Jan. 12, 1926. 1,569,618

R. N. CORTHELL

BOBBIN CONTROLLING ADJUNCT FOR SEWING MACHINE BOBBIN CASES

Filed March 17, 1925

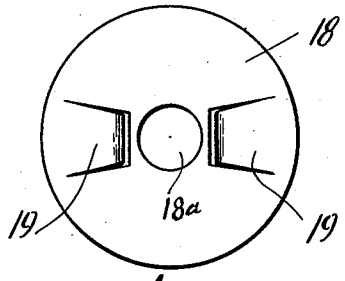


Fig. 1.

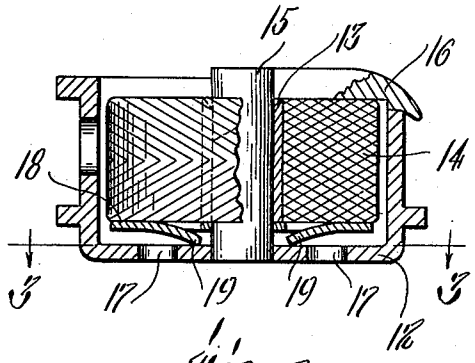


Fig. 2.

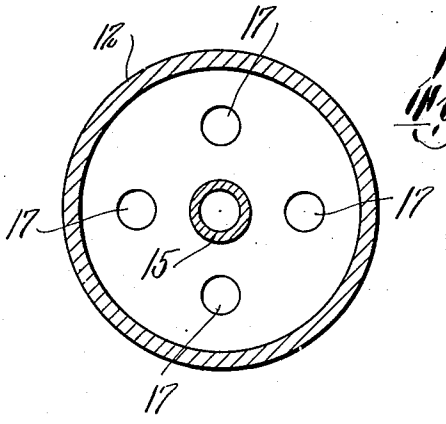


Fig. 3.

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Patented Jan. 12, 1926. 1,569,618

UNITED STATES PATENT OFFICE.

ROBERT N. CORTHELL, OF AUBURN, MAINE.

BOBBIN-CONTROLLING ADJUNCT FOR SEWING-MACHINE-BOBBIN CASES.

Application filed March 17, 1925. Serial No. 16,198.

To all whom it may concern:

Be it known that I, ROBERT N. CORTHELL, a citizen of the United States, residing at Auburn, in the county of Androscoggin and State of Maine, have invented new and useful Improvements in Bobbin-Controlling Adjuncts for Sewing-Machine-Bobbin Cases, of which the following is a specification.

This invention relates to the bobbin case of a sewing-machine shuttle, the bobbin-receiving cavity of the bobbin case being closed at one end by a head. The cavity is adapted to receive a ready-wound bobbin, composed of a cop tube and a thread winding thereon, the bobbin being rotatable on a center post projecting from the head.

The rotation of the bobbin is controlled by resilient means, interposed between the head and the adjacent end face of the bobbin, and a thrust bearing against which the other end face of the bobbin is pressed by said resilient means.

The continuity of the head in a bobbin case of the above-mentioned type is interrupted by orifices permitting a circulation of air in the cavity, and the escape of lint therefrom. Said orifices are located in the marginal portion of the head, and are spaced from the center post by a continuous or uninterrupted central portion of the head.

The object of the invention is to provide for use with a bobbin case of the above-mentioned type, a bobbin-controlling adjunct of extreme simplicity and made in a single piece, adapted to bear on practically the entire inner end face of the bobbin, and to bear movably on the uninterrupted central portion of the head, without interference with the margins of the orifices in the head.

The construction whereby this object is attained, and the advantages thereof, are hereinafter set forth.

Of the accompanying drawings forming a part of this specification—

Figure 1 is a plan view of a bobbin-controlling adjunct embodying the invention.

Figure 2 shows in section a bobbin case provided with the improved adjunct, and partly in section and partly in elevation a bobbin associated with the bobbin case and the adjunct.

Figure 3 is a section on line 3—3 of Figure 2.

The same reference characters indicate the same parts in all of the figures.

