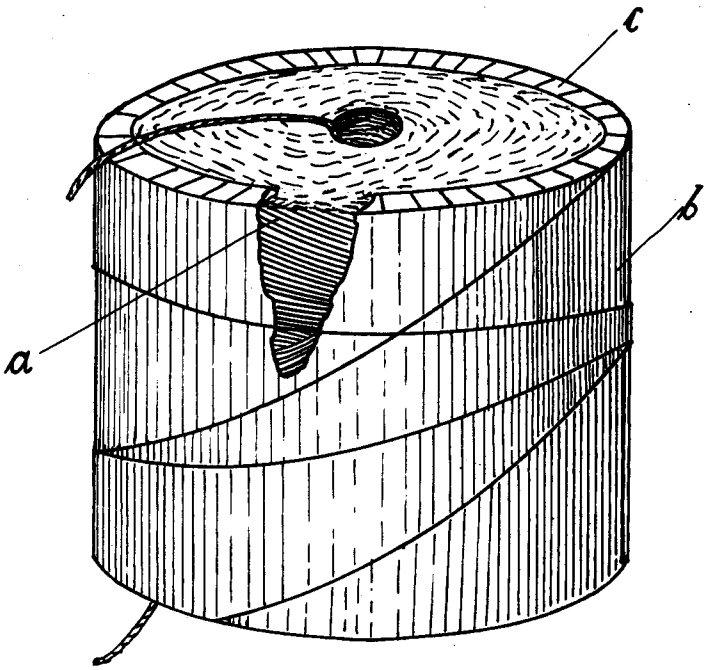
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PROTECTING ENVELOPE FOR BALLS OF STRING FOR BINDING SHEAVES

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PROTECTING ENVELOPE FOR BALLS OF STRING FOR BINDING SHEAVES

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In string balls and the like, especially in cross wound balls, the outer layers which are used last collapse easily so that loops are formed in the thread and the tiering or binding is disturbed. In order to obviate this inconvenience it has been proposed to secure the ball of string by means of a net-like protecting envelope. Such a protecting envelope, which must be knitted together with the binding threads of the string ball, forms loops, and these loops are likely to cause trouble. A further inconvenience resides in the fact that the knot connecting the binding string with the protecting thread exerts a disturbing influence. Such net-like protecting envelopes are rather expensive and difficult to produce.

A protecting envelope according to the invention, in which the above-named drawbacks are overcome, is shown in the accompanying drawing, in the process of applying the same. The envelope is shown partly broken away to illustrate the cross wound string ball disposed therein. The following description should be read with reference to the drawing.

The protecting envelope *b* for the string ball *a* may consist of various material such as of soft cardboard, or of several layers of paper glued together, of fabric, parchment, caoutchouc, or of harder substances, as for example, cardboard or tin foil in the shape of a strip of suitable width. I have found soft cardboard to be suitable when it is wrapped about the string ball in moist condition. In drying this cardboard contracts, adapts itself to the uneveness of the string ball, that is to say, to the depressions formed by the outermost layers of the windings, and forms a support for the threads, enveloping them completely with a firm grip. The envelope or cover attaches firmly to the string ball *a*, so that the projecting string portions of the outer layer of the ball produce grooves or depressions in the envelope cover, into which the projecting strings of the outer layer fit. When the inner layers of string are unwound, the outer layers remain supported in these grooves in the envelope, so that collapsing of the outer layers is avoided.

In order to obtain a close clinging of the envelope of soft cardboard, the envelope, prior to being wound around the string ball is rendered supple and impressible by moistening, and then strongly pressing the same against the string ball.

The moistened soft cardboard contracts when drying and thus grips the string ball so closely that the intended effect of supporting the outer layers of string is easily obtained.

This effect is further assisted by the flange or ledge *c* of the envelope which is formed to overlap the sides of the string ball in a flange-like manner. The close clinging of the material of the envelope may be further enhanced by the use of suitable pressing or clamping devices or the like.

What I claim:

1. A protecting envelope for string balls designed for binding sheaves, consisting of a suitable soft material, such as cardboard, entering into the unevennesses of the outer layer of the string ball, corresponding depressions being formed in the envelope acting as supports for the outer layers of the string ball.

2. A wholly self-supporting protecting envelope for a cross-wound string package of substantially cylindrical form, comprising a layer of soft cardboard disposed around the outer layers of thread on said string package forming a substantially cylindrical supporting casing therefor, depressions in said casing engaging depressions in said outer layer of string on said string package for holding said layers of string in position by the pressure of said casing on said outer layers of string and for supporting said protecting envelope thereon, the ends of said envelope being shaped laterally transverse to the axis of said string package and overlapping the ends of said package forming supporting flanges therefor and increasing the self-supporting function of said envelope, said function being due to the plasticity of said envelope exerting a pressure on the outer layers of said string package when attached thereto.

3. The method of forming a wholly self-supporting protecting envelope for a cross-

wound string package of substantially cylindrical form for securing the outer layers of said string package in position by the pressure of said envelope on said outer layers of said string package, consisting in moistening a strip of soft cardboard, in wrapping said strip around said string package in moist condition forming a moist casing around said outer layers of string on said package, in pressing said moist casing against said outer layers, in drying said moist casing to form depressions thereon engaging depressions on said string package by the construction of said moist casing, and in forming the ends of said casing transverse to the axis of said string package to overlap the ends of said package and to form supporting flanges therefor, the self-supporting function of said protecting envelope being due to the plasticity thereof and to the pressure created thereby upon the contraction during the drying process.

4. A wholly self-supporting protecting envelope for a cross-wound string package of substantially cylindrical form, said envelope consisting of a layer of soft cardboard disposed round the outer layers of thread of said string package and forming a substantially cylindrical supporting casing for the latter, depressions on the interior surface of said envelope, said depressions being formed by said outer layers of thread to keep said envelope in position on said string package by action of pressure thereon, and laterally directing flanges on the circular ends of said envelope, said flanges overlapping said package at the peripheries of the end surfaces thereof.

5. The method of forming a wholly self-supporting protecting envelope for a cross-wound string package of substantially cylindrical form, said method consisting in wrapping said packages at the cylindrical surface thereof with a moistened strip of soft cardboard, pressing said moistened strip of soft cardboard against the outer layers of said string package to form depressions in said strip, and flanging the circular edges of said casing inwardly to overlap the peripheries of the end surfaces of said string package, whereby the latter will be supported by said protecting envelope by action of pressure therebetween as well as by action of said flanges on said end surfaces.

In testimony whereof I have hereunto set my hand.

PETER BAUMHÜTER.