

No. 886,459.

PATENTED MAY 5, 1908.

H. WYMAN.  
BOBBIN SPINDLE.  
APPLICATION FILED MAR. 1, 1906.

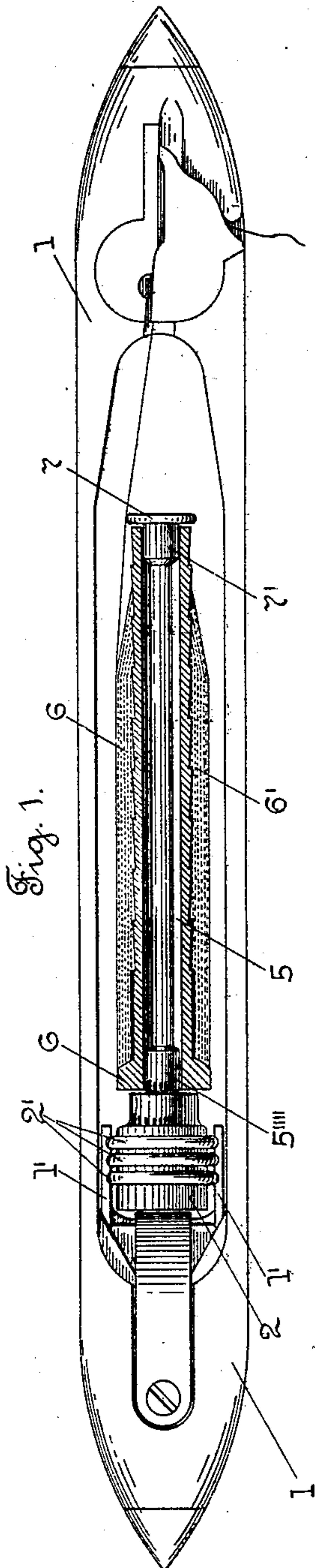


Fig. 1.

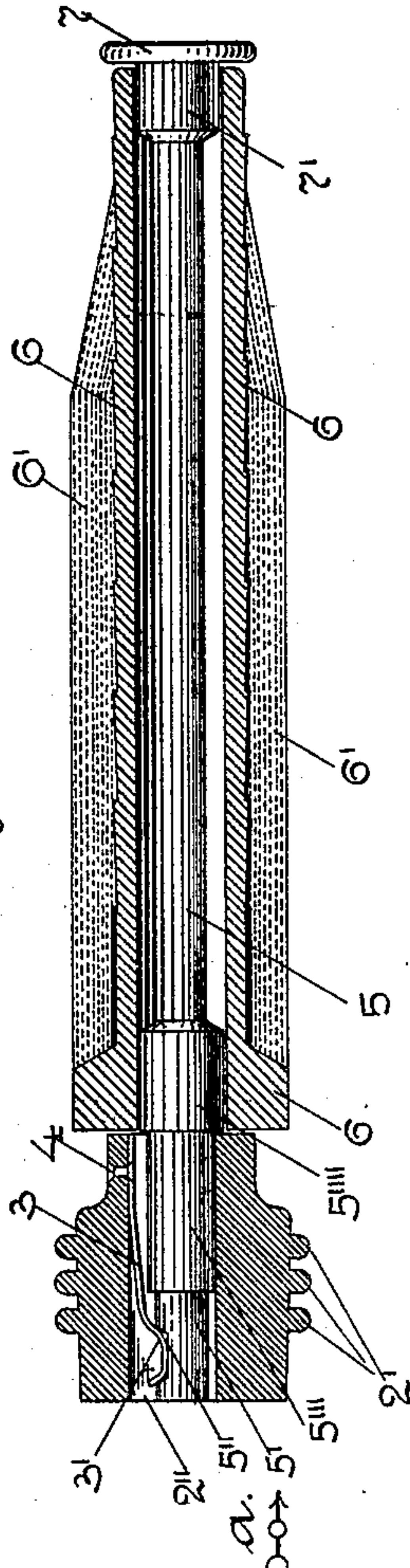


Fig. 2.

