(Model.)

S. D. KEENE.

ENAMELED SPOOL OR BOBBIN.

No. 359,447. Patented Mar. 15, 1887.

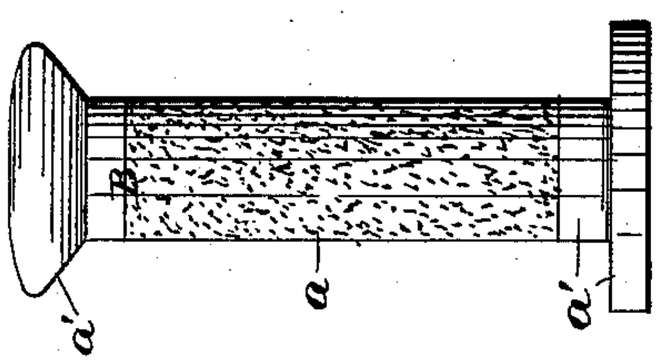

FIG. 5.

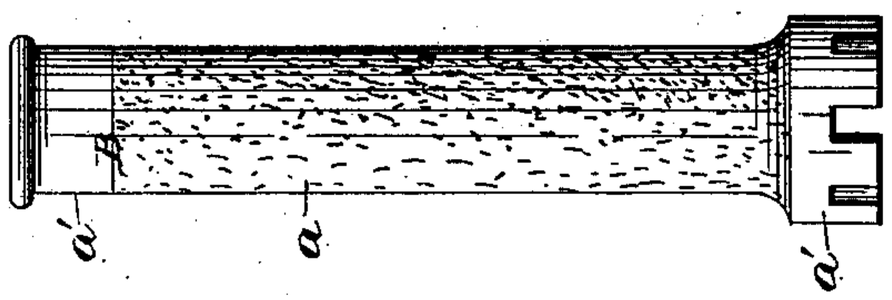

FIG. 4.

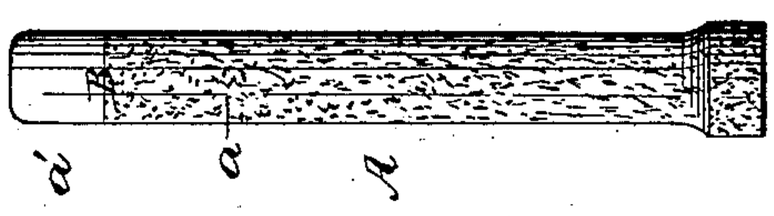

FIG. 3.

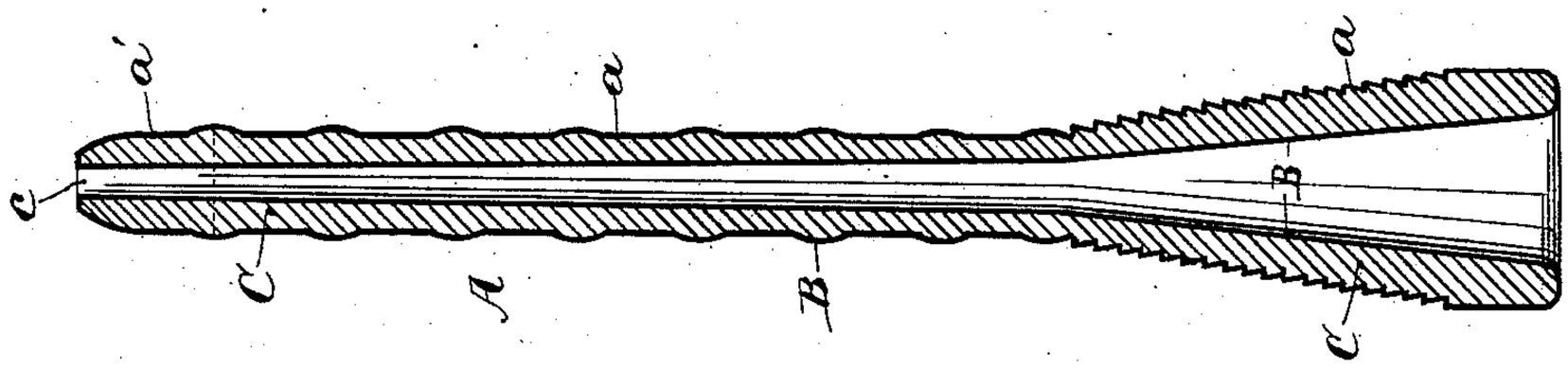

FIG. 2.

