Sept. 29, 1964 M. COHN 3,150,769

WIRE PACKAGING AND HANDLING DEVICE

Filed Sept. 6, 1962

FIG. 1.

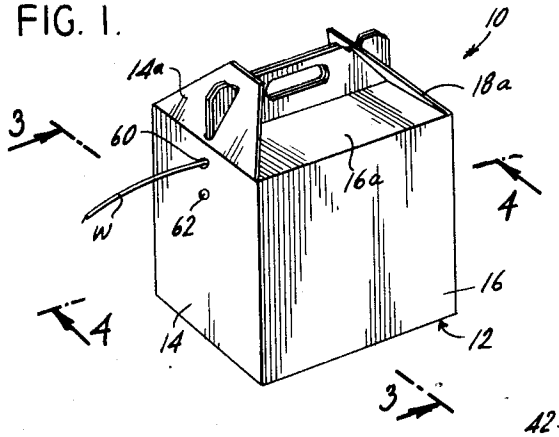


FIG. 2.

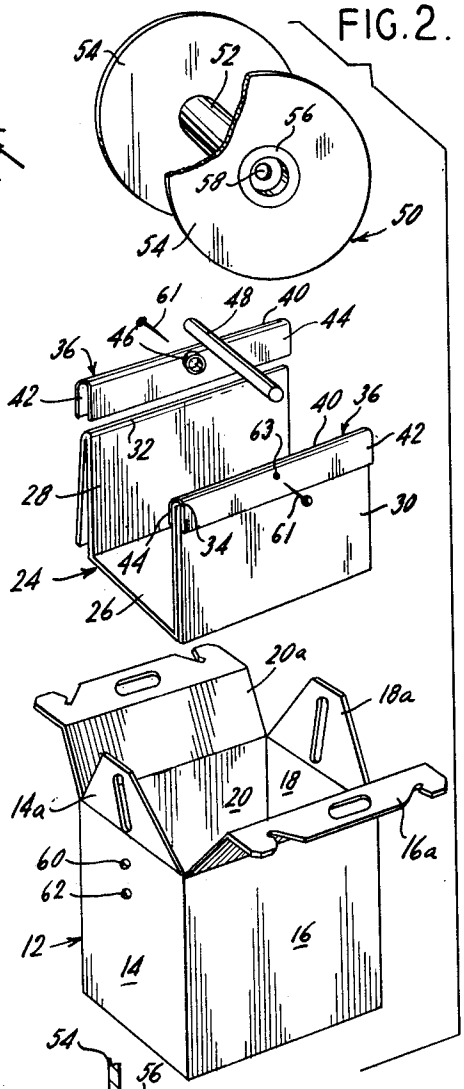
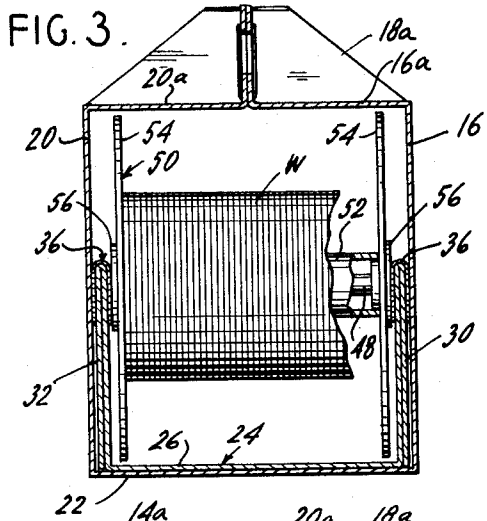


FIG. 3.



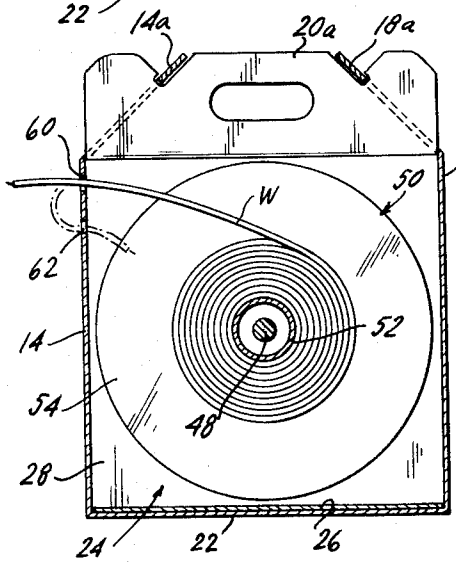


FIG. 4.

FIG. 5.

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WIRE PACKAGING AND HANDLING DEVICE

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The present invention relates generally to packages for items wound on reels such as wire, and specifically to a packaging and handling device for a reel of wire such that individual lengths of wire may be easily unwound without removing the reel from the device.

