

I. E. PALMER.
 SPINDLE APPURTENANCE.
 APPLICATION FILED DEC. 9, 1907.

913,044.

Patented Feb. 23, 1909.

Fig. 1.

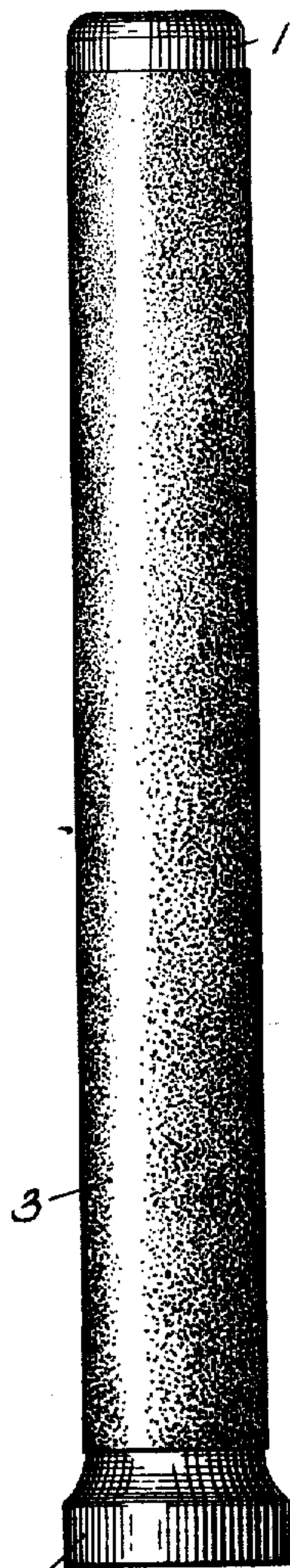


Fig. 2.

