Feb. 14, 1950 R. V. OLSON 2,497,556

REEL OR SPOOL

Filed Sept. 6, 1945

Fig. 1.

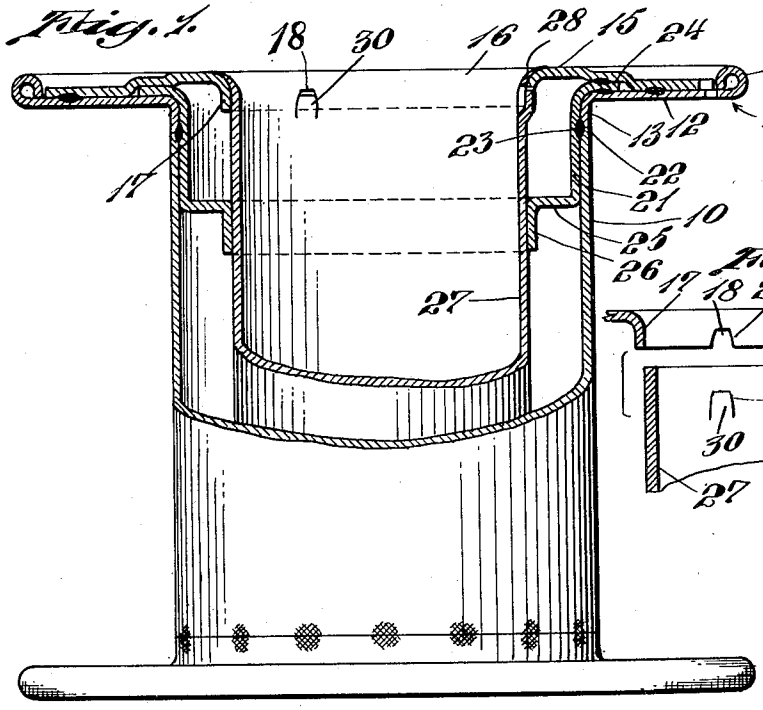


Fig. 3.

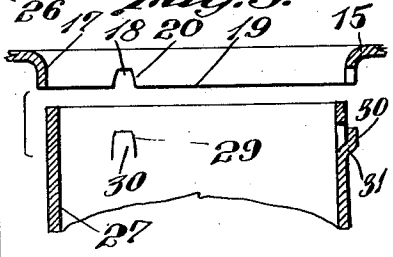


Fig. 2.

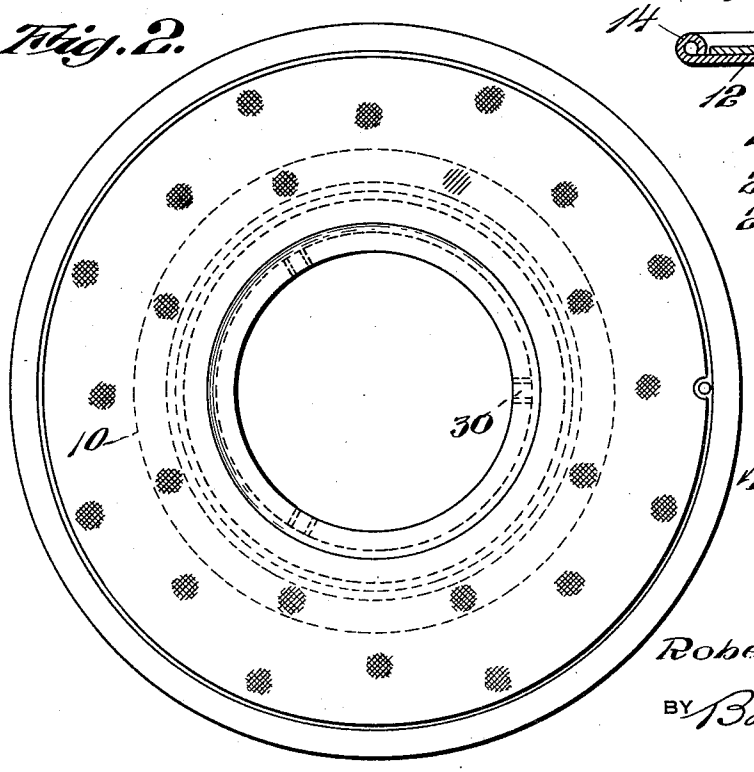
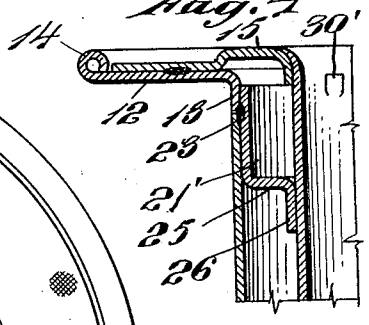


Fig. 4



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REEL OR SPOOL

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Application September 6, 1945, Serial No. 614,696

6 Claims. (Cl. 242—123)

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This invention relates to a reel or spool of the type formed of sheet stock, and is an improvement on my construction illustrated in Patent No. 2,258,580 dated October 7, 1941.

