printing wheels at considerably less cost than has been possible heretofore.

What is claimed is:

A method of providing a printing wheel for printing a code on insulated wire, comprising the steps of: cutting a circular disc of metal from flat stock; forming the peripheral edge of said disc into an annular flange; providing a code on the exterior surface of said flange; forming an annular groove in said exterior surface of said flange after providing said code thereon, the cross-section of said groove being rounded to conform to the exterior surface of said insulated wire; and inserting a washer element having a tapered edge against the face of said disc to fill substantially the cavity defined by said annular flange.

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