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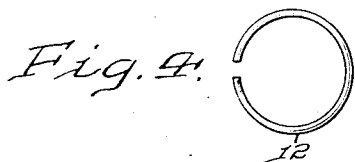
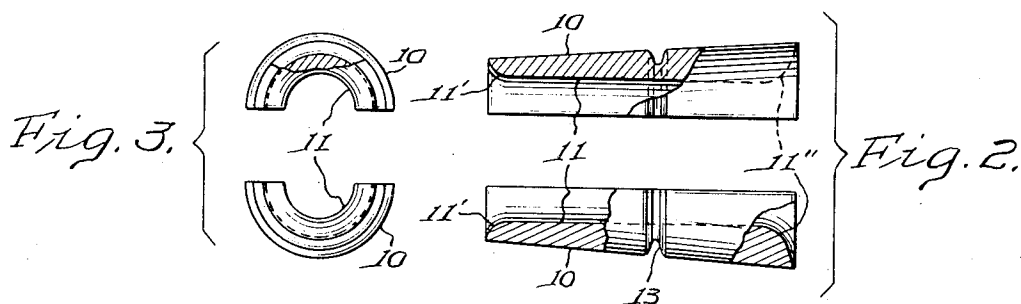
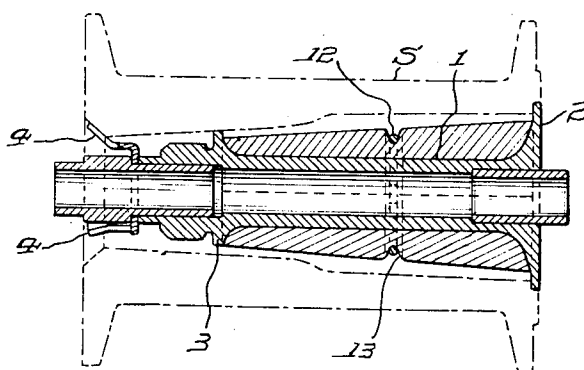
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1,934,170

WEIGHTING MEANS FOR TEXTILE MACHINERY SPOOL CORES

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Fig. 1.



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WEIGHTING MEANS FOR TEXTILE MACHINERY SPOOL CORES

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Application September 13, 1932
Serial No. 632,904

8 Claims. (Cl. 242—118)

The present invention relates to the cores or arbors on which thread holding spools utilized in the textile industry are operatively supported and more particularly to cores or arbors of the general character of those disclosed in my co-pending application for United States Letters Patent, Serial No. 603,272, filed April 5, 1932, a principal object of the invention being the provision of means for increasing the weight of such cores at the option of the user as, for example, when thread of relatively heavy gauge is to be wound upon or unwound from the spool disposed on the core.

A further object of the invention is the provision of weighting means which may be readily applied to or removed from the core when and as desired; which does not in any way interfere with the normal use of the core when operatively associated therewith; which is simple in design and construction and of a character such as to minimize chance of injury or deformation under the conditions of use to which articles of this character are necessarily subjected; which when operatively disposed upon the core is positively prevented from axial movement with respect thereto and restrained from rotating movement thereabout; which may be so designed as to effect any predetermined increase in the core weight within reasonable limits; which is relatively inexpensive, and which, when operatively associated with the core, is adapted to form therewith a substantially unitary assembly which can be readily introduced into or removed from the spool when and as required.

Other objects, advantages and novel features of design, construction and arrangement comprehended by the invention are hereinafter more particularly pointed out or will be apparent to those skilled in the art from the following description of a preferred embodiment thereof, during which reference will be had to the accompanying drawing.

In the said drawing, Fig. 1 is a longitudinal axial section through a core of the general character of that shown in my said application, Serial No. 603,272, filed April 5, 1932 with the weighting means of my invention operatively associated therewith, and also showing, in dot and dash lines, a spool disposed upon and supported by the core. Fig. 2 is a view partly in side elevation and partly broken away into central section of the members of the weighting element separated from each other and thus as they would appear prior to their application to the core; Fig. 3 is an end view of the parts shown in

Fig. 2, and Fig. 4 is a side elevation of the retaining element utilized to maintain the parts in operative assembly with the core.

As more fully disclosed in my said co-pending application, the core or arbor proper comprises a body 1 axially bored for the passage of a supporting spindle or the like and provided at one end with a flange 2 adapted to seat in a corresponding recess at one end of the spool S when the parts are assembled and, at a point more nearly adjacent its opposite end, with another flange 3 conveniently of triangular shape, the points of which cooperate with grooves in the wall of the spool bore to prevent rotation of the core therein; still more nearly adjacent its said opposite or forward end, the core is provided with a plurality of spring fingers 4 respectively designed to cooperate with the spool to center the adjacent end of the core therein and yieldingly resist relative axial movement between the spool and core, all as more fully described in my said co-pending application.

While the weighting means of the present invention is more particularly designed for use with a core of the general character shown in Fig. 1 and to which I have briefly referred, it is to be understood that by suitable modification said means may be employed with other forms of cores preferably embodying longitudinally spaced flanges or other means equivalent to the flanges 2 and 3, which, as will hereafter more fully appear, are effective to prevent relative longitudinal or axial movement between the weighting means and the core when the parts are operatively assembled.

