

Nov. 25, 1941.

H. C. HOWSAM

2,264,116

SPOOL

Filed June 22, 1940

Fig. 2.

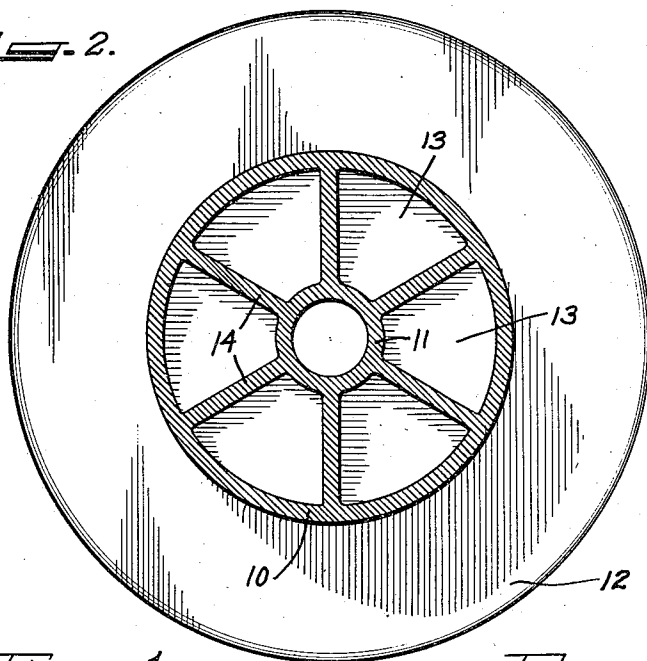


Fig. 1.

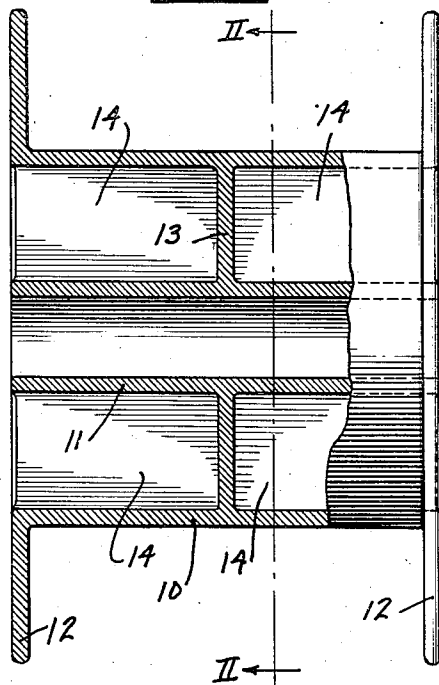
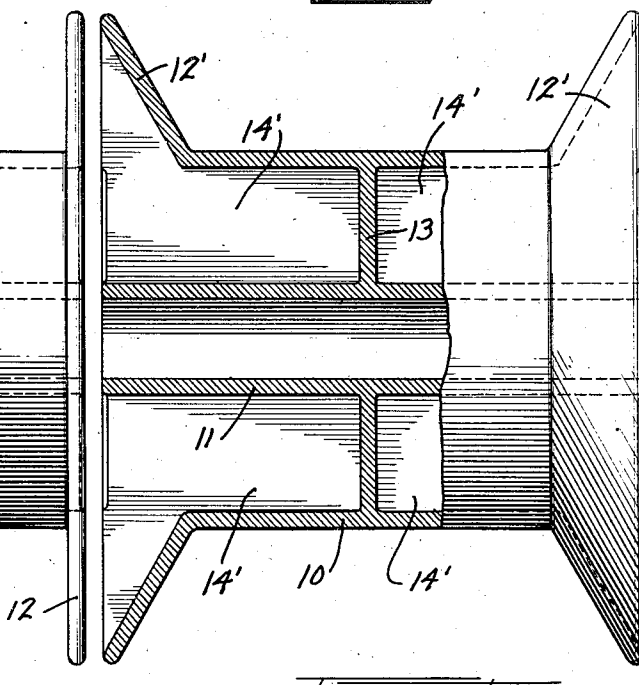


Fig. 3.



