Jan. 21, 1941. R. V. OLSON 2,229,584

SPOOL OR REEL

Filed June 7, 1939

Fig. 1.

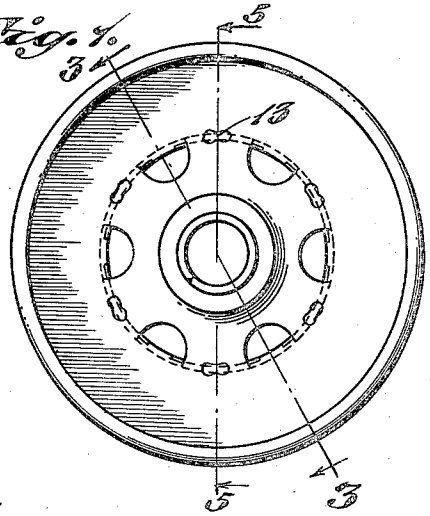


Fig. 2.

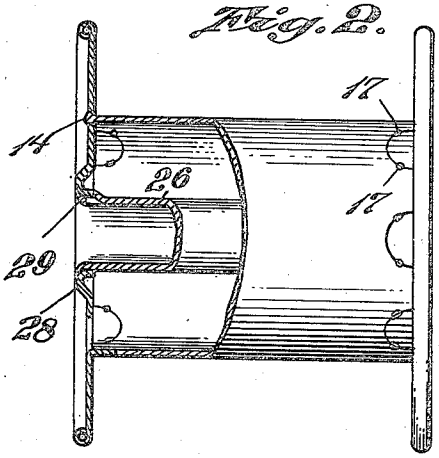


Fig. 3.

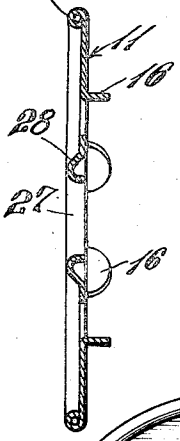


Fig. 4.

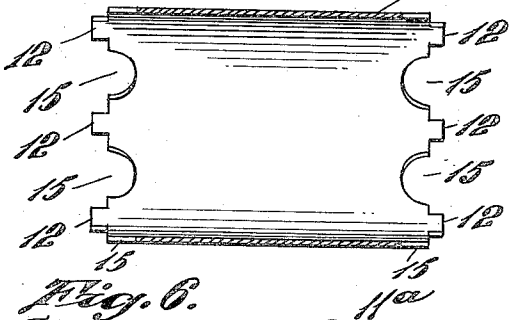


Fig. 5.

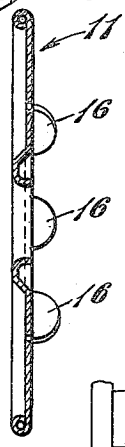


Fig. 6.

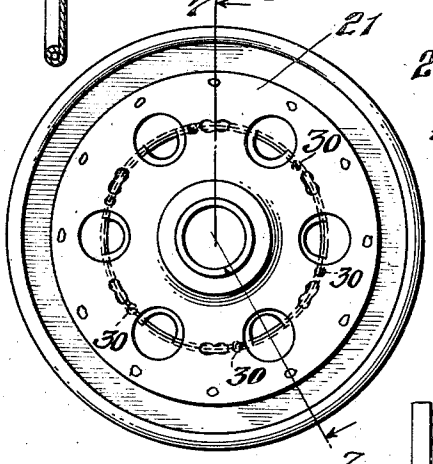


Fig. 7.

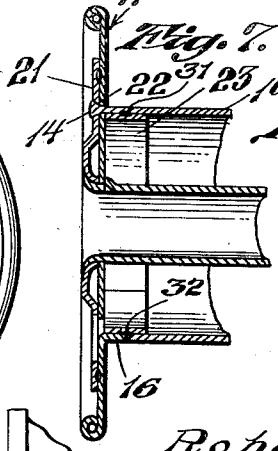


Fig. 8.

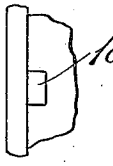
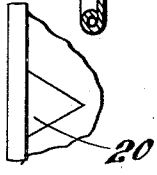


Fig. 9.



Fig. 10.



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SPOOL OR REEL

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Application June 7, 1939, Serial No. 277,756

10 Claims. (Cl. 242—123)

This invention relates to a steel spool or reel of a character usually utilized for the packaging of metal wire such, for instance, as copper wire, which may be wound thereon for various purposes such, for instance, as for annealing after drawing to a different size.

One of the objects of this invention is to provide a means to prevent the fine wire which may be packaged on the spool from entering a crevice which may be formed between the head and the barrel of the spool, to thereby prevent injury to the spool and to the wire wound thereon.

