R. KERSHAW.

MEANS FOR WINDING OR DELIVERING YARN FROM SPOOLS.

No. 69,101. Patented Sept. 24, 1867.

*Fig. 1.*

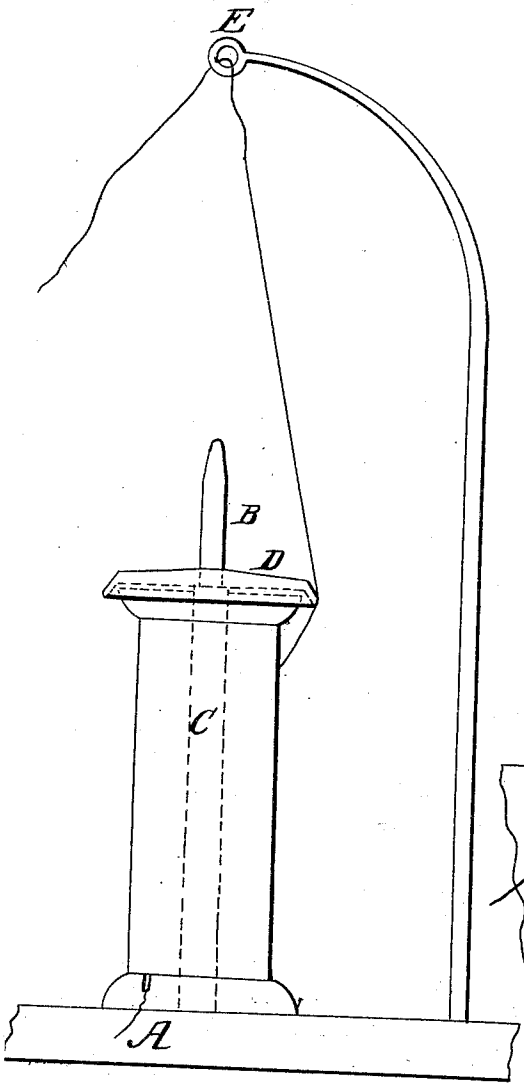
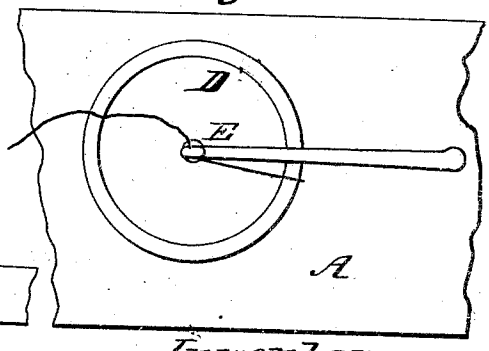



*Fig. 3.*




*Fig. 2.*




*Inventor.*

*Robert Kershaw.*

# United States Patent Office.

ROBERT KERSHAW, OF NORRISTOWN, PENNSYLVANIA.

*Letters Patent No.* 69,101, *dated September* 24, 1867.

## IMPROVEMENT IN MEANS FOR WINDING OR DELIVERING YARN FROM SPOOLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROBERT KERSHAW, of Norristown, in Montgomery county, and State of Pennsylvania, have invented a new and improved Mode of Delivering Yarn or Thread from Spools; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, in which—

Figure 1 represents a spool having a metallic cap or cover placed thereon.

Figure 2 shows a plan of the same.

Figure 3 shows a sectional view of the cap or cover.

The nature of my invention consists in placing a spool, having yarn or thread thereon, upon a spindle, and covering the head (nearest the delivery point) by a cap or cover made of metal or other suitable material, said cap or cover being larger in diameter and overlapping the head or rim of said spool, so that as the yarn or thread is being unwound and delivered from the spool, which does not revolve, it cannot bear against the head of said spool, thereby avoiding variable friction, giving uniform tension, and requiring less power than has been required heretofore by the old system of drawing yarn from spools.

My invention is applicable to various purposes in textile manufactures, sewing machines, warping and winding-mills or frames, and other similar machines where spools are used. When applied to spools used in shuttles for weaving tape and other similar goods, the cap or cover is placed on the end of the shuttle-tongue or spindle, permitting the free delivery of the yarn therefrom, and avoiding the strain consequent upon the yarn having to turn the spool, as heretofore. I have illustrated my invention, as applied to winding machines, warping-mills, &c.

A represents part of a rail or spool-frame of a winding machine, provided with an upright spindle, B, on which is placed the spool C, having yarn or thread thereon. D is a cap or cover, made of metal or other hard material, resting on a shoulder formed on rod B, close to the head of spool C. The heads of spool C, or at least the head nearest the point of delivery, must be made conical, as shown, in order to insure a true and free delivery of the thread at all times, until all is delivered, and to avoid its being delivered except in a straight line or an obtuse angle. The cap D is a little larger in diameter than the head of spool C, and slightly overlaps the same. The lower rim or rounded edge of cap D, being made perfectly smooth, projects a little below the rim or largest part of head of spool C. E represents a stationary metallic eye or guide, placed over the centre of spindle B and spool C, through which passes the yarn or thread, which may then be conducted in any way or direction to suit the purpose intended.

To obtain a constant delivery of yarn from spools without stopping the machine, I attach the outer end of the thread of a fresh or full spool to the inner end of the thread of the spool from which the yarn is being delivered. This is effected, when the spools are being filled with yarn or thread, by placing the leading or first end of thread into a nick or recess formed on the inside of the lower head of spool, and causing the said end to project outside the head of spool, as shown on fig. 1 at the point marked F, so that the operator can tie the last inch of thread on a spool to the first inch of thread on a full or fresh spool.

Heretofore yarn has been delivered from spools by placing the same on a rod or spindle, and the yarn being pulled off at a right angle compels the spool to revolve, requiring in many cases considerable power, and as the diameter of the yarn is constantly becoming less so is the tension of the yarn becoming greater, the spool making proportionately a greater number of revolutions to deliver the required amount of yarn in the same time. It will be perceived that by the use of my improvement the spool remains stationary on its axis, and the yarn, during delivery, comes in contact only with the smooth edge or rim of cap D, thereby requiring very little power or strain on the yarn, avoiding variable tension consequent upon the decreasing diameter of the mass of thread, as in the case of revolving spools, as before shown.

The metallic cap D may be substituted for the head on the delivery end of spool, it being in such case made conical, like such head, the cap thus answering the purposes both of a cap and head. The cap D may rest on the head of spool, and in some cases may be advantageously made of glass.

Any degree of tension required on thread used in sewing and other machines may be obtained by applying friction to the same, after it has passed through the metallic eye, in any of the well-known ways. In such case the friction can be regulated to the greatest nicety, and will be even and steady, regardless of the amount of yarn on the spool.

*Claim.*

The combination of the cap D with a conical-headed stationary spool, as and for the purposes described.

ROBERT KERSHAW.

Witnesses:

JAMES ECCLES.

JOHN WHITE.