

June 7, 1949.

J. V. COX

2,472,248

SPOOL

Filed Feb. 1, 1947

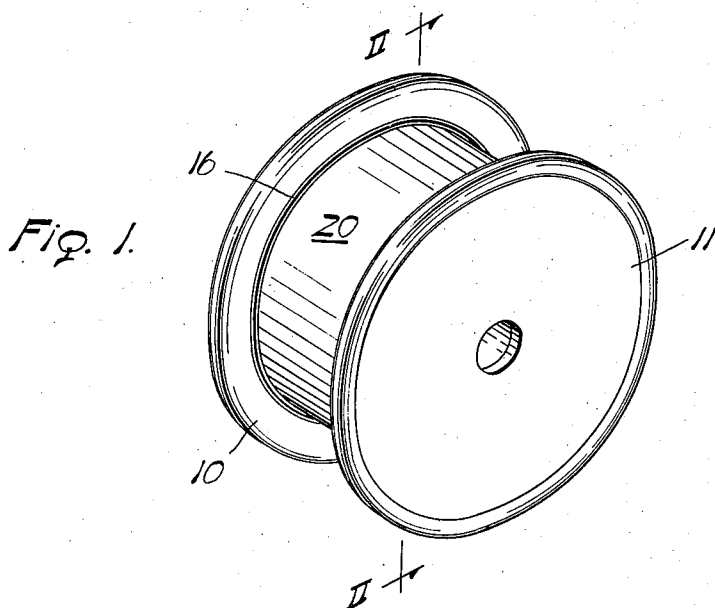
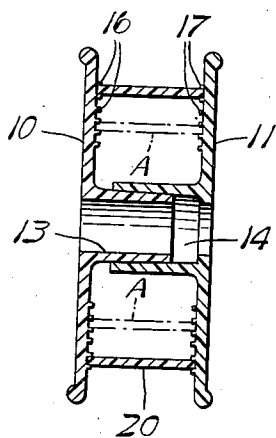


Fig. 2.

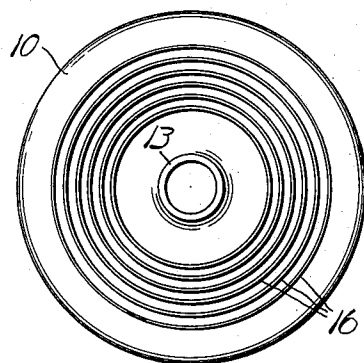


Fig. 3.

INVENTOR.
James Victor Cox
BY
Beau, Brooks, Buckley & Beau
ATTORNEYS

UNITED STATES PATENT OFFICE

2,472,248

SPOOL

James Victor Cox, Buffalo, N. Y., assignor to
B. F. Gladding & Company, Inc., South Otselee,
N. Y.

Application February 1, 1947, Serial No. 725,945

11 Claims. (Cl. 242-118)

1

This invention relates to a novel spool or bobbin construction.

Various built-up spool or bobbin constructions have been proposed in the prior art. The present invention provides departures from the constructions of the prior art which afford numerous advantages in manufacture, particularly in mass production, and in the usefulness of the resultant product.

In pursuing the teachings of the present invention, it is possible to fabricate a sturdy and rigid spool or bobbin from a minimum number of simple parts which lend themselves readily to economical production on a large scale by molding from any of a wide variety of synthetic resins or plastics.

Further, the construction of the present invention is such that the major parts of the spool may be used interchangeably to form spools having various base diameters. Base diameters as here used means the diameter of the drum or element upon which the material for which the spool is provided is wound. The spool of the present invention comprises a pair of interfitting end members or heads which engage over the ends of a short sleeve element which comprises the surface upon which the material is to be wound. Sleeve elements of various diameters may be engaged between a given pair of end members to provide spools of various effective sizes.

A detailed embodiment of a spool or bobbin constructed according to the present invention is illustrated in the accompanying drawing and described in the following specification. However, the principles of the present invention are not limited to the form shown by way of example nor otherwise than as defined in the appended claims.

In the drawing:

Fig. 1 is a perspective view of a completed spool or bobbin;

Fig. 2 is a cross-sectional view taken on the line II-II of Fig. 1; and

Fig. 3 is an elevational view of the inner face of one of the end members of the spool or bobbin of Figs. 1 and 2.

