Aug. 9, 1938. D. A. SPRIGINGS 2,126,053

SPOOL

Filed Jan. 20, 1938

Fig. 1.

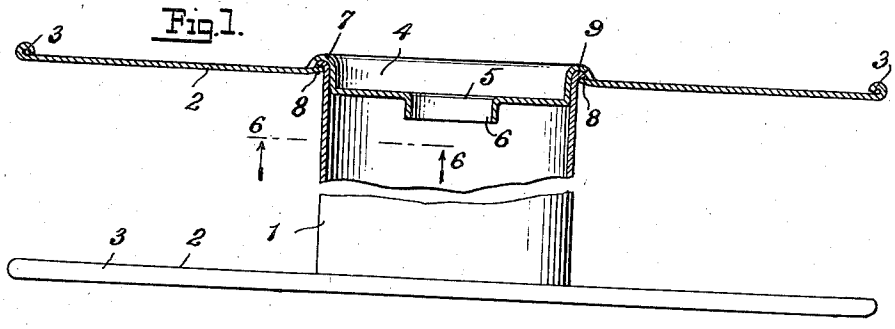


Fig. 4.

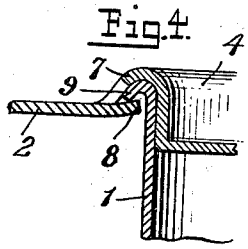


Fig. 2.

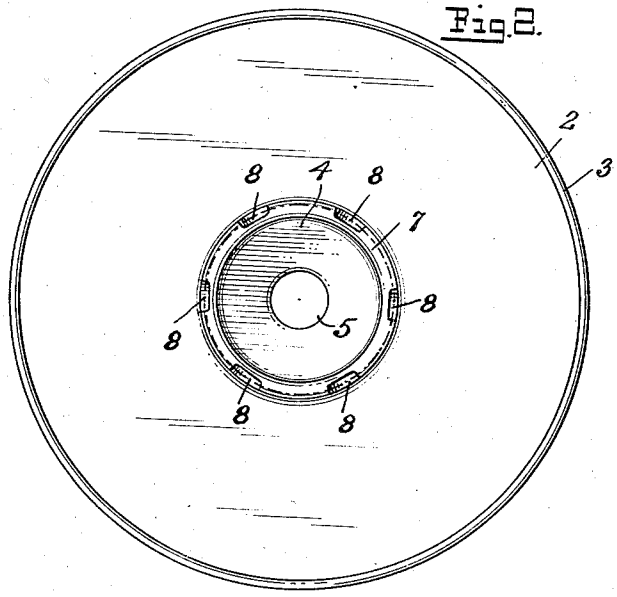


Fig. 3.

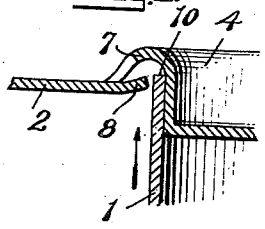


Fig. 5.

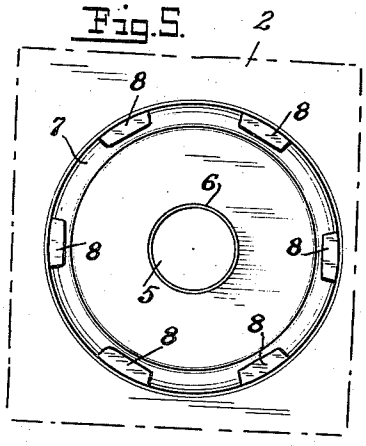


Fig. 6.

