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COLOR CABLE AND THE MANUFACTURING METHOD THEREFOR

FIELD OF THE INVENTION

The present invention relates to the art of cable and more particularly to a color cable and the manufacturing method therefor.

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BACKGROUND OF THE INVENTION

Conventionally, a transmitting cable (including the one for transmitting signal and the one for passing current) manufacturing technique comprises the step of surrounding a strand of conductor by an insulated opaque plastic material in the form of a cylinder by injection molding. Further, it is required to add color additive in the plastic material in order to obtain a color cable. However, the previous design suffered from a disadvantage, i.e., the color of cable whether monotonous or irregular is determined solely by the additive. As a result, it is impossible to obtain a transparent colorful cable through such cable manufacturing technique.

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Another transmitting cable manufacturing technique is to surround a strand of conductor by a transparent plastic material in the form of a cylinder by injection molding wherein an additive is added in the plastic material in order to obtain a transparent cable. However, such design still suffered from a disadvantage, i.e., the color of cable is determined solely by the additive despite the transparency thereof. As a result, it is impossible to obtain a colorful cable through such cable manufacturing technique.

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SUMMARY OF THE INVENTION

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It is thus an object of the present invention to provide a color cable and the manufacturing method therefor wherein said cable comprises a conductor body having one or more conductors, one or more color winding uniformly wound

around and secured to conductor body by heating, and a transparent plastic covering formed on the winding by injection molding. Therefore, colorful cable is obtained by changing color, number of strand, or winding of the winding during the process. Further, a decoration purpose is achieved. The color of cable is varied as electrical specifications and usage, whereby user can recognize the same from the color of cable.

It is another object of the present invention to provide a color cable and the manufacturing method therefor wherein the color of the winding wound around the conductor body can be seen through the surrounded transparent plastic material, resulting in a colorful cable.

It is still another object of the present invention to provide a color cable and the manufacturing method therefor wherein the color of the cable can be varied as electrical specifications and usage, whereby user can recognize the same from the color of cable.

The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view schematically showing a first preferred embodiment of color cable according to the invention;

FIG. 2 is a perspective view schematically showing a second preferred embodiment of color cable according to the invention where a central positioning wire is provided;

FIG. 3 is a perspective view showing the manufacturing process of color cable according to the invention where cable has not formed together with transparent plastic material;

FIG. 4 is a perspective view showing the manufacturing process of color cable according to the invention where cable has formed together with transparent plastic material;

FIG. 5 is a perspective view showing a manufacturing process of color cable according to the invention where two windings with different colors are wound around conductor body sequentially; and

FIG. 6 is a perspective view showing another manufacturing process of color cable according to the invention where two windings with different colors are stranded as one prior to being wound around conductor body.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 2, there is shown a color cable constructed in accordance with the invention comprising a conductor body 20 having one or more conductors (e.g., six strands shown on FIG. 2) 21, one or more color winding 3 (including one with a rectangular cross section) uniformly wound around and secured to conductors 21 by heating, and a covering 4 of transparent plastic material formed on the color winding 3 by injection molding. As a result, the color of winding 3 may be seen from outside through the transparent plastic covering 4.

Referring to FIG. 1 specifically, the number of conductor body 20 may be varied as the applications (e.g., two conductor bodies 20 are shown). Importantly, they are spaced from each other if two or more sets of conductor bodies 20 are provided in order to maintain insulation therebetween. Also, the number of conductor 21 is varied as applications. For example, the number of conductor 21 is at least one.

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Referring to FIG. 2 specifically, where a central positioning wire 1 is provided with six conductors 21 wound around to form a conductor body 20.

Also, color winding 3 may be formed of a single color, or alternatively two or more windings 3 with different colors stranded as one. As a result, a colorful cable is obtained by changing the color of winding 3, number of strand thereof, or winding of the winding 3. Also, the color of winding 3 may be seen from
5 outside through the transparent plastic covering 4.