One of the objects of this invention is to provide a reel or spool which will be stronger than the reel or spool construction shown in the above-entitled patent.

Another object of this invention is to provide a reel or spool which will have its center tube locked against circular motion with reference to the head or barrel.

Another object of this invention is to provide a reel or spool in which the head will be locked against axial movement as well as locked against circular movement.

Another object of this invention is to provide a construction which will provide a secure lock between the center tube and the head or barrel without the use of welding, brazing, or the like.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a fragmental sectional view of a reel or spool constructed in accordance with this invention;

Fig. 2 is an end view thereof;

Fig. 3 is a detail sectional view of a fragmental portion of the center tube and a portion of the head;

Fig. 4 is a fragmental sectional view of a modified structure.

In proceeding with this invention, I provide a head which has as a part of its construction an inturned center flange. The edge of this flange is notched and tapered on its side edges, while the center tube extends through the central opening about which the flange borders and forms a margin and has raised from its stock lugs, which are also tapered and which are driven into the notches so that a secure tight fit is provided between the side edges of the notches and the edges of the lugs. Thus, a secure rotary lock is provided while, because of this tight fit, an axial or longitudinal lock is also provided. The center tube is rolled over the head to lock the head against outward axial movement.

With reference to the drawings, 10 designates generally the barrel of the spool or reel and 11 designates generally the head. The head is composed of a plate 12 having an inturned flange 13 about its central opening and a rolled edge 14

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at its outer edge to stiffen the same. A reinforcing plate 15 bridges the center opening of the barrel and is itself provided with a center opening 16 about which a flange 17 extends and projects inwardly, which flange is provided with a plurality of notches 18 in its edge 19. These notches are tapered or provided with converging side walls 20 as they proceed away from the edge of the flange.

The barrel 10 abuts the flange 13 of the plate 12 and is welded thereto and reinforced by a member 21 which extends across the junction 22 of the barrel 10 and the flange 13, all of these being welded together as at 23 to provide a firm joint. This member 21 has a flange extending outwardly as at 24 which fits between the reinforcing plate 15 and the plate 12. Member 21 also extends radially inwardly as at 25 and then axially as at 26 to engage a center tube 27 which extends centrally through the barrel 10 and through the opening 16 in the plate 15 of the head.

The center tube 27 is flared over the plate 15 as at 28 so as to firmly lock the center tube into position.

Lugs 30 are raised from the stock of the center tube 27 at a point inwardly from its end and these lugs are of a size to enter the notches 18. The lugs are tapered as at 29 so as to engage the side walls 20 of the notches 18 prior to the ends of the lugs engaging the bottom of the notch to be limited in its movement. In practice, the heads are forced onto the center tube 27 until the lugs are bent backwardly at their portions 31 so as to insure a tight fit between the lugs and the notches.

I find it preferable to taper the lugs and the notches in order to secure this tight fit, but in some cases the lugs 30' (see Fig. 4) instead of being tapered may be square as illustrated in Fig. 4, so long as some means is provided for causing a tight engagement between the sides of the lugs and the notches as well as some support to enable an axial thrust to be taken between the lugs and the notches.

Fig. 4 also illustrates a further modification in that the member 21' has no flange corresponding to the flange 24 as shown in Fig. 1 between the plates 12 and 15. In both Fig. 4 and Fig. 1, however, the support provided from the portion 26 at the end of the radially extending portion 25 extends inwardly from the head so as to provide a central support for the center tube inwardly from the head, and thus a good bearing and reinforcement for the cen-

ter tube nearer the center thereof than were this portion turned outwardly toward the end of the reel from the radial portion 25.

I claim:

1. In a reel or spool of sheet material comprising a tube, a lug spaced from the end of the tube and offset outwardly from the stock thereof, a head having an opening through which the end of the tube extends, a flange on said head at the edge of the opening surrounding the tube, and a notch in the edge of the flange receiving said lug.

2. In a reel or spool as set forth in claim 1 wherein there are a plurality of notches and lugs spaced about the circular extent of the flange and tube.

3. In a reel or spool of sheet material, a head having an inwardly extending flange provided with a notch in the edge thereof, with its sides converging as they proceed away from the edge of the flange, an axially extending tube having a lug entering said notch and snugly engaging the sides thereof with its edges converging toward its free end, said lug being spaced from the end of the tube and offset from the stock thereof.

4. In a reel or spool as set forth in claim 3 wherein the end of the tube extends through

an opening in the head which said flange surrounds.

5. In a reel or spool as set forth in claim 4 wherein the end of the tube is flared over said head.

6. In a reel or spool of sheet material, a head having an inwardly extending flange provided with a notch in the edge thereof, with its sides converging as they proceed away from the edge of the flange, an axially extending tube having a lug entering said notch and snugly engaging the sides thereof with its edges converging toward its free end, said tube extending through said head and being flared over the head to hold the center of the head from moving out.

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