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CONSTRUCTION FOR SPOOLS OR REELS.

Filed Feb. 17, 1926

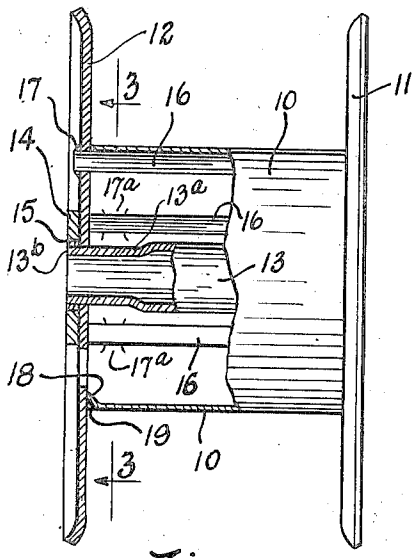


Fig. 1.

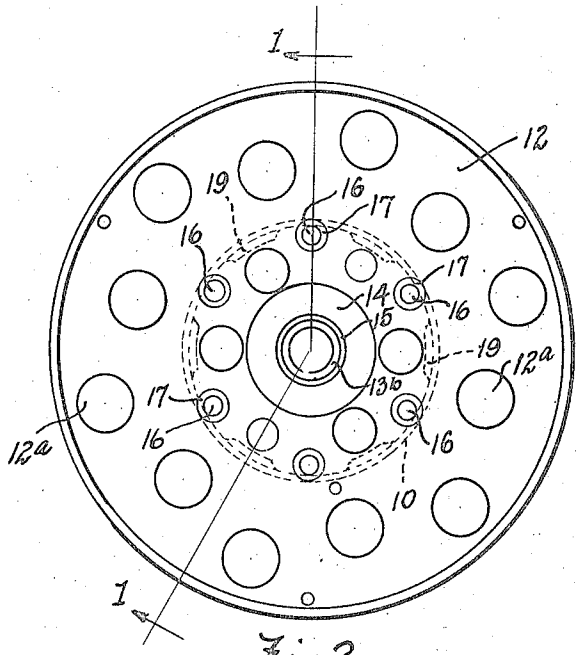


Fig. 2.

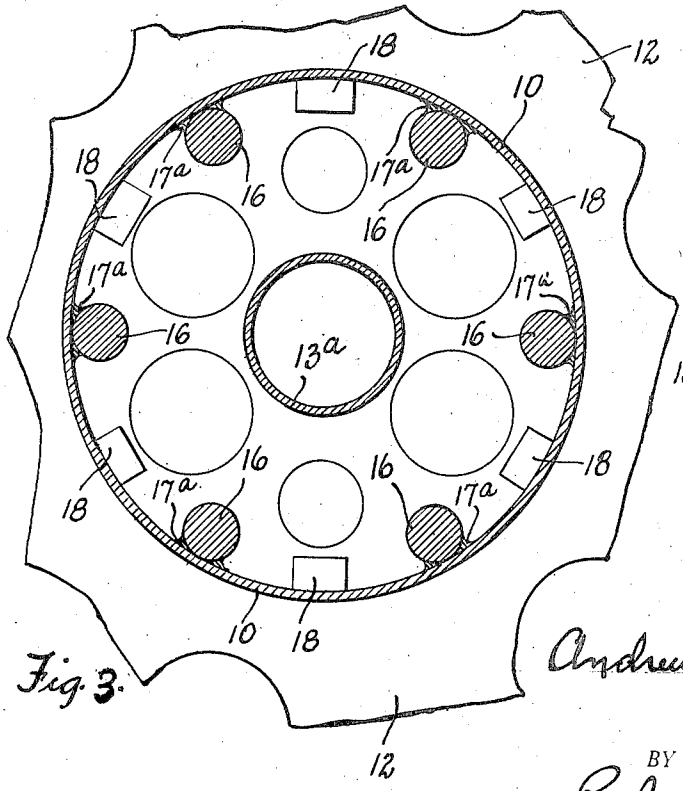


Fig. 3.

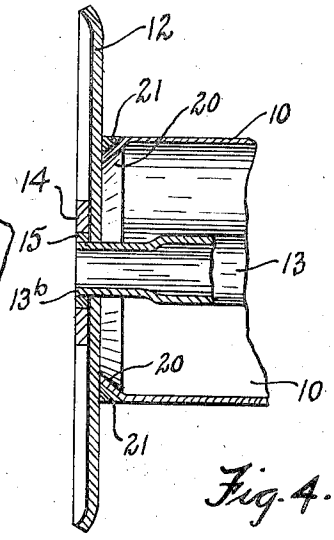


Fig. 4.

