Patented Feb. 13, 1940 2,190,013

UNITED STATES PATENT OFFICE

2,190,013

SPOOL

Harry Mancel Byers, Fort Wayne, Ind., assignor to Phelps Dodge Copper Products Corporation, New York, N. Y., a corporation of Delaware

Application March 24, 1939, Serial No. 263,860

4 Claims. (Cl. 242—118)

My invention relates to spools, more particularly to spools upon which very fine wire may be wound for convenience in storing, shipping and handling, and has for its object the production of an assembled die cast spool that will be economical in manufacture, easy to assemble and one having a structure that will overcome the many disadvantages inherent in the spools now on the market.

Heretofore spools of a similar character have been made with two flanges or heads fitted to the ends of a tubular member or drum. Such spools have a great disadvantage in that the fine wire to be wound thereon has a tendency to find its way into the joint, no matter how carefully made, between the head of the spool and the barrel and jamb in which case the wire does not readily reel off the spool and much of the spool contents is ruined. This disadvantage has been overcome by die casting the spools in a single piece. While the disadvantage of the wires being drawn between the head of the spool and the barrel has been eliminated, other and more serious disadvantages presented themselves. A single piece die cast spool presents a difficult job in any attempt to straighten a bent head and when one head is badly damaged it means that the entire spool has to be discarded. Then too, a single piece spool requires considerable spool inventory to take care of the commercial demand for different traverse spools, the barrels varying in length by a quarter inch.

I have overcome these difficulties and disadvantages in the present designs by making an assembled die cast spool in two identical halves. Each half will be equipped with an extending guide that will fit into an aperture of the corresponding half in such a manner to insure a perfect alignment. The spool may be held together by bolts or any other convenient way. To vary the traverse, a washer could be added between the halves and any reasonable traverse length could be obtained at the small additional cost of the washer. My spool may be driven by means of a driver pin in the spool head, thus eliminating the old practice of a spring in the spool holder which has had a tendency of throwing a spool off center and wearing the tube hole oversize.

The foregoing and other features of my invention will now be described in connection with the accompanying drawing forming part of this specification in which I have represented a preferred embodiment of my invention, after which I shall point out in the claims those features which I believe to be new and of my own invention.

In the drawing:

Figure 1 is an isometric view of two identical halves of my die cast spool, separated to show their relative positions.

Figure 2 is a longitudinal cross section of my spool.

Figure 3 is a cross section along the line 3—3, Figure 2, scale a trifle larger.

Figure 4 is a side view of my assembled spool with a washer inserted between the sections to lengthen the traverse of the spool.

Figure 5 is a side view similar to that shown in Figure 4 where the length of the traverse requires a mid-section.

Figure 6 is an isometric view of the washer employed.

Figure 7 is an isometric view of the mid-section employed.

In the carrying out of my invention I intend to use two identical sections 10 and 20 as illustrated in Figure 1. The sections have identical cylindrical portions 11 and 21 which when assembled will be the drum of the spool. On the end of the cylindrical portion 11 I provide a flange 12 cast integral therewith. On the opposite end I provide an extension or guide 13 of such cross-section to permit it to snugly fit in the recess 24 of the member 20. I also provide a recess 14 within the cylindrical portion 11 to receive the guide 23 of the member 20.

While these guides and recesses may be any shape, the structural features of my spool suggest that the guides should be substantially sector shape to correspond with the space between the radial members of the drum. In the manufacture of my device I have lightened the casting by making the cylindrical portion thin and supporting it by radial members 15 and 25 from a central hub member 16 and 26 respectively. The projection or guides 13 and 23 are drilled and tapped to receive screws 31 which project through the heads 12 and/or 22 and screw into the tapered holes 27 and 17 respectively.

In commercial use a larger variety of spools are used with a multiplicity of different lengths of drum. With my construction I intend to meet this demand, without the necessity of larger inventory and the great cost of dies incident thereto where the spools are cast in a single piece, by lengthening the traverse by inserting special length washers 40 as shown in Figure 4. Where the traverse required exceeds the capacity of my guides, I may make a special mid-section 50 that