

916,415.

A. BUCKLER.
LOOM SHUTTLE.
APPLICATION FILED DEC. 28, 1907.

Patented Mar. 30, 1909.

Fig. 1.

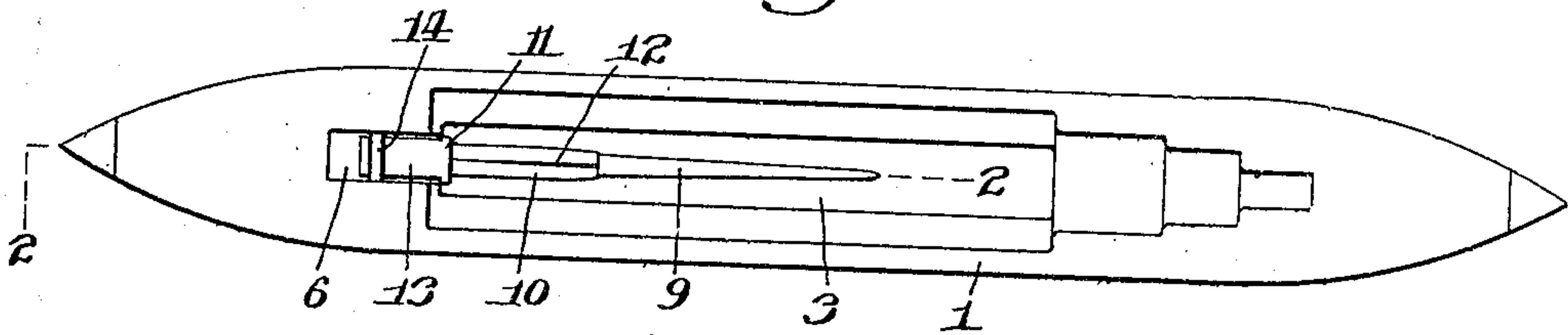


Fig. 4.