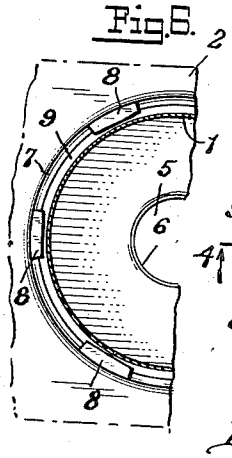
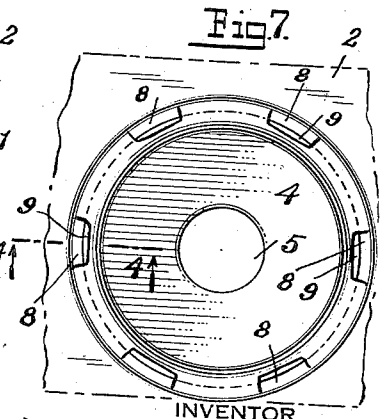


Fig. 7.



INVENTOR

David A. Sprigings

BY

Harry Rabinowitz

ATTORNEY

Patented Aug. 9, 1938 2,126,053

UNITED STATES PATENT OFFICE

2,126,053

SPOOL

David A. Sprigings, Bloomfield, N. J., assignor to Standard Container, Inc., Bloomfield, N. J., a corporation of New Jersey

Application January 20, 1938, Serial No. 185,807

6 Claims. (Cl. 242—123)

This invention relates to improvements in metal spools or reels of the character usually employed for holding wire and particularly insulated wire of the kind used for electrical purposes.

The object of the invention is to provide an extremely strong and sturdy spool having its elements so designed and connected, that the same may be speedily assembled, thus greatly reducing manufacturing cost, and the resultant product will not only be very satisfactory in appearance but also of excellent construction.

At the present time, metal spools of this kind are usually provided with a cylindrical core formed with a plurality of projecting tongues on each of its opposite ends, received in complementary slots formed in the sheet metal end discs or heads of the spool and bent over on the outside of the spool. Spools of such known construction require time and skill to assemble since the tongues on the core must not only be aligned with the slots in order to permit them to pass therethrough, but on the finished product the projecting tongues detract from the appearance of the spool and if not properly and uniformly bent over, a defective spool results.

The primary object of this invention, therefore, is to avoid the use of projecting tongues or other similar elements for uniting the spool members; to greatly strengthen the resultant spool; and to also greatly facilitate the assembly of the spool elements.

In the accompanying drawing, wherein an embodiment of the invention is shown, Fig. 1 is a side view of a spool with a greater portion of the same shown in section to disclose construction; Fig. 2 is a face view of the outer side of one of the spool discs or heads; Fig. 3 is a sectional view through one of the heads near the center thereof, showing how one end of the cylindrical core is inserted in an annular groove preparatory to curling or bending it laterally to flare it at its ends and lock it in the groove; Fig. 4 is a view similar to Fig. 3 showing how the end of the core is bent or curled outwardly to engage behind the tongues or lugs formed on one of the spool ends, said view being taken on the line 4—4 of Fig. 7, looking in the direction of the arrows; Fig. 5 is a view of the inner face of the central portion of one of the heads or discs; Fig. 6 is a sectional view on the line 6—6 of Fig. 1, looking in the direction of the arrows; and Fig. 7 is a view of the outer side of the structure shown in Fig. 6.

In the drawing 1 indicates the central core or hub section of the spool, the same being in cylindrical form, and preferably produced from a rolled section of sheet metal, the meeting ends of which are secured together by a lock seam or by any other known method of joinder. Secured to the opposite ends of the core 1 are the heads 2. Said heads are preferably disc-like sections of sheet metal, each of which has its peripheral edge rolled or curled to form the reinforcing or stiffening bead 3. Each of the discs 2 is formed with an annular pressed-out rib or bead 7 which surrounds a depressed central area 4 formed with a central hole 5 surrounded by an inturned flange portion 6. The portion 4 of the disc forms a cylindrical plug element which fits snugly within the end of the cylindrical core 1 as clearly shown in Fig. 1, and prevents collapsing of the core under pressure, as presently described. The hole 5 provides an opening for a spindle or other support for the spool.