There are many instances wherein it is desirable to unreel lengths of wire, or other elongated elements such as rope, etc., from a reel which is mounted for rotation. It is often desirable that such a reel be portable and be contained within a packaging device for easy transportation from one location to another. One example of a situation wherein such feature would be advantageous is in the installation of television antennas wherein wire is connected, on site, between a television antenna and a television set. Customarily, the wire used in these installations, 300 ohm twin-lead, is purchased in one thousand foot reels each of which weighs approximately twenty-two pounds. The wire is unwound, either by using a helper who holds the reel on a dowel such that the wire may be easily played out under the control of the helper, or by placing the reel on the ground and pulling the wire off the reel while the reel rolls about in random fashion. Contrary to present practice, the provision of a container for a reel of twin-lead which could be utilized to both house the reel and to mount same for rotation supported by the container would be a significantly advantageous addition to the art.

Accordingly, it is an object of the present invention to provide a packaging and handling device for spooled material providing one or more of the aforementioned advantages. Specifically, it is desirable to provide a packaging device in which is rotatably mounted a spool for wire.

It is a further object of the present invention to provide a packaging device for a spool of wire of sufficient strength and rigidity such that the spool may be unreeled in the package and that the package will support the spool in shipping without destruction of the packaging material.

In accordance with one illustrative embodiment of the present invention, there is provided a packaging and handling device for a spool of wire which comprises a generally rectilinear box having a bottom and four side walls as well as a customary top. A U-shaped cradle is positioned within the box and is contiguous to the bottom and two of the opposing side walls with the cradle extending approximately one-half way up each of the side walls. Reinforcing clips, generally U-shaped in cross section, are applied along the upper edge of and are supported by the cradle. Securement means for a spindle are supported by the reinforcing clips and a dowel, sized to be received within the axial opening of a standard wire reel, is positioned on the securement means and across the box. A wire-carrying spool is positioned about the spindle for rotation. An opening may be formed in one of the side walls of the box for the exit of the wire as it is unreeled from the spool and a second opening may be formed adjacent the first opening as an anchor for the end of the wire.

The above brief descrpition, as well as further objects, features and advantages of the present invention, will be best appreciated by reference to the following detailed description of a presently preferred embodiment

when taken in conjunction with the accompanying drawings wherein:

FIG. 1 is a perspective view of the packaging and handling device according to the present invention;

FIG. 2 is an exploded view of the several elements combining to form a packaging device of FIG. 1;

FIG. 3 is a sectional view taken along the line 3—3 of FIG. 1 and looking in the direction of the arrows;

FIG. 4 is a sectional view taken along the line 4—4 of FIG. 1 and looking in the direction of the arrows; and

FIG. 5 is an enlarged sectional view illustrating the construction of the reinforcing members and their engagement with the spindle and the wire reel.

Referring now specifically to the drawings, there is shown a packaging and handling device, generally designated by the numeral **10**, which is adapted to receive a reel of wound material such as wire and to package same for purposes of shipping and storage and to further provide means to rotatably mount the reel such that wire may be efficienly and selectively removed from the package. As may be seen in FIG. 2, the device **10** includes a rectilinear box **12**, having side walls **14**, **16**, **18**, **20**, a bottom **22** and conveniently formed top flaps **14***a*, **16***a*, **18***a*, **20***a*, extending upwardly from the respective side walls. The top flaps **14***a*, **16***a*, **18***a*, **20***a* are provided with interengaging hooking means, illustrated best in FIGS. 1, 3 and 4 to provide both a closure for the box **12** and a carrying handle therefor in accordance with box constructions as presently known.

A reel-supporting cradle **24** is provided within the box **12** which may be conveniently constructed of a cardboard box material. The cradle **24** is generally U-shaped or channel-shaped and has a bottom **26** and a pair of opposed sides **28**, **30** which terminate at upper edges **32**, **34** respectively. The upper edges **32**, **34** comprise fold lines within the board material of the U-shaped channel, which fold lines form the two-ply portions of the side walls **28**, **30**. It will be seen that the cradle **24** is proportioned to cooperate with the box **12** with the bottom **26** being complementary to the bottom **22** of the box **14** and the side walls **28**, **30** being equal in width to the sides **16**, **20** of the box **24** and being approximately one-half the height of those side walls.

A pair of reinforcing clips or channels, generally designated by the numeral **36**, are positioned on and about the upper edges **32**, **34** of the side walls **28**, **30**. The reinforcing clips **36** are generally U-shaped in cross section (see FIG. 5) with an edge-contacting bight portion **40** and a pair of parallel opposed side-contacting walls **42**, **44** adapted to contact the outer and inner faces respectively of the side walls **28**, **30** of the cradle **24**. The reinforcing member **36** may be conveniently formed of a sheet metal material.