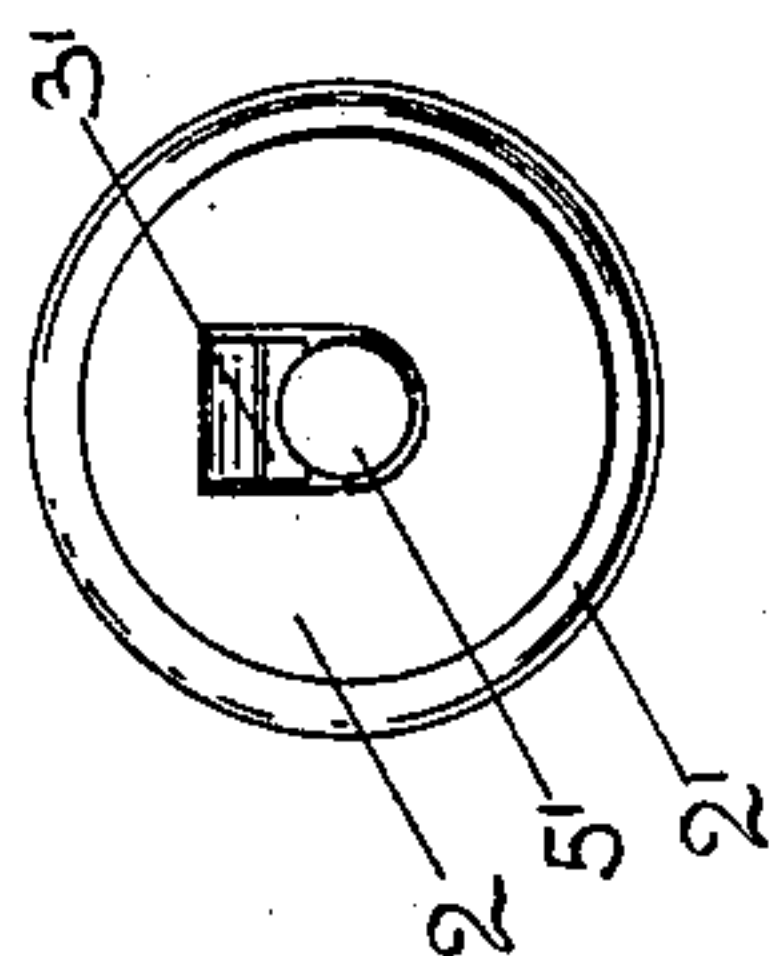


Fig. 3.

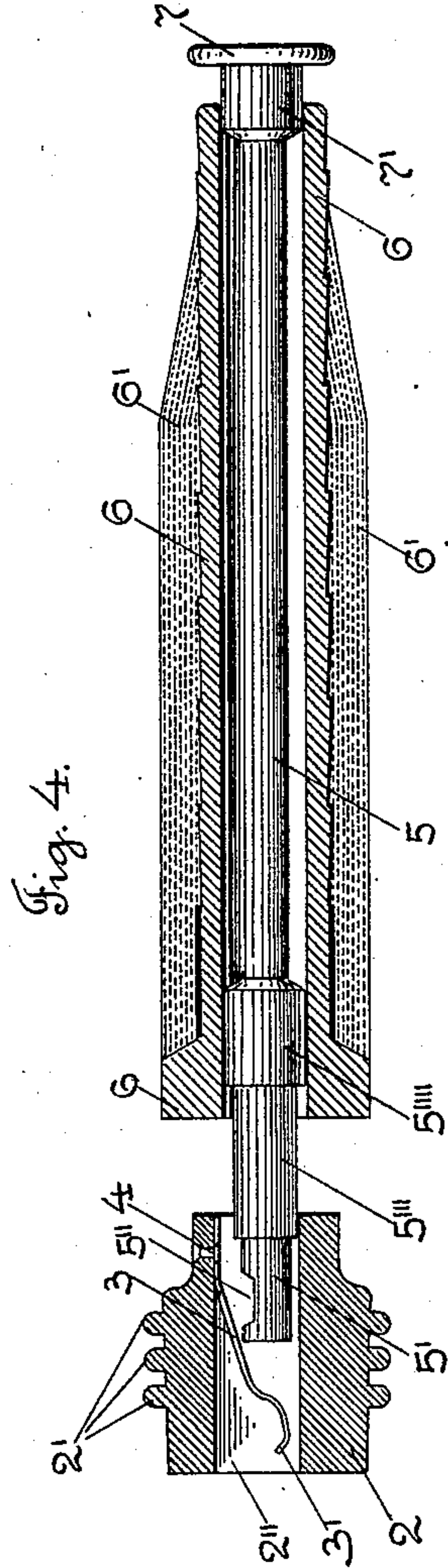


Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## BOBBIN-SPINDLE.

No. 886,459.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed March 1, 1906. Serial No. 303,668.

*To all whom it may concern:*

Be it known that I, HORACE WYMAN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Bobbin-Spindles, of which the following is a specification.

My invention relates to improvements in bobbin spindles, and to that description of bobbin spindles which have one end provided with two or more annular projections or rings thereon to engage with yielding jaws in a shuttle, and a retaining head for the bobbin at the other end, which acts also as a bearing for the filling on the bobbin.