In the several figures of the drawing, like characters of reference denote like parts, and the numerals 10 and 11 designate a pair of circular end members individually molded from synthetic resin or other suitable plastic material. The end members 10 and 11 are provided with telescoping central sleeve-like projections 13 and 14, respectively. Either the external periphery of projec-

2

tion 13 or the internal periphery of projection 14 or both may be very slightly tapered in the molding step to facilitate assembly and insure a tight fit.

The facing radial surfaces of end members 10 and 11 are each provided with a series of concentric circular ribs 16 and 17, respectively. The several ribs 16 and 17 are equally spaced in a radial direction to provide a series of seating grooves and in Fig. 2 a cylindrical sleeve element 20, likewise preferably of molded resin, is shown with its ends seated between pairs of adjacent ribs 16 and 17. The dot and dash lines at A in Fig. 2 illustrate the fact that, in the alternative, another sleeve of considerably less diameter might be seated between another pair of the ribs 16 and 17, in place of sleeve 20, to provide a spool of greater capacity within the same end members 10 and 11.

During assembly the circular grooves of the end members 10 and 11 which are to receive the ends of sleeve 20, or the ends of sleeve 20 themselves or both, are provided with a suitable cement. The external periphery of projection 13 and the internal periphery of projection 14 are likewise provided with cement, so that when the device is assembled as shown in Figs. 1 and 2, the parts 10, 11 and 20 bond into an integral unit which, while it basically may be made of relatively low strength synthetic resin, provides a very rigid, strong, and attractive spool or bobbin.

The material normally used is moderately resilient and the proportions may be such that when the projections 13 and 14 are pressed to finally assembled position the radial walls of end members 10 and 11 are flexed slightly outwardly by the sleeve 20, so that they clamp sleeve 20 with resilient pressure.

What is claimed is:

1. As an article of manufacture, a spool comprising opposed head members each including a central hollow cylindrical portion and a circular end wall portion extending radially outwardly therefrom, said cylindrical portions being snugly interfitting and adhesively secured to support the wall portions in spaced coaxial relationship, the proximate faces of the wall portions having relatively shallow circular grooves spaced outwardly of and concentric with said cylindrical portions, and a tubular element having its opposite ends seating in said grooves and held securely between said end wall portions by the rigid interfitting of said cylindrical portions.

2. As an article of manufacture, a spool comprising opposed head members each including a

3

central hollow cylindrical portion and a circular end wall portion extending radially outwardly therefrom, said cylindrical portions being snugly interfitting and adhesively secured to support the wall portions in spaced coaxial relationship, the proximate faces of the wall portions having relatively shallow circular grooves spaced outwardly of and concentric with said cylindrical portions, and a tubular element having its opposite ends seating in said grooves and held securely between said end wall portions by the rigid interfitting of said cylindrical portions, the proportions being such that the wall portions are flexed resiliently against the ends of the tubular element as the cylindrical portions are pressed to finally assembled position.

3. As an article of manufacture, a spool comprising opposed heads each comprising a molded plastic member having a central hollow cylindrical portion and a circular end wall portion extending radially outwardly therefrom, said cylindrical portions being snugly interfitting and adhesively secured to support the wall portions in spaced coaxial relationship, the proximate faces of the wall portions having relatively shallow circular grooves spaced outwardly of and concentric with said cylindrical portions, and a plastic tubular element having its opposite ends seating in said grooves and held securely between said end wall portions by the rigid interfitting of said cylindrical portions.

4. As an article of manufacture, a spool comprising opposed head members each including a central hollow cylindrical portion and a circular end wall portion extending radially outwardly therefrom, said cylindrical portions being snugly interfitting and adhesively secured to support the wall portions in spaced coaxial relationship, the proximate faces of the wall portions having a plurality of uniformly spaced relatively shallow circular grooves spaced outwardly of and concentric with said cylindrical portions, and a tubular element of a selected diameter having its opposite ends seating between a predetermined pair of said grooves on each wall portion, according to its diameter, and held securely between said end wall portions by the rigid interfitting of said cylindrical portions.

