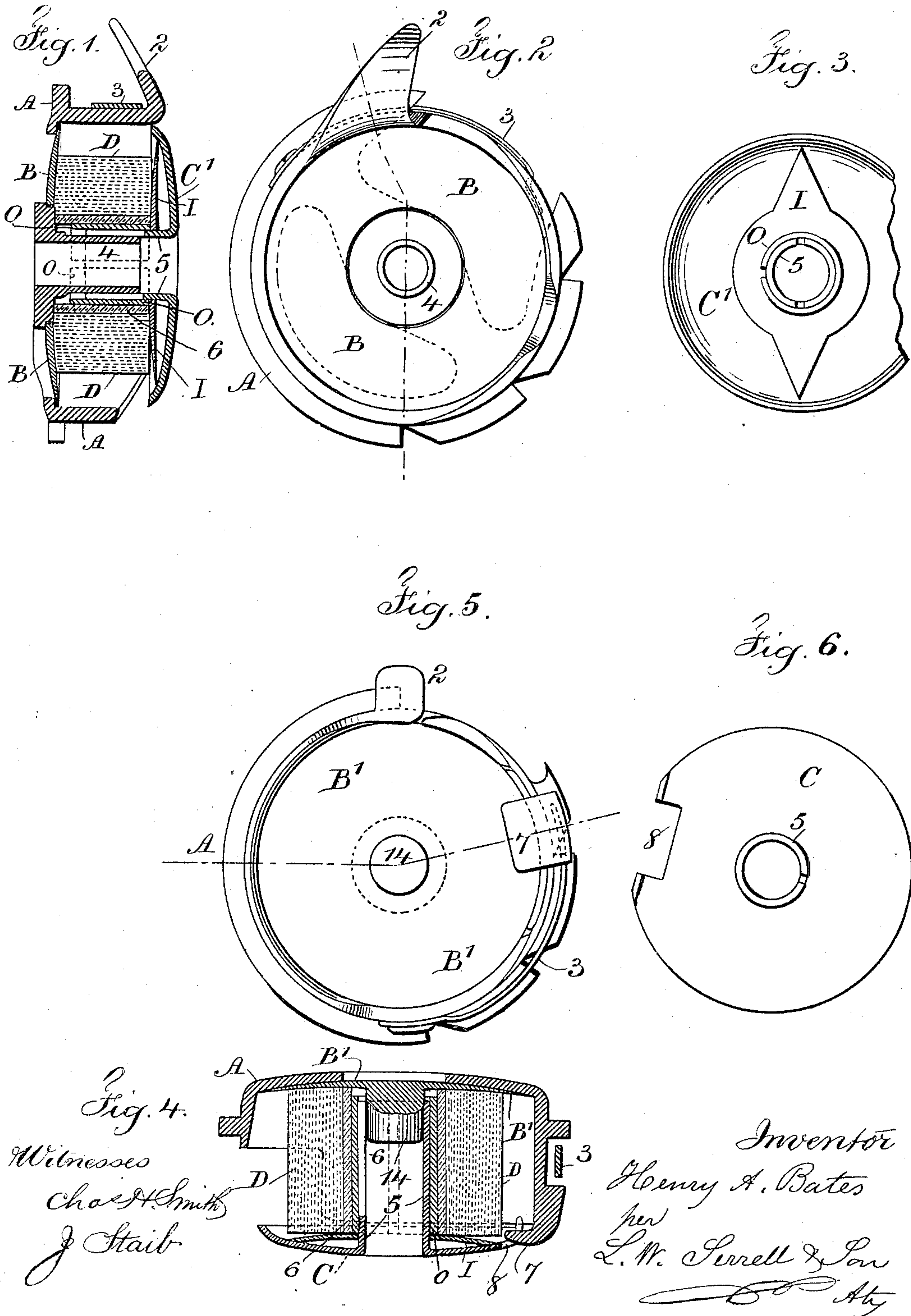


(No Model.)