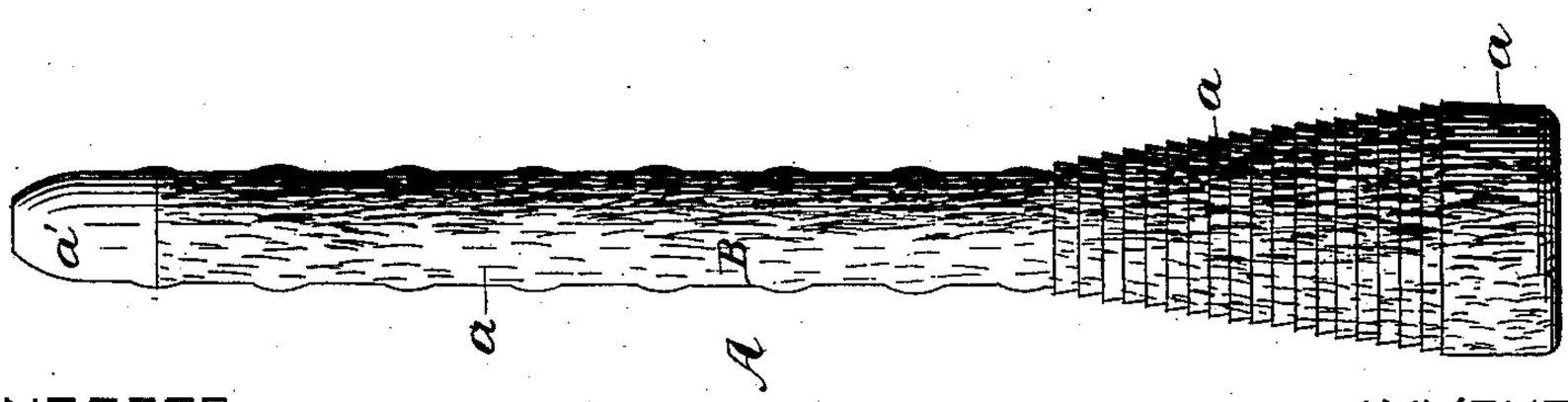

FIG. 1.

WITNESSES.

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UNITED STATES PATENT OFFICE.

SAMUEL D. KEENE, OF PROVIDENCE, RHODE ISLAND.

ENAMELED SPOOL OR BOBBIN.

SPECIFICATION forming part of Letters Patent No. 359,447, dated March 15, 1887.

Application filed August 27, 1886. Serial No. 211,969. (Model.)

To all whom it may concern:

Be it known that I, SAMUEL D. KEENE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Enameled 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain improvements in enameled spools or bobbins employed in the manufacture of yarn and textile fabrics, the present invention consisting in the novel finish of the exterior enameled surface of the spool or bobbin, as will be more fully hereinafter set forth and claimed.

My invention is more particularly applicable to the surface of wooden spools or bobbins on which is wound the yarn used in the manufacture of textile goods, although it may be advantageously applied to roving-bobbins, &c.

Usually heretofore the yarn-holding surfaces of spools and bobbins have been uniformly finished—that is to say, in a metal bobbin or quill the surface is uniformly polished, in a wooden bobbin the surface is, if oiled or shellaced, uniformly treated, and if covered with Japan enamel applied in a liquid state the same, when baked, becomes smooth and uniform in finish and appearance.

I am aware that bobbins have been provided with a series of grooves or scores extending along the barrel thereof, such grooves being concentric, spiral, zigzag, &c. Sand-paper, flannel, and leather have also been employed to prevent yarn from slipping off the bobbin. It is found practically that bobbins and spools thus treated and finished are objectionable, owing to the fact that the yarn, especially cotton yarn, is very apt to slide off from the smooth surface in masses, thereby producing a greater proportion of waste yarn, and the consequent increase in the cost of the manufactured fabric.

