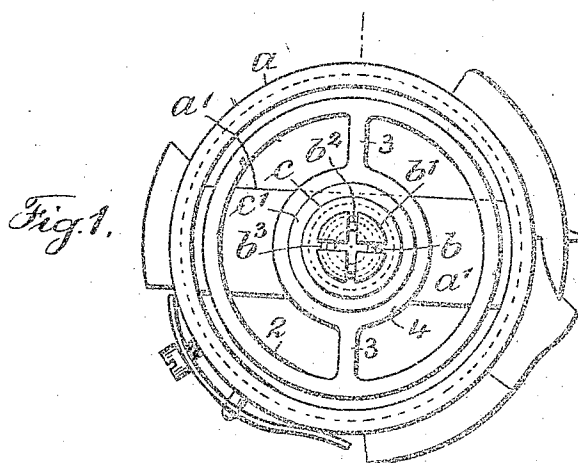
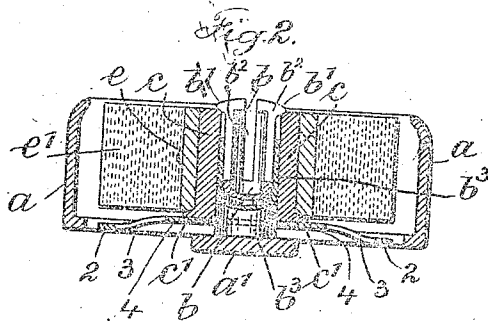


951,554.

H. A. BATES.
SHUTTLE FOR SEWING MACHINES.
APPLICATION FILED JAN. 3 1909.

Patented Mar. 8, 1910.



Witnesses

Chas. H. Smith
A. H. Serrell

Inventor

Henry A. Bates.
by Harold Serrell

his atty.

UNITED STATES PATENT OFFICE.

HENRY A. BATES, OF MIDDLETOWN, CONNECTICUT.

SHUTTLE FOR SEWING-MACHINES.

951,554.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed January 2, 1909. Serial No. 471,218.

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 invention of an improvement in shuttles for sewing machines relates particularly to the bobbin case and the means forming part thereof for engaging the thread bobbin and retaining the same during use within the bobbin case and applying friction for tension whether or not the said devices are accompanied by the presence of the bobbin case holder or hook-device.

In the device of my invention, the stem of the bobbin case is provided at its free end with a circumferential flange or shoulder and a sleeve surrounds said stem freely but not loosely. This sleeve is at its inner end preferably provided with a circumferential shoulder or narrow flange and a spring of suitable form and character occupies a position within the bobbin case and bears respectively against the bobbin case and the inner end face of the sleeve to force the sleeve forward against the retaining shoulder on the free end of the stem and effect a retarding friction against a too rapid rotation of the sleeve and thread bobbin. The stem is preferably longitudinally slit for the passage of the sleeve. The external diameter of the sleeve agrees substantially with the internal diameter of the core of the thread bobbin which for use is forced over the sleeve and held frictionally in position; the flange of the sleeve preventing forcing the thread bobbin too far. When the thread of the bobbin is used up the core is quickly removed and a new thread bobbin put in position.

In the drawing, Figure 1 is a plan representing the features of my invention and Fig. 2 is a vertical cross section. Both of these views are of exaggerated size for clearness.

a represents the bobbin case, the particular character of which bears no special or necessary relation to the features of my improvement. This bobbin case is advantageously provided with a cross bar *a'* from the center of which rises a stem *b* which stem is provided with a flange *b'* at its free end and the same is preferably slit at *b''* across the

center of the stem in at least one and probably in opposite directions.

c represents a sleeve adapted to freely but not loosely surround the stem *b* and in order to pass said sleeve over said stem it is necessary for the flanged end of the stem to yield and when the sleeve is in position the stem returns to its normal condition in which the diameter of the flange exceeds the free open diameter of the sleeve, consequently it requires pressure to remove the sleeve from the stem by again compressing the end of the stem. The sleeve is preferably provided with a shoulder or slight flange *c'* at the lower end and in the base of the bobbin case and between the lower end of the sleeve and the cross-bar *a'*, I place a spring of any suitable or desired character. In fact this spring may be any one of the springs shown and described in Letters Patent previously granted to me. For convenience I have shown the spring as composed of a circular endless rim 2, arms 3 and integral ring center 4; the rim of the spring bearing upon the cross-bar *a'* and portion of the bobbin case if desired, and the ring center 4 bearing against the under or end surface of the sleeve *c*.

