May 31, 1927. 1,630,670

F. MOSSBERG

REEL

Filed Sept. 25, 1925

Fig. 1.

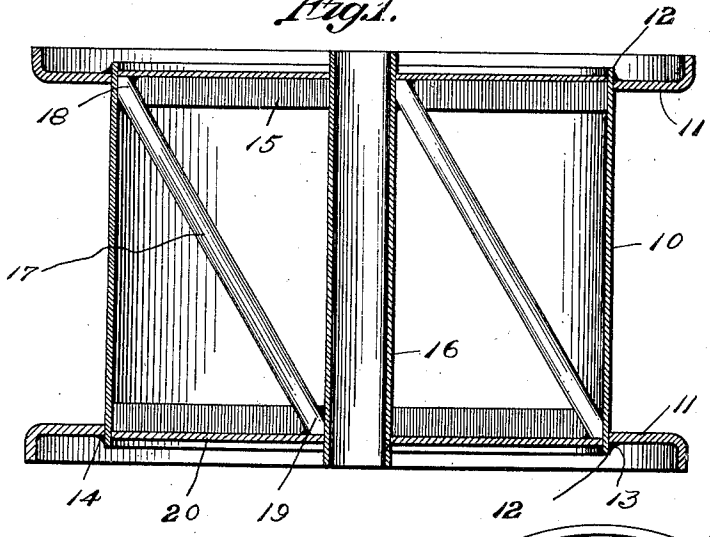


Fig. 2.

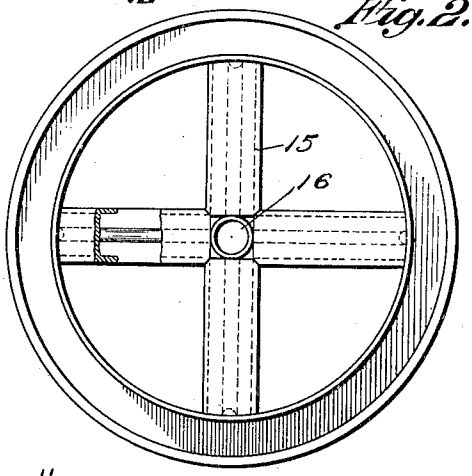


Fig. 3.

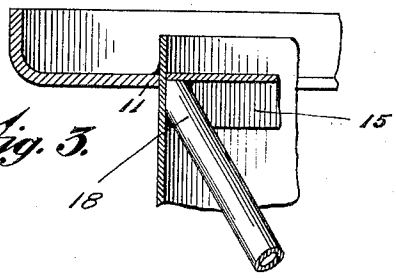


Fig. 4.

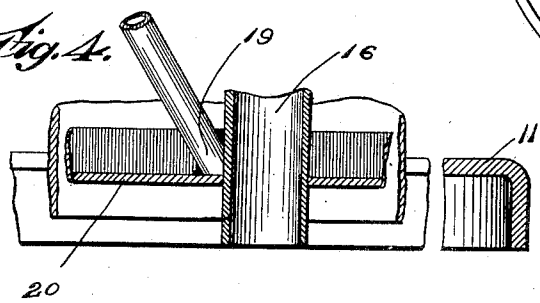


Fig. 6.

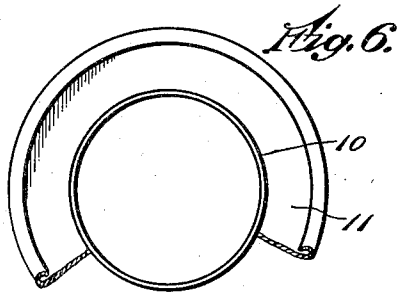


Fig. 5.

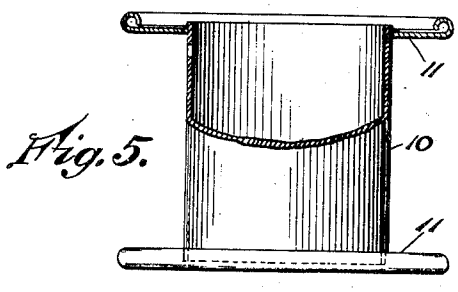
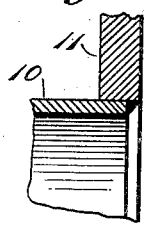


Fig. 7.