As best shown in Figs. 2 and 3, the weighting element comprises a plurality of members, preferably formed of a heavy metal such as lead, which, when assembled, are adapted to form a sleeve about that portion of the core lying between the flanges 2 and 3; the element may thus consist, as shown, of a pair of similar members 10, 10 each of semi-annular cross section, the inner curved surfaces 11 of the members being shaped in conformity with the body of the core and at their ends 11', 11'' outwardly flared or curved to conform with the fillets, if any, between the flanges 2 and 3 and the core body, so that each member will fit snugly on the latter and, when so seated thereon, be restrained from longitudinal or axial movement by the flanges. Thus, when the two complementary weighting members are disposed about the core, that portion of the body between the flanges is practically enclosed in a surrounding sleeve, the thick-

ness of which, measured radially, substantially determines the additional weight which is added to the core by the weighting means. Preferably, as shown, the outer surface of each weighting member is inwardly tapered from that end thereof designed to rest adjacent the flange 2 toward its opposite end in general conformity with the corresponding taper of the spool S so that the member will clear the spool at all points when the core is positioned therein. While I prefer to form the weighting element of a pair of complementary members as just described, a greater number thereof may be employed if desired, in which case of course, the cross section of each member will approximate an annular sector of less than substantially 180°.

Means are also provided for snugly clamping the weighting members about the core after they are assembled thereon, said means preferably comprising a spring ring 12 adapted to fit in a peripheral groove 13 formed in their outer surfaces, the ring being of such diameter that when seated in the groove its ends will be spaced apart somewhat so that it will at all times tend to yieldingly press the members radially inwardly toward the core and hold them in assembled position thereon. This spring receiving groove 13 is preferably positioned in a plane normal to the longitudinal axis of the weighting element considered as a whole and substantially coincident with its center of gravity; thus when the weighted core is rapidly revolved, there is no greater tendency for one end of each weighting member to move outwardly from the core than for the other so to do, and, in consequence, the pressure of the spring ring, even though relatively light, is amply sufficient to maintain the weighting members snugly against the core under normal or even extraordinary operating conditions.

When it is desired to assemble the weighting means on the core the weighting members are first disposed about its body between the flanges 2 and 3 and the spring ring then snapped into position in the groove 13 so as to hold the members in place. Since the members are designed so as to snugly seat upon the core, the pressure exerted by the spring ring or other equivalent means employed prevents any substantial relative rotation between the weighting element as a whole and the core when the latter is revolved when in use. Moreover, the flanges 2, 3 cooperate with the ends of the members to prevent any longitudinal axial movement between them and the core, while, preferably, the radial thickness of the members at all points is such that the outer surface of the weighting element as a whole lies within the outermost edges of the flanges, thus permitting the weighted core to be inserted into or withdrawn from the spool in the usual way irrespective of the presence of the weighting means.

If a series of the weighting elements of different thicknesses and consequently of different weights are provided, it is therefore possible to impart any desired amount of weighting to a core by merely selecting the proper weighting element so that a given spool and core assembly can be readily and aptly adapted to the specific requirements of the particular thread which is to be used or arranged to meet the local practice of any mill, as the weighting elements can be very quickly assembled on the cores and equally quickly detached therefrom by simply prying off the spring rings or other securing means, thus enabling a single set of cores to be utilized for a

wide range of requirements by simply applying different weighting elements thereto or removing them therefrom.

While I have herein described one form of my invention with considerable particularity, I do not thereby desire or intend to specifically restrict myself thereto as minor changes may be made in the design, construction and arrangement of the various parts to adapt them to cores of varying conformation or for other reasons without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, I claim and desire to protect by Letters Patent of the United States:

1. The combination with a core of the class described, adapted to receive a spool, of weighting means therefor comprising a plurality of separate relatively elongated weighting members, each member having a cross section approximating an annular sector and means for removably confining said members about the core, whereby when the spool is placed on the core, the weighting means is concentric to, and within the spool.

2. The combination with a core of the class described, adapted to receive a spool, of weighting means enclosing a portion of the body thereof and comprising a pair of relatively elongated complementary weighting members each of semi-annular cross section, and means for holding said members together, whereby when the spool is placed on the core, the weighting members are concentric to, and within the spool, and the formation of the weighting members being such, with respect to the spool, so as to enable ready association and disassociation of the spool with and from the core.

3. The combination with a core of the class described, adapted to receive a spool of removable weighting means comprising a pair of relatively elongated complementary weighting members, each substantially of semi-annular cross section and provided with a groove in its outer surface and resilient means seating in said grooves and confining said members about the core, whereby when the spool is placed on the core the relatively elongated complementary weighting members are concentric to, and within the spool.

4. The combination with a core of the class described, of weighting means comprising a pair of complementary relatively elongated members adapted to fit about the body of the core and each of substantially semi-annular cross section, the outer surface of each member provided with a groove, and a spring ring seating in said grooves to removably confine the members to said body.

5. The combination with a core having a cylindrical body and radial axially spaced flanges, of weighting means comprising a plurality of elongated weighting members adapted to fit between said flanges against the body of the core to substantially enclose the latter and spring means surrounding said members for removably confining them to the core.

6. The combination with a core having a cylindrical body and radial axially spaced flanges, of weighting means comprising a plurality of elongated members adapted to fit between said flanges about the body of the core, each of said members approximating in transverse section an annular sector, and a spring ring substantially surrounding all of said members and yieldingly confining them to said body.

7. The combination with a core having a cy-

lindrical body and radial axially spaced flanges, of weighting means comprising a plurality of elongated members adapted to fit between said flanges about the body of the core, each of said members approximating in transverse section an annular sector, and means substantially surrounding said members in a plane normal to the core axis and approximately coincident with the center of gravity of said weighting means for confining said members to the core body.

8. The combination with a core of the class described, adapted to receive a spool, of externally tapered weighting means comprising a plurality of complementary segments adapted to embrace the core body and means for removably holding said segments in assembled relation thereabout, whereby when the spool is placed on the core the externally tapered weighting segments are concentric to, within, and spaced from the spool.

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15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150