Figures 1 and 2 show a bobbin case of the type above mentioned, to which my improved adjunct is applicable. The bobbin case includes a head 12, forming one end of a bobbin cavity, adapted to receive a bobbin which may be of the ready-wound variety, and composed of a tube or core 13, and a thread winding 14. The bobbin is rotatable on a center post 15, fixed to the head. A swinging latch 16, yieldingly retained by well known means in the position shown by Figure 2, constitutes a thrust bearing against which the outer end face of the bobbin is pressed, as hereinafter described, the latch being movable to a position in alinement with the post, to permit the insertion and removal of the bobbin, in the usual manner.

In this type of bobbin case the head 12 is provided with orifices 17, located near the margin of the head, to permit the escape of lint from the bobbin cavity, and permit a cooling circulation of air around the bobbin. Said orifices interrupt the continuity of the marginal portion of the head, and their walls intersect the inner face of the head, and thereby form shoulders at the outer portion of the head.

The central portion of the head surrounding the post is invariably continuous or uninterrupted. I utilize this continuous portion to support my improved bobbin-controlling adjunct, which is so formed that it bears only on the continuous central portion of the head, and is free from liability to interference with said shoulders.

Said adjunct is composed of a flat disk 18, of thin resilient sheet metal, formed to enter the bobbin cavity and bear on substantially the entire inner end face of the bobbin, said disk having a central orifice 18^a, receiving the post 15, and inclined spring tongues 19, integral with the disk, extending inward from opposite marginal portions of the disk toward the post, and laterally from the disk toward the head, the periphery of the disk being continuous and maintaining the flat form of the disk sides.

Said tongues have free end portions offset from the disk, as shown by Figure 2, and arranged to bear on the continuous central

portion of the head at points between the center post and the openings 17. The tongues are therefore movable on the head, without interference with the shoulders formed by the walls of said openings.

Owing to the fact that the disk 18 contacts with practically all portions of the inner end face of the bobbin, its frictional engagement with the bobbin is sufficient to cause the disk to turn with the bobbin. Owing to the fact that the tongues 19 are joined to the marginal portion of the disk, and extend inward therefrom to points in close proximity to the center post, the tongues are adapted to prevent undesirably free rotation of the bobbin by their sliding contact with the continuous or uninterrupted central portion of the head, there being no possibility of interference between the tongues and the walls of the openings. The disk and its tongues, therefore, constitute a one-piece bobbin-controlling adjunct, adapted to be applied as a unit to a bobbin case having openings in the outer portion of its head, and free from liability of interference between the tongues and the margins of the openings, and the injurious results of such interference, such as the breakage of the tongues and the catching of the needle thread by a tongue protruding through an orifice.

The described arrangement of the tongues obviates the necessity of employing means independent of the disk, and tongues for preventing interference between the tongues and the margins of the head orifices.

The tongues are tensioned by the insertion of the bobbin in the cavity, so that they press the disk against the bobbin and the bobbin against the thrust bearing.

I claim:

A bobbin-controlling adjunct for a sewing-machine bobbin case, having openings in its head at one end, and a thrust bearing at the other end, said adjunct comprising a flat disk formed to enter the bobbin-receiving cavity of the bobbin case and bear on substantially the entire inner end face of a bobbin in said cavity, the disk having a central orifice adapted to receive a center post of the bobbin case, a continuous periphery concentric with the orifice and maintaining the flat form of the disk, and inclined spring tongues integral with the disk, extending inward from points at opposite marginal portions of the disk and within the periphery of the latter, said tongues having free end portions offset from the disk and from the central orifice, and arranged to bear on the central portion of the head at points between the center post of the bobbin case and the openings in the head, the tongues being adapted to move on the head without interference with the margins of said openings, and to press the disk against the bobbin, and the bobbin against said end thrust bearing at the outer end of the cavity, the tongues being wholly within the periphery of the disk, so that said periphery is uninterrupted and the inner side of the disk has a flat, substantially continuous surface adapted to bear on the inner end face of the bobbin.

In testimony whereof I have affixed my signature.

ROBERT N. CORTHELL.