INVENTOR.
Frank Mossberg.
BY
Barlow & Barlow
ATTORNEYS.

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UNITED STATES PATENT OFFICE.

FRANK MOSSBERG, OF ATTLEBORO, MASSACHUSETTS, ASSIGNOR TO MOSSBERG PRESSED STEEL CORPORATION, OF ATTLEBORO, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

REEL.

Application filed September 25, 1925. Serial No. 58,527.

This invention relates to an improved construction of so-called vulcanizing reels; and the object of this invention is to form the larger sizes of reels on which insulated wire may be wound before the insulation is vulcanized for the purpose of subjecting the covered wire to a vulcanizing heat.

A further object of this invention is to form this so-called vulcanizing reel of sheet metal of as light construction as possible and yet be durable and to withstand the intermittent heating and cooling actions of the vulcanizing operations and at the same time absorb and waste as little of the heat as possible.

This invention further consists in the forming of a very strong and durable reel of this character, by providing a central annular opening through the head plates and extending the ends of the body portion through these head plates and beyond the outer surface thereof thus providing an annular shoulder between the outer surface of the body and the outer surface of the head plates onto which shoulder welding metal is fused forming a fillet for homogeneously joining the head plates to the body member.

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:

Figure 1 is a central sectional elevation of my improved form of reel.

Figure 2 is an end view showing a set of braces for supporting the tubular central bearing member between the head plates.

Figure 3 is an enlarged detailed view illustrating the position of the diagonally-disposed braces as welded to the inner surface of the body member and to the radial ribs.

Figure 4 is a detail illustrating the opposite end of the diagonally disposed braces as being welded near the outer end of the central tube and to the adjacent end of one of the radial ribs.

Figure 5 is a side elevation showing a modified construction of reel partly in section and showing the ends of the body as projecting through the ends of the head plate.

Figure 6 is an end view of the structure shown in Figure 5.

Figure 7 is a fragmental view showing a modified construction in which the end of the body projects into and nearly through the head opening and is welded at its outer end.

In vulcanizing the covering of certain kinds of wire, so-called vulcanizing reels are employed onto which the wire with its soft or unvulcanized insulating material is wound and these reels with their windings are then subjected to a vulcanizing heat of steam or hot air for the purpose of vulcanizing or curing the rubber covering on the wire. These reels are usually of a size approximately from four to six feet in diameter.

By my improved method, I am enabled to form these reels of sheet metal and when these larger sized reels are formed of sheet metal the metal must be as thin as possible so as to keep the weight of the reel down to within practical limits for handling and at the same time the stock must be as light as possible so as to absorb the minimum amount of heat during the heating or vulcanizing operation so as to waste as little of this heat as possible in heating up the wire, as this operation is repeated many times during a day's work. Therefore, to form a reel of this character of a weight light enough to be handled in a practical way, I have formed the body portion of a stock thinner than that of the head portion, the head portion being provided with openings of a size to receive the body portion and permit the ends of this body to extend therethrough so as to provide an annular shoulder on the outer face of the head onto which shoulder a welding metal may be fused and deposited to form a fillet for joining the head plate to the body member. As it is found in practice that this welding process is the only practical way of constructing such a reel as riveting and other such fastenings, due to the constant heating and cooling actions soon become loosened, while the welding operation serves to fuse and join the metals so securely together as to provide substantially a homogeneous assembly of the parts. Then again, in order to reduce the amount of metal employed in a reel of this size and character, to the minimum, I cut away the central por-

tion of the head and through this body a central tubular bearing member is supported at its ends with radially disposed ribs and is further supported by diagonally-disposed braces to prevent an axial movement of the same; and the following is a detailed description of the present embodiment of my invention showing one means by which these advantageous results may be accomplished:—

With reference to the drawings, 10 designates the body of my improved construction of reel which is formed of sheet metal, the body being of a smaller diameter relative to that of the head members, and at the ends of this body member I have secured the head-plate members 11, the center of the end plate in each of these head members being cut out to receive the ends 12 of the body member which ends project through these central openings in the head and beyond the outer surfaces thereof thus providing an annular shoulder 13 about which welding metal 14 is fused and deposited thereby forming in some cases an annular fillet to weld the outer surface of the body member to the outer surface of the head-plate to form a homogeneous assembly of these parts, which means of joining the body to the head serves to well withstand the deteriorating effect of the alternate heating and cooling of such reels when subjected to the annealing operations of the wire which is wound thereon.

