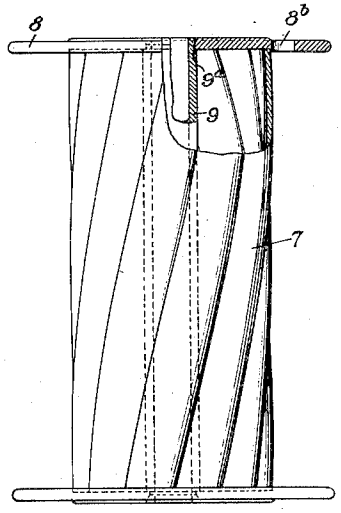
March 26, 1929. H. D. CLINTON 1,707,076

SPOOL AND BOBBIN

Filed April 25, 1928

Fig. 1.



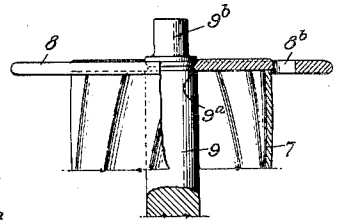


Fig. 2.

Fig. 5.



Fig. 6.

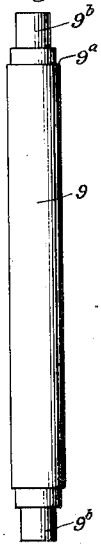


Fig. 3.

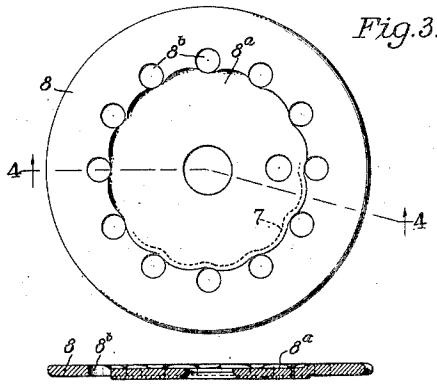


Fig. 4.

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Patented Mar. 26, 1929. 1,707,076

UNITED STATES PATENT OFFICE.

HARRY D. CLINTON, OF JOHNSON CITY, NEW YORK.

SPOOL AND BOBBIN.

Application filed April 25, 1928. Serial No. 272,828.

This invention relates to spools and bobbins and particularly to those of the types used in textile mills. It aims to provide spools or bobbins of improved construction and character for general utility while especially appropriate for use in steaming or otherwise treating silk or yarn prior to weaving.

The invention will be best understood from the following description with reference to the accompanying drawings, wherein practical embodiments thereof are illustrated in the form of a bobbin loader for fine silk thread.

In said drawings:

Fig. 1 is a representation in parti-sectional elevation of one form of bobbin embodying the invention;

Fig. 2 is a similar but fragmentary representation of a modified form of bobbin;

Fig. 3 illustrates a plan view of one of the bobbin heads;

Fig. 4 is a section of the head taken on the line 4—4 of the preceding figure;

Fig. 5 is an elevation of one form of connecting part; and

Fig. 6 is a similar view of a modified form of connecting part.

The illustrative bobbin or spool comprises only four parts, two of which are substantial duplicates. These parts formed preferably of metal having low coefficient of expansion from heat are united in a novel and simple manner providing a strong, rigid and durable construction.

In this instance, the barrel 7 of the bobbin is formed by a section of spirally-corrugated metallic tubing of minimized wall thickness combining the advantages of lightness and strength with non-tendency to expand from moisture. Such tubing is found peculiarly appropriate for the barrels of steaming bobbins and spools because of the spaced depressions of corrugation in the outer periphery thereof along which steam or other fluid may pass under silk or yarn loaded on the bobbin to permeate the same outwardly from the barrel as also inwardly from the outside, thereby assuring a thorough penetration and saturation of the wall of closely wound material.

Heads for the ends of the barrel are represented by metallic plates 8 shown centrally apertured for engagement over a member or part disposed axially of the barrel. In this instance the plates or heads are stamped or formed with a marginally scalloped annular depression or shallow recess 8^a in one side conforming to the periphery of the corrugated barrel so as to receive or complementarily fit the ends thereof without possibility of rotation independently of the barrel when secured thereagainst. Along the margin of said recess in the heads, annularly spaced orifices 8^b are shown punched to oppose the depressions of corrugation in the outer periphery of the barrel when the heads are applied to the ends thereof. Said orifices are provided for the purpose of admitting steam or other fluid to the depressions in the barrel periphery from the ends of the bobbin when the latter is loaded with silk or yarn. Such orifices also lighten the weight of the bobbin or spool to a slight measure.