Referring to FIG. 3, the manufacturing process of color cable according to the invention is illustrated as below. Conductor body 20 is penetrated through the bore 631 of a shaft 63 of winding device 60. Conductor body 20 is axially moved through the bore 631 in a predetermined speed. Shaft 63 is supported by
10 at least one bearing means 90 (two are shown). A pulley 61 is connected to the shaft 63. A belt 62, at a distal end of shaft 63, driven by a drive source (not shown) is over the shaft 63. As such, shaft 63 can be rotated. A spool 64 and a flywheel 65 are located between the bearing means 90 wherein spool 64 with one or more color windings 3 wound is fixed on shaft 63 and flywheel 65 is
15 rotatable on shaft 63 by having shaft 63 passing through the hole 652. As shown, one line of winding 3 is passed through one eye 651, while the other line of winding 3 is passed through the other eye 651 prior to being wound around conductor body 20 to form a color conductor body 5. Flywheel 65 is rotated in a speed slower than the spool 64 due to the friction with the shaft 63. As such, the
20 stability of color winding 3 may be maintained during rotation, resulting in a uniform winding of color winding 3 on conductor body 20. Preferably, winding 3 may be coated with an adhesive in a preparatory manufacturing process in order to increase the adhesion therebetween and between conductor body 20 and thereof during the winding process. This assures the uniformity of wound
25 winding 3. A heating device 80 is provided at the proximal end for heating the passed color conductor body 5. This further secures the winding 3 on conductor body 20.

Referring to FIG. 4, one or more color conductor body 5 (two are shown) are guided through an injection molding device 70 for surrounding a transparent plastic material on the color conductor body 5. Injection molding device 70 has a mold 72 with a hole 721 penetrated through injection molding device 70 and mold 72. A color conductor body 5 with a transparent plastic covering 4 is formed after going through the injection molding device 70 wherein two color conductor bodies 5 are spaced from each other in order to maintain insulation therebetween as well as transmit signal and allow current to pass. As a result, the cable of winding 3 can be seen through the surrounded transparent plastic covering 4.

A number of techniques are capable of changing the color of cable as detailed below.

Referring to FIG. 5, two windings 30 and 301 with different colors driven by respective winding devices 60 in different speeds are wound around conductor body 20 sequentially.

Referring to FIG. 6, two windings 311 and 312 with different colors are stranded as one winding 30 prior to being wound around conductor body 20.

The benefits of this invention includes:

1. An additional decoration purpose of cable is achieved.
2. The color of cable is varied as electrical specifications and usage, whereby user can recognize the same from the color of cable.

While the invention herein disclosed has been described by means of specific embodiments, numerous modifications and variations could be made thereto by those skilled in the art without departing from the scope and spirit of the invention set forth in the claims.

COLOR CABLE AND THE MANUFACTURING METHOD THEREFOR**CLAIMS****WHAT IS CLAIMED IS:**

1. A color cable comprising:
at least one conductor body each having at least one conductor;
at least one color winding uniformly wound around and secured to said
5 conductor body; and
a transparent plastic covering formed on said color winding by injection molding;
wherein each of said conductor body is spaced from the other in order to
maintain insulation therebetween, transmit signal, and allow current to pass.
2. The color cable of claim 1, further comprising a central positioning wire with
10 said conductor wound around.
3. The color cable of claim 1, wherein said color winding is formed of a plurality
of windings with different colors stranded as one.
4. A color cable manufacturing method comprising the steps of:
(a) uniformly winding at least one color winding around a conductor body by at
15 least one winding device to form a color conductor body;
(b) guiding at least one of said color conductor body through an injection molding
device for surrounding a transparent plastic material on said color conductor
body; and
(c) forming said color conductor body with a transparent plastic covering after
20 guiding said color conductor body through the mold of said injection molding
device wherein each of said color conductor body is spaced from the other in
order to maintain insulation therebetween.
5. The method of claim 4, further comprising a heating device for heating said
color winding wound around said conductor body, thereby securing said color
25 winding on said conductor body.
6. The method of claim 4, wherein said winding is coated with an adhesive in a
preparatory process for increasing the adhesion therebetween and between the



conductor body and thereof, thereby assuring the uniformity of said color winding wound.

7. The method of claim 4, wherein said color winding is formed of a plurality of windings with different colors stranded as one winding prior to being wound
5 around said conductor body.

8. The method of claim 4, wherein a plurality of color windings with different colors driven by respective associated winding devices are wound around said conductor body sequentially.

9. The method of claim 4, wherein said color winding is formed of a plurality of
10 threads with different colors.

10. The method of claim 4, wherein said conductor body is formed of a plurality of conductors.