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UNITED STATES PATENT OFFICE.

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CONSTRUCTION FOR SPOOLS OR REELS

Application filed February 17, 1926. Serial No. 88,725.

This invention relates to construction for spools or reels and more particularly to such devices adapted to carry a winding of metal wire in the process of annealing the wire.

One of the objects of the invention is to provide a construction of the above nature which is practical and efficient and capable of meeting the requirements of use in a highly satisfactory manner. Another object is to provide a construction of the above nature which is strong and rugged, capable of carrying a heavy load and dependably withstanding hard usage. Another object is to provide a construction of the above nature which is free from projections or recesses which might interfere with the proper smooth winding of the wire or which might catch the wire. Another object is to provide a construction of the above nature which is capable of withstanding the annealing heat without having its efficiency impaired. Other objects will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts as will be exemplified in the structure to be hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing in which is shown one of the various possible embodiments of this invention,

Figure 1 is a side view showing the spool or reel partly in section;

Figure 2 is an end view;

Figure 3 is a section taken substantially along the line 3—3 of Fig. 1, and

Figure 4 is a sectional view of an end portion of a spool showing a modification.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Referring now to the drawing in detail, there is shown in Figure 1 a hollow metal barrel member 10 which may be formed in any desired manner, for example, by rolling a sheet of metal into the desired hollow circular form and welding the longitudinal seam. Against the two ends of this barrel 10 are mounted and secured a pair of metal heads 11 and 12. These heads are substantially circular in shape, as shown in Figure 2, and are preferably provided with perforations 12^a adapted to lessen their weight without materially affecting their strength. At their peripheries the heads are preferably bent outwardly slightly so as to facilitate the winding of the wire upon the reel and also for the purpose of lending rigidity to the heads. The two heads 11 and 12 are substantially identical in construction and are similarly secured to the ends of the barrel 10.

Passing axially through the center of the barrel 10 is a tubular bearing member 13 which projects at either end thereof through the respective heads 11 and 12. This tubular member 13 provides a suitable bearing through which a shaft or rod may be passed to rotatably support the reel. Considering the manner in which the ends of this tubular member 13 are secured to the heads 11 and 12, it will be seen from Figure 1 that the member 13 is provided with a slightly reduced end 13^a which fits snugly into and passes through a central opening in the head 12, the outer end 13^b of the member 13 projecting outwardly from the outer face of the head. Resting against the outer face of the head about this projecting end 13^b of the member 13 is a flat metal ring 14 whose inner diameter is a little greater than the outside diameter of the part 13^b. The annular space between the part 13^b and the ring 14 is filled by welding 15. In this manner the welding 15 welds together the head 12, the end of the member 13 and the ring 14. A strong rugged and thoroughly dependable connection between the tubular member 13 and the head 12 is thus obtained. The ring 14, securely welded both to the head and to the member 13 provides a strong reenforcement for the center of the head and, moreover, the resulting outer surface of the head at its central portion is smoothly formed without projecting parts to interfere with the convenient handling of the spool.

Passing through the barrel 10 close up against the inner surface thereof are a plurality of steel rods 16 shown in this instance as six in number. These steel rods project at their ends through openings in the heads 11 and 12 and are rigidly secured to the heads by welding 17 at the outer surfaces of the heads. These rods 16 thus support and center the barrel 10 between the two

heads and, in addition, they rigidly clamp the two heads together.

These steel rods 16 are welded to the inner surface of the barrel 10. Preferably each rod is welded to the barrel at least at two points, one adjacent each end of the barrel. This welding adjacent the left-hand end of the barrel, as viewed in Figure 1, is clearly shown at 17[a] in Figures 1 and 3. The rods 16 are thus rigidly joined to the barrel 10 as well as to each of the heads 11 and 12. The welding 17[a] is important since it prevents the rods 16 from expanding and lengthening relative to the barrel 10 and thus pushing the heads away from the ends of the barrel.

The rods 16 thus dependably clamp the heads 11 and 12 against the ends of the barrel and at the same time rigidly support and center the barrel so that it is capable of dependably supporting a heavy load of wire. Danger of the construction opening up between the ends of the barrel and the inner surfaces of the heads is avoided and the consequent danger of the coiled wire catching in such an opening is eliminated. The heads are dependably clamped together and reenforced at their central portions by the bearing member 13 and the weld 15, and a reel is provided which is strong and rugged throughout and thoroughly dependable.

