

H. A. BATES.
SHUTTLE FOR SEWING MACHINES.
APPLICATION FILED DEC. 7, 1911.

1,029,257.

Patented June 11, 1912.

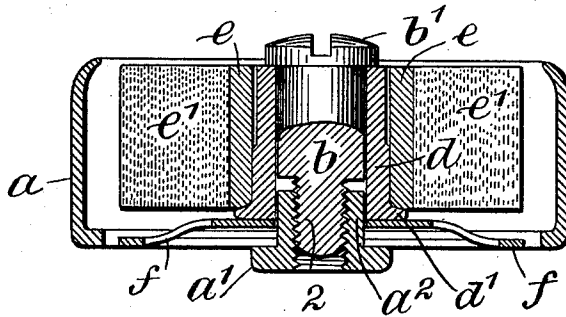


Fig. 1.

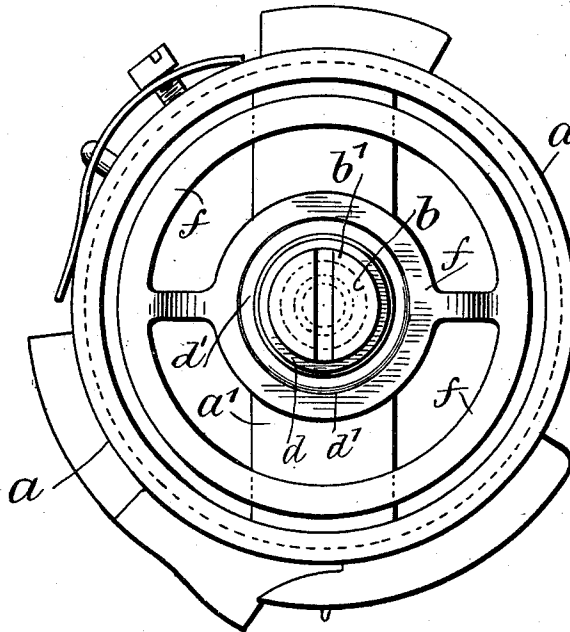


Fig. 2.

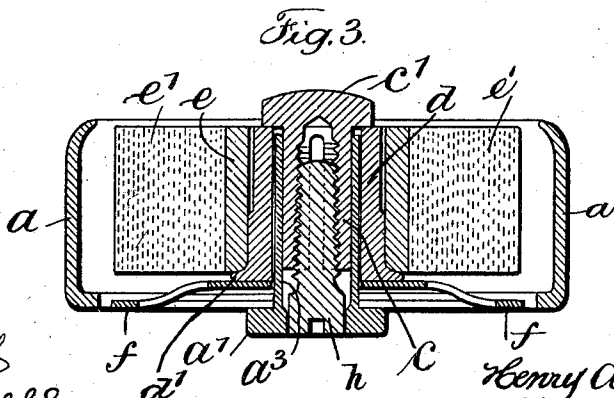


Fig. 3.

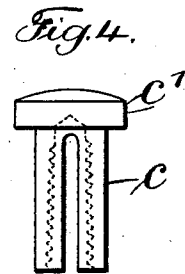


Fig. 4.

Witnesses
Chas. H. Smith
A. H. Terrell

Inventor
Henry A. Bates.
by Harold Terrell
his atty.

UNITED STATES PATENT OFFICE.

HENRY A. BATES, OF MIDDLETOWN, CONNECTICUT.

SHUTTLE FOR SEWING-MACHINES.

1,029,257.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed December 7, 1911. Serial No. 664,474.

To all whom it may concern:

Be it known that I, HENRY A. BATES, a citizen of the United States, residing at Middletown, in the county of Middlesex and State of Connecticut, have invented an improvement in Shuttles for Sewing-Machines, of which the following is a specification.

My present invention is designed as an improvement upon the device shown and described in Letters Patent No. 951,554, granted to me March 8, 1910, with the object of simplifying the construction and lessening the expense, as it has been found seldom necessary to remove the sleeve receiving the thread bobbin and only necessary to provide an adjustable member secured removably to the bobbin case and having an edge or shoulder bearing over the outer end of said sleeve to hold it down in the bobbin case with the desired friction of the spring; it being easy to pass the cored thread bobbin over the sleeve and remove the core for the purpose of putting a new thread bobbin upon the sleeve.

In carrying out my invention, I dispense with the hollow split stem of said patent and employ a bobbin case and a cross-bar thereto having a tubular part, together with an axial removable member adapted for engagement with the tubular part and for axial adjustment; said member having a head shouldered and adapted to extend over the outer end of the sleeve surrounding the tubular part and receiving the thread bobbin around it; said head having the function of retaining and holding the sleeve down in the bobbin case and effecting the desired friction with the spring over the cross-bar, all of which is hereinafter more particularly described.

In the drawing, Figure 1 is a vertical cross section representing the device of my invention with a thread bobbin in position. Fig. 2 is a plan of the same but without the thread bobbin. Fig. 3 is a vertical cross section illustrating a form of my invention, and Fig. 4 is an elevation of a detached part of the construction shown in Fig. 3. All figures are of large size for clearness.

a represents the bobbin case, a^1 a cross-bar of the case. The particular character of these parts bears no special or necessary relation to the features of my improvement; in fact the bobbin case might be made with a shell or filling on one side instead of the

cross-bar, as the same would be the equivalent of a cross-bar. I have shown a tubular part a^2 as formed with the cross-bar a^1 . This tubular part in Figs. 1 and 2 is short and stocky, centrally perforated and interiorly threaded.

