Jan. 27, 1970 D. J. WALLDORF 3,491,472

ARTICLE IDENTIFICATION SLEEVE

Filed May 1, 1968

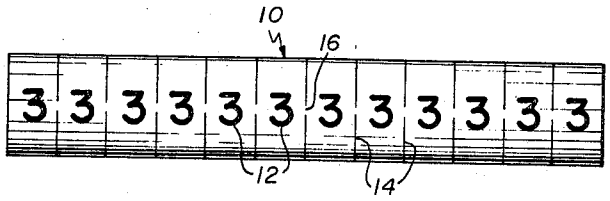


FIG. 1

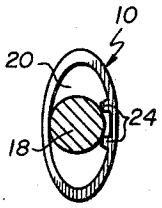


FIG. 2

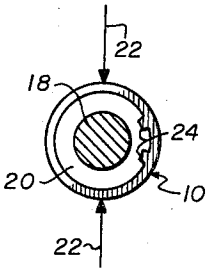


FIG. 3

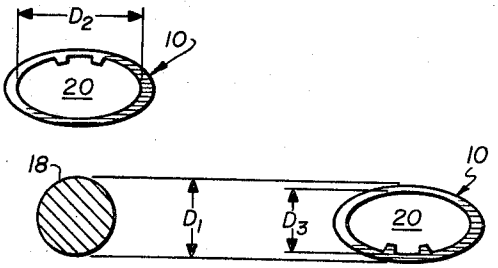


FIG. 4

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ARTICLE IDENTIFICATION SLEEVE

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ABSTRACT OF THE DISCLOSURE

An elliptical indicia-bearing identification sleeve which has a plastic memory. The interior dimension along the minor axis is less than the diameter of the article to be identified whereas the interior dimension along the major axis is greater than the diameter of the article. Two ribs within the passage along with a portion of the inner surface of the passageway provide a three point contact with the enclosed article.

BACKGROUND OF THE INVENTION

Field of the invention

The invention is directed to the field of identification of articles having generally circular cross-sections such as tubes, conductors or the like.

Description of the prior art

Prior art devices of the general type described herein, are shown in the patent to Searing, No. 3,212,207, for a Wire Identification Marker, issued Oct. 19, 1965. The Wire Identification Marker of the Searing patent is of a generally rectangular shape, both as to its external configuration and its wire receiving passage. The application of external forces along its two shortest walls will cause the wire identification marker to take on a generally elliptical shape. This will permit the slipping of the marker over the wire to be identified. Upon relaxation of the forces applied to the marker it will tend to return to its normal rectangular shape thus gripping the conductor placed therein at two points. Due to the generally rectangular shape, stress points are provided at each one of the corners of the marker which permit the marker to be readily cracked along these corners causing the loss of the wire marker. Additionally, the two point contact provided solely by means of the inner surface of the passage fails to provide the required coupling between the wire identification marker and the conductor, and permits, under vibration conditions, or externally applied forces, the marker can be moved along the conductor and moved out of position where the indicia may not be observed.

SUMMARY OF THE INVENTION

The present invention overcomes the difficulty noted above with the Searing marker by providing an article identification sleeve which is structurally sound and which provides for maximum gripping of articles placed within the passage therethrough. This is achieved by using a sleeve whose general cross-section is elliptical, when in its relaxed state, and which when forces are applied to it along its major axis, deforms into a circular shape for easy movement onto, along or off of a circular cross-sectioned article to be identified. The absence of corners in a smooth transition of the various portions of the sleeve greatly diminish the possibility of destruction, or cracking of the sleeve, during movement of the sleeve onto, off of or along an article to be identified. In addition, two ribs are provided in the passageway, which ribs extend along the length of the entire sleeve. These ribs provide for a greater gripping of the sleeve to the outer surface of the

circular cross-sectioned article to be identified. As a result, the integrity of the marking of the article is assured. It is therefore an object of this invention to provide an improved article identification sleeve.

It is still another object of this invention to provide an improved article identification sleeve which has a generally elliptical passage therethrough and which when deformed assumes a generally circular cross-sectional passage.

It is yet another object of this invention to provide an improved article identification sleeve having two longitudinal ribs along its passage to increase the ability of the sleeve to grip an article passed through its internal passage.

It is yet another object of this invention to provide an article identification sleeve which may be fabricated in continuous lengths and which may be provided with transverse score lines to permit separation of individual article identification sleeves from the continuous lengths in accordance with the requirements of a particular marking or identification situation.

It is yet another object of this invention to provide an article identification sleeve having indicia upon the outer surface thereof and which may be readily positioned, repositioned or removed from the outer surface of a generally circular cross-sectioned article.

Other objects and features of the invention will be pointed out in the following description and claims and illustrated in the accompanying drawings, which disclose, by way of example, the principal of the invention and the best mode which has been contemplated for carrying it out.

BRIEF DESCRIPTION OF THE DRAWING

In the drawings:

FIG. 1 is a front elevation of continuous length of article identification sleeves constructed in accordance with the concepts of the invention.

FIG. 2 is an end elevation of an article identification sleeve positioned over an article having a generally elliptical cross-section.

FIG. 3 is an end elevation of the sleeve of FIG. 2 and showing its shape as a result of having externally applied forces applied along its major axis.

