

A. I. EARLE.
Bobbins.

No. 139,558.

Patented June 3, 1873.

Fig. 1

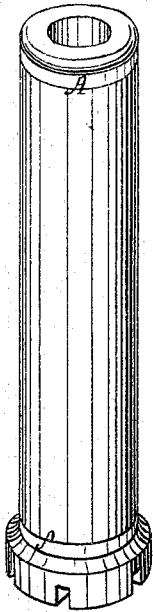


Fig. 2.



Fig. 3.

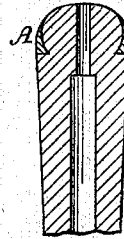


Fig. 4

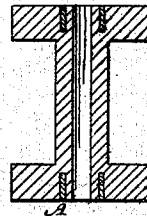
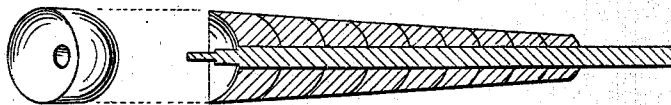


Fig. 5.



Witnesses.
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ANTHONY I. EARLE, OF VALLEY FALLS, RHODE ISLAND.

IMPROVEMENT IN BOBBINS.

Specification forming part of Letters Patent No. **139,558**, dated June 3, 1873; application filed May 10, 1873.

To all whom it may concern:

Be it known that I, ANTHONY I. EARLE, of Valley Falls, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Re-enforced Wooden Bobbins for Spinning, &c.

It has long been proposed, and, to some extent, has been practiced, to strengthen bobbins by bands or hoops of metal wire or molten metal, cast in annular recesses on the bobbins; and, also, by sheet metal spun thereon; and, still further, by employing bands or rings of India rubber. My invention has for its object the strengthening of the bobbin by means of a solid or jointless ring or band, which, while being lighter and less expensive than the metal, will be sufficiently strong, and cannot be softened or injuriously affected by such degree of heat as they will, in practice, be liable to be subjected to, or by contact with ordinary oily solvents, as in the case, for instance, of India rubber, or compounds in which similar gums are ingredients. My invention consists of a bobbin provided with a seamless re-enforcing or strengthening band or ring, composed mainly of glue, which is treated and combined with glycerine, a suitable thickening powder, and properly hardened. And I do hereby declare that the following specification, taken in connection with the drawings accompanying and forming a part of the same, is a clear and accurate description thereof.

In the drawings, Figure 1 represents in perspective a large base-bobbin with two bands. Fig. 2 represents a small bobbin with a single band at the base. Fig. 3 represents in section part of a small bobbin re-enforced at the top. Fig. 4 represents a spooling-bobbin re-enforced at the ends. Fig. 5 represents a tapering arbor.

A, in each instance, denotes one of the bands. Annular recesses of proper size are cut in the bobbins, sometimes at top and bottom, as in Fig. 1, and sometimes at but one of these points, as shown in Figs. 2 and 3. When applied to old bobbins which have been split the rings should be of such number and located at such points as will give the requisite degree of security.

The compound which I find to be practically suited to the purpose can be made as fol-

lows: Dissolve in one quart of water (24) twenty-four ounces of glue, or its derivatives, and add thereto about (28) twenty-eight ounces of glycerine, and four (4) ounces of sulphate of lead. The mass is to be heated and well mixed. Suitable molds or flasks of metal or other material, provided with cores in a manner well known for pipe casting, are employed, in which to mold the compound, while warm, in tubular form. When sufficiently cooled the molds are opened and the tubes removed and subjected to the action of a solution of three (3) pounds of alum and (2) two pounds of sugar of lead in, say, five gallons of water, for about three hours, after which they are placed on sticks, and allowed to dry and harden. From these tubes rings of suitable width are cut. The thickness of the material may be varied to meet requirements. As a rule it will be safe to cut it quite as wide as, or a little wider than, the recesses cut in the bobbin, because it can be readily inserted and flatted so as to make a tight joint at the sides of the recess, which may, in some cases, be inclined somewhat, so as to make it a little wider at the bottom than at the top. If the band be cut as wide as the bottom of the recess and pressed into position a very neat finish can be effected.

Coloring matter of various kinds may be employed in the compound, and produce bands of any desired shades. Aniline dyes have been found to be well suited to the purpose.

It is sometimes desirable that certain sets of bobbins should be kept separate from others, and by employing a peculiar shade of color for each set ready identification may be effected.

In applying the bands to double-flanged spools, as in Fig. 4, the longitudinal annular recess is cut, at one or both ends, concentrically with the chamber, of a depth, say, not exceeding one-half an inch, and of a width equal to the thickness of the material composing the rings. In all cases the tubes from which the rings are cut should be considerably smaller than the circumference of the bobbins at the recesses, in order that, after having been stretched over the adjacent portions of the bobbin, they may contract into a desirable relation with the bobbin.

In putting on the rings a "spoon," similar

to that used by top-roll coverers, may be employed. A tapering arbor, like that illustrated in Fig. 5, will be found, however, especially valuable for this purpose, as being made in detachable sections, as shown. It is suited to bobbins of all sizes. The cup-shaped recess in the large end of each section will properly engage with the rounded ends of the bobbins, and allow of the ready transfer of the ring. The arbor will be provided with a central spindle, which, while uniting the several sections, will, on entering the chamber of the bobbin, secure the lower section in proper relation with the end of the bobbin or spool.

The lower end of the spindle may be turned to several diameters, so as to be adapted to small and large chambers; or it may be made of one size throughout, and suited to the smallest-sized bobbins. Each section of the arbor may then be provided, at its large end, with a neck, which will rest in a recess in the small end of the next-larger section; and so on throughout the series.

In repairing split bobbins my bands will be found of great practical value. In practice it will be found that the shrinkage of the wood in the bobbin will be closely followed by the

contraction of the band; and that long use will increase the hardness of the bands, while they will still retain their tenacity and requisite elasticity. Oily lubricating matter does not injuriously affect these bands; and, being always smooth, they cannot catch and hold dust or fiber.

It is to be distinctly understood that I make no claim to the compound named; and do not confine myself to the use of bands manufactured from the precise formula stated, as I am well aware that it can be considerably varied. As compared with any of the re-enforcing means heretofore known or practiced within my knowledge there is, in my opinion, a large margin in favor of the glue rings on the score of economy and general efficiency.

I claim as new and desire to secure by Letters Patent—

A wooden bobbin, provided with one or more seamless re-enforcing rings or bands, composed of a glue compound possessing substantially the characteristics specified.

ANTHONY I. EARLE.

Witnesses:

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