In the form of my invention shown in Figs. 3, the tubular part a^3 which is also preferably integral or formed with the cross-bar a^1 is formed with a thin wall and elongated so as to be almost of the same depth as the bobbin case, and at the base of this tubular part a^3 the cross-bar a^1 is centrally perforated; the perforation preferably being of smaller diameter than the diameter of the tubular part a^3 . In connection with these tubular parts a^2 a^3 I employ an axial removable member having a shouldered head which is adapted to extend over the outer end of a surrounding sleeve. In Figs. 1 and 2 this axial removable member b is in the form of a screw with a cylindrical upper portion, and a reduced and threaded lower portion at 2 which is adapted to screw into the tubular part a^2 and be longitudinally movable therein for adjustment. The head b^1 of this axially removable member is preferably provided with a kerf to receive a screw-driver for turning the same.

In all the figures of the drawing, d represents a sleeve similar to the sleeve shown in my aforesaid patent and provided with a flange d^1 at the lower end. This sleeve surrounds the tubular part, and in Figs. 1 and 2 it also surrounds the upper portion of the axial removable member, coming under the shouldered head b^1 of said member.

In all the figures of the drawing e represents the thread bobbin core, e^1 the thread bobbin and f the spring employed in connection with my improved shuttle and these latter parts are also the same as shown in my aforesaid patent.

In the device of my present invention, I prefer to reduce the upper part of the sleeve in diameter as shown in both Figs. 1 and 3, so that the same is adapted more readily to receive the thread bobbin, or in other words, to receive the thread bobbin with less holding friction than is shown in my aforesaid patent; the grip between the core of the thread bobbin and the sleeve only extending the lower half of the core. This I have found to be sufficient, and when it is

necessary to remove the core and to replace the same with a fresh thread bobbin it requires less effort to remove the core and also less effort to place a fresh thread bobbin in position; the flange d^1 of the sleeve forming a stop for the thread bobbin as in my aforesaid patent. It will therefore be quite apparent that with the turning of the axial removable member b the sleeve d may be pressed down farther into the bobbin case with greater tension on the spring f so that by turning the member b in either direction, the proper tension may be obtained.

15 In the form of my invention shown in Figs. 3 and 4, the axial removable member c is a split tube with a head c^1 having the same function as the head b^1 of the member b . This member c fits snugly within the tubular part a^3 . It is hollowed and split, with interiorly threaded tapering walls and adapted to receive the tapering screw h , the head of which is located in the aperture or hole made in the cross-bar a^1 . The turning of the tapering screw h in one direction forces the same into the member c , expanding the same and with greater friction holding this member c in the tubular member a^3 . The movement of the screw in the opposite direction releases the friction so that the parts c c^1 and h may be removed together from the tubular part a^3 , and when this friction is released there is of course, an axial longitudinal movement of adjust-
30 ability for the parts c c^1 and h in the tubular part a^3 , so as to provide the desired tension upon the thread bobbin.

As hereinbefore stated, I have found that it is seldom necessary to remove the sleeve d and spring f from the bobbin case because it is so easy to place the thread bobbin over the sleeve and remove its core after the thread has been unwound therefrom so as to place a fresh thread bobbin over the sleeve, and as the head b^1 or c^1 of the movable part is of less diameter than the extreme diameter of the sleeve d the removable feature of the core and thread bobbin is facilitated.

50 I have shown in Fig. 3 as in Figs. 1 and 2, the reduced upper end of the sleeve d , and while I do not limit my present invention to thus making the sleeve, I have shown the same because of the desirability of the structure and the ease of removing the core e and inserting a fresh thread bobbin in place.

I claim as my invention:

1. In a shuttle for sewing machines, the combination with a bobbin case, a tubular
60 central part and a revoluble sleeve adapted

frictionally and directly to receive the thread bobbin, of an axial member removable and adjustable and having a connection with the tubular central part by screw-threaded parts and having a shouldered head to extend over the outer end of the sleeve, and a spring bearing against the inner face of the sleeve.

2. In a shuttle for sewing machines, the combination with a bobbin case and tubular central part, of an axial member removable and adjustable and having a shouldered head, a revoluble sleeve adapted frictionally to receive the thread bobbin extending around the tubular central part and at its outer end coming beneath the shouldered head, and said sleeve of greater diameter than the shouldered head, and said sleeve also of less diameter at the upper end than at the lower portion and also provided with a flange at the lower end and a spring bearing against the inner face of the sleeve at said flanged end.

3. In a shuttle for sewing machines, the combination with a bobbin case, of a cross-bar and integral tubular central part, said cross-bar having a central perforation, a revoluble sleeve adapted frictionally and directly to receive the thread bobbin and extending around said tubular central part, an axial member removable and adjustable and having a connection with the tubular central part by screw-threaded parts also having an element of friction, and said axial member having a shouldered head to extend over the outer end of the sleeve, and a spring bearing against the inner face of the sleeve.

4. In a shuttle for sewing machines, the combination with a bobbin case, of a cross-bar and substantially integral tubular central part, a sleeve adapted to receive the thread bobbin and extending around said tubular central part, an axial member having a shouldered head to extend over the outer end of the sleeve and of less diameter than the sleeve, and said axial member otherwise consisting of a split tube with tapering screw-threaded walls, a tapering screw adapted by its longitudinal movement to expand said axial member to frictionally grip the interior walls of the tubular central part, and a spring bearing against the inner face of the sleeve.

Signed by me this 25th day of Nov. 1911.

HENRY A. BATES.

Witnesses:

MARJORIE L. JOYCE,
FRANK D. HAINES.