Aug. 11, 1931. W. C. MILLS 1,818,149

SPOOL OR REEL

Filed July 7, 1928

Fig. 1.

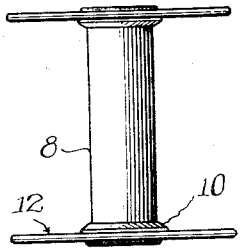


Fig. 2.

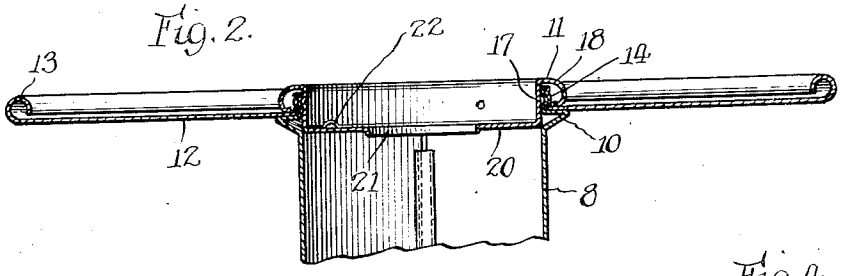


Fig. 3.

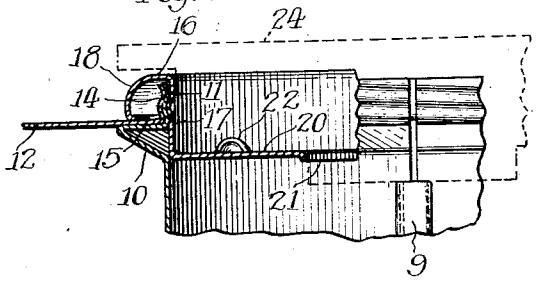


Fig. 4.

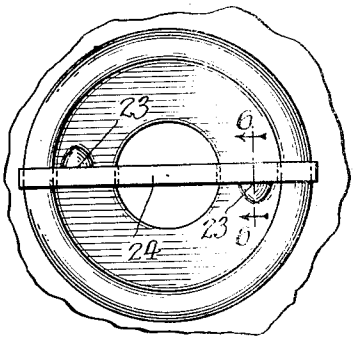


Fig. 5.

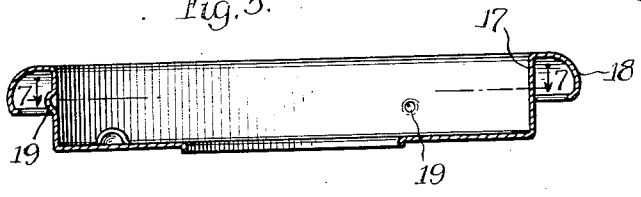


Fig. 6.

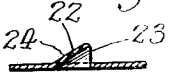
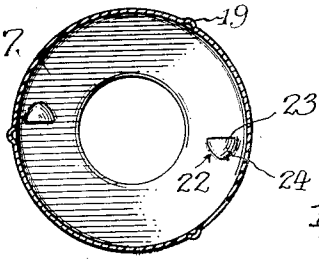


Fig. 7.



Inventor:
Wallace C. Mills.
By Schmidt, Parker & Carlson.
Attys.

Patented Aug. 11, 1931

1,818,149

UNITED STATES PATENT OFFICE

WALLACE C. MILLS, OF ROCKFORD, ILLINOIS, ASSIGNOR TO J. L. CLARK MANUFACTURING COMPANY, OF ROCKFORD, ILLINOIS, A CORPORATION OF ILLINOIS

SPOOL OR REEL

Application filed July 7, 1928. Serial No. 291,073.

The invention relates to spools of the type comprising a tubular core having substantially flat sheet metal heads secured upon opposite ends thereof. Such spools when made in larger sizes are adapted to contain wire, insulated electric conductors, etc., and are commonly supplied in large numbers to the manufacture of the product to be wound on the spools. When thus made in large sizes they necessarily consume a large amount of space when packed in assembled form for shipment, while the weight is relatively light, and therefore shipment in assembled form is objectionable.

The object of my invention is to provide a spool of a construction such as to lend itself to shipment in disassembled or knock-down form, while permitting the user thereof to assemble the same quickly and effectually.

A further object is to provide a spool of the character above referred to having means of a simple character for rigidly securing the heads onto the ends of the core without the use of forming dies or the like.

The objects of the invention thus set forth, together with other and ancillary advantages are attained by the construction and arrangement shown in the accompanying drawings forming part hereof, it being contemplated however, that various changes may be made by those skilled in the art without departing from the spirt and scope of the invention.

Figure 1 of the drawings is a side elevational view of a spool or reel of the character referred to.

Fig. 2 is a central longitudinal sectional view through one end of the spool in assembled relation.

Fig. 3 is a fragmentary sectional view showing the method of assembling the parts of the spool.

Fig. 4 is a fragmentary end view also showing the assembling operation.

Fig. 5 is an enlarged sectional view of a connecting member employed in securing the head on the end of the core, in the form of a plug.

Fig. 6 is a fragmentary sectional view illustrating a detail of construction, the same being taken in the plane of line 6—6 of Fig. 4.

Fig. 7 is a transverse sectional view through the connecting member but on a smaller scale, the view being taken in the plane of line 7—7 of Fig. 5.

