

March 17, 1936.

F. MOSSBERG

2,034,480

SPOOL

Filed Dec. 26, 1933

2 Sheets-Sheet 1

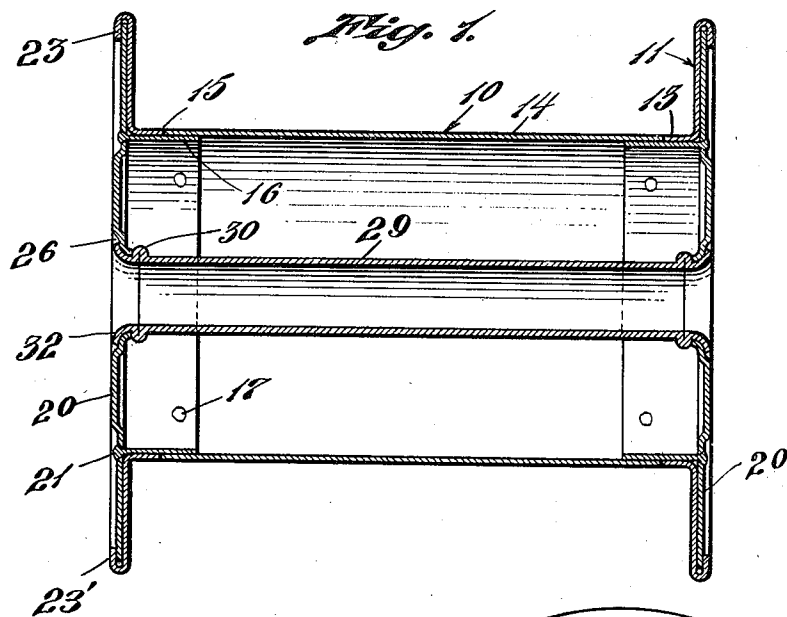


Fig. 2.

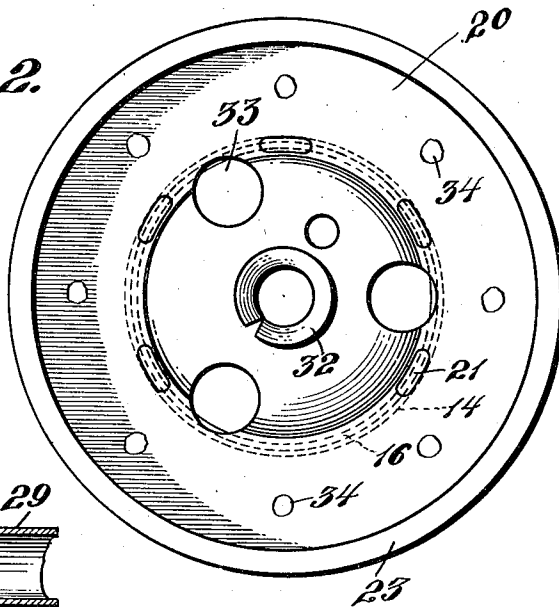
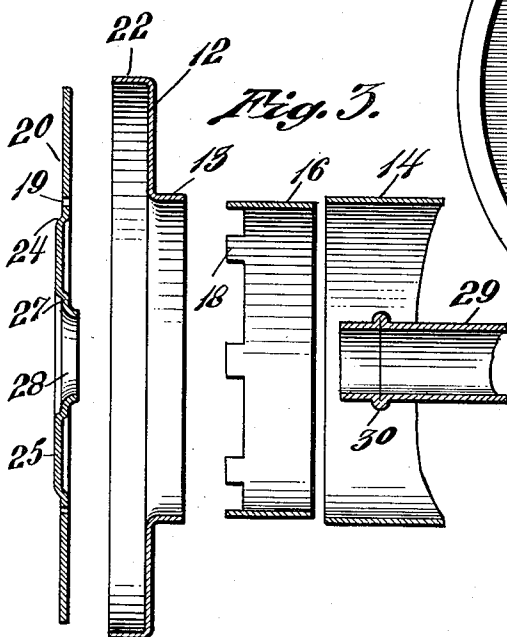


Fig. 3.



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Fig. 4.