In addition to the features above described, the heads 11 and 12 are preferably welded directly to the respective ends of the barrel 10, each at a plurality of points. This is preferably done as is best shown in Figures 1 and 3. A plurality of lugs 18 are pressed inwardly from the barrel surface at the ends thereof. The recesses thus formed at the angle between the barrel surface and the inner surface of the head are filled with welding 19. In this manner the barrel is securely welded to the head at a plurality of spaced points and there is no possibility of these two parts separating. After the welding has been done, the weld is ground off smoothly flush with the surfaces of the head and of the barrel so as to leave a sharp clean angle as shown in Figure 1.

Referring now to Figure 4, there is shown a modified manner of securing together the barrel member and the head member. In this instance the end portion of the barrel 10 is pressed inwardly throughout its circumference as shown at 20. The annular recess thus formed is filled by welding 21. After welding the parts are ground off to leave a sharp angle between the surface of the barrel and the inner surface of the head so that the wire can be evenly wound. It will be seen that the barrel is dependably joined to the head against any possibility of separation and, moreover, that the thickness of welding material 21 provides a substantial reenforcement. In this instance the rod 16 may or may not be employed as found desirable.

As many possible embodiments may be made of the above invention, and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

I claim as my invention:

1. In construction for reels and the like, in combination, a hollow sheet metal barrel member, a pair of metal heads resting against the ends of said barrel member, and a plurality of elongated metal reinforcing members extending axially of said barrel and positioned therein at spaced points and close against the inner surface thereof, said elongated members being welded to the inner surface of said barrel adjacent each end, and the end portions thereof projecting through said head members and being welded to the outer surfaces of said head members.

2. In construction for reels and the like, in combination, a hollow sheet metal barrel member, a pair of metal heads resting against the ends of said barrel member, and a plurality of elongated metal reinforcing members extending axially of said barrel and positioned therein at spaced points and close against the inner surface thereof, said elongated members being secured to the inner surface of said barrel adjacent each end, and the extreme ends thereof being rigidly secured to said head members.

3. In construction for reels and the like, in combination, a hollow sheet metal barrel member, a pair of metal head members resting against the ends of said barrel member, and a plurality of elongated metal reinforcing members secured at their ends to said heads and passing through said barrel close up against the inner surface thereof, the portions of said barrel between said reinforcing members being bent inwardly at the ends of the barrel and said inwardly bent portion being welded to said heads.

4. In construction for reels and the like, in combination, a hollow metal barrel member, a metal head member resting against the end of said barrel member and secured thereto, a tubular metal bearing member passing axially through said barrel and projecting at its end through an opening in said head member, and a reinforcing metal plate resting against the outer surface of said head member and having therein an opening into which the end portion of said bearing member projects, said last opening being of greater size than said opening in said head member and the space thereby occasioned about the end portion of said bearing member being filled with welding

material which unites said head member, said plate member and said bearing member.

5. In construction for reels and the like, in combination, a metal head member, and a hollow metal barrel member having an end resting against said head member, the end portion of said barrel member being pressed inwardly toward the axis thereof and the recess thus formed between the surface of said barrel and the surface of said head member being filled by welding, a tubular metal bearing member passing axially through said barrel and projecting at its end through an opening in said head member, and a reinforcing metal plate resting against the outer surface of said head member and having therein an opening into which the end portion of said bearing member projects, said last opening being of greater size than said opening in said head member and the space thereby occasioned about the end portion of said bearing member being filled with welding material which unites said head member, said plate member and said bearing member.

6. In construction for reels and the like, in combination, a hollow sheet metal barrel member, a pair of metal heads resting against the ends of said barrel member, and a plurality of elongated metal reinforcing members extending axially of said barrel and positioned therein at spaced points and closed against the inner surface thereof, said elongated members being secured to the inner surface of said barrel adjacent each end, and the extreme ends thereof being rigidly secured to said head members, a tubular metal bearing member passing axially through said barrel and projecting at its end through an opening in said head member, and a reinforcing metal plate resting against the outer surface of said head member and having therein an opening into which the end portion of said bearing member projects, said last opening being of greater size than said opening in said head member and the space thereby occasioned about the end portion of said bearing member being filled with welding material which unites said head member, said plate member and said bearing member.

7. In construction for reels and the like, in combination, a metal head member, and a hollow metal barrel member having an end resting against said head member, the end portion of said barrel member being pressed inwardly toward the axis thereof and the recess thus formed between the surface of said barrel and the surface of said head member being filled by welding.

8. The herein described art of joining a metal head member to a metal barrel member which consists in turning inwardly the end portion of the barrel wall, placing the head member against said end of the barrel, and welding the head to the barrel along said turned in portion.

In testimony whereof, I have signed my name to this specification this 26th day of January, 1926.

ANDREW A. UNDERWOOD.