Feb. 23, 1932. G. H. KENNEDY 1,846,397

SPOOL

Filed Dec. 15, 1930

Fig. 1.

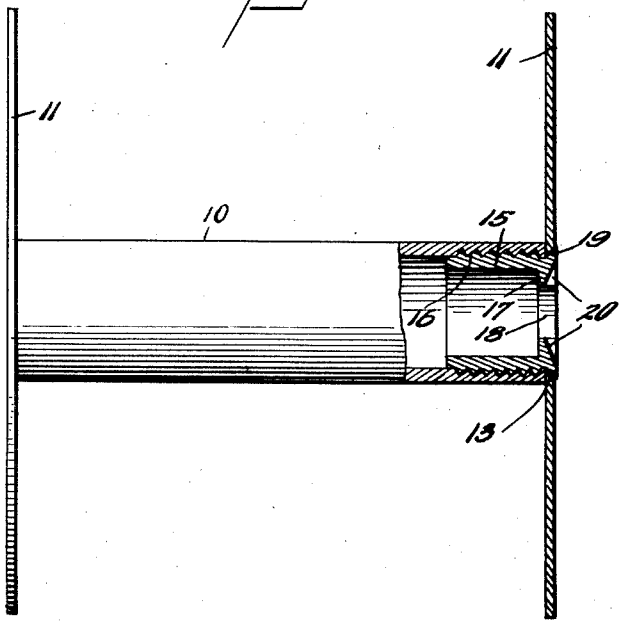


Fig. 2.

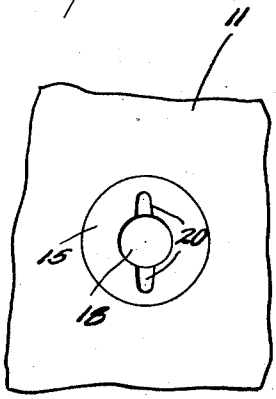


Fig. 3.

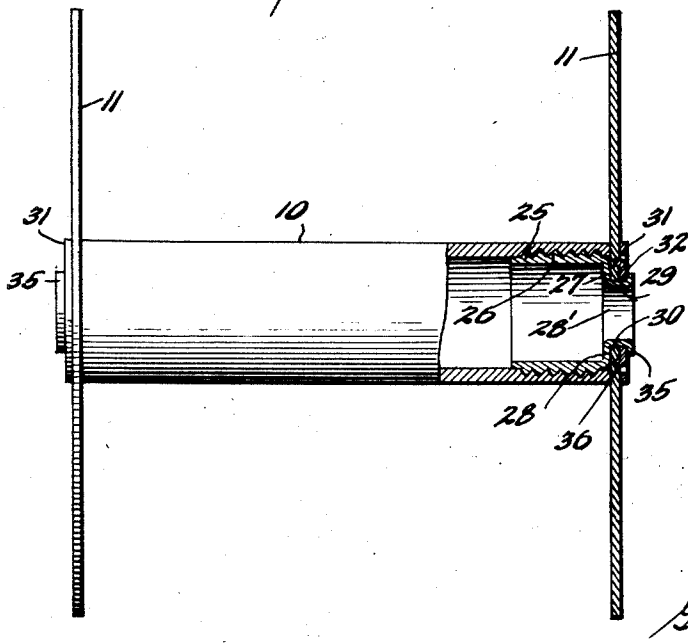
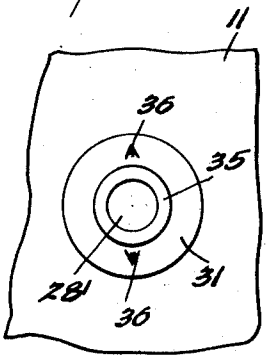


Fig. 4.



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Patented Feb. 23, 1932 1,846,397

UNITED STATES PATENT OFFICE

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SPOOL

Application filed December 15, 1930. Serial No. 502,494.

This invention relates to spools, reels, bobbins, or like winding devices, and more particularly to means for securing the end discs or flange members to the barrels or body portions thereof.

The general object of this invention is to provide an improved spool for thread, wire, or the like, in which the end discs or flange members are rigidly fastened to the body member by means of novel securing elements, the particular construction of which also forms an important feature of the invention.

The present invention contemplates the provision of a practical and simply constructed securing element, a portion of which is adapted to be received within an opening in the end of the barrel or body member of the spool or bobbin, and which is further provided with means for retaining the end discs.

Other objects and features of novelty will be apparent from the following specification when read in connection with the accompanying drawings in which certain embodiments of the invention are illustrated by way of example.

In the drawings:

Figure 1 is a view in side elevation of one embodiment of my invention, a portion thereof being shown in vertical cross-section;

Figure 2 is a fragmentary end view of the spool shown in Figure 1;

Figure 3 is a view similar to Figure 1 showing another embodiment of the invention; and

Figure 4 is a fragmentary end view of the spool shown in Figure 3.

In all of the figures of drawings, the barrels or body members of the spools are designated by the numeral 10, and the end discs or flange members by the numeral 11. As illustrated, the body members 10 comprise tubular cylinders constructed preferably of pasteboard or a similar material, but it will be understood that in both of the embodiments of invention illustrated, the body members 10 may be made solid for the greater portion of their longitudinal extent but with hollow ends for the reception of the fastening elements which will presently be described.