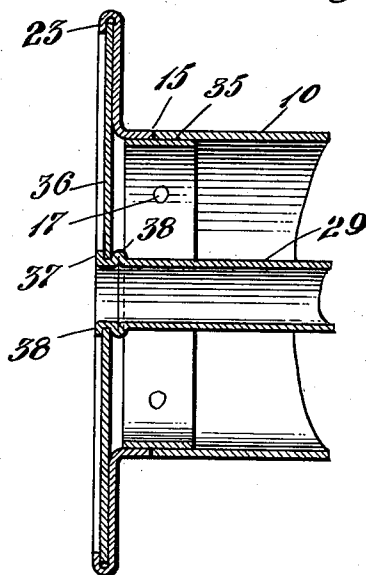
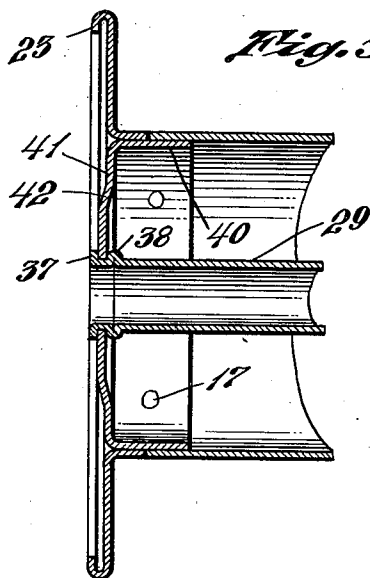


Fig. 5.



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UNITED STATES PATENT OFFICE

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SPOOL

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7 Claims. (Cl. 242—123)

This invention relates to a spool and has for one of its objects to provide solid corners between the head and the barrel of the spool where a joint customarily occurs.

Another object of the invention is the provision of a spool in which there will be no joint at the juncture between the barrel and the right-angularly extending head and yet along the entire surface of the barrel between the heads there will be an uninterrupted cylindrical surface.

Another object of the invention is the provision of a spool in which the end or outer surfaces of the heads will be flush as to their middle and edge portions so that the same may be supported upon its end or several spools supported in superimposed relation if desired.

A further object of the invention is the provision of a spool which will be strong and durable as to the securing of its parts in desired position.

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 central sectional view thru the spool.

Fig. 2 is an end view of one of the heads.

Fig. 3 is a sectional view showing each of the parts and in their relation just prior to assembly.

Fig. 4 is a sectional view of a fragmental portion of a modified construction of spool.

Fig. 5 is a sectional view of a fragmental portion of a different modified construction of spool.

In the formation of spools upon which wire is to be wound and the entire mass annealed, it is desirable to provide a head and barrel so that the stock of one will turn the right-angular corner which usually exists between the head and the barrel making it somewhat rounded and thus eliminating the joint at this point; and in order to accomplish this result I have provided a flange upon the head, with the barrel in abutting relation with the edge of this flange, and have suitably supported the structure so that the joint is located along the barrel at a point spaced from the usual right angular corner; and I have further strengthened this structure by means of a sleeve and an end plate to cooperate with the head and barrel to secure the parts in position and strengthen the junction between them and I have also provided the ends of the head so that the device when on end on a flat surface will be supported at the periphery of the heads and also at the center thereof by reason of this surface being in a single plane; 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 provided:—

With reference to the drawings, I consider the portion 10 as the barrel which extends to the right-angularly extending portions 11 which I designate as the heads. The head consists of a disc 12 which has an open center with the stock about this opening turned inwardly as at 13 providing a flange and also a portion of the barrel. This flange portion 13 abuts the tubular member 14 which provides the main portion of the barrel. The stock of this tubular member and the flange 13 is of the same thickness so that the inner and outer surfaces at the junction 15 of these parts will be substantially flush.

A sleeve 16 of a size to just fit the inner surface of the barrel extends across the joint 15 to a substantial extent on either side thereof and is secured in position by spot welding as at 17, while the outer edge of this sleeve is formed into projections 18 to extend outwardly and thru openings 19 in an end plate 20 after which these projections 18 are headed over as at 21 to rivet the end plate securely in position.

This end plate is of a size just smaller than the head 12 and spot welded thereto as at 34. The outer edge of this head 12 is deflected as at 22, see Fig. 3, outwardly and then rolled inwardly as at 23, see Fig. 1, to extend over the outer surface of this end plate or wall 20 to assist in binding this end plate to the disc 12 and securing it firmly as a part of the head.

The end plate 20 is deflected outwardly at its middle, as shown at the offset 24 to provide a surface 25 which is flush with or in the same plane as the outer surface 23' of the rolled over portion 23, so that this end of the spool provides a surface upon which the spool may rest upon its end or such that several spools may be positioned in superimposed relation. The center portion of this end plate is deflected inwardly as at 26, in somewhat of an inclined manner and stiffened by the offset 27 in its surface. Thru the opening 28 in the end plate and a similar opening in the opposite end plate, there extends a binding tubular bearing member 29 which is upset to provide an abutment 30 with which the edge of the opening 28 engages, while the ends of the tubular binding member are flared outwardly, as at 32, to rivet the heads together. This portion 32 which is flared outwardly comes well inside of the plane of the surfaces 26 and 25 so that no protuberances are provided to disturb

the flat setting of the spool in position on end, while by reason of the abutments 30 and the flaring end of the portion 32 a firm binding engagement is provided and one which supports the central portion of the end plate against the inward or outward forces and maintains the spool in rigid position by reason of the construction and assembly of the parts.