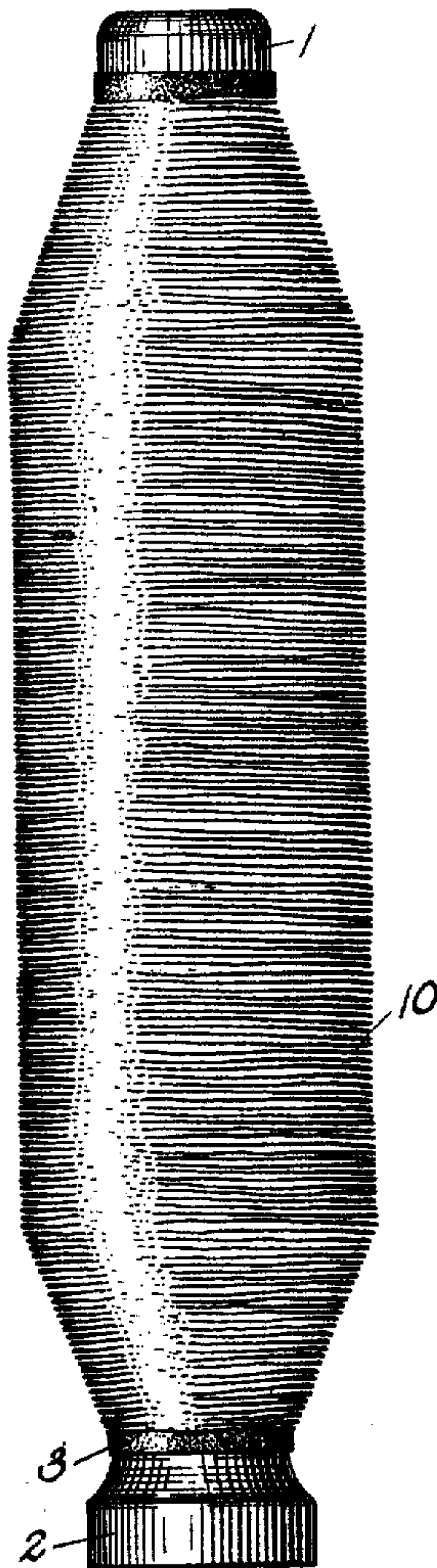
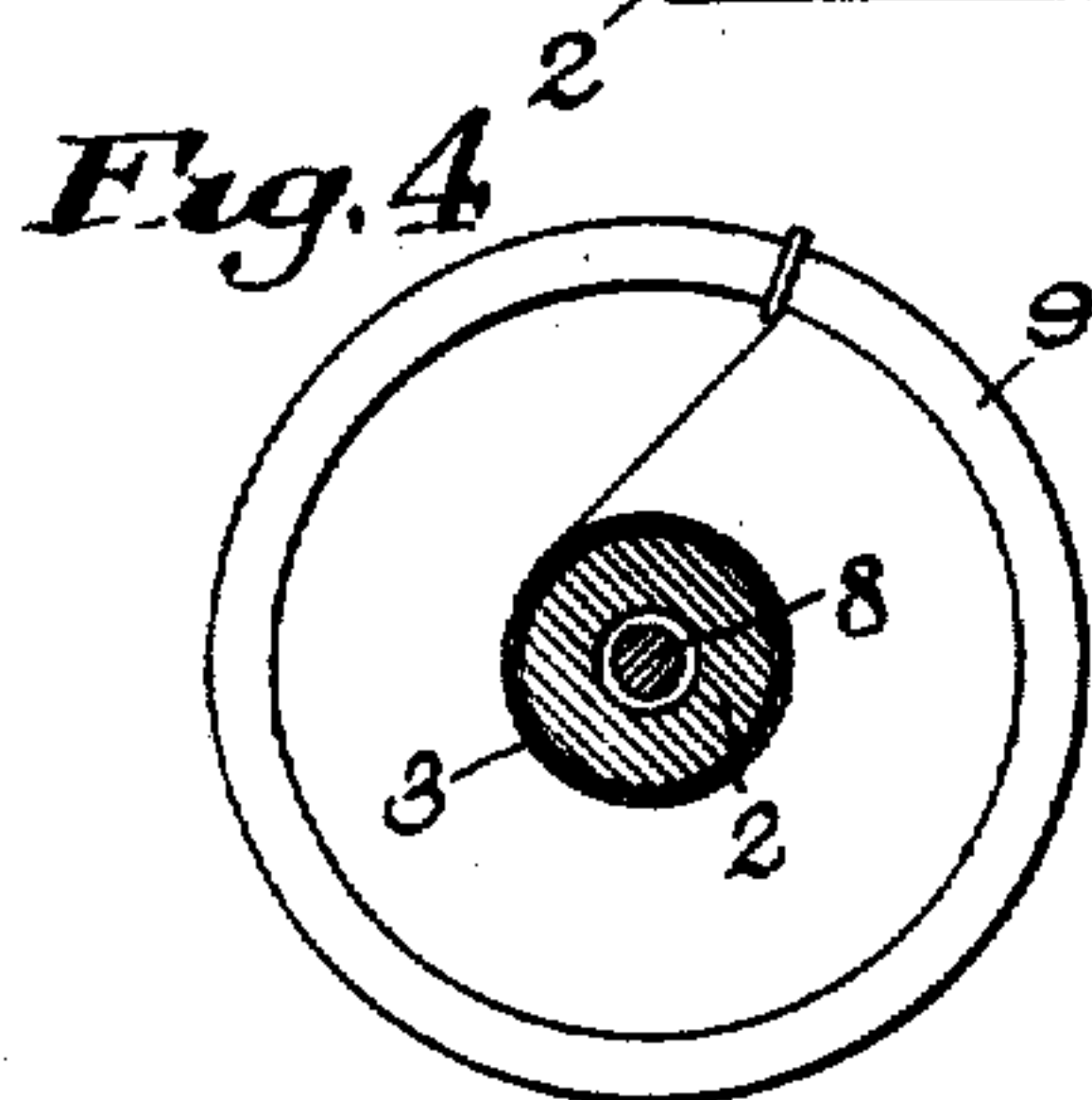
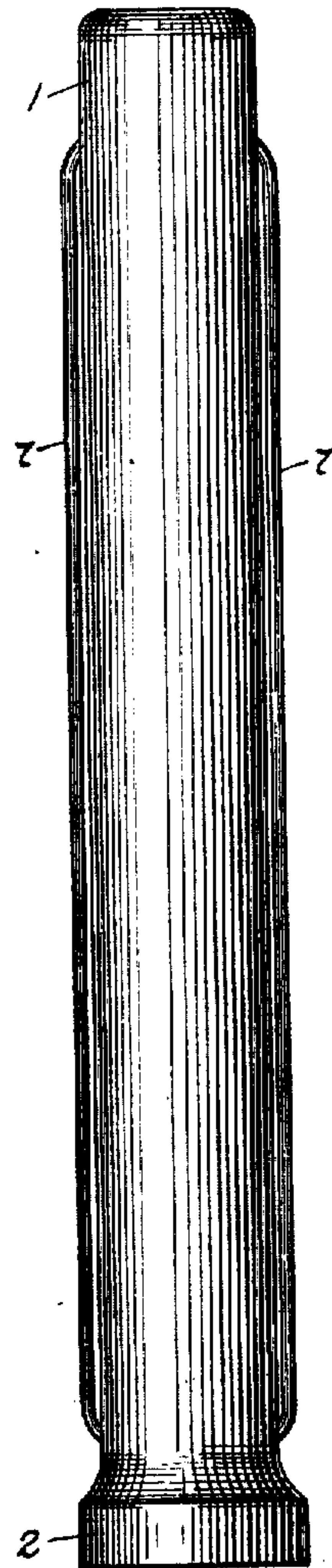