The object of my invention is to improve upon bobbin spindles of the description referred to, and more particularly to provide an end with two or more annular projections thereon to engage the yielding jaws in a shuttle, and a spindle or support for the bobbin, made separate from the head, and adapted to be attached thereto, and detached therefrom, and having on one end a retaining head for the bobbin.

Referring to the drawing:—Figure 1 is a plan view of a self-threading shuttle of ordinary construction, having spindle holding jaws, and showing a spindle embodying my improvements combined therewith, and a sectional view of a filled bobbin on the spindle. Fig. 2 shows, on an enlarged scale, a central longitudinal section of the spindle and bobbin, shown in Fig. 1, detached. Fig. 3 is an end view of the spindle head shown in Fig. 2, looking in the direction of arrow *a*, same figure, and, Fig. 4 corresponds to Fig. 2, but shows the removable retaining head partially detached from the head of the spindle, and the bobbin moved down slightly on the spindle.

In the accompanying drawing, 1 is a self-threading shuttle which may be of any usual and well known construction, and is provided with a pair of yielding holding jaws 1', in the usual way.

The spindle embodying my improvements consists of the head or end 2, having two or more annular projections 2' thereon, adapted to engage with the jaws 1' in the spindle. The head 2 has a central opening 2'' there-through, of circular shape in cross section, at one side, and straight at its opposite side, as shown in Fig. 3. Within the opening 2''

through the head 2, extends a leaf spring 3, which is secured at one end, in this instance by a screw or rivet 4, at the inner end of the head 2 on the flat side of the opening 2'', and has at its other end a cam-shaped projection 3'.

The other part of the spindle consists of a rod or support 5, forming the spindle for the bobbin 6, having filling 6' thereon.

The rod or support 5 at its inner end is preferably of reduced diameter, as shown at 5', and has a recess 5'' therein to receive the cam-shaped projections 3' on the spring 3. Above the reduced diameter 5' of the spindle 5, the spindle is of somewhat larger diameter as shown at 5''', and is adapted to enter loosely the central opening 2'' in the head 2. Beyond the part 5''' of the spindle 5 the diameter of the spindle is increased, as shown at 5''', to correspond with the size of the central opening through the bobbin, being a little smaller than said opening, and forming an annular shoulder or flange to butt against the inner end of the head 2, as shown in Fig. 2. Between the part 5''' of the spindle 5 and the outer end of the spindle, the body of the spindle is preferably of reduced diameter, as shown.

The outer end of the spindle 5 has the head or enlarged end 7 thereon, of disk shape and adapted to extend over the tip end of the bobbin, and having the reduced portion 7' to extend loosely within the central opening in the outer end of the bobbin.

The operation of my improved bobbin spindle will be readily understood from the above description in connection with the drawing.

When it is desired to remove the bobbin 6 from the spindle, or to place a spindle on the bobbin, the part 5' is drawn out from the head 2, being yieldingly held therein by the spring 3; the bobbin is then drawn off from the spindle 5. After a new bobbin has been placed upon the spindle 5 by inserting the reduced end of the spindle through the central opening in the bobbin, the spindle 5 is attached to the head 2, by inserting the reduced end 5' through the central opening 2'' in said head, and pushing it down until the cam-shaped portion 3' on the spring 3 enters the recess 5'' on the reduced end 5' of the spindle 5. The spindle 5 may be inserted in the head 2 without regard to the position of



the recess 5'' therein relating to the spring 3, and then the spindle rotated until the cam shaped portion enters the recess 5''.

It will be understood that the details of construction of my improvements may be varied if desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

10 1. A bobbin spindle, comprising a head provided with two or more annular projections, and having a central longitudinal opening therethrough, and a flat or leaf spring contained within said opening, attached at  
15 one end, and with its other end adapted to extend within a recess in a support for the bobbin, and said support, adapted at one end to extend loosely into the central opening in said head and to be retained therein by said  
20 spring, and having an enlarged end or head at its other end to retain the bobbin thereon.

2. In a bobbin spindle, the combination with the head having a central opening there-  
through, and a spring extending entirely  
25 within said opening and attached at one end

in said head, and adapted at its other end to engage one end of the bobbin support, of said bobbin support, adapted to extend loosely into said head at one end, and be held therein by said spring, and having its other  
30 end enlarged or provided with a head to retain the bobbin on said support.

3. In a bobbin spindle, the combination with the head having a central opening there-  
through, and a spring extending entirely  
35 within said opening, and attached at one end in said head, and adapted at its other end to engage one end of the bobbin support, of said bobbin support, adapted to extend at one  
40 end loosely within said head, and to be retained therein by said spring, and having an annular shoulder to engage the end of said head, and an enlarged end or head on its other end adapted to retain the bobbin on said support.

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