The extra cost of bobbins provided with grooves, &c., as just described, precludes their general use, while bobbins covered with sand-paper, leather, or flannel are too readily affected by steam or moisture to be desirable, aside from the increased cost in producing them.

The object of my improvement herewith is to overcome the before-mentioned disadvantages by producing an enameled spool or bobbin having the yarn-retaining portion thereof slightly roughened or "dull" finished, by means of which the yarn is prevented from slipping off faster than is required, the end portion or tip of said spool at the same time having a smooth-finished surface, so that the yarn will not catch thereon in unwinding from the spool.

In order to more clearly set forth the distinguishing features of my invention, I have prepared the annexed sheet of drawings, in which—

Figure 1 represents a perspective view of a bobbin embodying my improvements. Fig. 2 is a vertical central sectional view of the same. Fig. 3 is a reduced side view showing the improvement applied to another style of bobbin. Fig. 4 is a similar view of an ordinary speeder-bobbin having smooth-finished ends and the intermediate portion of the bobbin dull-finished or roughened; and Fig. 5 is a view of a spool thus enameled and finished.

The following is a more extended description of the invention.

A, referring to the drawings, designates my improved enameled bobbin or spool.

B indicates a layer or layers of Japan enamel covering the entire outer surface thereof, as well as lining the surface of the central longitudinal hole, *c*, as shown clearly in Fig. 2, said enameled covering being baked or hardened by a high degree of heat, as usual.

a designates the slightly-roughened or dull-finished portion of the enameled spool, the same presenting what may be termed a "mat" surface.

A means for producing the slightly-roughened enameled surface *a* is as follows: A varnish composed of japan, coarse lamp-black, naphtha, and oil is applied to the surface of the bobbin and then baked. By the addition of fine emery to said varnish a coarser or more roughened surface is produced. Substantially

the same effect may be obtained, however, by submitting an ordinary enameled bobbin to the action of a revolving roll covered with sand-paper or other analogous material.

The tip or upper end portion of my improved bobbin is covered with the Japan enamel proper and baked, the result being the smooth and hard-finished surface *a'*.

As is well-known, ordinary Japan enamel applied in a liquid state to wooden or metal articles and then subjected to the action of artificial heat produces a coating that is smooth and hard, yet tough, and being of great durability, even under constant use, such enameled wooden articles being, moreover, impervious to water, oil, steam, &c.

It is obvious that mineral paints of the colors desired, or bronze-powders even, may be combined with the Japan varnish to produce body colors.

In concluding, I would state I am aware that a wooden spool or bobbin having a baked enameled surface has been patented prior to my present invention. Therefore I do not broadly claim such enameled articles.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent, is—

1. As a new article of manufacture, a spool or bobbin having a baked enameled exterior presenting a slightly-roughened or dull-finish surface to the yarn-retaining portion and a smooth-finish surface to the unwinding yarn, substantially as hereinbefore set forth.

2. The bobbin hereinbefore described, having a portion of its exterior covered with baked enamel producing a roughened or dull surface, as at *a*, and the other or tip portion of the bobbin, as at *a'*, covered with a baked enamel, producing a smooth, hard, and bright surface, substantially as shown and set forth.

3. A spool or bobbin having its end portions covered with smooth baked enamel and the portion intermediate of said ends covered with baked enamel having a slightly-roughened or dull-finish surface, substantially as shown and described.

4. The wooden bobbin A, hereinbefore described, having its exterior surface covered with one or more layers, B, of Japan enamel baked thereon, the lower or yarn-holding portion of the enamel, *a*, having material combined therewith to produce a roughened or "dead" finished surface, while the upper portion or tip, *a'*, is covered with Japan enamel, producing a smooth, hard, and brilliant surface.

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

SAMUEL D. KEENE.

Witnesses:
GEO. H. REMINGTON,
CHARLES HANNIGAN.