It is found in practice in the building of such large sizes of reels that the stock of the body member may be made considerably lighter than that of the head member owing to the fact that the body is protected by the winding of wire about the same and is therefore not so apt to be injured as the head portion when the reel is dropped upon the floor as sometimes occurs, the stock in this head portion shall be necessarily of sufficient thickness to withstand such abnormal usage even when heated to a high degree. In some instances, it is found of advantage to insert a central tubular bearing member into the body member, and in order to support this central tube, I have provided a set of radially-disposed ribs 15 preferably of channel shape which extend from the inner surface of the body adjacent their ends radially to the corresponding ends of the tube 16 which serve to well support the ends of this central tubular member in a radial direction, but in order to support the same against axial strains, I have set diagonal bracing members 17 which are perferably tubular in form, so that one end 18 will be positioned inside of the channel-shaped radial braces 15 and the opposite end 19 of this brace is welded within the channel bar 20 at the opposite end of the body adjacent the end of the tube. By this construction the larger sizes of metal reels may be built which will withstand the unusual strains it is sometimes called upon to bear and by forcing the ends of the body portion each through a central opening in the head to extend beyond its outer face, an annular shoulder is provided onto which fused welding metal may be readily deposited to form the strongest kind of a fastening between the head and body portions of the reel.

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. A sheet metal reel comprising a tubular body member, a head-plate at each end thereof provided with central annular openings through which the ends of said body project beyond the outer surface of the head plates providing an annular shoulder at each end thereof, and welding metal fused and deposited about said annular shoulder to form a fillet joining the head plates to the body member.

2. A sheet metal reel comprising a tubular body member, a head plate at each end thereof provided with central annular openings through which the whole of each end of said body projects beyond the outer surface of the head plates, each providing an annular shoulder, and welding metal fused and deposited to form a fillet at the juncture between the outer surface of the head plates and the outer adjacent surface of the body member.

3. A sheet metal reel comprising a tubular body member, a head plate at each end thereof, each provided with a central annular opening through which the ends of said body projects beyond the outer surface of the head plates each providing an annular shoulder, and welding metal fused and deposited to form a continuous annular fillet at the juncture between the outer surfaces of the head plates and body member.

4. A sheet metal reel comprising a tubular body member, a head plate at each end thereof provided with central annular openings through which the ends of said body project beyond the outer surfaces of the head plates, a central tubular bearing member extending through said body, and means to support said bearing from said body in central relation thereto.

5. A sheet metal reel comprising a tubular body member, a sheet metal head plate at each end thereof each having an opening to receive the ends of said body, a central tubular bearing member within said body member and radially disposed ribs connected to said members to centrally support the ends of said bearing in said body.

6. A sheet metal reel comprising a tubular body member, a head plate at each end thereof, a central tubular bearing member within said body member, radially disposed ribs connecting the ends of said members to centrally support said bearing in said body, and diagonally disposed braces extending between the opposite ends of said members to support the bearing member against an axial movement relative to the body member.

7. A sheet metal reel comprising a tubular body member, a head plate at each end thereof, a central tubular bearing member within said body member and radially disposed ribs connecting said members to centrally support said bearing in said body, and diagonally disposed braces extending from opposite ends of said tubular member to opposite ends of said body member to support the tube against endways thrust in opposite directions.

8. A sheet metal reel comprising a tubular body member a head plate at each end thereof with a central annular opening into which the ends of the body project, and welding metal fused and deposited to form a continuous welding fillet at the juncture between the outer surface of the head plate and the body member.

In testimony whereof I affix my signature.

FRANK MOSSBERG.