

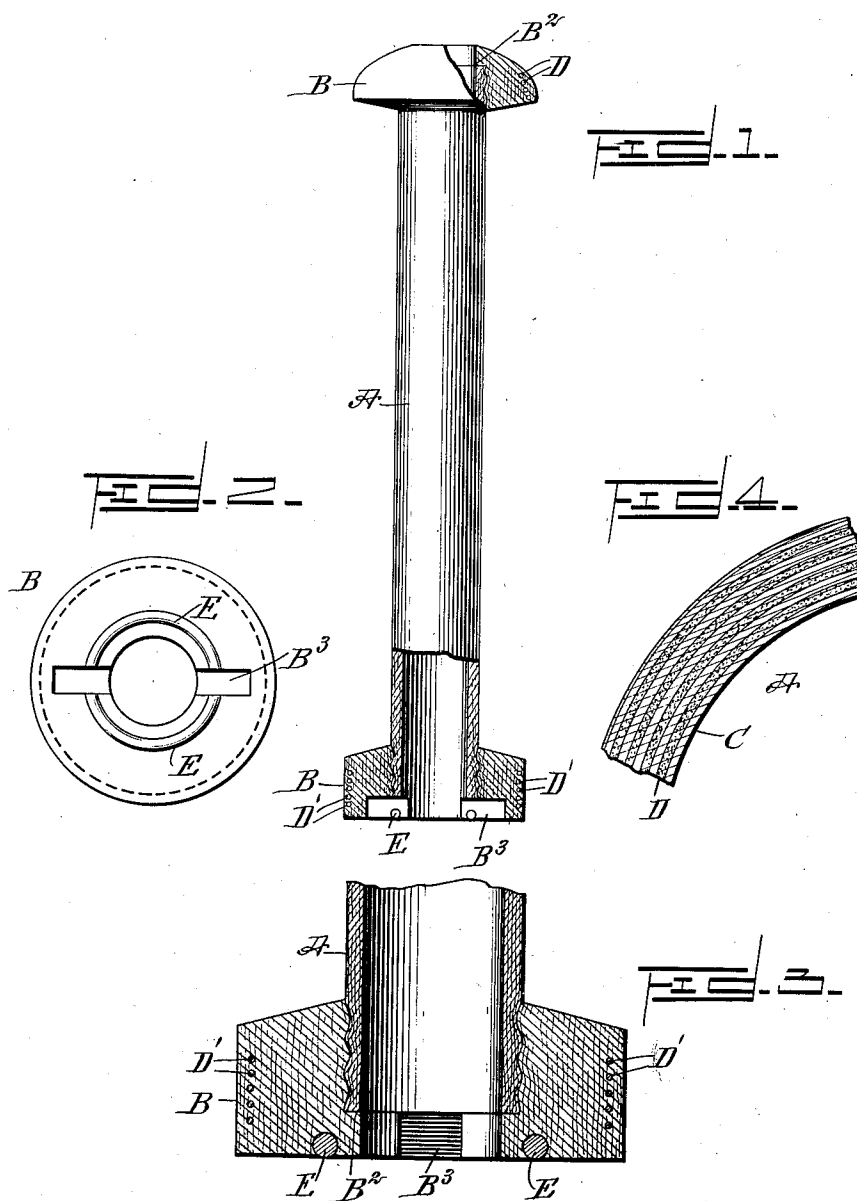
No. 845,575.

PATENTED FEB. 26, 1907.

G. POPPLEWELL.

BOBBIN.

APPLICATION FILED AUG. 31, 1905.



WITNESSES:

*L. Sanford Hand*  
*Rev. H. H. H.*

INVENTOR

*George Popplewell*

BY

*Munn*

ATTORNEYS

# UNITED STATES PATENT OFFICE.

GEORGE POPPLEWELL, OF LOUISVILLE, KENTUCKY.

## BOBBIN.

No. 845,575.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed August 31, 1905. Serial No. 276,587.

*To all whom it may concern:*

Be it known that I, GEORGE POPPLEWELL, a citizen of the United States, and a resident of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and Improved Bobbin, of which the following is a full, clear, and exact description.

The invention relates to bobbins, more particularly such as are used on drawing, spinning, and twisting frames.

The object of the invention is to provide a new and improved bobbin which is simple and durable in construction, exceedingly strong to stand all ordinary wear and tear and allow repeated use of the bobbin.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement, one end thereof being in section. Fig. 2 is an enlarged end view of the same. Fig. 3 is an enlarged sectional side elevation of one end of the improvement, and Fig. 4 is an enlarged cross-section of the bobbin.