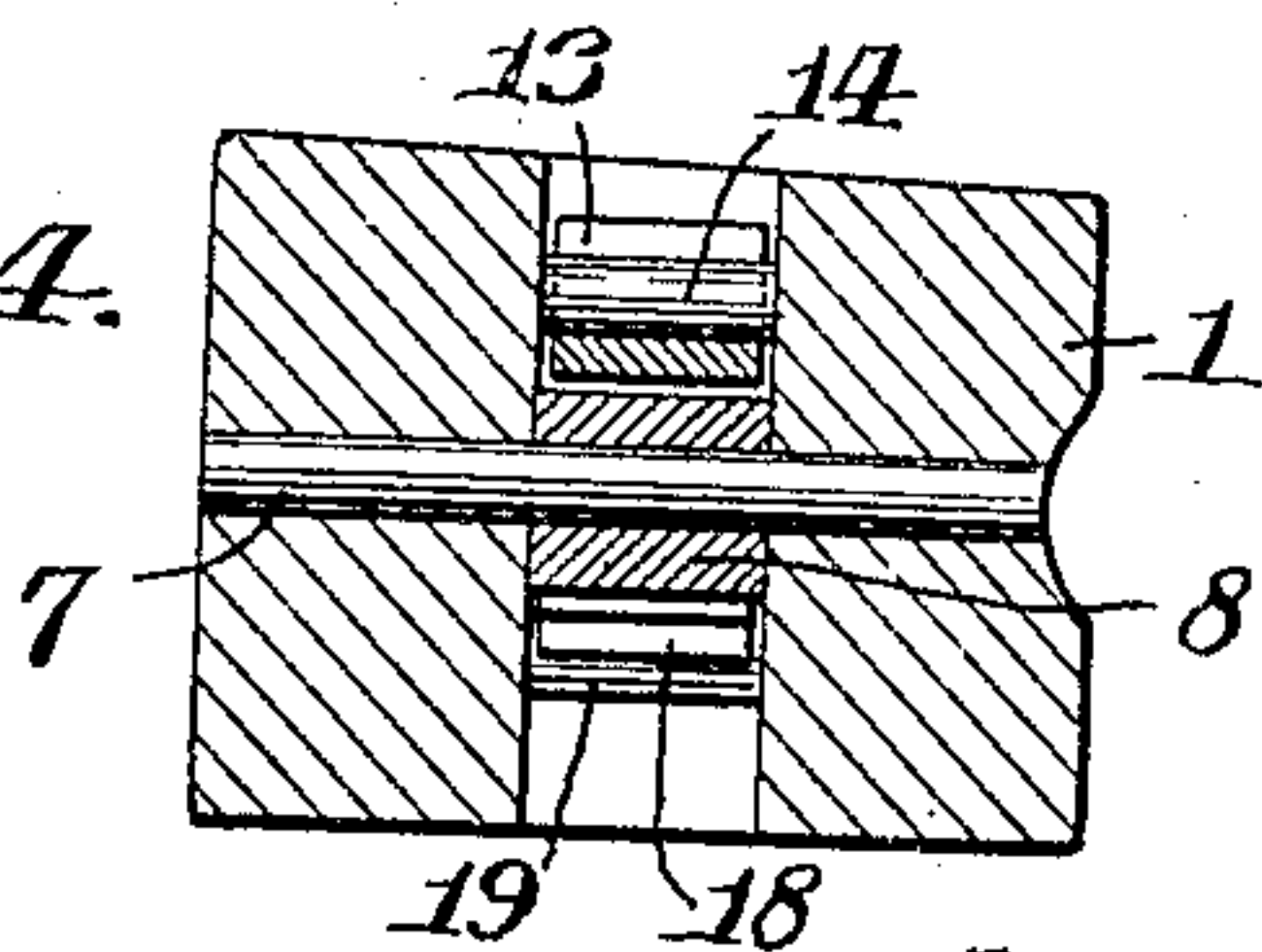


Fig. 2.

