

No. 668,973.

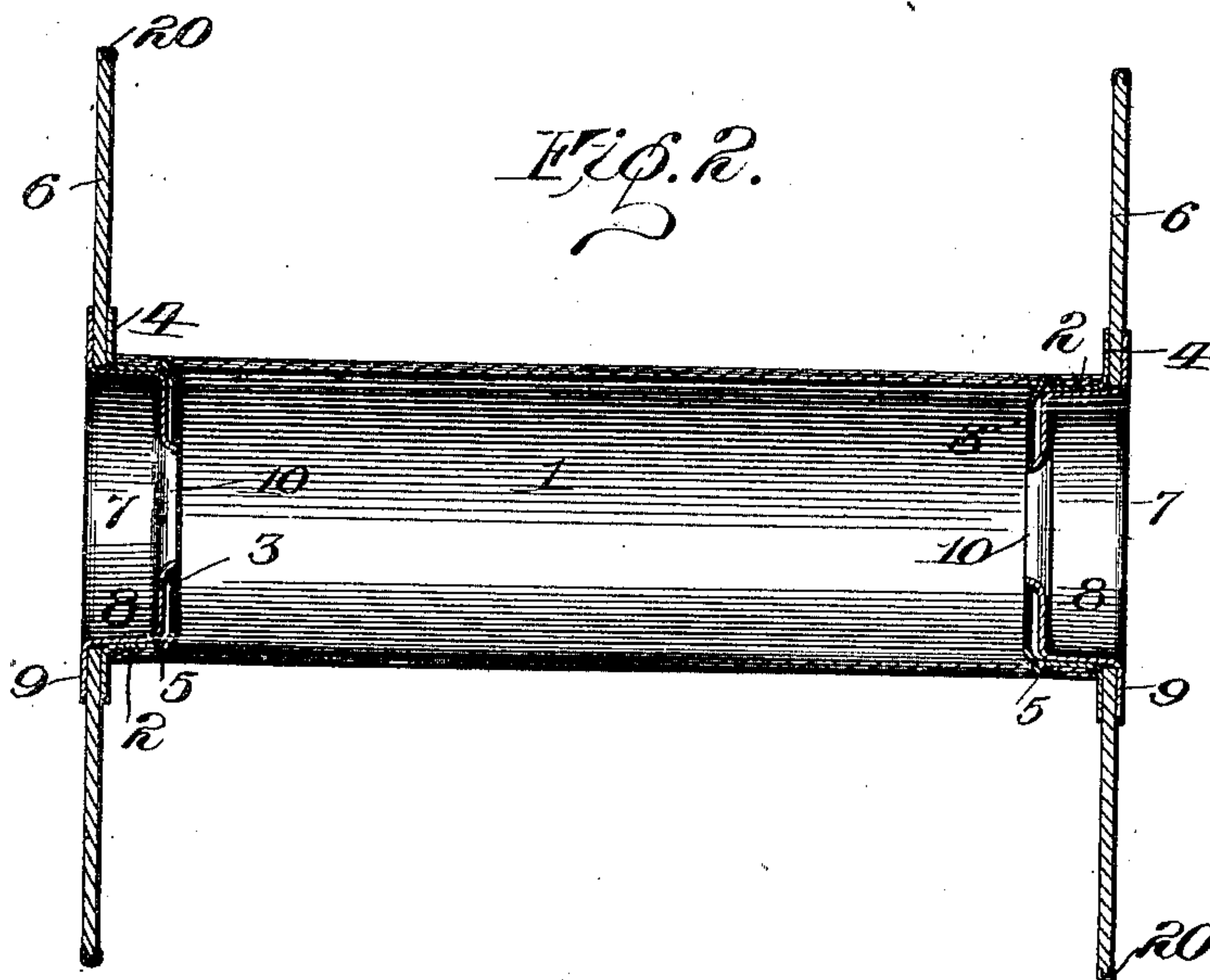
