(No Model.)

G. E. GRIMM.

BOBBIN.

No. 342,437. Patented May 25, 1886.

FIG. 1

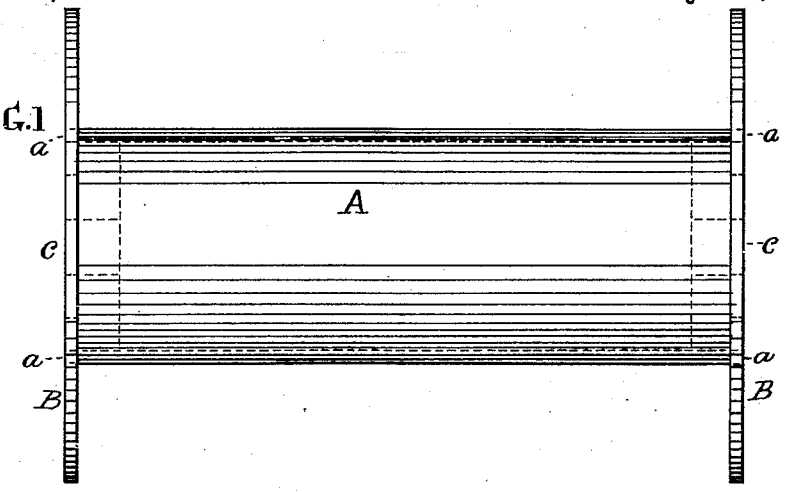


FIG. 2

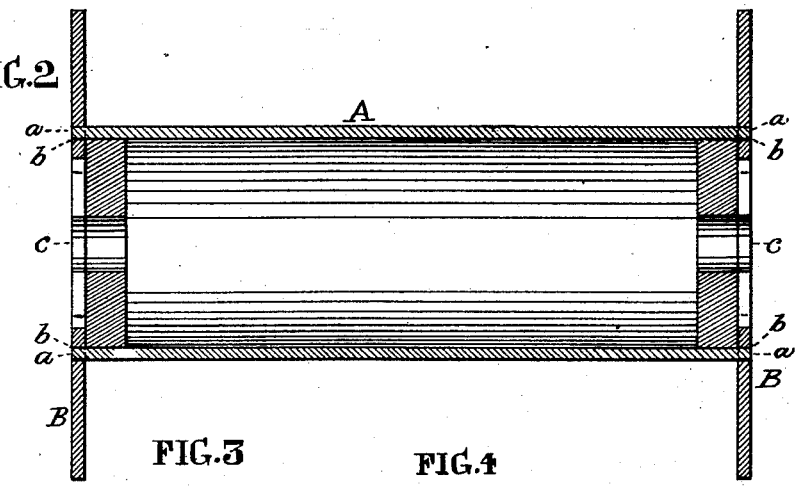


FIG. 3

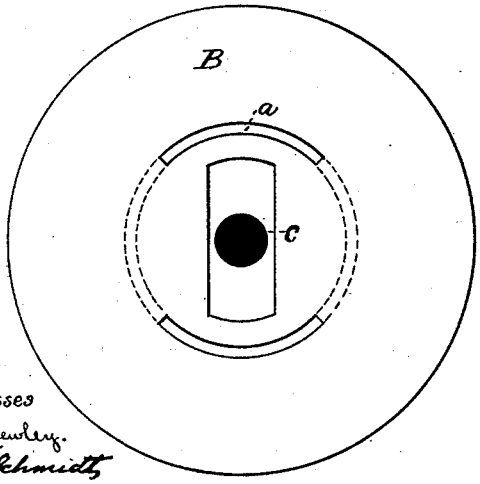


FIG. 4

FIG. 5

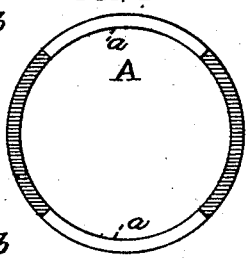
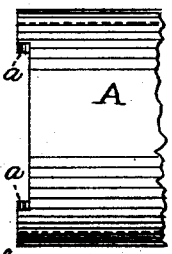


FIG. 6



Witnesses
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UNITED STATES PATENT OFFICE.

GERHARD E. GRIMM, OF CAMDEN, NEW JERSEY.

BOBBIN.

SPECIFICATION forming part of Letters Patent No. 342,437, dated May 25, 1886.

Application filed March 17, 1886. Serial No. 195,605. (No model.)

To all whom it may concern:

Be it known that I, GERHARD E. GRIMM, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Bobbins, of which the following is a specification.

My invention has for its object the formation of a bobbin entirely of paper card-board that shall be symmetrical in shape, inexpensive to manufacture, and also strong and durable, designed for the purpose of superseding the cumbersome, weighty, and costly spool or bobbin constructed of wood, upon which yarn and kindred materials are wound, and to which the chief objections made are cost, weight in transportation, liability to break, and trouble in collecting and returning empty spools to the owner.

The invention consists of a paper card-board seamless cylinder, which forms the body of the bobbin or spool, having a pair of tenons formed upon each end, each pair engaging within a corresponding pair of segmental mortises cut through the circular card-board plates which form the ends and shoulders of the bobbin, and united therein by cement or glue. Previous to the connection of the end disks a circular plate is inserted and cemented within each end of the cylinder, with their outer faces even with the shoulders of the tenons, whereby cementing-surface is provided for the connection of the end disks, in addition to the mortise-and-tenon joints, and rigidity given to the entire bobbin.

In the accompanying drawings, which make a part of this specification, Figure 1 is a side elevation of my improved bobbin. Fig. 2 is a longitudinal section of the same. Fig. 3 is an end view. Fig. 4 is a cross-sectional view taken through one of the disks B. Fig. 5 is an end view of the cylindrical tube A. Fig. 6 is a side view of one end of the cylinder.

Like letters of reference indicate the same parts in all the figures.

A is a seamless cylindrical tube, made of paper card-board, which constitutes the body of the bobbin. It has segmental curved tenons *a a* cut or formed upon each end, that enter and engage with corresponding-shaped mortises, *b b*, cut through the disks B, that form the ends or shoulders of the bobbin. Previous to the connection of these disks upon the cylinder A a circular plate, C, is inserted within each end of said cylinder, the outer faces of which are even with the shoulders of the tenons and cemented in place to re-enforce and give rigidity. The disks B are then connected by their mortises *b* to the tenons *a*, cement or glue being used to unite the parts. *c* is a central orifice in each end of the bobbin.

By the formation of a bobbin or spool in the manner described, composed entirely of paper card-board, better results are obtained than from a wood spool, with less cost, decreased weight, and breakage reduced to a minimum, as the bobbin of paper will withstand great strain and rough usage without damage.

In some cases the re-enforcing-plates may be dispensed with in the formation of small bobbins.

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

A paper card-board bobbin composed of the cylinder A, having tenons *a a* formed upon its ends, re-enforcing plates C, and disks B, having mortises *b b*, the parts being united together substantially in the manner herein shown and described.

GERHARD E. GRIMM.

Witnesses:
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