The spool comprises a core 8 formed from a flat sheet of metal with the meeting edges thereof joined by a suitable seam 9. An annular bead 10 is formed near each end of the core and projects outwardly therefrom. An end portion 11 extends beyond the bead 10 and in the present instance is shaped to provide internal and external helical grooves or threads.

Each of the heads 12 are, in the present embodiment, formed from a single flat sheet or disk of metal, though the invention is not limited to this construction. The outer peripheral edge of the disk may be curled as at 13 for finishing and strengthening purposes. The inner peripheral edge of the disk is in the present instance preferably provided with a flange 14 encircling the threaded extension 11 of the core, and said flange may have a helical groove or thread so as to form a threaded nipple or sleeve adapted to be screwed onto the core in interengagement with the external thread thereon. The bead on the core is preferably shaped to provide a flat seat portion 15 for the head, while the opposite wall of the bead may be inclined.

In assembling the parts of the spool each head is seated upon its bead 10 and is held in this position by a U-shaped annulus 16 having an inner leg 17 adapted to interengage with the threaded end of the core and an outer leg 18 adapted to engage with the head 12. In the present instance the inner leg of the annulus may be provided with spirally arranged projections or bosses 19 adapted to engage with the internal thread in the end portion 11 of the core so that the annulus may be screwed or threaded into the core and held in such position by reason of the screw threaded relation.

It will be apparent that the parts may thus be rigidly secured together, the annulus serving as a nut clamping the head on its seat

and preventing it from being unscrewed from the core.

In the preferred form the annulus has formed integral therewith a transverse partition 20 constituting an end wall for the core which partition may be centrally apertured as at 21 to receive a rod or shaft upon which the spool may be mounted for the purpose of dispensing the product thereon.

The end wall 20 may be utilized in assembling the parts, being for this purpose provided with struck up segmental bosses 22 providing sharp abutting edges 23 in opposed relation on opposite sides of the axis of the core, but spaced slightly on opposite sides of a diameter passing through the core. Between these abutting edges 23 a bar or key 24 may be placed as shown clearly in Fig. 4, and it will be apparent that upon turning the key 24 to the right (Fig. 4) the annulus may be turned in a direction to screw the same into the core and thus clamp the head in place on the core. Preferably the bosses 22 provide inclined surfaces 24 opposite the sharp abutting edges 23 over which the key 24 will ride if an effort is made to unscrew the annulus from the core.

It will be apparent that the construction is very simple, may be economically manufactured, and by reason of the fact that it may be quickly and easily assembled may be shipped to the user in knock-down form, thus reducing substantially the cost of shipment.

I claim as my invention:

1. A spool comprising a core, a head to be secured upon one end thereof, means providing a seat for the head to hold it against inward movement relative to the core, and an annulus having a portion adapted to be inserted into the end of the core in interengaging relation therewith, so as to be held against relative longitudinal movement, said annulus further having a portion curled around the end of the core and engaging with said head to hold it upon its seat.

2. A spool comprising a core formed of sheet metal and having a bead near one end thereof shaped to provide a flat seat, a head in the form of a disk centrally apertured to encircle the end of the core while engaging said seat, said head having a flange defining said aperture and fitting snugly the end of the core, and an annulus adapted to be inserted into the core in binding relation thereto and having a portion engaging with the head to hold it upon said seat.

3. A knock-down spool having a core with a circumferential groove near one end, a head centrally apertured to receive the end of the core, means forming a seat for the head, and a member for clamping the head on said seat, said member having a part adapted in turning to interengage with said groove in the core, and a portion engaging with the head, and said member further having a partition extending transversely of the core and centrally apertured to receive a supporting rod.

4. A spool comprising a core having a shoulder at one end and a part projecting from said shoulder, a head including an apertured disk adapted to seat upon said shoulder and having a part screw-threaded into engagement with said extending part of the core, and an annulus having a screw threaded connection with one of said parts and serving to enclose the same, said annulus also having rigid therewith a disk forming an end wall for the core.

5. A spool having a sheet metal core with a screw threaded end portion, a head threaded onto the exterior of said end portion, and a nut in screw threaded engagement with the interior of said end portion and serving to hold the head from unscrewing from the core.

6. A spool comprising a core formed from sheet metal and having a shoulder near one end thereof, a head formed from a disk centrally apertured to encircle the end of the core while seated against said shoulder, said head having a flange defining said aperture and arranged to fit snugly against said core, said flange and said core having means formed thereon whereby said head may be manually interengaged with said core to form a spool.

7. A spool having a sheet metal core with a screw-threaded end portion, a head threaded onto the exterior of said end portion, and an annulus in screw-threaded engagement with the interior of said end portion and having a portion reversely curled around the end of the core and engaging said head to hold the same against unscrewing from said core.

8. A spool adapted for manual assembly and comprising a tubular core having a screw-threaded end portion, a head adapted to be threaded onto the exterior of said portion, an annulus adapted to be threaded into the interior of said portion, said annulus having a reversely curled portion arranged to extend over said end portion into engagement with said head to lock the same against unscrewing from said core, a transverse wall connected to said annulus and arranged to be positioned within said core when the parts are in assembled relation, and projections formed on said wall whereby said annulus may be engaged and screwed into said core, said projections being arranged to be inoperative for the purpose of unscrewing the annulus from its operative position on the core.

In testimony whereof, I have hereunto affixed my signature.

WALLACE C. MILLS.