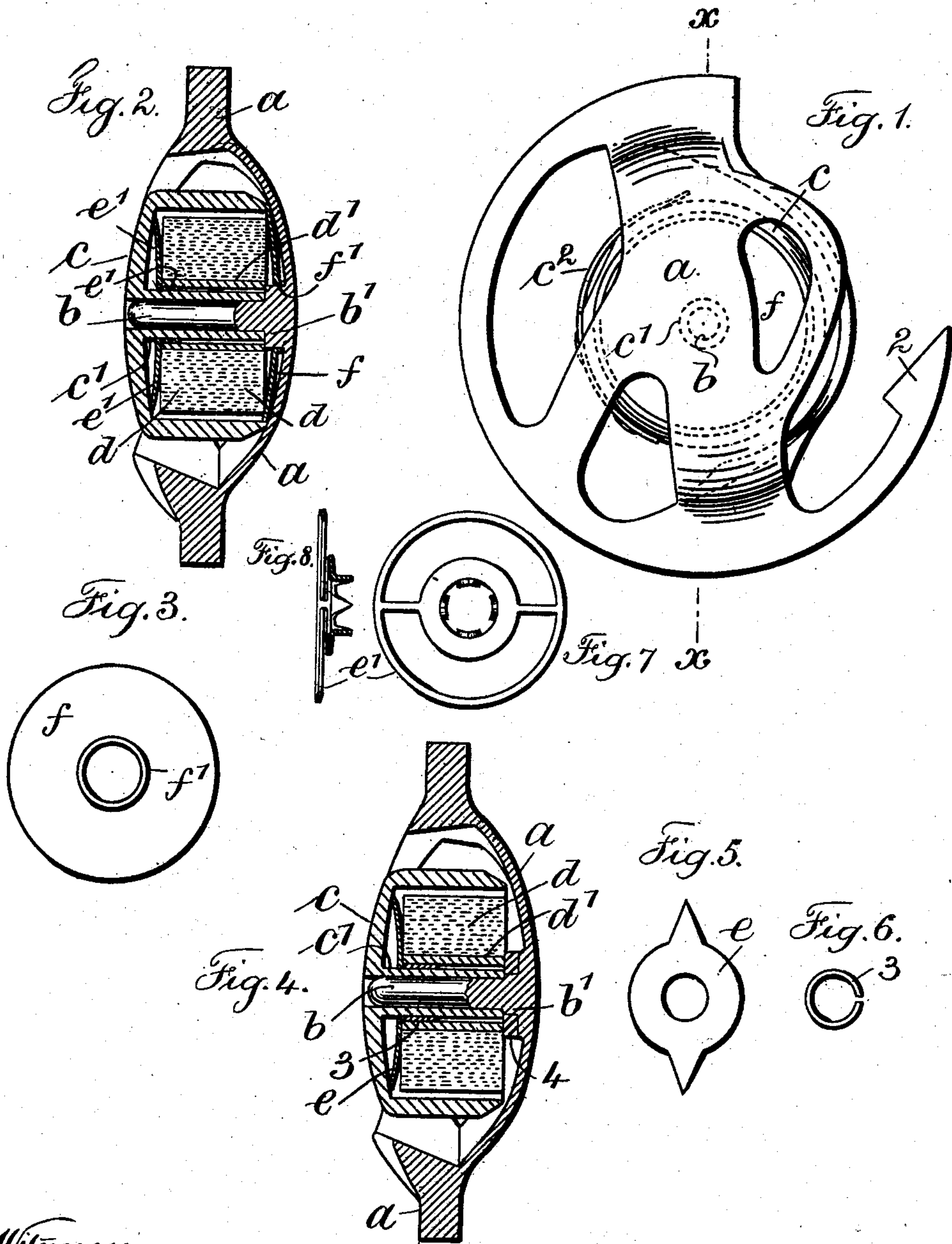


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H. A. BATES.
BOBBIN HOLDER FOR SEWING MACHINE SHUTTLES.
APPLICATION FILED OCT. 1, 1907.



Witnesses

Chas. H. Smith
A. B. Terrell

Inventor

Henry A. Bates
per Harold Terrell
his atty

UNITED STATES PATENT OFFICE.

