June 8, 1937. W. L. RUTKOWSKI 2,083,096

SPOOL

Filed March 2, 1935

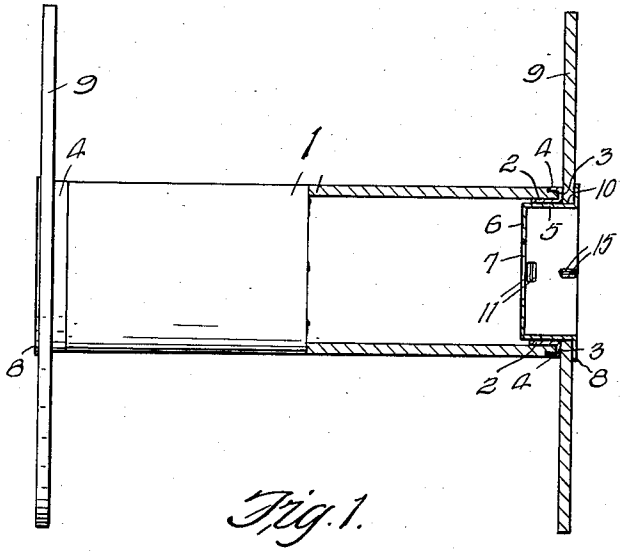


Fig. 1.

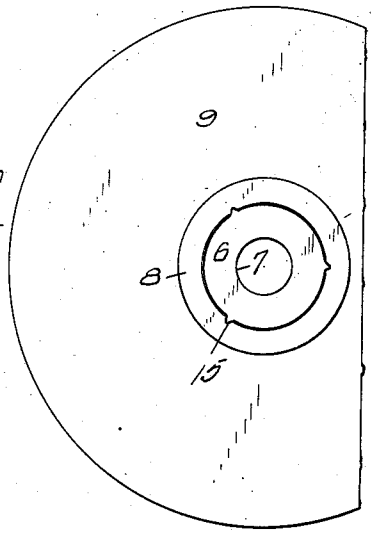


Fig. 2.

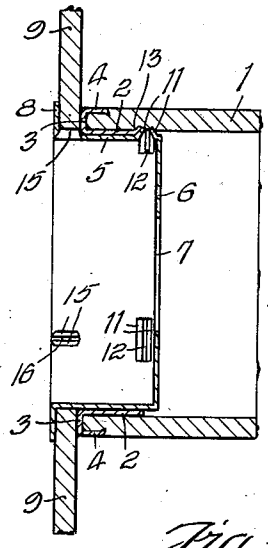


Fig. 3.

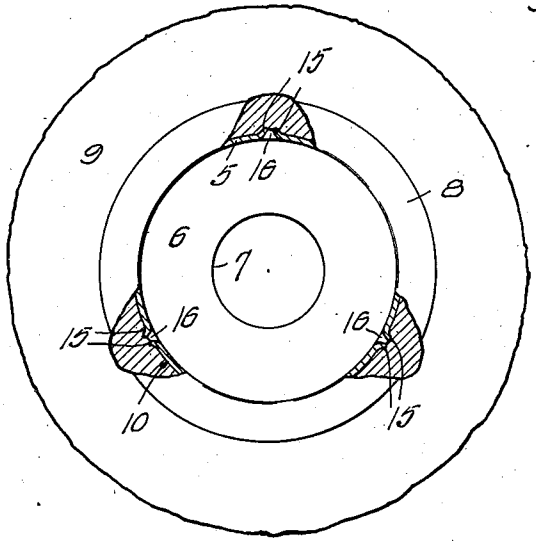


Fig. 4.

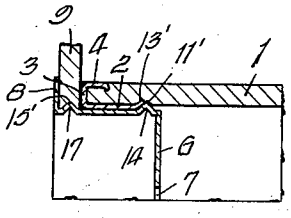


Fig. 5.

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2,083,096

SPOOL

Walter L. Rutkowski, Normandy, Mo., assignor to R. C. Can Company, St. Louis, Mo., a corporation of Missouri

Application March 2, 1935, Serial No. 9,069

1 Claim. (Cl. 242—119)

My invention relates to improvements in spools, and more particularly, of the type of spool shown in my U. S. Letters Patent # 1,923,510.

The objects of my present invention are, first, to provide means to prevent spool flange supporting devices from possible rotation relative to the ends of the spool hub; and, second, to provide means to prevent possible rotation of the spool flanges relative to the spool flange supporting devices.

A still further object of the invention is the provision of a spool which possesses advantages in points of simplicity and efficiency, and, at the same time proves itself comparatively inexpensive in cost of manufacture.

One form of spool embodying my improvements and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawing, in which:—

Fig. 1 is a view partly in side elevation and partly in sectional elevation, of a spool embodying the features of my invention.

Fig. 2 is an end elevation of the spool with a portion thereof broken away.

