July 21, 1964 K. KREBS 3,141,631

YARN CARRIER

Filed July 6, 1962

FIG. 1

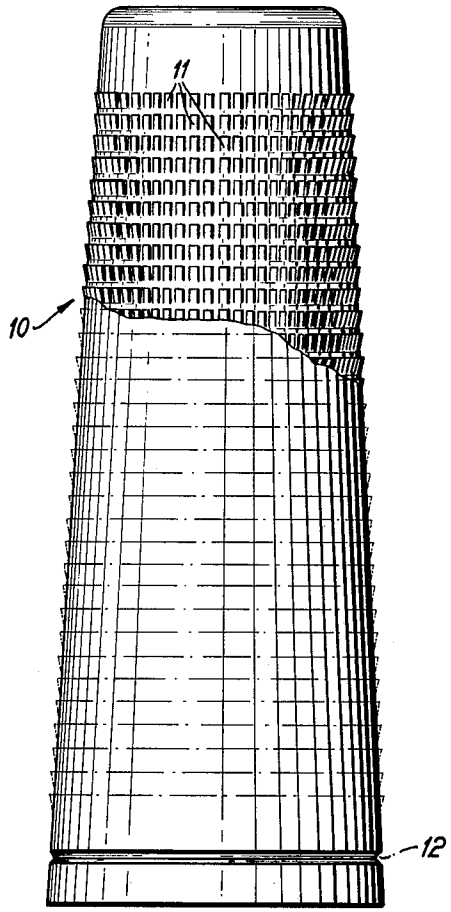
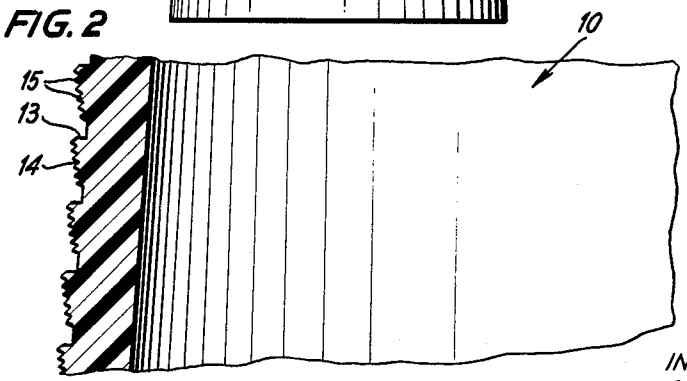


FIG. 2



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YARN CARRIER

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The present invention relates to yarn carriers and shells of spools in general, and to conical yarn carriers made of artificial material for textile yarns or the like or a so-called shell of spools, having a surface roughening, favoring the adherence of the yarn or winding layers on the shell, as well as an annular groove disposed at its lower end.

In shells of spools which are used, for instance, as yarn carriers for cross wound bobbins or the like, it is known to provide a roughening on the outer surface of the spools made of artificial material or on the basis of pasteboard. For this surface roughening different patterns have become known. Such roughening serves the purpose of enhancing the adherence, particularly in the first winding-layer or -layers, so that they find a stay on the smooth shell and so that they cannot slide off their position.

It is one object of the present invention to provide yarn carriers and shells of spools with a particularly effective formation of the surface roughening by forming the outer face of the shells of the spools in a manner of projecting scale extensions, whereby each of the scale extensions has an engaging face extending radially relative to the outer face, which engaging face is continued into a supporting face inclined in axial direction and leading into the outer wall face of the shell.

The scale extensions forming these supporting steps can be arranged in such manner, that they form a type of a plurality of annular supporting rings aligned in axial direction of the spool and extending in peripheral direction of the spools at the same time having recesses free of the scales.

This surface roughening, as proposed by the present invention, has particular importance for the reason that rather reliable supports are now provided for the yarn or winding layers, on which the yarn can be safely supported and thus retain the total yarn winding safely on the shell, whereby the danger of axial sliding off is removed. On the steps formed by the scale extensions the yarn of the first yarn- or winding-layer or layers find a reliable stay and first support, while by the cross grooves every thread is immovably retained in its position, an achievement which is questionable under circumstances with the known edged formation.

Thus the shell of spools, designed in accordance with the present invention, is superior than the known shells, in consideration of the fact that a plurality of variation possibilities for the formation of the surface roughening exists.

With these and other objects in view, which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawing, in which:

FIGURE 1 is a front elevation of the spool, the roughening formation being shown only over a portion of the surface thereof; and

FIG. 2 is a fragmentary axial section of the shell of the spool shown at an enlarged scale.

Referring now to the drawing, the shell **10** of the spool is of conical shape and is equipped with a surface roughening. This surface roughening is formed by scale extensions **11**, which are worked directly in the manufacturing mold during the manufacture of the shell **10** of the spool. The roughening extends nearly over the entire axial height of the shell **10**, whereby, however, a zone free of roughening remains at the upper edge and at the lower edge thereof. The roughening surface finds its end near the lower edge of the shell **10** by an annular groove **12** having a substantially half circular cross-section.

In accordance with the present invention, each scale extension **11** has an engaging annular face **13** extending in radial direction from the outer face of the shell **10**, which supporting face **13** is continued into an engaging annular face **14** inclined in axial direction of the shell **10** of the spool, which supporting face **14** leads into the outer wall face of the shell **10**. The arrangement is such, that the inclined supporting faces **14** of the scale extensions **11** are inclined in the direction to the lower part of the shell **10** towards the center axis of the latter.

The scales **11** can be disposed in peripheral direction spaced apart from each other, so that supporting rings are formed which are aligned in axial direction. The first yarn- or winding-layer or layers find a safe stay on these supporting faces **14**, whereby each face **14** comprises a plurality of individual supporting steps. Furthermore, in order to enhance the stay, each scale-like supporting face **14** is equipped, in accordance with the present invention, additionally with grooves **15** of any selected size and likewise extending in peripheral direction.

The shown and described embodiment of the shell, produced in accordance with the present invention, is merely an example for the application of the present invention, and the latter is not limited to this embodiment, rather it is possible to provide other embodiments and applications within the scope of the present invention.

It is thus possible to provide the roughening of the surface of the shell in a manner different from that shown, by providing, for instance, continuous rib-like or knot-like supporting rings extending in peripheral direction, instead of the individual supporting steps.

Finally, the same roughening surface, as shown in connection with the conical shell, can also be provided in connection with cylindrical shells.

While I have disclosed one embodiment of the present invention, it is to be understood that this embodiment is given by example only and not in a limiting sense, the scope of the present invention being determined by the objects ad the claims.

I claim:

1. A yarn carrier for textile threads or the like comprising

a longitudinal shell having a plurality of scales extending from the outer surface of said shell,

said scales constituting substantially the major portion of the outer surface of said shell,

said scales being disposed along imaginary circular lines disposed in planes perpendicular to the longitudinal axis of said shell and constituting supporting steps having engaging faces and supporting faces,

all scales of said circular lines having corresponding scales in the immediately adjacent circular line arranged in longitudinal direction, thereby forming a groove between each pair of adjacent circular lines,

said engaging faces projecting radially from the outer faces of said shell along said imaginary circular lines, the latter having increased diameters in the direction of one end of said shell,

said supporting faces being inclined to the surface of said shell and leading into said outer surface of said shell, and

each of said supporting faces having a plurality of small annular grooves adapted to receive individual threads.

2. The yarn carrier, as set forth in claim 1, wherein said shell has a conical outer surface, and

said supporting faces being tapered downwardly towards the end of larger diameter of said shell.

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