H. A. BATES.
BOBBIN CASE FOR SEWING MACHINE SHUTTLES.

No. 584,572.

Patented June 15, 1897.



UNITED STATES PATENT OFFICE.

HENRY A. BATES, OF YONKERS, NEW YORK.

BOBBIN-CASE FOR SEWING-MACHINE SHUTTLES.

SPECIFICATION forming part of Letters Patent No. 584,572, dated June 15, 1897.

Application filed February 12, 1896. Serial No. 579,013. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. BATES, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented an Improvement in Bobbin-Cases for Sewing-Machines, of which the following is a specification.

In sewing-machines metallic spools are extensively employed for holding the under or shuttle thread, and the loop of needle-thread is carried around the bobbin-case. In some instances the rotary hook upon the shuttle is removable from the machine with the bobbin of thread, and in other instances a bobbin-case is made use of that is kept in a substantially stationary position while the loop of needle-thread is carried around the same.

In Letters Patent No. 549,265, granted to me November 5, 1895, a shuttle is represented with a hook that is adapted to carry the loop of needle-thread around the bobbin of thread, and in this case such bobbin of thread is received between a disk with a central tube that is free to revolve around the central pin of the shuttle and a removable portion of the bobbin-holder which is held to such tubular sleeve by a split tube. In this instance the rotary hook with its central pin revolves and the holder for the bobbin of thread stands substantially still as the thread is drawn off.

My present invention is made with reference to adapting bobbin-cases that are already on the market to the reception of ready-wound thread-bobbins upon paper tubes, and in carrying out this invention I remove from the ordinary bobbin-case the metal spool upon which the thread has to be wound, and I apply a disk with a split tube to the center pin of the bobbin-case, so that in introducing a thread-bobbin already wound it is only necessary to place the paper tube of the same over the split tube of the disk and insert the parts into the ordinary bobbin-case of the sewing-machine, and the friction of the split tube upon the pin holds the ready-wound bobbin of thread in position and the tension upon the thread is obtained from the ordinary friction-spring that usually is found upon bobbin-cases. This improvement greatly facilitates the use of ready-wound thread-bob-

bins, especially in manufacturing establishments, and without necessitating any change in the structure of the bobbin-case itself.

In the drawings, Figure 1 is a section, and Fig. 2 is a side elevation, of a well-known style of bobbin-case employed in the Wheeler & Wilson machines and having a central pin or tube; and Fig. 3 is an elevation of the removable disk and its parts for the bobbin-case, Figs. 1 and 2; and Fig. 4 is a section, and Fig. 5 an elevation, of a well-known case that receives a metal spool and does not contain a central tube, and my improvements are shown as added in each figure. Fig. 6 is an elevation of the removable disk for the bobbin-case, Figs. 4 and 5.

The bobbin-case A is of ordinary character and usually circular, and it is provided with a projection 2, by which such case is prevented from rotating with the hook that revolves and carries the loop of needle-thread around the case, and usually in bobbin-cases of this character a spring 3 is applied at one side of the cylindrical portion of the case for the thread to be passed beneath the same and receive its tension from the spring. These parts do not require further description.

In the bobbin-case shown in Figs. 1 and 2 there is a central pin or tubular projection 4, and in some kinds of cases there is a small arm pivoted to this central pin and adapted to be turned up into line with the pin for the metal spool to be slipped over the pin or turned down for holding such metal spool in position. Where this arm exists in the bobbin-case it is advantageous to remove the pivot-pin and take the same out, and I remark that with cases of the last-named character the pin is usually upon a cross-bar, and there are openings at each side of the cross-bar.

A bobbin-case having a central pin 4 upon a cross-bridge, as illustrated in Figs. 1 and 2, is well known, and with this case the disk B is applied around the pin for closing the bottom of the open recess that receives the thread-bobbin, so as to protect the thread from becoming soiled, and in other known bobbin-cases where there is not a central pin in the recess, and as a pin is required in con-

nection with a second removable disk, made use of in the present invention, I provide a pin 14 upon the disk B' and insert said disk into the recess of the bobbin-case, as seen in Figs. 4 and 5, the said disk being held by the friction of its edges.