HENRY A. BATES, OF MIDDLETOWN, CONNECTICUT.

BOBBIN-HOLDER FOR SEWING-MACHINE SHUTTLES.

No. 889,501.

Specification of Letters Patent.

Patented June 2, 1908.

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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 Bobbin-Holders for Sewing-Machine Shuttles, of which the following is a specification.

My invention relates to sewing machine shuttles and particularly to the bobbin case and means for locating therein the thread bobbin, and my present invention is an improvement upon the device shown and described in Letters Patent granted to me June 15th, 1897, No. 584572, and the object of my present invention is to keep the thread bobbin well within the bobbin case.

In carrying out my invention, the bobbin case holder is formed with a central pin over which the tubular arbor of the bobbin case with its thread bobbin is passed in connecting the parts. An annular member is slipped over the pin of the bobbin case holder or hook and is forced to place around the base of said pin and this member is of a diameter equal to or greater than that of the paper tube center of the thread bobbin; the function of this member is to come against the thread bobbin and its tubular center so as to keep the thread bobbin well within the bobbin case. I prefer that this member be in the form of a disk of slightly less diameter than the internal diameter of the bobbin case, so that when the parts are connected, this disk extends within this case and the two parts completely envelop the thread bobbin, said bobbin case being of course constructed with the usual thread slot providing an exit for the thread and also with the usual tension device or spring for applying tension to the thread.

In the drawing, Figure 1 is a side elevation of a well known style of bobbin holder. Fig. 2 is a cross section of the same on about the dotted line x, x , Fig. 1. Fig. 3 is a plan of the disk member adapted to fit within the bobbin case. Fig. 4 is a cross section similar to the cross section Fig. 2, showing a form of my invention. Fig. 5 is an elevation of a spring employed within and at the base of the bobbin case and against which the thread bobbin bears. Fig. 6 is an end elevation of a collar employed around the central sleeve of the bobbin case for holding the spring (Fig. 5) in a normal or initial position. Fig. 7 is an elevation of the form of spring shown in

my patent and Fig. 8 is an edge view of the same.

The bobbin case holder a is of usual and ordinary character; it is substantially circular and is provided with a projection or hook 2 by which said holder is prevented from rotating with a hook device that revolves and carries the loop of needle thread around the holder. This bobbin case holder a is constructed with a central pin b let into the central shouldered base b' of said holder, the shouldered base being advantageously of slightly greater diameter than the pin and the bearing surface of which is in a plane parallel with that of the thread bobbin. The bobbin case c is circular and also of usual and well known character advantageously provided with a tubular central arbor c' of an interior diameter slightly greater than that of the pin b so as to set over said pin, said tubular central arbor c' being of such a length that the free end thereof bears down upon the surface of the shouldered base b' of the bobbin case holder. This bobbin case is to be slotted for the thread of the thread bobbin d as usual and provided with a spring c'' as is usually the case, beneath which this thread passes to produce a tension or friction upon the thread. These thread bobbins are wound upon a tubular center d' preferably a paper tube which interiorly is of slightly greater diameter than the over all diameter of the tubular arbor c' so that the said thread bobbin drops readily over the said tubular arbor.

Within the bobbin case and surrounding its tubular arbor c' is a spring which bears upon the inner surface of the bobbin of thread to prevent the same moving endwise in either direction along the tubular arbor as the result of looseness, as I have found this to be detrimental. This spring compensates for the lack of absolute uniformity in the thread bobbins and prevents this looseness. This spring is shown in Figs. 4 and 5 of the form shown in Letters Patent No. 515187, or No. 522002, or No. 584572, granted to me, and comprises a circular disk centrally perforated and with oppositely extending points which points bear upon the inner surface of the bobbin case; a collar 3 is forced down over the tubular arbor c' so as to prevent the spring e coming off the same and being lost. The spring e' shown in Figs. 2, 7 and 8, is of the form shown in Letters Patent No. 651155, granted to me June 5, 1900, and consists of

a central disk with prongs to engage around the tubular arbor and an outer ring connected thereto by radial arms. Both forms of spring perform the same function.