Fig. 3 is an enlarged fragmentary sectional view of one end of the spool clearly showing the means for locking the spool flanges against rotation relative to the spool hub and the spool flange supporting devices against rotation relative thereto.

Fig. 4 is a fragmentary end view of the spool with portions thereof in sectional elevation to clearly show the means for locking the spool flanges in position.

Fig. 5 is a fragmentary sectional view of one end of the spool showing modified means for locking the ferrule on the end of the spool hub and the spool flange supporting devices against rotation relative thereto.

In the drawing, the reference character 1 designates a suitable, preferably cylindrical hub or body member formed from suitable paper or fibrous material, although not necessarily limited thereto, and to the ends of which hub are carried suitable metallic ferrules including a tubular body portion 2 embracing the inner face of the hub, a portion 3 embracing the outer ends of the hub and a portion 4 forced into locked engagement with the outer face of the hub 1.

Associated with each end of the hub 1 and having frictional telescopic engagement with the body portion 2 of each ferrule, is a cap-like spool flange supporting device embodying a tubular body 5 having a wall 6 at its inner end provided with a spindle receiving opening 7, and having its outer end provided with an outwardly projecting flange 8.

A suitable disc like spool flange 9, preferably although not necessarily formed from suitable paper or fibrous material, having a central opening 10 is mounted on the body portion 5 of each spool flange supporting device, and after the supporting devices have been forced into frictional telescopic engagement with the body portions 2 of the ferrules, the spool flanges 9 are disposed and clamped between the outer ends 3 of the ferrules and the inner faces of the flange 8 on the spool supporting devices.

In order to securely lock the ferrules to the ends of the hub 1 to prevent possible rotation thereof relative to the ends of the hub, I provide the body portion 5 of the spool supporting devices with a plurality of suitable elongated indentations to provide outwardly separated protrusions 11 by splitting the material, as at 12. The indentations are disposed adjacent the inner edge of the ferrule bodies 2 so that the outer side of each protrusion will force ferrule body material in engagement therewith outwardly to form protrusions 13 to bite into the hub material. If desired, the protrusion 11 need not necessarily be separated by splitting the body material 5 of the spool supporting devices, but protrusions 11' may be formed by merely indenting the material, as at 14, as illustrated in the modification shown in Fig. 5. In the latter instance, the protrusions 11' when formed by the indentations 14, will also form protrusions designated 13' on the ferrule body 2. Thus, it will be observed, that protrusions 13 or 13', whichever are used, serve to lock the ferrules against possible rotation relative to the ends of the hub 1 and that protrusions 11 or 11', whichever are used, serve to lock the bodies 5 of the spool supporting devices against possible rotation relative to the ferrules on the ends of the hub 1.

In order to lock the spool flanges 9 to the bodies 5 of the spool supporting devices in their clamped positions, between the outer ends of the ferrules and the flanges 8 of the spool supporting devices, I provide the bodies 5 of the spool supporting devices with a plurality of suitable elongated indentations to provide outwardly separated protrusions 15 by splitting the material as at 16. The indentations are disposed adjacent the edges of the central openings 10 in the spool flanges 9 so that the protrusions 16, when formed, will bite into the material of the spool flanges surrounding the central openings 10 therein to

prevent any possible chance of rotation of the spool flanges 9 relative to the spool supporting devices and relative to the ends of the hub 1. If desired, the protrusions 15 need not necessarily be separated by splitting the body material 5 of the spool supporting devices, but protrusions 15' may be formed by merely indenting the body material, as at 17, as illustrated in the modification shown in Fig. 5. In the latter instance, the protrusions 15', when formed by the indentations 17, will bite into the material of the spool flanges at the edge of the central openings 10 therein and will also resist any possible rotation of the spool flanges relative to the spool supporting devices and the ferrules locked to the ends of the hub 1.

The many advantages of the herein described invention will readily suggest themselves to those skilled in the art to which it appertains.

From the foregoing description, it is evident that a simple device for this purpose has been disclosed, but it is to be understood that I do not desire to restrict, or limit myself to the very details of the construction shown and described, which is merely illustrative, it being obvious that changes, not involving the exercise of invention, may be made without conflicting or departing from the spirit of the invention within the scope of the appended claim.

What I claim is:

A spool construction having, in combination, a paper cylindrical tubular body, metallic ferrules applied to the ends of the tubular body by frictional contact therewith, tubular sheet metal flange supporting devices applied to the metallic ferrules within the tubular body by frictional contact, outwardly directed circumferentially extending elongated protrusions in the annular walls of the tubular flange supporting devices adjacent their inner ends distorting the inner edges of the metallic ferrules with said distorted edges and protrusions embedded in the inner wall of the tubular body, centrally apertured paper spool flanges clamped between the metallic ferrules and the flange supporting devices, and outwardly directed elongated longitudinally extending protrusions formed in the sheet metal flange supporting devices and embedded in the walls of the apertures in the spool flanges.

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