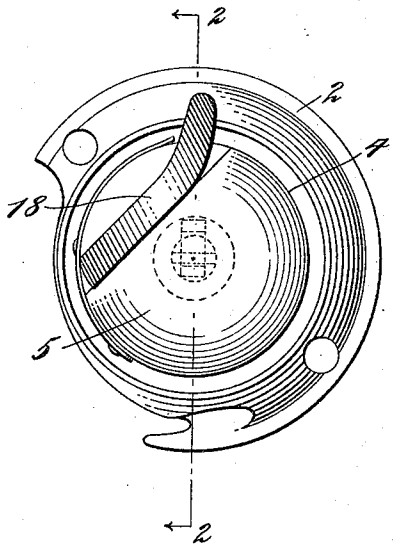
G. W. NELSON.

BOBBIN CASE LATCH FOR SEWING MACHINES.

APPLICATION FILED NOV. 12, 1913.

1,185,235. Patented May 30, 1916.

Fig. 1.



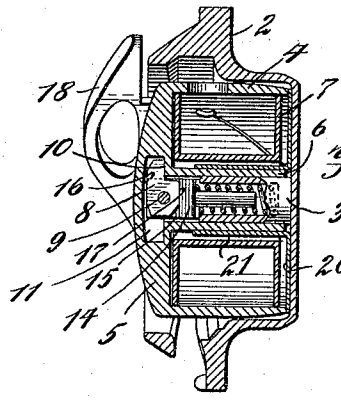
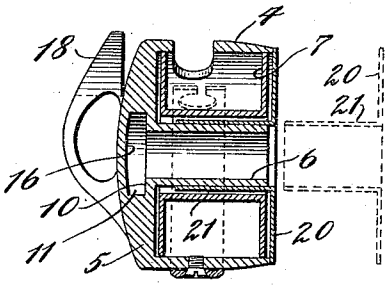


Fig. 2.

Fig. 4.



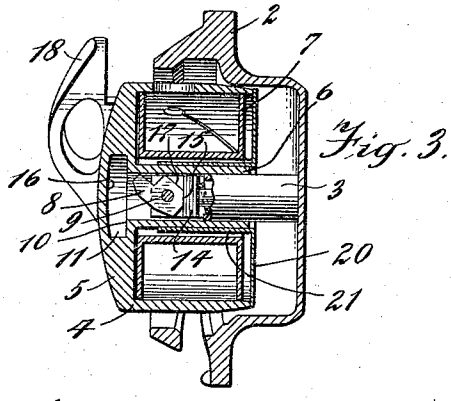
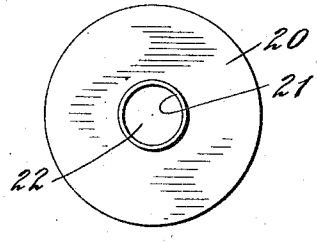


Fig. 3.

Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE W. NELSON, OF CLEVELAND, OHIO, ASSIGNOR TO THE STANDARD SEWING MACHINE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

BOBBIN-CASE LATCH FOR SEWING-MACHINES.

1,185,235. Specification of Letters Patent. Patented May 30, 1916.

Application filed November 12, 1913. Serial No. 800,496.

To all whom it may concern:

Be it known that I, GEORGE W. NELSON, citizen of the United States, and resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Bobbin-Case Latches for Sewing-Machines, of which the following is a specification.

My invention relates to improvements in bobbin-case latches for sewing machines and has for its main object the provision of a bobbin-case latch that will be automatically operative to latch and unlatch upon the placing of the bobbin-case in the shuttle and its removal therefrom respectively.

Another object of the invention is the provision of a bobbin-case latch that may be located in a concealed position at the rear of the face wall of the bobbin-case whereby it will be protected from damage by accidental contact with any foreign object or otherwise and also whereby a smooth and unobstructed surface at the face side of the bobbin-case may be provided for the passage of the thread-loop thereover.

A further object of the invention is the provision of means for preventing the escape of bobbin-thread from the rear end of the bobbin-case—such as might occur from the over-running of loosened coils of thread on the bobbin—and the winding or entangling of the same about the shuttle spindle.

These objects are obtained by means of the novel features of construction and combination of parts as set forth in the detailed description of the invention which follows:

Referring now to the accompanying drawings forming part of this specification, Figure 1 is a front end elevation of a shuttle and contained bobbin-case provided with latching means embodying my invention. Fig. 2 is a central cross-section of the same taken on the line 2—2 of Fig. 1, and showing the latching means in operative or latching position. Fig. 3 is a similar view showing the bobbin-case partially withdrawn from the shuttle and the latching means in inoperative or unlatching position. Fig. 4 is a sectional view of the bobbin-case as shown in Figs. 2 and 3, withdrawn from its position in the shuttle, and Fig. 5 is an end view of the thread shield at the rear end of the bobbin-case, removed from connection with the latter.

Similar reference characters indicate like parts in the several figures of the drawings.