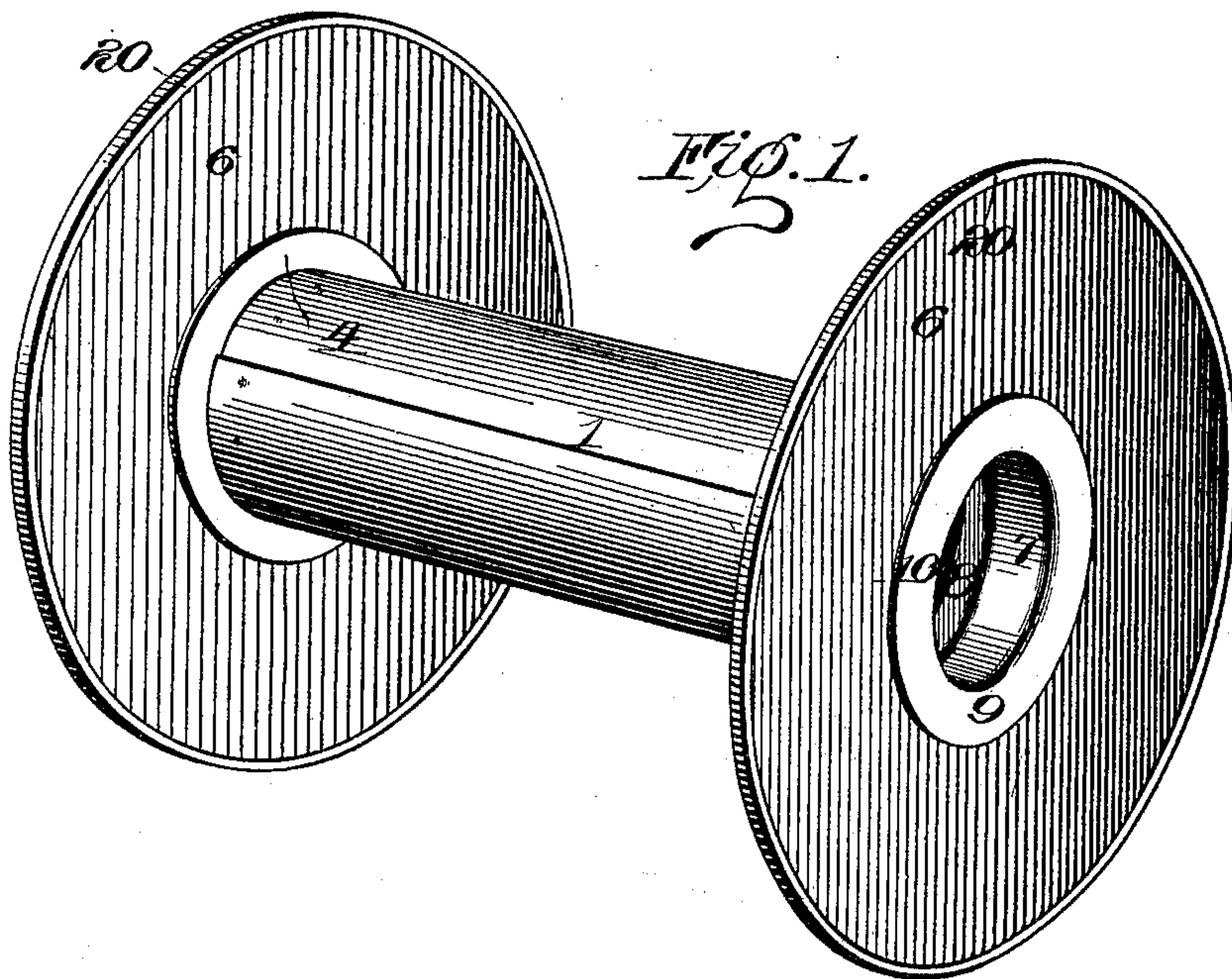
F. B. BUEDINGEN.