The bobbin illustrated in the drawings consists, essentially, of a barrel A and heads B and B'. Each of the parts of the bobbin is formed of alternating layers C and D, of which the layer C is of paper, and the layer D consists of a composition formed of glue, cement, and sand. In making the composition I prefer to dissolve one pound of glue to eight pints of boiling water, to which is added two pounds of cement and two pounds of sifted sand, the entire mixture being thoroughly agitated to a desired consistency. It will of course be understood that the proportions above stated may be varied as may be required or found desirable in practice. The paper after being cut to the desired shape and length receives on one face the composition spread to the proper thickness by the use of a brush or other suitable means, and then the paper with the composition thereon is rolled up into tubular form by a suitable machine and with sufficient pressure to insure a proper adhesion of the alternating layers C and D. In making the heads B and B' in the manner above described suitable knives are

used to trim the heads to the proper size, as indicated in the drawings.

The several parts of the bobbin are made separately, and when finished the parts are assembled—that is, the ends of the barrel A are inserted by pressure into the head B or B', or both, and also at the same time pressed into any shape desired, it being understood that the inner ends of the heads B and B' are formed with suitable apertures for receiving the ends of the barrel A, the ends of which abut against annular shoulders B<sup>2</sup>, formed in the heads, as plainly illustrated in Figs. 1 and 3.

In order to reinforce the heads B and B' for large bobbins, I prefer to employ wires D', embedded in a composition layer near the periphery of the head B or B', as will be readily understood by reference to Figs. 1 and 3. The head B is preferably provided with the usual recess B<sup>3</sup>, extending diametrically and of a depth equal to the distance of the shoulder B<sup>2</sup> from the bottom surface. In order to reinforce the walls of this recess B<sup>3</sup>, segmental wires E are employed embedded in recesses formed in the outer faces of the head B, (see Figs. 1, 2, and 3,) it being understood that the terminals of the said wires E are flush with the said walls of the recess B<sup>3</sup>. If found desirable in practice, the recess B<sup>3</sup> may be omitted.

By the arrangement described an exceedingly strong and durable and yet somewhat flexible bobbin is produced which is not liable to become easily broken and which can be repeatedly reused. The bobbin when manufactured as above described is preferably provided with a coating of shellac, so as to render the bobbin exceedingly smooth and prevent the yarns from catching on uneven surfaces.

In the formation of the bobbin-head the layer of paper forming the head is rolled upon itself with the reinforcing-wire between the turns of the paper, the said wire being merely wound on the bobbin-head between the layers of the paper. This head is then placed in an annular mold having a closed bottom and the plunger pressed down upon the head. This forces the wraps of paper firmly into contact with each other and also forces the turns of the reinforcing-wire in closer relation with each other. It will be understood that the strip of paper used in forming the head is of considerably

greater width than the thickness of the bobbin-head after compression and that the layers of paper are compressed from end to end.

- 5 It will be understood that the cement, glue, and sand under the heavy pressure to which it is subjected is forced into the paper, impregnating it, thus making a very strong and solid bobbin. In the usual process of  
10 manufacture the method of pressing is as follows: A steel roller is inserted in the bobbin, and the bobbin with the roller therein is then pressed between two other steel rollers while in rapid motion, while the heads are  
15 pressed, as before mentioned. The reinforcing-wires between the layers near the periphery of the head lengthen the life of the head and prevent wear by the projections on the spindle, which enter the recess when the  
20 bobbin is thereon to impart motion to said spindle. The bobbin while extremely hard is yet slightly flexible and well adapted to withstand rough usage, being practically indestructible with ordinary care.
- 25 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A bobbin comprising a barrel, and heads thereon, each made of alternating layers of  
30 paper and a composition of glue, cement and

sand, each of the heads having reinforcing-wires between the layers.

2. A bobbin comprising a barrel, and heads thereon each made of alternating layers of paper and a composition of glue, cement and sand, each of the heads having reinforcing-wires between the layers near the periphery of the head. 35

3. A bobbin comprising a barrel, and heads thereon, each made of alternating layers of paper and a composition of glue, cement and sand, each of the heads having a diametrically-extending recess at the outer face, and segmental wires embedded in the material at the outer face and terminating with their ends at the said recesses to leave the latter unobstructed and its walls reinforced. 40 45

4. A bobbin comprising a barrel and a head, each made of alternating layers of paper and a composition of glue, cement and sand, said head having reinforcing-wires between the layers thereof. 50

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

GEORGE POPPLEWELL.

Witnesses:

FREDK. WM. THORNBUR,  
JAMES WILLIAM THORNBUR.