The disk C is generally of a shape corresponding to one side of the metal spool employed with a particular case, so that no obstruction is offered to the loop of needle-thread as it is carried around the bobbin-case, and to this disk C a split tube 5 is connected, and this split tube 5 fits around and holds by friction upon the central pin 4 or 14, and hence a ready-wound thread-bobbin D, with a paper tube 6, is easily passed over the split tube 5, and when the tube and bobbin are introduced into the case the tube, engaging the pin, holds the disk in position, and the thread-bobbin is reliably retained within the bobbin-case, and it is free to rotate as the thread is pulled off the same.

In the case shown in Figs. 4 and 5 there is usually an inwardly-projecting hook or flange 7, beneath which the metal spool is introduced. I avail of this flange for preventing the disk C rotating by notching such disk, as at 8, there being projecting prongs on the disk, which rest one at each side of the flange 7 when the parts are put together.

In the form of case shown in Figs. 1 and 2 the disk C' is similarly provided with a split tube 5, and its mode of use is the same as before set forth—that is to say, the paper tube of the ready-wound thread-bobbin is placed over the split tube 5, and then the parts are placed into the bobbin-case and pressed together, so that the split tube 5 engages the central pin 4 and holds the disk in position, but the bobbin of thread and its paper tube are free to revolve as the thread is drawn off.

I have found in some instances that it is detrimental to permit the bobbin of thread to move backward and forward endwise of its supporting tube or pin, and the parts are not always sufficiently accurate or the bobbins of thread sufficiently uniform to prevent this looseness. I therefore sometimes provide a spring I, having a central opening, through which the split tube 5 is passed before it is riveted or attached to the disk, there being a shoulder or offset which may be formed, as hereinafter set forth, to prevent the spring slipping off the split tube. This spring is generally similar to that shown in Letters Patent No. 522,002 or No. 515,187, granted to me.

In cases where the split tube 5 is of comparatively thin metal it is advantageous to surround the same with a spring formed of

a piece of thin sheet metal rolled up into a cylindrical form, the ends being at a slight distance apart, so that the cylindrical band O thus formed becomes a reinforcing-spring to the split tube, and when this cylindrical band is made use of the same may also hold the spring I and prevent it slipping off the split tube, such band forming a shoulder or offset to hold the spring.

When the split tube 5, Figs. 4 and 6, has around it a spring-sleeve O, the spring I may also be employed.

I claim as my invention—

1. The combination with the circular bobbin-case, of a removable disk adapted to be sprung into the case and held by the friction of its edges, a central pin and a removable disk and a split tube therewith connected and adapted to pass over and engage the central pin of the bobbin-case, for holding an ordinary ready-wound bobbin of thread with a paper tube around the split tube and between the disks, substantially as set forth.

2. The combination with the circular bobbin-case having an inward-projecting flange, of a removable disk adapted to be inserted into such case, a central pin, a removable disk having a notch for the flange, and a split tube therewith connected and adapted to engage the central pin, whereby an ordinary ready-wound bobbin of thread with a paper tube can be received into such case, substantially as set forth.

3. The combination with a bobbin-case having a circular recess for the thread-bobbin and a central pin, of a removable disk and a split tube carried thereby and adapted to engage and hold by friction the central pin, a thin spring-cylinder around the split tube, and a spring for preventing looseness of the thread-bobbin within the case, substantially as set forth.

4. The combination with a bobbin-case having a circular recess for receiving the thread-bobbin and a central pin, of a removable disk held at the bottom of the recess by friction and a second removable disk and a split tube carried thereby and adapted to engage and hold by friction the central pin whereby an ordinary ready-wound bobbin of thread with a paper tube can be received into the bobbin-case, substantially as set forth.

Signed by me this 10th day of February, 1896.

H. A. BATES.

Witnesses;

GEO. T. PINCKNEY,
S. T. HAVILAND.