Patented Feb. 26, 1901.

SPOOL.

(Application filed Jan. 27, 1900.)

(No Model.)



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## SPOOL.

SPECIFICATION forming part of Letters Patent No. 668,973, dated February 26, 1901.

Application filed January 27, 1900. Serial No. 3,010. (No model.)

*To all whom it may concern:*

Be it known that I, FERDINAND B. BUEDINGEN, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Spools; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide a spool or reel adapted to contain ribbon, trimming, or similar material and that shall be light, simple, and consist of few parts, all of which may be easily and cheaply constructed.

To these ends my invention consists in certain improvements in construction and combinations of parts, all as will be clearly described, and the novel features pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a perspective view of a spool constructed in accordance with my invention; Fig. 2, a longitudinal sectional view thereof.

Similar reference-numerals in both figures indicate similar parts.

In constructing spools according to my invention I employ a hollow central hub or spindle 1, formed, preferably, of a continuous strip of flexible material, such as paper or cardboard, formed or rolled about a mandrel, the successive layers, if more than one be employed, being glued or pasted to secure the parts and afford stability, making the tube of material. The tubes may be formed or cut strong and rigid with the minimum amount to the desired length, and in each of the ends I secure a metallic bushing consisting of the annular collar 2, strengthened upon its inner end by the inwardly-extending flange 3 and upon its outer end by the broad radially-extending flange 4, which projects outwardly, covering the end of the tube and affording a backing or support for the disks forming the ends of the spool. These bushings are secured in place by projections extending from the interior of the collar, forming points 5 of metal, which are sunk into the material upon

the inner side of the tube, securely engaging the latter and preventing a separation of the parts. The ends 6 of the spool are disks, as shown, and are adapted to be formed of a single piece of light stiff material, such as cardboard, and are provided at their centers with an aperture, through which the locking member extends. The latter is cup-shaped in form, consisting of a single piece of sheet metal embodying the annular collar 7, having the bottom 8 and the radially-extending flange 9. The collars 7 are adapted to project through the central apertures in the end disks 6 and are formed slightly larger in diameter than the internal diameter of the collar 2 of the bushing, so that as the former is compressed within the latter the collars will frictionally engage, holding the parts tightly together, with the end disks supported on the ends of the tubes between the flanges 4 and 9. The bottoms 8 of the locking members are provided with central apertures 10, the edges of which are curved or rounded, as shown, affording a smooth bearing, whereby the spool may be supported either by inserting the fingers in the apertures or mounting it upon a suitable spindle.

20 indicates a binding-strip, preferably formed of metal and applied to the periphery of the end disks of the spool, and by forming or molding the edges of the strip over the edges of the disks and embedding it in the material, as shown, I am enabled to provide an edge which will not be dented or otherwise injured by rough handling and one which is smooth and not liable to injure a delicate fabric.

Spools or reels constructed in the manner I have described may be made in various sizes and adapted for holding different classes of goods, and by reason of the fact that there are no sharp corners or rough edges on my device it is particularly adapted for holding ribbon, trimming, or fine delicate fabric, such as lace. The end disks being secured to the hollow tube between the inner and outer flanges on the frictionally-engaging collars enables me to unite the parts rigidly without the use of glue or cement. The fastening devices are simple and easily constructed from



thin sheet metal, and when in operative position also serve to strengthen the tube or spindle.

I claim as my invention—

- 5 1. In a spool or reel, the combination with a hollow spindle, the bushing located in the end and engaging the inner side thereof, having the flange, of the end disk having the central aperture, and the locking member extending through the aperture in the disk and engaging the interior of the bushing to secure the parts.
- 10 2. In a spool or reel, the combination with the hollow spindle, the collars in the ends thereof engaging the inner sides and forming bushings and having the outwardly-extending flanges thereon, of the end disks having the apertures and engaging the flanges on the bushing, the collars extending through the
- 15 20 apertures in the disks and engaging the interior of the bushings, and the flanges on the collars engaging the faces of the disks.
- 25 3. In a spool or reel, the combination with a hollow spindle, the collar forming the bushing secured in the end of the spindle engaging the inner sides thereof and having the flange, and the end disk having the aperture, of the locking member having the flange engaging the exterior face of the end disk extending
- 30 through the aperture and engaging the bushing in the spindle to secure the disk between the flanges.
4. In a spool or reel having the hollow spin-

dle and the end disk having an aperture, the combination with a bushing secured in the 35 end of the spindle, consisting of a collar having the flange upon its outer end, of a locking member having the flange and the collar adapted to extend through the aperture in the end disk and frictionally engage the interior 40 of the bushing to lock the end disk to the spindle.

5. In a spool or reel, the combination with a hollow tubular spindle of cardboard, the end disk formed of a single piece of similar 45 material, and the metallic binding-strip upon the edge thereof, of the metallic collar having the flange forming a bushing secured in the end of the spindle, and a cooperating member having the flange and the collar engaged in 50 the bushing to secure the disk between the flanges.

6. In a spool or reel, the combination with the hollow spindle of cardboard, the end disks, each formed of cardboard having the metal- 55 lic binding-strip at the edges, and the central apertures, of the securing-collars formed of sheet material provided with the flanges engaging the outer faces of the disks, and the central tubular portions extending through 60 the apertures and engaging the inner sides of the spindle.

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