Spindle securement means, best seen in FIGS. 2 and 5, are provided on the reinforcing clips **36**. In the illustrative embodiment described herein the spindle securement means include integrally formed collars **46** on the inside-facing wall **44** of the reinforcing clips **36**. A spool-supporting spindle **48**, of a diameter complementary to the collar **46**, is positioned between the opposed reinforcing clips **36** and within the collars **46** to provide rotatable mounting means for a spool of wire. As shown in FIG. 2, a standard wire spool, generally designated by the numeral **50**, is provided with a hollow spindle **52** and a pair of disc-shaped end walls **54**. Customarily, metallic end caps **56** are provided at the ends of the hub **52** which caps are formed with spindle-receiving openings **58**. It will be appreciated that the sizes of the spindle **48** is selected such that it is slightly smaller than the openings **58** in the spool **50** such that free and

easy rotation of the spool may be effected. A pair of tacking nails 60 may be provided to extend through holes 62 formed in the reinforcement strips 36 to engage to spindle 48 to secure its placement within the mounting collars 46.

The features and advantages of the invention will be understood by considering the following description of the assembly of a spool of wire into the packaging device 10 and its subsequent use. A spool of wire, such as the reel 50, provided with a full load of wire designated by the letter W, is placed within the cradle 24 by the insertion of a spindle 48 through the openings provided along the axis of the spool. The protruding ends of the spindle are then secured within the mounting collars 46 of the reinforcement clips 36 by simply spreading apart the opposing walls 28, 30 of the cradle 24 and then returning them to parallel configuration. The entire assembled cradle 24 and spool 50 is then placed within the box 14 as shown in sectional view in FIGS. 3 and 4. The wire W may be played outwardly from the reel 50 through a wire opening 60 formed in the face 14 of the box 12. A second wire securement opening 62 may similarly be formed adjacent the opening 60 such that the wire may be folded around and tucked back into the box through the opening 62 as shown in phantom in FIG. 4 to prevent unwinding of the wire W.

Although the constructions described herein are formed of cardboard, a packaging and handling device for spools of wound material may be similarly constructed of a more durable and permanent material such as plastic, fiberboard, wood or any other well known construction material. The cradle 24 may be more permanently secured within the box 24 simply by an adhesive element or alternatively the cradle 24 forming a support for the clips 36 may be constructed as an integral part of the container.

Although the above description is restricted to one presently preferred embodiment of the invention, a large variety of alternate constructions may be employed without departing from the scope of the invention. Therefore, the following claims should be interpreted broadly in a manner consistent with the spirit and scope of the invention.

What I claim is:

1. A packaging and handling device for a spool of wire comprising a rectangular box having a bottom and four side walls, a U-shaped cradle positioned within said box contiguous to said bottom and two opposed side walls, said cradle extending substantially midway up said side walls, a pair of metallic reinforcement clips, U-shaped in cross section, positioned over the upper edges of said cradle and in engagement therewith, spindle securement means at the midpoint of said reinforcement clips, and a spindle positioned between said spindle securement means and between the opposing sides of said cradle for supporting a reel for rotation thereabout, said spindle being sized to be received within a wire-carrying reel to support same and to allow rotation thereof for the unwinding of wire.

2. A combined wire carrying container and spool mounting device for transporting and storing a spool of wire and for providing a support for the spool for the removal of wire therefrom comprising a rectangular container having a bottom wall and four side walls, a U-shaped cradle positioned within said container and having a bottom wall and two opposed side walls, said cradle bottom wall being in intimate engagement with said bottom wall of said container, said cradle side walls being in intimate engagement with an opposed pair of the side walls of said container and extending upwardly from said bottom wall and terminating in cradle upper edges parallel to said carton side walls and bottom walls, a pair of channeled reinforcing strips having an inside wall and an outside wall positioned over said cradle upper edges, said outside walls of said container side walls and the inner walls of said reinforcing strips positioned on the respective opposite sides of said cradle side walls, a spindle mount formed on each of said reinforcing strips, a spindle for supporting a spool of wire positioned between said respective reinforcing strips and supported on said spindle mounts.

3. A combined wire carrying container and spool mounting device for transporting and storing a spool of wire and for providing a support for the spool for the removal of wire therefrom comprising a rectangular container having a bottom wall and four side walls, a U-shaped cradle positioned within said container and having a bottom wall and two opposed side walls, said cradle bottom wall being in intimate engagement with said bottom wall of said container, said cradle side walls being in intimate engagement with an opposed pair of the side walls of said container and extending upwardly from said bottom wall and terminating in cradle upper edges parallel to said carton side walls and bottom walls, a pair of channeled reinforcing strips having an inside wall and an outside wall positioned over said cradle upper edges and along their entire extent, said outside walls of said reinforcing strips positioned between said cradle side walls and said container side walls and the inner walls of said reinforcing strips positioned on the respective opposite sides of said cradle side walls, a spindle mount formed on each of said reinforcing strips, a spindle positioned between said respective reinforcing strips and supported on said spindle mounts.

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