

(No Model.)

H. S. FROST.
SPOOL OR BOBBIN.

No. 458,971.

Patented Sept. 1, 1891.

Fig. 1.

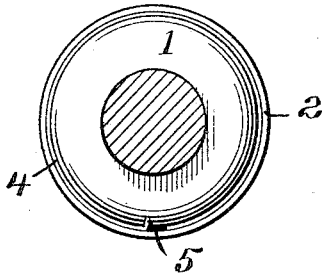


Fig. 2.

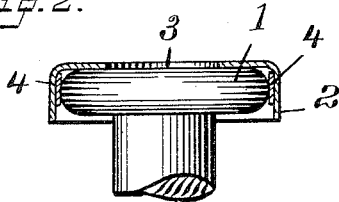


Fig. 3.

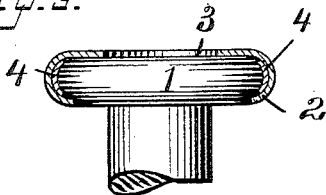


Fig. 4.

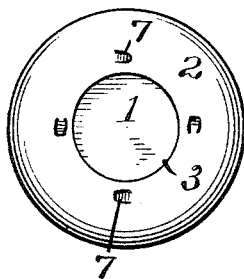


Fig. 5.

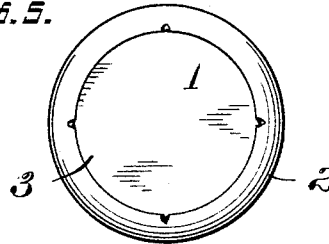


Fig. 6.

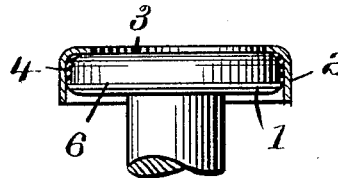
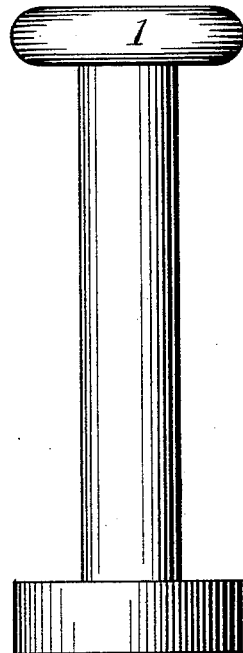


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY S. FROST, OF WATERTOWN, CONNECTICUT.

SPOOL OR BOBBIN.

SPECIFICATION forming part of Letters Patent No. 458,971, dated September 1, 1891.

Application filed March 5, 1891. Serial No. 333,868. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. FROST, a citizen of the United States, residing at Watertown, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Spools or Bobbins; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an inexpensive and durable spool or bobbin, more especially adapted for use in textile manufacturing, which will wholly avoid the difficulty heretofore experienced of the heads of the spools checking and becoming rough in use, thereby breaking the thread or silk, will avoid all expense and loss of time in re-turning, varnishing, and smoothing the heads after they have been run a short time, will allow the silk to pass over the edge without friction, and which will last for practically an unlimited length of time.

With these ends in view I have devised the spool having a metal-covered head, of which the following description, in connection with the accompanying drawings, is a specification, numerals being used to designate the several parts.

Figure 1 is a section of the shank of a spool, showing the inner side of the head in elevation, the metal cap having been placed in position, but not closed down, and a metallic spring placed between the cap and the head; Fig. 2, a side elevation of the head, the spring, and the cap not set to place, being in section; Fig. 3, a similar view after the cap has been set to place; Fig. 4, a plan view of the top of the head of a completed spool, showing one mode of locking the cap against rotary movement; Fig. 5, a similar view showing another mode of locking the cap against rotary movement; Fig. 6, a section corresponding with Fig. 2, a rubber band or cushion being interposed between the cap and head instead of a metallic spring, as in the other form; and Fig. 7 is an elevation of a spool or bobbin complete.

The fact that it has been impossible to prevent the heads of spools from checking and

roughing up in use frequently after but a very short run has been a source of great inconvenience and expense in all kinds of textile manufacturing. No matter how carefully selected or well seasoned the wood has been, the heads have almost invariably checked and cracked, necessitating great loss of time and expense in re-turning, smoothing, and varnishing the heads. This objection I overcome entirely by placing metal caps upon the heads, which I lock firmly in position, and prevent the cap from becoming loose on the head by interposing between the cap and head a suitable spring, which may be of either metal or rubber, and which will act to fill in the space between the head and cap when the wood shrinks, and thus prevent any looseness of the cap upon the head.

1 denotes the head of the spool, and 2 a metallic cap therefor. This cap is drawn to cup shape from a disk of sheet metal, a hole 3 being ordinarily punched at the center.

4 denotes a spring which I interpose between the head and the cap before the latter is closed to place. This spring may be either a metallic spring, as shown in Figs. 1, 2, and 3, or a rubber band, as shown in Fig. 6. When a metallic spring is used, one end of the spring is turned inward at an angle, as at 5, and is engaged in a suitable notch in the periphery of the head. When a rubber spring is used, I preferably turn down a portion of the periphery of the head, leaving a shoulder 6, against which the inner edge of the band rests, as clearly shown in Fig. 6. After the spring and cap have been placed in position upon the head, as shown in Figs. 1, 2, and 6, the cap and spring are set firmly to place upon the head by the action of suitable dies, as clearly shown in Figs. 3, 4, and 5. It is of course well understood that more or less shrinking of the wood is certain to take place in use. By interposing springs, however, between the heads and the caps the space between them when the wood shrinks is taken up, and looseless of the caps upon the heads is wholly prevented. As these spools or bobbins are used in enormous quantities, the saving effected by the use of cheaper woods becomes an important consideration. In ordinary bobbins only the hardest woods can be

used; but when the heads are covered by metallic caps cheaper grades of wood will do just as well. The caps are locked against turning on the heads by striking portions of the metal of the caps into the heads. This may be done by striking in lips of metal 7, as in Fig. 4, alternate lips being pointed in opposite directions, so as to insure the cap against movement in either direction, or, if preferred, the metal may be struck inward at the edges of the cap, as shown in Fig. 5.

Having thus described my invention, I claim—

1. A spool or bobbin having its head covered with a metallic cap and having interposed between the periphery of the head and the cap a suitable spring, whereby looseness of the cap is prevented when the wood shrinks.

2. A spool or bobbin having its head covered with a metallic cap and having interposed between said head and cap a spring to compensate for shrinkage of the head, said cap being locked against rotation by striking the metal of the cap into the head.

3. A spool or bobbin having a metallic cap, substantially as shown and described, and having a rubber band interposed between the periphery of the spool and the cap to prevent looseness of the cap when the wood shrinks.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY S. FROST.

Witnesses:

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