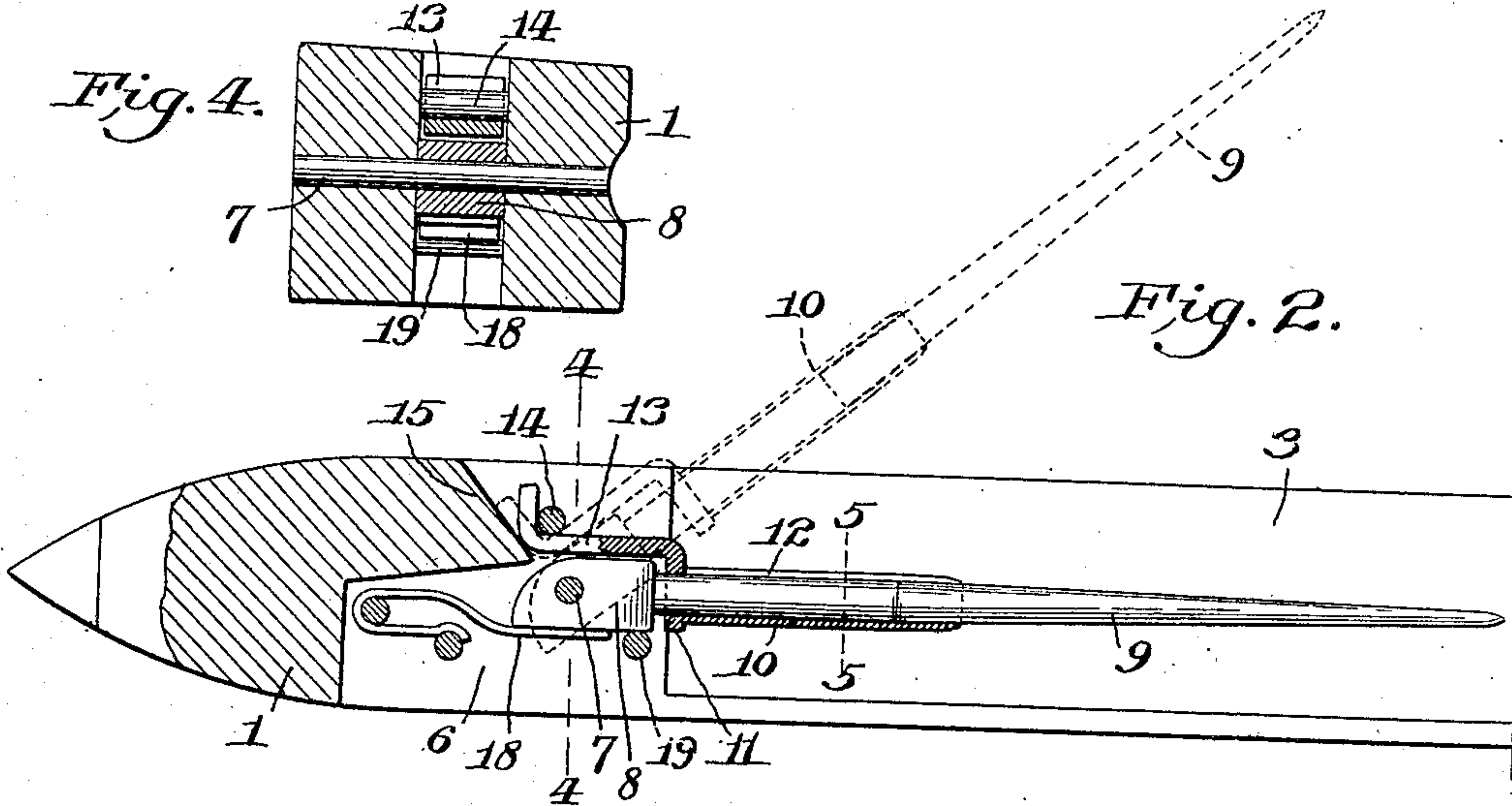


Fig. 3.

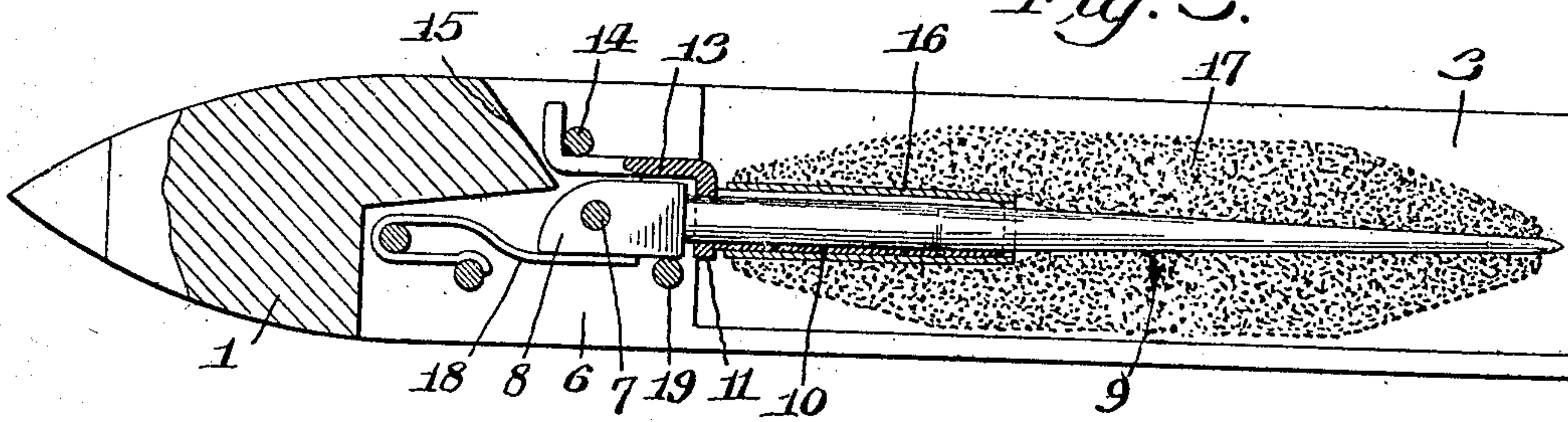


Fig. 6.