The shuttle and bobbin-case here shown as being provided with my improved latching means are, in the main, of substantially usual construction and arrangement, that is, the shuttle, indicated at 2, is a rotary shuttle having a spindle 3 at or about the center of the open bobbin chamber in its face side, and the bobbin-case, indicated at 4, is a cylindrical case having a face-wall 5 carrying at its inner side a tubular spindle or sleeve 6 adapted to loosely fit over the shuttle spindle 3 when the bobbin-case with its contained bobbin 7 is placed in operative position in the shuttle.

In accordance with my invention, in a preferred form thereof, a latch device is connected to the shuttle spindle at the outer end thereof for latching engagement with a latch shoulder at the inner side of the face wall of the bobbin-case. This latch device, indicated at 8, is pivotally mounted on a pin 9 in an open slot at the end of the shuttle spindle as shown, and the latch shoulder on the bobbin-case with which said latch device coöperates, indicated at 10, is formed by an annular recess 11 in the rear side of the face wall 5 at the front end termination of the opening in the sleeve 6, such opening being closed at the front end thereof by the face wall of the bobbin-case as shown. With this arrangement of latching means, when the bobbin-case is removed from its connection with the shuttle the latch device 8 will be in unlatching position with its outer or latching end projected forwardly of the shuttle spindle as shown in Fig. 3, in which position it will preferably be movably held by means of a spring-pressed plunger 14 in the hollow shuttle spindle bearing against a suitably positioned flat surface 15 at its inner end as shown. To now place a bobbin-case and contained bobbin in the shuttle, the bobbin-case is entered into the shuttle with its sleeve 6 sliding over the shuttle spindle 3 and attached latch device 8 until the inner side 16 of its face wall comes into contact with the end of the latch when, by a further inward pushing of the bobbin-case, the latch is upset and

moved into latching engagement with the shoulder 10 as shown in Fig. 2, in which position it is also movably held by the plunger 14 bearing against a second suitably positioned flat surface 17 thereon.

With the latching device arranged as shown, that is, in a concealed position at the rear of the bobbin-case wall, it is obvious that it will be protected from contact with any foreign object that might result in damage thereto, and also that a free and unobstructed surface at the face side of the bobbin-case for the passage of the thread loop will be provided.

To remove the bobbin-case from the shuttle, no manipulation of the latching device on the part of the operator is required; it only being necessary for the operator to grasp the bobbin-case, as by means of the arm 18 thereon, and withdraw it from the shuttle with sufficient force to turn the latch device against the pressure of the co-acting spring-pressed plunger 14 from latching to unlatching position, and the force required to do this in practice is hardly sufficient to render it noticeable.

As a means for preventing the escape of loosened coils of bobbin-thread through the rear end of the bobbin-case and the resulting liability of their being wound or entangled upon the shuttle spindle, I have provided a removable shield at the rear end of the bobbin-case for closing the same at such end after the bobbin has been inserted into the case. This shield as here shown is in the form of a disk, indicated at 20, corresponding in size to the rear end of the bobbin-case and having an attached sleeve 21 adapted to fit over the sleeve 6 of the bobbin-case as a means for effecting detachable connection of the shield with said case. An opening 22 in the center of the shield and coincident with the opening of the attached sleeve permits of the entry therethrough of the shuttle spindle when the bobbin-case is placed in the shuttle.

What I claim is:—

1. In combination, a sewing machine shuttle having a spindle, a pivoted latch device attached to said spindle at the outer end thereof, and a bobbin-case having a sleeve adapted to fit over said shuttle spindle and being provided with a latch shoulder and with an end wall adapted to engage the latch device upon the placing of the bobbin-case in the shuttle and move the same into latching engagement with said latch shoulder.

2. In combination, a sewing machine shuttle having a spindle, a pivoted latch device attached to said spindle at the outer end thereof, a spring-pressed plunger operative to movably hold said latch device in its latching and unlatching positions, and a bobbin-case having a sleeve adapted to slide over the shuttle spindle and attached latch device and being provided with a latch shoulder and with an end wall adapted to engage the latch device upon the placing of the bobbin-case in the shuttle and move the same into latching engagement with said latch shoulder.

3. In combination, a sewing machine shuttle having a spindle, a pivoted latch device attached to said spindle at the outer end thereof, a bobbin-case having a face wall provided with an annular latching shoulder at the inner side thereof into latching engagement with which the said latch device is moved by contact with the inner side of the face wall of the bobbin-case upon the placing of the latter in the shuttle, and means yieldingly holding the latch device in latching position and permitting of its movement to unlatching position upon the removal of the bobbin-case from the shuttle.

4. In combination, a sewing machine shuttle, a bobbin-case having a face-wall, and means holding the bobbin-case in connection with the shuttle comprising a latch shoulder on one part and a coöperating movable latch device on the other part, said face-wall of the bobbin-case being operative upon the placing of the bobbin-case in the shuttle to engage the latch device and move the same to latching position.

Signed at Cleveland, in the county of Cuyahoga, and State of Ohio, this 8th day of Nov. A. D. 1913.

GEORGE W. NELSON.

Witnesses:
CHAS. C. EMMONS,
H. R. KNAPP.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."