A more specific object of the invention is to provide means between the riveting connecting of the barrel and head along the portion of the spool between such riveting connection where the crevices sometimes appear, to provide a bridging projection at this location where a crevice may appear to span the crevice and prevent the entry of a wire between the end or edge of the barrel and the head.

Another object of the invention is to strengthen the connection of the head to the barrel around the peripherial extent of the barrel where it abuts the head, and to at the same time prevent entry of the wire into a crevice which might be formed between the barrel and the head at the location between the riveting connection of these two parts together.

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.

Fig. 1 is an end view of a spool formed in conformance with this invention.

Fig. 2 is an elevation partly in section.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1, illustrating the head alone with the projection bent ready to fit into the barrel.

Fig. 4 is a sectional view of the barrel alone taken on line 3—3 of Fig. 1.

Fig. 5 is a view similar to Fig. 3 but taken on line 5—5 of Fig. 1 showing the openings provided therein for receiving portions of the barrel.

Fig. 6 is an end view of a modified form of spool.

Fig. 7 is a fragmental section of the spool shown in Fig. 6 with the section taken on line 7—7 of Fig. 6.

Figs. 8, 9 and 10 are fragmental views showing modified forms of bridge lugs of the head and corresponding recesses in the barrel.

In the construction of steel spools the barrel end abuts the head and is secured thereto at spaced intervals such, for instance, as by the riveting over of portions of the barrel extending thru the head, it frequently occurs when stresses occur in the wire wound on the spool that the strain present in the spool will cause a flaring of the head, in which case a small crevice may occur at the juncture between the head and the barrel between the portions forming rivets of the barrel so that a wire may crowd down into such crevice, and damage the wire and the spool, and in order to overcome this difficulty I have provided an arrangement to bridge the space between the head and the barrel at these locations between the rivet lugs by shearing out and bending a portion of the head to provide a projection extending inwardly of the spool, and I provide a recess corresponding in shape to the shape of the projection so that the edges of the projection and the edges of the recess will substantially abut, thus any crevice which may be formed is bridged by such projection and in instances where I secure the edges of the projection to the edges of the recess, the connection between the head and the barrel is strengthened, and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished.

With reference to the drawing, 10 designates a barrel formed cylindrical in shape, usually from sheet stock, with its abutting edges suitably secured in some cases such as by welding. 11 denotes a head which is secured to the end of the barrel; two such heads serve to provide flanges between which heads or flanges the wire is packaged to maintain it in position as it is wound.

In order to secure these heads at the opposite ends of the barrel, I have provided lugs 12 at spaced locations about the ends of the barrel and slots 13 similarly spaced thru the heads so that the projection 12 may extend thru these slots 13 and there be headed over or riveted or welded as at 14, so as to hold the heads in position at the ends of the barrel. Such formation is quite customary in the trade.

It frequently occurs that a flaring of the head caused by stress against the head beyond the elastic limit of the material will cause a crevice to be formed between the barrel and the head at locations between the lugs 12 so that a wire may become forced in between the head and the barrel in such crevice, thereby accentuating this condition, and in order to prevent wire from entering a crevice so formed and at the same time strengthen the connection of the heads to the barrel so as to reduce to a minimum

the possibility of such crevices being formed, I cut out recesses 15 in the edge of the barrel and I shear or cut and bend up projections 16 from the sheet metal stock of the head and so shape these cut and sheared up projections 16 that they will closely fit into the recesses 15 in the barrel and I so form these projections 16 that they will be arcuate on their outer surface to provide a surface which will be substantially flush with and conformed to the cylindrical surface of the barrel, and in order that these projections may be maintained in position, I weld, brace or solder the edges of the projection to the edges of the recess as at 17 in Fig. 2 such, for instance, as by spot welding, which serves to hold these projections in position and also to strengthen the connection of the head to the barrel.

The projections which I have just mentioned designated 16 in Fig. 3 and the recesses 15 in the barrel are of corresponding shape but the particular shape of the projections and the recesses may vary, I having illustrated in Fig. 8 a projection of a regular rectangular formation designated 18, while in Fig. 9 I have shown one which is frusto-triangular 19, or the same may be triangular as illustrated in Fig. 10 at 20, various selected shapings being a matter of mechanical expedience within the choice of the manufacturer.

In some cases a stronger reel may be desired and I have illustrated in Fig. 7 a reinforcing plate 21 provided on the outer surface of the head 11*a* with the projection 12 (in this case somewhat longer) extending not only thru the flange of the head 11*a*, but also thru the corresponding registering opening 22 in the reinforcing plate, these projections being headed over or welded as at 14 similar to that above described. Also this reel may be further strengthened by the provision of a band 23 located within the barrel and abutting the inner surface of the head 11, also abutting or contacting the inner surface of the barrel 10 and being of a length to extend beyond the recesses in the barrel and providing a bottom wall therefor, thus forming pockets for the projections. This band is secured in place by having its end welded, brazed, soldered or rivetted to the head or its outer surface welded, brazed, soldered or otherwise suitably secured to the barrel. In the instant case, this band 23 is secured to the head by welding as at 30 and to the barrel by welding as at 31. These bridging projections 16, 18, 19 or 20 are welded, brazed or soldered to it and these projections likewise can be welded to the edges of the recesses into which they project. As shown in Fig. 7, the projection 16 is secured to the edge of the recess and to the band 23 by welding as at 32.