5 The drawing illustrates two forms of my invention, the object of which is to keep the thread bobbin well within the bobbin case, the preferred form of the invention being shown in Figs. 2 and 3, in which *f* represents
10 a disk of metal with a central flange or collar *f'* adapted to be passed over the pin *b* and forced down over its shouldered base *b'* and held frictionally in position. This disk is of a diameter which adapts it not only to come
15 against the end of the thread bobbin or its tubular center so as to keep the thread bobbin well within the bobbin case, but it is of such a diameter as will provide freely for it being received within the bobbin case as
20 shown in Fig. 2, whereby it performs the additional function of closing the bobbin case so as to completely envelop the thread bobbin and keep out dust, oil and lint.

In the form of my invention shown in Fig.
25 4, the primary object of keeping the thread bobbin well within the bobbin case is performed by a washer 4 which is adapted to slip freely over the pin *b* and be forced to place over the shouldered base *b'*, the said
30 washer 4 being of a diameter that is equal to or greater than the extreme diameter of the paper tube center of the thread bobbin, so that its action is to press the thread bobbin into the bobbin case against the tendency of
35 the spring *e* to expel the bobbin from the case, consequently the bobbin is held within the case, especially in the position of use, so that the maximum portion of its thread is entirely protected.

40 While I have shown and described and prefer to employ the disk *f*, I do not limit my invention thereto, as the main function performed thereby is also performed by the washer 4 shown in Fig. 4.

45 I claim as my invention:

1. The combination with the circular bobbin case, a central tubular arbor formed therewith and a spring adapted to fit over said tubular arbor and bear against the
50 inner surface of the bobbin case, of a bobbin case holder circular and of usual character, a pin occupying a central position with reference to the bobbin case holder, and a shouldered base at the union of the pin therewith,
55 with a bearing surface in a plane substantially parallel with that of the thread bobbin, which base is of a diameter greater than the pin and substantially equal to the diameter of the paper tube center of the thread bobbin performing the function of keeping the
60 thread bobbin well within the bobbin case.

2. The combination with the circular bobbin case adapted to receive a thread bobbin, a central tubular arbor formed therewith

and a spring adapted to fit over said tubular
65 arbor and bear against the inner surface of the bobbin case, of a bobbin case holder circular and of usual character, a central pin formed therewith and over which the tubular
70 arbor of the bobbin case is adapted to pass in connecting the parts, and a device located at the opposite side of the bobbin case to that occupied by said spring and adapted
75 to be slipped over the pin of the bobbin case holder and to be forced to place around the base of the same, and which device is of a diameter substantially equal to that of the paper tube center of the thread bobbin and which is adapted to keep the thread bobbin
80 well within the bobbin case.

3. The combination with the circular bobbin case and a central tubular arbor formed therewith, a spring adapted to fit over said tubular arbor and to bear against the inner
85 surface of the bobbin case, of a bobbin case holder, circular and of usual character, a pin occupying a central position with reference to the bobbin case holder and a shouldered base of the latter to which the pin is secured and which base is of slightly greater diameter
90 than that of the pin with a bearing surface in a plane substantially parallel with that of the thread bobbin, and an annular member adapted to be slipped over the pin and to be forced to place and frictionally held to the
95 shouldered base and which annular member is of a diameter substantially equal to that of the paper tube center of the thread bobbin, said annular member performing the function of keeping the thread bobbin well
100 within the bobbin case.

4. The combination with the bobbin case and a central tubular arbor formed therewith, a spring adapted to fit over said arbor and to bear against the inner surface of the
105 bobbin case and a coacting collar surrounding said tubular arbor, of a bobbin case holder circular and of usual character, a pin occupying a suitable position with reference to the bobbin case holder and a shouldered
110 base of the latter to which the pin is secured and which base is of slightly greater diameter than that of the pin, and an annular member in the form of a central perforated flanged disk *f* adapted to be passed over the central
115 pin of the bobbin case holder and to be forced down over the shouldered base *b'* and said disk being of a diameter slightly less than the internal diameter of the bobbin case
120 *c* so as with the bobbin case, to completely envelop the thread bobbin as well as to keep the same well within the bobbin case.

Signed by me this 21st day of August 1907.

HENRY A. BATES.

Witnesses:

GEO. F. PINCKNEY,
BERTHA M. ALLEN.