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DEVICE FOR BLOCKING WIRE LAY

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This invention relates to the packaging of wire, such as magnet wire, in packages of the type comprising a container in the form of a pail or drum in which the wire is coiled in a lay around a central core, and a blocking device disposed in the void between the container lid and the coiled wire lay for maintaining the latter under compression. The invention has particular reference to an improved blocking device for the wire lay in such packages.

Packages of the type described are subjected to considerable and, at times, rather rough handling incident to shipment and other operations. Accordingly, it is a function of the blocking device to maintain pressure on the wire lay and thus prevent shifting of the wire coils relative to each other or to the container in which they have been placed. Otherwise, serious tangling and kinking of the wire will result as the wire is being uncoiled from the container.

Heretofore, this blocking of the wire lay in the container has generally been accomplished by placing a filler of cushioning material, such as foamed plastic blocks, rubberized hair or coiled springs, on top of the wire to fill the void in the container above the wire lay. The cushioning material is then compressed and held under compression until the cover or lid of the container is positioned and sealed, so that the pressure on the wire lay is maintained by the removable lid of the container. However, since the depth of the wire lay will usually differ in different containers, such blocking means have the disadvantage that they require resort to varying the amount of filler material used in the different containers, in order to compensate for variations in the distance between the top of the wire lay and the top opening of the container. In practice, even this compensating measure does not make it possible to maintain a standard amount of pressure on the wire lays in the different containers. Substantial variations from a predetermined amount of such pressure are undesirable because if the pressure is too high, the lid may be loosened or forced off the container during the handling; and if the cushioning material is insufficiently compressed, it may permit shifting of the wire lay in the container during handling. Moreover, application of the filler material, in varying amounts or thicknesses for different containers, is an exacting and time-consuming operation.

The principal object of the present invention is to provide a wire lay blocking device which overcomes the above-noted disadvantages of the blocking devices commonly used.

The blocking device of the present invention does not depend upon the container lid to maintain the wire lay under compression, nor does it require any variation in the dimensions of the device to compensate for different depths of the wire lay in the container. It may be properly positioned in the container quickly and easily and may be readily removed.

A blocking device made according to the invention comprises a cushion mounted on top of the wire lay in the usual annular space defined by the cylindrical outer wall of the wire container and by its central core forming the inner wall of this space. The device comprises also a clip in this space overlying the cushion in position to hold it compressed against the wire lay and thereby press the latter against the container bottom.

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The clip includes releasable prong means embedded in either the inner or the outer wall of the annular space to hold the clip against upward displacement by the cushion. Preferably, the clip is mounted on a retaining member engaging the top of the cushion and fitting closely between the inner and outer walls to hold the prong means embedded in one wall, and this retainer member is movable relative to the other wall to release the prong means from the one wall.

With this construction, the wire lay may be effectively blocked, regardless of its depth in the container, by simply pushing the clip downwardly to subject the underlying cushion to the desired compression, and then locking the clip by embedding its prong means in the opposing inner or outer wall of the annular space. Conversely, the wire lay may be readily unblocked by tilting or otherwise moving the clip to withdraw its prong means from the opposing wall to permit lifting the clip and cushion from the annular space in the container.

A better understanding of the invention may be had by referring to the following description in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective, partially cut-away view of a container having a center core around which the wire lay is wound, the container having therein a preferred form of the blocking device of the present invention;

FIG. 2 is a horizontal sectional view taken along the line 2-2 of FIG. 1;

FIG. 3 is a detailed perspective view of the assembled blocking device; and

FIG. 4 is an enlarged sectional view on line 4-4 in FIG. 2.

The blocking device is illustrated in FIGS. 1 and 2 as being located in a shipping and storage container indicated generally by the reference numeral 10. Container 10 comprises outside cylindrical wall 11, a bottom 12 integral with wall 11, a removable cover 13, and a cylindrical core 14 extending upwardly from bottom 12 substantially coaxially of the wall 11. Thus, container 10 provides an annular space 10a defined by outer wall 11 and the inner wall formed by core 14. The wire to be packaged is coiled in the usual manner in the annular space 10a around core 14, to form a wire lay 15 seated on the container bottom 12.

The blocking device is shown generally at 16. As illustrated, three of these devices overlie the wire lay 15 and are spaced around the core or inner wall 14, in order to block the wire lay at different locations and thereby hold the wire coils more securely against shifting in the container. Since the blocking devices 16 are identical to each other, a description of one will suffice.

Each blocking device 16 comprises a clip 17, a clip-retaining member in the form of a pressure pad 18 to which clip 17 is attached, and a block of cushioning material 19 which may also be attached to pad 18. The clip 17 makes locking engagement with inner wall 14, through releasable prong means 22 embedded in this wall, and thereby holds pad 18 in a predetermined vertical position along the core. In this position of pad 18, the cushion 19 is compressed between pad 18 and wire lay 15, so that the wire lay is held under compression against the container bottom 12.

The container 10 may be of conventional construction for packaging wire, such as magnet wire. The cylindrical wall 11, bottom surface 12 and cover 13 will generally be constructed either of metal or fiber, and cylindrical core 14 is formed from fiber board or other material permitting the clip prongs 22 to be embedded in the inner wall formed by core 14.