In Fig. 4, I have illustrated a differently formed sleeve 35, the same having no projections, such as 18, for the end plate. It is spot welded in position in the same manner as the sleeve 16. The end plate 36 is differently formed and is provided with an opening at its center thru which the core or bearing member 29 extends and is secured by rolling over its end as at 37. I have provided upset portions 38 nearer the end of core 29 and in such location that the rolled over portion 37 will bind the end plate 36 and hold it between the rolled over portion 37 and the abutment formed by the upset portion 38.

In Fig. 5 I have illustrated a differently modified construction. In this case, I have omitted the end plate and have provided a sleeve 40 with an end wall 41. This end wall being offset slightly as at 42 for strengthening purposes and also to position it in such a plane that when the end 37 of the core is rolled over the wall 41 as above mentioned in connection with Fig. 4, the outer surface of the core will be flush with the rolled over part 23 of the head. Abutments 38 are similarly located in Fig. 5 as in Fig. 4. Thus I provide an end plate formed integral with the sleeve rather than as a separate part and secure it to the head by rolling over the outer edge of the core and head.

Suitable openings 33 may be placed in the heads for the circulation of air therethru and the equalization of pressures due to changes in temperature.

The abutting seam 15 may be ground that no uneven surfaces of the two parts may be provided. Thus there is no uneven surface or space at the corner in which the fine wire to be annealed may engage or catch.

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 sheet stock spool, a head having its stock deflected to provide an inwardly extending flange forming a part of the barrel, a tubular member abutting said flange and continuing said barrel, an end plate of a diameter greater than said barrel engaging the outer face of said head, and separate means secured to said tubular member and engaging said end plate to hold it against said head and said head against said tubular member.

2. In a sheet stock spool, a head having its stock deflected to provide an inwardly extending flange forming a part of the barrel, a tubular member abutting said flange and continuing said barrel, an end plate of a diameter greater than said barrel engaging the outer face of said head, means engaging said end plate to hold it against said head and said head against said tubular member, comprising a sleeve in said barrel extend-

ing on either side of the junction of said flange and tubular member and secured to the tubular member.

3. In a sheet stock spool, a head having its stock deflected to provide an inwardly extending flange forming a part of the barrel, a tubular member abutting said flange and continuing said barrel, an end plate of a diameter greater than said barrel engaging the outer face of said head, a sleeve in said barrel extending on either side of the junction of said flange and tubular member and secured thereto, said sleeve having prongs extending thru said end plate and headed over to secure it thereto.

4. In a sheet stock spool, a head having its stock deflected to provide an inwardly extending flange forming a part of the barrel, a tubular member abutting said flange and continuing said barrel, an end plate of a diameter greater than said barrel engaging the outer face of said head with the edge of said head rolled over said plate and said plate deflected outwardly at its center portion sufficiently to present its surface flush with the rolled over portion of said head, a sleeve in said barrel extending on either side of the junction of said flange and tubular member means for securing said sleeve to said tubular member, and means for securing said sleeve to said end plate, said last mentioned means being positioned inwardly of the outer surface of said rolled over portion of said head.

5. In a sheet stock spool, a head having its stock deflected to provide an inwardly extending flange forming a part of the barrel, a tubular member abutting said flange and continuing said barrel, a sleeve in said barrel extending on either side of the junction of said flange and tubular member, means for securing said sleeve to said tubular member, an end wall having an opening therein, a tubular core member extending through said barrel and said opening, abutments on said core with which the inner surface around said opening engages, and means for securing said core to said wall adjacent the opening therein.

6. In a sheet stock spool, a head having its stock deflected to provide an inwardly extending flange forming a part of the barrel, a tubular member abutting said flange and continuing said barrel, a sleeve in said barrel extending on either side of the junction of said flange and tubular member, means for securing said sleeve to said tubular member, an end wall having an opening therein, a tubular core member extending through said barrel and said opening, abutments on said core with which the inner surface around said opening engages, the end of said core being rolled over to engage the outer surface around said opening to secure said core in place.

7. In a sheet stock spool, a head having its stock deflected to provide an inwardly extending flange forming a part of the barrel, a tubular member abutting said flange and continuing said barrel, an end plate of a diameter greater than said barrel engaging the outer face of said head, means engaging said end plate to hold it against said head and said head against said tubular member comprising a sleeve in said barrel extending on either side of the junction of said flange and tubular member and secured to the tubular member, and a tubular core member secured to said end plate.

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