Other strengthening construction of the reel or spool which may be utilized, is that of rolling the edge of the head as at 25 and providing a center tube 26 which extends centrally thru the barrel and thru openings 27 in the head, the peripheral edges 28 of which are strengthened by the deflecting of the stock while the center tube 26 is flared outwardly as at 29 over the surface of the strengthened portion 28 about the opening 27 to assist in holding the head on the end of the barrel and generally reinforcing the entire reel or spool, while at the same time providing a long bearing for the rotation of the spool on its axis.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. In a spool, reel or the like, a barrel having recesses in the edge of the barrel, located at spaced points about the periphery thereof, a head abutting portions of the end of the barrel, bridging projections on the head to extend into said recesses, an auxiliary metal band at the end of said barrel and means to secure said projections to said metal band.

2. In a spool, reel or the like, a barrel having recesses in the edge of the barrel, located at spaced points about the periphery thereof, a head abutting portions of the end of the barrel, bridging projections on the head of a shape corresponding to the shape of the recesses to extend into said recesses and abutting the edges thereof, an auxiliary metal band at the end of said barrel and means to secure said projections to said metal band, said projections being also secured to the edges of said recesses.

3. In a spool, reel or the like, a barrel having recesses in the edge of the barrel, located at spaced points about the periphery thereof, a head abutting portions of the end of the barrel, bridging projections on the head of a shape corresponding to the shape of the recesses to extend into said recesses and abutting the edges thereof, an auxiliary metal band at the end of said barrel and means to secure said metal band in position beneath said projections to prevent their being forced inwardly.

4. In a spool, reel or the like, a barrel having recesses in the edge of the barrel, located at spaced points about the periphery thereof, a head abutting portions of the end of the barrel, bridging projections on the head of a shape corresponding to the shape of the recesses to extend into said recesses and abutting the edges thereof, an auxiliary metal band at the end of said barrel and means to secure said metal band to said barrel and in position beneath said projections to prevent their being forced inwardly.

5. In a spool, reel or the like, a barrel having recesses in the edge of the barrel, located at spaced points about the periphery thereof, a head abutting portions of the end of the barrel, bridging projections on the head of a shape corresponding to the shape of the recesses to extend into said recesses and abutting the edges thereof, an auxiliary metal band at the end of said barrel and means to secure said metal band to said head and in position beneath said projections to prevent their being forced inwardly.

6. In a spool, or reel, a barrel having lugs extending beyond the edge thereof at spaced intervals and recesses extending into the edge of the barrel between said lugs, a head at the end of the barrel abutting a portion of the end thereof and providing an opening through which said lugs extend and are secured, bridging projections carried by the head and extending into the recesses with their outer surfaces arranged to be flush with the outer surface of the barrel to block the entrance to any crevice between the barrel and head at a position between said lugs.

7. In a spool or reel, a barrel having lugs extending beyond the edge thereof at spaced intervals, and recesses of substantial extent extending into the edge of the barrel between said lugs, a head at the end of the barrel abutting a portion of the end thereof and providing an

opening through which said lugs extend and are secured, bridging projections of one piece with the head extending into the recesses in the barrel with their surfaces conforming to and flush with the surface of the barrel to block the entrance to any crevice between the barrel and head at a position between said lugs.

8. In a spool, reel or the like, a barrel having recesses in the edge of the barrel, located at spaced points about the periphery thereof, a disk-like head abutting portions of the end of the barrel, bridging projections bent from and extending from the head into said recesses with their surfaces arranged to be flush with the outer surface of the barrel, and means to secure the head at the end of the barrel.

9. In a spool, reel or the like, a barrel having recesses in the edge of the barrel, located at spaced points about the periphery thereof, a disk-like head abutting portions of the end of the barrel, bridging projections bent from and extending from the head of a shape corresponding to the shape of the recesses and extending into said recesses and with their edges abutting the edges thereof in edge to edge contact, and means to secure the head at the end of the barrel.

10. In a spool, reel or the like, a barrel having recesses in the edge of the barrel, located at spaced points about the periphery thereof, a disk-like head abutting portions of the end of the barrel, bridging projections bent from and extending from the head of a shape corresponding to the shape of the recesses to extend into said recesses and with their edges abutting the edges thereof in edge to edge contact, and means to secure the head on the end of the barrel, said projections being secured to the edges of said recesses.

ROBERT V. OLSON.