In the spools illustrated in Figures 1 and 2, the end discs 11 are provided with apertures 13, the diameter of which is substantially equal to the internal diameter of the tubular or hollow body member. The inner margins of the aperture 13 are adapted to abut the end of the body member 10, and the fastening member 15 is adapted to be inserted through the aperture 13 and into the bore or hollow end of the body member. The fastening element 15 in this embodiment takes the form of a hollow cylindrical shell, preferably constructed of metal and provided with the screw threads 16 on its outer cylindrical surface. An end wall, head, or web 17 is formed at the outer end of the fastening element and is adapted to partly close this end. The head or web 17 is centrally provided with the circular perforation or aperture 18 and is also provided around its outer periphery with an outwardly flared portion or flange 19 which is adapted to overlie and bear against the outer margin of the end disc aperture 13 in order to clamp it rigidly against the end of the body member 10. A groove or slot 20 is cut in the outer surface of the head 17 of the fastening element for the purpose of providing means whereby a suitable tool may be applied to the element in assembling or taking down the spool. This slot or groove is formed upon a diameter of the head of the fastening element and is adapted to bisect the perforation 18. A tool for this purpose may take the form of a relatively wide screw driver or of a shaft adapted to enter the aperture 18 and provided with relateral projections for engaging the walls of the slot or groove 20.

In assembling the spool the fastening element 15 is inserted through the aperture 13 and is forced into the bore or hollow end of the body member 10. Either the body member 10 may be previously formed with internal threads, or such threads may be cut or pressed into the material of the body member by the threads 16 of the fastening element as the fastening element is screwed home by means of the assembling tool.

In the embodiment illustrated in Figures 3 and 4 of the drawings, the securing element is designated by the numeral 25 and is provided with threads 26 for securing it to the body member 10. At the outer end of the threaded cylindrical portion which enters the bore or hollow end of the body member 10, there is formed the head or web 27, the outer surface 28 of which is adapted to occupy the same plane as the outer end surface of the body member 10. The head 27 is formed with a central opening 28′ and is extended outwardly in the form of a narrowed cylindrical or tubular portion 29. The end disc 11 in this instance is provided with a central aperture 30, the diameter of which is considerably less than the internal diameter of the body member 10. The margin of the aperture 30 of the end disc is adapted to be disposed against the end of the body member 10 and the outer surface 28 of the head of the securing element. A washer 31 provided with a central perforation 32 is disposed against the outer surface of the end disc with the perforation 32 registering with the aperture 30. The tubular or cylindrical projection 29 is adapted to extend through the aperture 30 and the perforation 32, and the outer end 35 thereof is then spun or otherwise flared radially outwardly over the margins of the perforation 32 of the washer 31 so as to cause the washer to rigidly clamp the end disc 11 against the end of the body member 10 and the head of the securing element. In order to provide a more rigid connection and to absolutely prevent relative rotation between the washer 31 and the disc 11, the prongs or spurs 36 may be struck inwardly from the material of the washer so as to be embedded in the outer surface of the end disc 11.

The central opening 18 of the first embodiment and the opening 28 of the embodiment last described are provided for the insertion of a shaft or axle upon which the spool may be mounted.

It will be understood that any suitable materials may be used in constructing the various parts of the spools described above, but, in the preferred embodiments, the body portions 10 are formed of pasteboard or wood, the ends discs 11 are preferably constructed of impregnated pasteboard, and the fastening elements 15 and 25 are formed of a metal, such as brass or the like.

It will also be understood that various changes and modifications may be made in the embodiments shown and described without departing from the scope of the invention as defined in the following claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:—

1. In a bobbin, spool, or the like, comprising a barrel or body member having an opening in the end thereof and a centrally perforated end disc, a fastening element for securing said end disc to said body member comprising an externally threaded hollow cylindrical portion adapted to be screwed into the opening in the end of said body member, an annular head or web formed at the outer end of said cylindrical portion, extending radially inwardly from said outer end, and provided with a central opening, a narrowed cylindrical portion extended outwardly from the margins of said opening and through the aperture in said end disc, the end of said narrowed cylindrical portion being spun radially outwardly to overlie the margin of said aperture and to clamp said margin rigidly against the outer surface of said head and the end of said body member.

2. In a bobbin, spool, or the like, comprising a barrel or body member having an opening in the end thereof and a centrally perforated end disc, a fastening element for securing said end disc to said body member comprising a hollow, relatively thin-walled, metallic shell provided with an externally threaded cylindrical portion adapted to be screwed into the opening in the end of said body member, the aperture of said end disc having a diameter less than the internal diameter of said body member, a washer disposed against the outer surface of said end disc and having a central perforation adapted to register with said aperture, a head or web formed at the outer end of said cylindrical portion and provided with a central opening, a narrowed cylindrical portion extending outwardly from the margins of said opening and through said aperture and said perforation, the end of said narrowed cylindrical portion being spun radially outwardly to overlie the margin of said perforation and to cause said washer to clamp the end disc rigidly against the end of said body member and the outer surface of said head.

3. The combination as set forth in claim 2 in which a spur or prong is struck inwardly from the material of said washer so as to be embedded in the material of said end disc.

In testimony whereof I hereunto affix my signature.

GIBSON H. KENNEDY