e represents the thread bobbin core and *e'* the bobbin thread portion of the thread bobbin. The core *e* fits snugly around the sleeve *c* and with sufficient friction to be held to the sleeve so as to cause the sleeve to rotate with the bobbin during the unwinding of the thread. The flange or shoulder *c'* of the sleeve acts to prevent forcing the thread bobbin too far when the same is pressed to place and the action of the spring is to press the sleeve forward and against the flange *b'* of the stem so as to effect a retarding friction against a too rapid rotation of the sleeve and thread bobbin in unwinding the thread. This device is exceedingly simple and very efficient, and the thread bobbin held in this way in the bobbin case is not in any sense necessarily connected with the bobbin case holder, as the thread bobbin will keep its position in any position of the bobbin case without the risk of accidental separation.

I have shown in the drawing and herein described, the end of the stem *b* as slit in opposite directions, and I have also shown the stem *b* as tubular and a sleeve *b''* secured to the cross-bar *a'* and surrounding the stem

b as coming between the stem b and sleeve c, but I do not limit my invention to this construction,—as some other and equivalent construction may be employed for effecting the function of retaining the sleeve upon the stem and providing for a retarding friction.

I claim as my invention:

1. In a shuttle for sewing machines, the combination with a bobbin case, of a yielding stem therefor, an undivided sleeve fitting the stem snugly, and the sleeve adapted to receive the thread bobbin, a flange at the free end of the stem formed integral therewith for holding the sleeve in position, and a spring bearing against the inner face of the sleeve.

2. In a shuttle for sewing machines, the combination with a bobbin case, of a split and yielding stem having an integral divided flange at the free end of the same, an undivided sleeve adapted to fit the stem snugly and receive the thread bobbin, said sleeve having a flange coming at the inner end when in position, a spring bearing against the flanged end of the sleeve and the flanged end of the stem retaining the sleeve and thread bobbin in place in the bobbin case.

3. In a shuttle for sewing machines, the combination with a bobbin case having a central cross-bar and a sleeve secured thereto at right angles, of a yielding stem therein longitudinally split in opposite directions, a split flange integral with the stem and at the free end thereof, an undivided independent sleeve adapted to be forced into the open center of the commercial thread bobbin or cop and to be forced over the yielding stem and its flange with the upper end of the sleeve removably retained beneath the overhanging flange.

4. In a shuttle for sewing machines, the combination with a bobbin case, of a longitudinally split stem, a flange circumferentially formed at the free end of the stem, a sleeve fitting the stem and adapted to be forced to position over said flange by the yielding of the end of the stem and the sleeve adapted to receive a thread bobbin and a spring for pressing the sleeve against the flange of the stem for causing friction and thus creating a tension.

5. In a shuttle for sewing machines, the combination with a bobbin case, of a longitudinally split stem, a flange circumferentially formed at the free end of the stem, a sleeve fitting the stem and adapted to be forced to position over said flange by the yielding of the end of the stem and the sleeve having a shoulder or flange and adapted to receive a thread bobbin to which such flange forms a stop, and a spring bearing against the inner face of the sleeve.

6. In a shuttle for sewing machines, the combination with a bobbin case and a sleeve secured centrally thereto and at right angles, of a longitudinally split and yielding stem within said sleeve and an overhanging flange at the outer end thereof, an independent sleeve surrounding the aforesaid sleeve and removably retained beneath the said overhanging flange and adapted to receive the commercial thread bobbin or cop as the same and its sleeve is passed over said independent sleeve and forced down into the bobbin case.

Signed by me this 31st day of December 1908.

HENRY A. BATES.

Witnesses:

GEO. T. PINCKNEY,
E. ZACHARIASEN.