5. As an article of manufacture, a spool comprising opposed head members each including a central hollow cylindrical portion and a circular end wall portion extending radially outwardly therefrom, said cylindrical portions being securely interfitted to support the wall portions in spaced coaxial relationship, the proximate faces of the wall portions having relatively shallow circular grooves spaced outwardly of and concentric with said cylindrical portions, and a tubular element having its opposite ends seating in said grooves and held securely between said end wall portions by the rigid interfitting of said cylindrical portions.

6. As an article of manufacture, a spool comprising opposed head members each including a central hollow cylindrical portion and a circular end wall portion extending radially outwardly therefrom, said cylindrical portions being snugly interfitting and adhesively secured to support the wall portion in spaced coaxial relationship, the proximate faces of the wall portions having a circular seat spaced outwardly of and concentric with said cylindrical portions, and a tubular element having its opposite ends in engagement with said seat and held securely between said end wall

portions by the rigid interfitting of said cylindrical portions.

7. As an article of manufacture, a spool comprising a pair of end members, each of said end members comprising a substantially discoidal body portion and a central coaxial tubular projection, said tubular projections being telescoped in snugly fitting engagement to support the discoidal portions in spaced coaxial relationship, and a core element comprising a cylindrical sleeve having each of its ends in abutment with one of the inner faces of the discoidal portions of said end members, each of said end members having a relatively shallow circular groove in its inner face to receive and locate an end of said sleeve, said members and said sleeve being retained in assembled position by adhesive securement of said interfitting tubular projections.

8. As an article of manufacture, a spool comprising a pair of end members, each of said end members comprising a substantially discoidal body portion and a central coaxial tubular projection, said tubular projections being telescoped in snugly fitting engagement to support the discoidal portions in spaced coaxial relationship, and a core element comprising a cylindrical sleeve having each of its ends in abutment with one of the inner faces of the discoidal portions of said end members, each of said end members having a relatively shallow circular groove in its inner face to receive and locate an end of said sleeve, said members and said sleeve being retained in assembled position by adhesive securement of said interfitting tubular projections, the proportions being such that the discoidal portions are flexed resiliently against the ends of the cylindrical sleeve as the parts are finally assembled by telescoping said tubular projections.

9. As an article of manufacture, a spool comprising a pair of molded plastic end members, each of said end members comprising a substantially discoidal body portion and a central coaxial tubular projection, said tubular projections being telescoped in snugly fitting engagement to support the discoidal portions in spaced coaxial relationship, and a core molded plastic element comprising a cylindrical sleeve having each of its ends in abutment with one of the inner faces of the discoidal portions of said end members, each of said end members having a relatively shallow circular groove in its inner face to receive and locate an end of said sleeve, said members and said sleeve being retained in assembled position by adhesive securement of said interfitting tubular projections.

10. As an article of manufacture, a spool comprising a pair of end members, each of said end members comprising a substantially discoidal body portion and a central coaxial tubular projection, said tubular projections being telescoped in snugly fitting engagement to support the discoidal portions in spaced coaxial relationship, and a core element comprising a cylindrical sleeve having each of its ends in abutment with one of the inner faces of the discoidal portions of said end members, each of said end members having a relatively shallow circular groove in its inner face to receive and locate an end of said sleeve, said members and said sleeve being retained in assembled position by secure interfitting of said tubular projections.

11. As an article of manufacture, a spool comprising a pair of end members, each of said end members comprising a substantially discoidal body portion and a central coaxial tubular pro-

jection, said tubular projections being telescoped in snugly fitting engagement to support the discoidal portions in spaced coaxial relationship, and a core element comprising a cylindrical sleeve having each of its ends in abutment with one of the inner faces of the discoidal portions of said end members, each of said end members having a circular seat on its inner face to receive and locate an end of said sleeve, said members and said sleeve being retained in assembled position by adhesive securement of said interfitting tubular projections.

JAMES VICTOR COX.

REFERENCES CITED

The following references are of record in the file of this patent:

15

Number
550,701
1,396,481
1,475,704
1,591,771
2,201,305

5

10

Number
22,131
145,918

UNITED STATES PATENTS

Name	Date
Wardwell -----	Dec. 3, 1895
Vaughan -----	Nov. 8, 1921
Kaufman -----	Nov. 27, 1923
Batchelor -----	July 6, 1926
Springer -----	May 21, 1940

FOREIGN PATENTS

Country	Date
Great Britain -----	Nov. 6, 1899
Great Britain -----	July 8, 1920