The wall of the bead 7 is formed with a plurality of spaced lugs or tongues 8 which are cut out of the outer wall portion of the bead and directed inwardly toward one another so that their free ends project into the concave side of the bead, or in other words into the annular recess formed in the inner face of the disc by the production of the bead. The lugs 8 so formed, are inclined or slightly bent upwardly as clearly shown in Figs. 3 and 4. The manner in which the hub portion 1 is secured to the discs 2 will be clear from Figs. 3 and 4. The discs 2 are first fitted on the ends of the hub 1 with the portions 4 of the discs extending and snugly fitting into the opposite ends of the hub 1. The parts are now forced together by spitable tools or dies so that the hub portion 1 is moved in the direction of the arrow in Fig. 3 relative to the disc, or alternatively the two discs may be moved toward one another with the core between them. As the end 10 of hub member 1 is moved, it will follow the inner curved face of the concave recess formed by the bead 7 and said end 10 is thus rolled or curled outwardly as indicated at 9 to cause it to engage behind the inwardly projecting lugs 8 as clearly shown in Fig. 4. Any tendency of the cylindrical hub 1 to collapse inwardly during the imposition of longitudinal pressure on it is prevented by the snug-fitting portions 4 entering into the opposite ends of the cylinder 1.

By the arrangement described, each end of core member 1 is firmly locked in position within the bead 7 by being confined between the face of

the recess and the inwardly projecting and upwardly inclined lugs 8. It will be observed that the outer surfaces of the heads of the spool are free and clear of all projections and the inside faces of said heads are similarly clear of projecting elements so that nothing interferes with the winding or unwinding of wire or other material on or from the spool. With the structure described, a strong, sturdy and rigid arrangement is provided and speedy assembly of spools of this character is assured.

What I claim is:

1. A metal spool or reel having a cylindrical core portion and disc-shaped ends, each of said ends having an annular channel-like recess into which an end of the core extends, lugs forced out of the body of the disc and projecting into said recess, the end of the core extending into said recess being laterally curled to conform to the inner surface of the recess and confined between the face of the recess and the lugs.

2. A metal spool or reel provided with a cylindrical core portion, disc-shaped end members secured to the ends of said core portion, each of said disc-shaped ends having an annular bead near its center, the formation of said bead providing an annular channel-like recess on one face of the end member into which the end of the core enters, said core having its end formed with an outwardly directed curled flange, and lugs on the disc entering into the recess and confining the curled flange between them and the face of the recess.

3. In a metal spool, a disc-shaped end member, a cylindrical core, an annular rib pressed out of the end member to form an annular channel-like recess on one face of the end member, lugs formed out of the body of the rib and projecting angularly inward within the recess, the core having an end disposed within said recess, said end being formed with a laterally extended curled flange portion confined within the recess between the lugs and the body of the disc-shaped end member.

4. A metal spool having a disc-shaped sheet metal end member formed with a pressed-out rib whereby an annular recess is formed in the face of the end member opposite to that in which the rib is produced, a cylindrical core member having an end fitted into the recess, said end being outwardly curled to follow the curvature of the wall of the recess, and a plurality of spaced lug members forced out of the rib and having free ends directed inwardly within the recess, said lugs overlying the curled end of the core to thereby confine said end between them and the wall of the recess.

5. A sheet metal spool having a disc-shaped end member formed with an annular channelled recess in its inner face, spaced lugs formed around the marginal edge of said recess, the free ends of said lugs being directed inwardly within the recess, a core having a flared curled end located in the recess and confined between said lugs and the body of the end member, the end member having a depressed central area surrounded by the recess and snugly fitting within the end of the core.

6. A sheet metal spool having a disc-shaped end member formed with an annular channel-like recess in its inner face, spaced lugs formed around the recess, the free ends of said lugs being directed inwardly within the recess, a core having an outwardly directed curled end flange located in the recess and conforming to the shape thereof and confined between said lugs and the body of the end member, and an inwardly projecting plug portion pressed out of the end member and surrounded by the recess, said plug portion fitting within the end of the core.

DAVID A. SPRIGINGS.