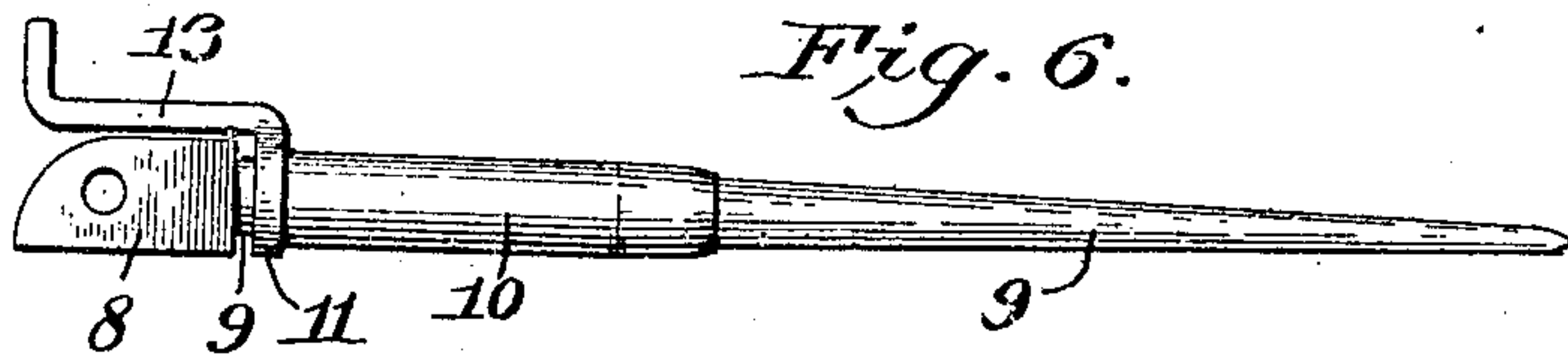


Fig. 5.



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UNITED STATES PATENT OFFICE.

ARTHUR BUCKLER, OF PHILADELPHIA, PENNSYLVANIA.

LOOM-SHUTTLE.

No. 916,415.

Specification of Letters Patent.

Patented March 30, 1909.

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To all whom it may concern:

Be it known that I, ARTHUR BUCKLER, citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Loom-Shuttles, of which the following is a specification.

This invention relates to loom shuttles, my object being to provide a shuttle with a simple and efficient means for receiving and retaining the bobbin or cop, and to this end the invention consists in the novel construction and combinations of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view of a loom shuttle provided with a bobbin- or cop-receiving means embodying my invention. Fig. 2 is a longitudinal sectional view thereof, enlarged, as on the line 2—2, of Fig. 1, showing, by dotted lines, the position of the bobbin-receiving means when it is removed from within the shuttle. Fig. 3 is a view similar to Fig. 2, including a bobbin or cop. Fig. 4 is a transverse, sectional view, as on the line 4—4, of Fig. 2. Fig. 5 is a transverse, sectional view as on the line 5—5, of Fig. 2. Fig. 6 is a view of the bobbin-receiving spindle, detached.

