

(No Model.)

H. A. BATES & W. H. BARNETT.
SHUTTLE FOR SEWING MACHINES.

No. 515,187.

Patented Feb. 20, 1894.

Fig. 1.

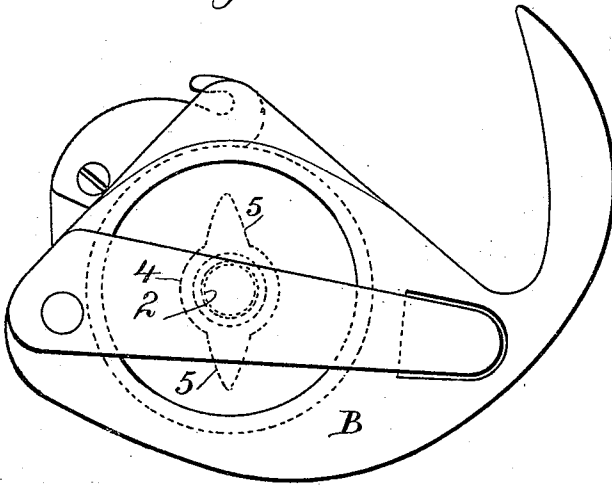
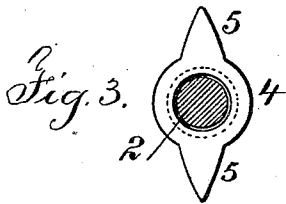
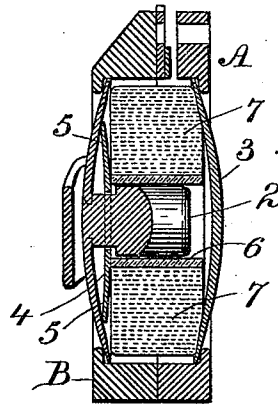


Fig. 2.



Witnesses

Chas. A. Smith
J. Staib

Inventors

Henry A. Bates
William H. Barnett

per Lemuel W. Perrell
Att'y

UNITED STATES PATENT OFFICE.

HENRY A. BATES, OF YONKERS, NEW YORK, AND WILLIAM H. BARNETT,
OF NEWARK, NEW JERSEY, ASSIGNORS TO SAID BATES.

SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 515,187, dated February 20, 1894.

Application filed September 14, 1893. Serial No. 485,463. (No model.)

To all whom it may concern:

Be it known that we, HENRY A. BATES, of Yonkers, in the county of Westchester and State of New York, and WILLIAM H. BARNETT, of Newark, in the county of Essex and State of New Jersey, citizens of the United States, have invented an Improvement in Sewing-Machine Shuttles, of which the following is a specification.

In sewing machine shuttles a bobbin has been made use of made with a metallic tube and thin metallic heads, between which the thread is wound, and in other instances the thread has been wound upon a paper tube and the bobbin inserted into the shuttle. With the metallic bobbin there is considerable wear in consequence of the rotation of the metallic bobbin within the shuttle as the thread is drawn off, and in cases where the thread has been wound upon a paper tube, there is considerable risk of the thread becoming entangled around the pin or axis that sustains the thread bobbin. This arises principally from the thread bobbin turning loosely within the shuttle and by its momentum continuing to revolve in consequence of the speed imparted to the bobbin by drawing off the thread in the sewing operation.

The object of the present improvement is to adapt the ordinary shuttle that has been provided with a metallic bobbin, to the reception of a thread bobbin wound on a tube and to apply to such thread bobbin a friction that will prevent the bobbin turning loosely and the thread becoming slack and entangled around the pin that sustains the paper tube and the thread bobbin.

In the drawings, Figure 1 is an elevation of a sewing machine shuttle containing the present improvements. Fig. 2 is a cross section of the same, and Fig. 3 is a detached view of the friction spring, the axis of the bobbin being in section, and both figures are drawn on an enlarged scale to more clearly represent the present improvements.

The shuttle is of any desired character; we have represented a shuttle corresponding to that known as the "Singer oscillating shuttle," and the same is made in two parts A and B hinged together so as to be opened for passing in the thread bobbin. In shuttles of this

character, the metal bobbin is usually received into the circular cavity, its edges being against the annular ledges or offsets. In our present improvements we apply into both the openings, disks, the edges of which are comparatively thin and flexible and of slightly larger diameter than the openings in the parts A. B. of the shuttle so that such disks will remain in position by the friction of their edges when pressed into the cavities, and the pin 2. projects from one of said disks. The bobbin friction spring 4 is made with an opening, so that such spring may receive through it the pin 2, and there are projecting ends 5 extending outwardly from the ring portion of the spring and bearing against the inner surface of the shuttle. This spring is made of thin sheet metal, and the ends 5 are curved to bear against the interior surface of the shuttle and cause the central or ring portion of the spring to press against one end of the bobbin of thread or its tube. We have shown the bobbin tube 6 as containing the thread that is wound around the bobbin tube, and such bobbin tube is advantageously made of paper, and the spring 4 acting against the end of the bobbin or tube applies sufficient friction to the same to hold the bobbin and prevent in revolving by momentum as the thread is drawn off, and thereby apply to the bobbin thread a slight tension as it passes from the shuttle so as to insure the proper drawing off of the thread without the risk of the same becoming looped or entangled within the shuttle. It is advantageous to make the pin 2 with a neck adjacent to the disk at the side of the shuttle to which such pin is permanently fastened, and this neck is of a size for the ring portion of the bobbin spring 4 to fit around the same freely, and the length of the neck is sufficient for the proper expansion of the spring in acting against the end of the bobbin or tube, but the shoulder adjacent to the neck around the pin 2 prevents the bobbin spring from dropping out of the shuttle when the shuttle is opened and the thread bobbin removed.

We are aware that a shuttle has been made with a stationary headed pin receiving a tube with a spring at the end of the tube. This was only adapted to a spool connected to the

tube by a projection. In our invention the shoulder on the pin simply retains the spring from falling off, and the paper tube and the thread are pressed against the spring in closing the shuttle, the friction being produced by the paper tube or the thread itself against the spring, so as to dispense with the spool and tube.

We claim as our invention—

10 1. The combination with the sewing machine shuttle, of a movable disk adapted to be inserted into the shuttle and held by the friction of the edges of the disk, a central pin upon the disk for the reception of the thread
15 bobbin, and a spring acting between the disk and the thread bobbin to apply a friction to the latter, substantially as set forth.

2. The combination, in a sewing machine shuttle, of a pin having a neck and shoulder
20 near the end at which it is fastened to the shuttle, a spring having a ring loosely surrounding the neck and retained by the shoulder, and arms extending outwardly and bear-

ing against the interior of the shuttle, the cavity for the reception of the paper tube and
25 surrounding thread bobbin being such that the thread and tube will bear against and compress the spring and apply friction to the bobbin when introduced into the shuttle, substantially as specified.

3. The combination with the sewing machine shuttle, of a removable disk adapted to be inserted into the shuttle and held by the contact of its edge with the interior of the shuttle, a central pin connected with the disk,
35 a spring having a central hole through which the pin passes and acting between the thread bobbin and the disk to apply a friction to such bobbin, substantially as set forth.

Signed by us this 12th day of September, 40
A. D. 1893.

HENRY A. BATES.
WM. H. BARNETT.

Witnesses:

HERBERT W. KNIGHT,
FRANCIS E. DOW.