FIG. 4 illustrates the relative dimensions of the internal passage of the article identification sleeve of FIG. 2 with respect to an article to be identified.

Similar elements will be given similar reference characters in each of the respective figures.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now to FIG. 1, there is illustrated a continuous web of article identification sleeves **10** constructed in accordance with the concepts of the invention. The sleeves **10** are fabricated from plastic, or rubber type materials, which are flexible, resilient and show a plastic memory which permits a return to a preformed shape from the shape formed when externally applied deforming forces are removed therefrom. The web is partially scored as at **14**, lands **16** maintain the individual sleeves on the web. Individual sleeves **10** may be separated from the web by stretching, cutting or the like. Indicia may be placed anywhere along the surface of the sleeve such as at **12**. Through sleeve **10** is an axial passage **20** of a generally elliptical cross-section. In the normal relaxed position, as shown in FIG. 4, that is without the application of external forces to the sleeves **10**, the dimensions of the sleeve **10**, with respect to an article **18** to be identified, are as follows: The diameter of the article **18** is D_1 while the dimension of the passage **20** of sleeve **10** along its major

axis will be D_2 where D_2 is greater than D_1. In a similar fashion the dimension of passage **20**, along its minor axis, will be D_3, D_3 is less than D_1. To summarize these dimensions the dimension of the passage **20** along its major axis will be greater than the diameter than the circular cross-sectioned article **18** to be identified, whereas the dimension along the minor axis will be less than the diameter of the circular cross-sectioned article **18** to be identified.

Referring to FIG. 3 it can be seen that when externally applied forces are applied inwardly along the ends of the major axis as at **22**, the sleeve **10** and the passage **20** will deform from its generally elliptical shape, as is shown in FIG. 4, to the circular shape as is shown in FIG. 3. This permits the sleeve **10** to be moved onto or positioned along or removed from the circular cross-sectioned article **18** to be identified. Since the inner shape of the passage **20** resembles that of the shape of the outer surface of the article **18**, a minimum amount of interference exists to restrict such movement onto, or along or off of the article **18**.

To increase the gripping friction of the sleeve **10** with respect to the article **18** a pair of generally rectangular ribs **24** are provided. Ribs **24** will be positioned along the same portion of the surface of the passage **20** and will be positioned to either side of the minor axis. Once the external forces **22** have been released from along the ends of the major axis, as at **22** in FIG. 3, the sleeve **10** will take on a generally elliptical shape shown in FIG. 2. That is, sleeve **10** will tend to return the passage **20** to its generally elliptical shape due to the fact that the material from which the sleeve **10** is constructed is preformed in this shape and is formed of a material which is flexible and resilient and which exhibits a plastic memory such that it will tend to return towards its initial shape after having been deformed upon the termination of the externally applied deforming forces. Depending upon the diameter of the object **18** to be identified the sleeve **10** will tend to return, as closely as it can, to its original elliptical shape providing the elliptical passage **20**. Doing so it will bring into contact with the outer surface of the article **18**, at least the edges of the ribs **24** and a portion of the inner surface of the passage **20** directly opposite the center line between the ribs **24**. As a result, at least a three point contact is assured between the article **18** and the sleeve **10**. In this manner, maximum frictional engagement is achieved between the sleeve **10** and the article **18** whereby any displacement of the sleeve **10**, along the article **18**, is minimized. If desired, additional ribs, such as rib **24**, may be placed on the inner surface of the passage **20** depending upon the shape of the article **18** and of its general diameter.

While there have been shown and described and pointed out the fundamental novel features of the invention as applied to the preferred embodiment, it will be understood that various omissions and substitutions and changes of the form and details of the device illustrated and in its operation may be made by those skilled in the art, without departing from the spirit of the invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An identification sleeve arranged to be readily positionable on and removable from the surface of a circular cross-sectioned article to be identified comprising: a sleeve of a flexible resilient material exhibiting plastic memory capable of returning to its original form upon the termination of externally applied deforming forces; indicia positioned on at least a portion of the outer surface of said sleeve; said sleeve having a generally elliptical passage therethrough for the passage of an article to be identified therethrough; the major axis of said elliptical passage being greater than the diameter of said article and the minor axis of said elliptical passage being less than the diameter of said article; said sleeve being deformed by the external application of forces inwardly at the extremes of said major axis to cause said elliptical passage to take on a generally circular cross-section to permit said sleeve to be positioned on or removed from the surface of said article; said passage tending to return to said elliptical shape upon the termination of said externally applied forces; and two ribs on the inner surface of said elliptical passage, extending along the length of said sleeve; said ribs engaging said article passing through said passage whereby contact between said sleeve and said article is achieved at least three points along said passage.

2. An identification sleeve, as defined in claim **1**, wherein said ribs have a generally rectangular cross-section and are positioned on the same portion of said passage on either side of said minor axis.

3. An identification sleeve, as defined in claim **1**, wherein said sleeve is fabricated in continuous lengths and individual sleeves are separated by score lines whereby individual sleeves may be separated from said continuous lengths.

4. An identification sleeve as defined in claim **3**, wherein each sleeve along said continuous lengths has indicia thereon.

References Cited

UNITED STATES PATENTS

3,212,207 10/1965 Searing ---------- 40—316

FOREIGN PATENTS

1,088,188 10/1967 Great Britain.

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