Fig. 3.



Witnesses:
 Horace H. Grossman
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Inventor:
 Isaac E. Palmer
 by Emery and Booth Attys

UNITED STATES PATENT OFFICE.

ISAAC E. PALMER, OF MIDDLETOWN, CONNECTICUT.

SPINDLE APPURTENANCE.

No. 913,044.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed December 9, 1907. Serial No. 405,646.

To all whom it may concern:

Be it known that I, ISAAC E. PALMER, a citizen of the United States, residing at Middletown, in the county of Middlesex, State of Connecticut, have invented an Improvement in Spindle Appurtenances, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

This invention relates to spindle appurtenances particularly adapted for use in connection with ring spinning and twisting.

In order that the principles of my invention may be clearly understood, I have disclosed in the accompanying drawing a single type or device wherein the invention may be embodied.

In the drawing,—Figure 1 is a side elevation of a bobbin having removably positioned thereon a cop receiving shall, tube or case; Fig. 2 is a similar view of such bobbin and shell, tube or case and a cop of yarn spun or twisted thereon; Fig. 3 is a side elevation of the form of bobbin preferably employed in the practice of my invention; and Fig. 4 is a cross sectional view of the spindle, bobbin and shell and representing their relation with respect to the traveler ring.

Heretofore, in the art of ring spinning and twisting, the yarn has usually been spun or twisted directly upon the bobbin, which is usually of wood and of a diameter dependent upon that of the spinning or twisting ring, and which, being of considerable weight, increases the cost of transportation and of storage, besides requiring the use of an excessive number of bobbins. A bobbin or barrel is necessarily employed in ring spinning or twisting, since the diameter of the bare spindle is too small to compel the rotation of the traveler upon the traveler ring. In other words, the rotating body whereon the yarn is spun or twisted must be of such relation with respect to the diameter of the ring as to drag the traveler about the ring in the spinning or twisting operation. Spinning and twisting processes have usually utilized a different bobbin for each cop. This has greatly augmented the number of bobbins in constant use or in mill circulation or in storage with completed cops thereon. In former processes, it has been customary, at large expense, to transport bobbins with the cops thereon from the place of spinning

or twisting to the place of further use. To avoid the shipment of bobbins, the expedient has been resorted to of transporting the yarn from mill to mill upon chain warps or upon large spools or upon beams or section beams. The transportation of yarn upon spools or beams has, however, entailed much expense and has interposed a serious obstacle to the shipment of spun or twisted yarn to considerable distances. Moreover, all yarn spun or twisted directly upon bobbins has customarily been re-wound upon spools or the like. I transport ring spun or twisted yarn at slight expense and in small bulk for immediate use and avoid the additional cost of shipping therewith the relatively heavy bobbin employed in the manufacture of the cop and do away entirely with the step of re-winding the spun or twisted cop, inasmuch as the spun or twisted yarn, preferably in smaller bulk than the re-wound yarn upon the spools, may be at once employed in the further mill processes.