Means securing the heads to the ends of the barrel is in this instance provided by a bar or core-piece 9 extending axially through the barrel in slight projection beyond the ends of the latter. In the two embodiments shown, said bar is formed with shoulders 9^a near its ends against which the inner faces of the heads bear, while end-portions of the bar are swaged or depressed over the outer faces of the heads to hold them securely to the barrel ends, thus in effect acting as a tie-rod connecting the heads through the barrel with the latter clamped rigidly between the former.

In Fig. 4, the bar or core-piece is represented in hollow form providing a spool of the embodiment shown in Fig. 1 adapted to receive supporting spindles upon which to rotate, while in Fig. 6 said bar is represented in solid form with reduced extensions 9^b providing a spool of the embodiment shown in Fig. 2 having gudgeons for rotatably supporting the same.

A bobbin or spool of novel, improved and simplified construction is thus provided, wherein the attachment of the heads to the barrel ends is made to depend upon the form or peripheral contour of the barrel clamped receptively therebetween. Comprising only four simple parts, of which two may be duplicates and one is of interchangeable form, it may be produced in either of the illustrated embodiments at very little expense, especially in large quantities. For preservation purposes, the entire bobbin or

spool is advantageously made rust-proof either by the use of rust-proof metals or by coating treatment.

While the illustrated bobbin is an all-metal product, any one of its parts, especially the heads may be formed of some other material, such for example as hard vulcanized fibre which will not readily break under strain and abusive treatment in the mills. As hereinbefore stated, the claimed construction is especially appropriate for steaming bobbins or spools because of the form of the barrel permitting the passage of steam or other fluid under yarn or silk loaded thereon so as to permeate the same from the barrel outwardly as well as from the outside inwardly, the fluid being admitted to the depressions of corrugation in the barrel through the lightening orifices in the heads. When formed entirely of metal, the parts will not materially expand nor loosen or separate from steam moisture. Moreover, the silk or yarn will not be stained during the steaming process by contact with the parts of the bobbin or spool, as in the case of a wooden spool for example.

As the invention comprehends various possible modifications of construction, the appended claims are not intended to limit the same to the illustrated construction alone, nor to the specific form and arrangement of the parts described, and the word "swaged" as used in the specification and claims is intended to cover any equivalent mode or means of securing the heads against the ends of the barrel.

The term "spool" as used in the claims is intended to include bobbins or any other strand holder comprising a barrel with end heads.

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

1. A spool comprising a barrel of spirally-corrugated metallic tubing, metallic heads recessed with scalloped margin conforming to the peripheral edge of the barrel so as to fit complementarily thereagainst at opposite ends and having annularly spaced orifices opposing the depressions of corrugation in the body of the barrel, and a metal bar extending axially through the barrel and swaged over the outer faces of the heads to hold the latter rigidly fitted to the ends of the former.

2. An all-metal spool comprising a hollow spirally-corrugated barrel, heads receptively engaging the barrel at opposite ends thereof and having annularly spaced orifices opposing the depressions of corrugation in the outer periphery of the barrel, and a bar connecting the heads through the barrel in a manner to engage them securely thereagainst.

3. An improved steaming spool comprising a hollow spirally-corrugated metal barrel, metallic heads receptively engaging with opposite ends of the barrel and having annularly spaced orifices opposing the depressions of corrugation in the body thereof, and a metallic core-piece extending through the barrel and swaged to the outer faces of the heads to prevent disengagement from the barrel ends, the spool being rust-proofed to prevent deterioration from moisture.

4. A metal steaming spool comprising a barrel formed of a section of spirally-corrugated tubing, disc-like heads recessed to engage the barrel complementarily at opposite ends thereof and having annularly spaced orifices opposing the depressions of corrugation in the barrel body, and a tie-bar connecting the heads through the barrel to clamp the latter rigidly between the former.

5. A spool comprising a hollow spirally-corrugated metal barrel, metallic heads fitting complementarily against opposite ends of the barrel and having annularly spaced orifices opposing the depressions of corrugation in the outer periphery thereof, and a metal core-piece extending through the barrel and swaged over the outer faces of the heads to secure the latter rigidly against the barrel ends.

6. A spool comprising a barrel formed of a section of spirally-corrugated tubing, disc-like heads recessed in one side with scalloped margin conforming to the outer peripheral edge of the barrel so as to fit complementarily thereover at opposite ends and having annularly spaced orifices opposing the depressions of corrugation in the barrel body, and a tie-bar connecting the heads through the barrel to clamp the latter rigidly between the former.

In testimony whereof I affix my signature.

HARRY D. CLINTON.