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UNITED STATES PATENT OFFICE

2,264,116

SPOOL

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Application June 22, 1940, Serial No. 341,842

2 Claims. (Cl. 242—118)

My invention relates to spools and is of particular importance where spools are molded, die cast, or otherwise integrally formed of metal, or of non-metallic material such as plastic material, paper pulp or other composition, pulp or mass, or of material known in the trade as "Bakelite" or "Wood-Textolyte," and where the spool after molding, die casting or forming must be dried out or cooled.

The important object of the invention is therefore to so form and shape the spool that all the walls thereof are as closely as possible of equal thickness in order that all parts of the spool may dry or cool at a uniform rate to thereby prevent distortion, warping or cracking, or the introduction of unequal strain.

Spool structures incorporating the features of my invention are shown on the drawing, in which drawing:

Figure 1 is a side elevation of a spool partly in vertical diametral sections;

Figure 2 is a section on plane II—II Figure 1; and

Figure 3 shows a modified form of spool.

The spools shown may be formed integral of metal or other material by die casting or molding. The spool comprises a cylindrical barrel shell part 10 and the inner tube part 11 for receiving spindles or other supporting means for winding or unloading of the spool. The spool on Figures 1 and 2 has straight annular head flanges 12 extending from the ends of the barrel shell, the outer surfaces of the flanges being in the same planes with the outer edges of the inner tube part 11. Midway between the ends of the barrel and of the inner tube 11 an annular web 13 extends between the barrel shell and the tube 11, and extending laterally outwardly from this diametral or cross wall or web 13 and in radial planes between the barrel shell 10 and the tube 11 are the webs 14 which function as spokes. A number of the radial webs may be provided, six equally spaced webs being provided as best shown on Figure 2. The outer edges of these radial plane webs preferably terminate a distance short of the planes of the outer surfaces of the flanges 12 and ends of the inner tube 11 so that the spool may accurately seat on a supporting surface or turn on a support without undue friction.

In accordance with my invention, the barrel shell 10 and its flanges 12, the wall of the inner tube 11, the cross wall 13 and the radial webs 14, are substantially of the same thickness so that after the formed spool is removed from the die or the mold, the spool may uniformly cool or dry to thereby prevent distortion, warping or cracking, or the introduction of strain or stress in the spool. Wire coming from a hot enameling

bath may be wound on the spool, but with my improved spool, in which the walls are of substantially uniform thickness, the heat from the wire will be rapidly and uniformly dissipated and the spool will not be subjected to localized heating which might introduce strain which would tend to crack or break the spool.

Instead of having the spool flanges straight as shown on Figure 1, these flanges could be flaring as indicated by 12' on Figure 3. With these flanges, the radial webs 14' would follow the flare and at their outer ends would extend between the flared flanges and the inner tube 11.

I thus produce a die cast or molded metallic or non-metallic spool which will retain its die cast or molded shape free of internal strain and which is of light weight relative to its capacity. It is evident that the walls of the spool could be perforated for steam or other treatment of the material on the spool, and then with all the walls of the spool of substantially uniform thickness, heat or moisture will be rapidly and uniformly dissipated.

I have shown a practical embodiment of my invention but I do not desire to be limited to the exact construction and arrangement shown and described as changes and modifications may be made without departing from the scope of the invention.

I claim as follows:

1. An integral die cast or molded spool comprising a tubular barrel wall having outwardly flaring flanges at its ends, an arbor tube extending axially through said barrel wall and terminating in the planes of the outer edges of said flaring flanges, and spoke walls extending radially between said arbor tube and the barrel wall and flanges and extending axially to terminate at their outer ends in the planes of the outer edges of the flanges, whereby to form segmental compartments within the spool open at their ends to the exterior.

2. An integral die cast or molded spool comprising a tubular barrel wall having outwardly flaring flanges at its ends, an arbor tube extending axially through said barrel wall and terminating in the planes of the outer edges of said flanges, a cross-wall between said barrel wall and said arbor tube intermediate the ends of said barrel, and spoke walls extending radially from said arbor tube to said barrel wall and flanges and extending axially from said cross-wall to terminate in the planes of the outer edges of the flanges thereby forming segmental compartments open to the exterior of the spool, all said walls being of substantially the same thickness.

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