In the practice of my invention and to accomplish the results stated, I employ a usual spinning or twisting bobbin or barrel, such as represented at 1, which may have the usual shoulder 2 at the lower end thereof and provide such bobbin or barrel with expansible means shown in Fig. 3 as wires 7 connected at their ends to the bobbin or barrel and having their intermediate portions spaced therefrom and adapted to be compressed in the practice of my invention. Said wires serve to retain upon the bobbin or barrel a shell, tube or case 3, preferably of some thin, flexible material, such as paper, securing the same upon the bobbin or barrel in the described manner so that it may rotate in unison therewith and yet be readily removable therefrom after the formation of the cop of yarn thereon. This unison rotation of the tube, shell or case and the bobbin or barrel may be variously accomplished. I may taper the bobbin or tube or shell. Preferably I employ a cylindrical shell, tube or case, since the same may be more readily manufactured from a single sheet of rectangularly shaped paper united at its edges, the shell being formed if desired of several thicknesses of paper rolled upon itself, the edges being suitably secured, as by an adherent. The length of the tube, shell or case may be such as desired, but preferably it is of the full length of the cop to be formed thereon. Preferably, such tube, shell or case

is slightly spaced from or is somewhat loose upon the bobbin, excepting upon that part the formation of which is such as to compel unitary rotation of the tube.

5 In the practice of my invention, I position the shell, tube or case, such as herein represented, upon the bobbin, which in turn is positioned upon the spindle 8 within the traveler ring 9, as represented in Fig. 4, and
10 then spin or twist the yarn upon such shell, tube or case, thereafter doffing as a unit the shell and the cop of yarn 10, which may be shipped to any desired point or used at once in mill circulation or stored at comparatively slight expense. The yarn so spun or
15 twisted may be used either in the manufacture of warp or filling, and need not be subjected to the re-winding operation. It will thus be apparent that by the elimination of
20 one entire step in the usual process of manufacture, the cost of manufacture of the fabric is largely reduced.

Having thus described one type or embodiment of my invention, I desire it to be
25 understood that although specific terms are employed, they are used in a descriptive and generic sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

30 Claims.

1. A spindle appurtenance for use in ring spinning or twisting comprising, in combination, a bobbin adapted to be fitted upon
35 a spindle to rotate therewith, and to have yarn ring spun or twisted thereon, said bobbin having a compressible and expansible tube-engaging-and-retaining portion, and a

tube adapted to be removably fitted upon said bobbin and to compress and be frictionally retained thereon by said expansible portion, said bobbin being adapted for ready removal from the spindle by direct, axial pull. 40

2. A spindle appurtenance for use in ring spinning or twisting comprising, in combination, a bobbin adapted to be fitted upon a
45 spindle to rotate therewith and to have yarn ring spun or twisted thereon while so positioned, said bobbin having one or more longitudinally arranged wires upon its surface, and a tube adapted to be removably fitted
50 upon said bobbin and to be frictionally retained thereon by said wire or wires, said bobbin being adapted for ready removal from the spindle by direct, axial pull.

3. A spindle appurtenance for use in ring
55 spinning or twisting, comprising, in combination, a bobbin adapted to be fitted upon a spindle to rotate therewith and to have yarn ring spun or twisted thereon while so positioned, said bobbin having a wire or wires
60 having the ends thereof secured to said bobbin and intermediate portions spaced therefrom, and a tube adapted to be removably fitted upon said bobbin and to be frictionally retained thereon by said wire or wires, the
65 said bobbin being adapted for ready removal from the spindle by direct, axial pull.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ISAAC E. PALMER.

Witnesses:

FRED E. FOWLER,

IRVING U. TOWNSEND.