1 designates a well known form of shuttle, provided with the usual bobbin receiving chamber 3 therein. The body of the shuttle 1 has, formed therein, a recess 6, through which extends a transversely arranged pin 7. Pivotaly mounted on the pin 7 is the basal end 8 of a spindle 9, which extends into the chamber 3, as shown. This spindle is adapted to be moved upon the pin 7 to a position within the chamber 3, as shown by full lines in the drawings, and from its position within said chamber to the position shown by dotted lines in Fig. 2. The spindle 9 adjacent the basal end 8 is made straight, or cylindrical for a short distance, and is then made tapering toward its free end, as shown in the drawings. Surrounding the spindle 9 near the basal end 8 thereof, is a bobbin receiving member 10, which extends over the cylindrical portion of the spindle and a slight distance over the tapering portion thereof, the bobbin receiving member being made to conform to the spindle, as shown. The bobbin receiving member 10 projects fixedly from a collar 11 which surrounds the spindle 9, and said member is

provided throughout its length with a longitudinal slit 12, to permit the member to be expanded against the tapering portion of the spindle 9 when the member is moved longitudinally upon the spindle toward the pivoted end thereof. The bobbin receiving member 10 is made of spring metal, so that it may be expanded when the tapering portion of the spindle is projected therethrough, and so that it may spring back to its normal size when the tapering portion of the spindle is withdrawn.

Extending from the collar 11 is an arm 13, which extends back over the basal end 8 of the spindle 9, and into the recess 6. The arm 13, extends beneath a transverse pin 14, into the recess 6, and the free end of the arm is bent upwardly between the pin 14 and an inclined wall 15 of the recess 6. The pin 14 and the wall 15 are so located with relation to each other and to the pin 7, that when the spindle 9 is moved to the position shown by dotted lines in Fig. 2, the upwardly bent end of the arm 13 will engage the wall 15 and project the member 10 toward the free end of the spindle 9, and thus permit it to contract by its own spring action, to free the bobbin; and when the spindle 9 is moved into the bobbin-receiving chamber 3, the upwardly bent end of the arm 13 will engage the pin 14 and draw the member 10 toward the base of the spindle 9, and thus cause the tapering portion of the spindle to expand the member 10 in a manner to engage and bind the bobbin. Thus it will be seen that when the spindle 9 is moved to the position shown by dotted lines in Fig. 2, the member 10 will be contracted and that a bobbin may be readily placed upon the spindle 9 and member 10; and that when the spindle 9 is pressed down into the chamber 3, the member 10 will be expanded in a manner to bind and firmly hold the bobbin upon the spindle. The bobbin receiving member, 10, may extend the entire length of the spindle 9, or it may extend only part way over the spindle, as shown in the drawings.

In preparing cops or bobbins for shuttles, a paper core the full length of the cop or bobbin is sometimes employed, upon which the cop or bobbin is wound. Sometimes, however, in order to get a greater quantity of yarn upon the cop or bobbin, only the basal end of the bobbin is wound upon the tube, the remaining portion being wound upon a spindle from which it is removed after the bobbin has been wound, thus providing a

bobbin having an opening extending through the center thereof, and a tube within said opening and extending part way therethrough.

When it is desired to use bobbins having the paper core or tube extending the entire length of the bobbin, I would preferably extend the bobbin receiving member 10 the entire length of the bobbin. When, however, the paper core extends only part way through the bobbin, I prefer to have the spindle 9 project beyond the bobbin-receiving member 10, so that in applying a bobbin of this character to the spindle 9 and member 10, the free end of the spindle 9 may be projected through the opening in the bobbin not occupied by the paper core, and the bobbin receiving member may be projected into the paper core, in which case the bobbin is supported throughout its entire length and is held in place upon the spindle 9 by the engagement of the member 10 with the core, as shown in Fig. 3, wherein 17 designates the bobbin and 16 the core therein.

I claim:—

1. The combination of a shuttle body provided with a bobbin-receiving chamber, a hollow bobbin-receiving member having a longitudinal slit in one side thereof, and being closed on the opposite side thereof, and means for expanding the member to engage and bind the bobbin.

2. The combination of a shuttle body provided with a bobbin-receiving chamber, a tapering spindle, a hollow bobbin-receiving member surrounding the spindle and having a longitudinal slit therein, and means for moving said member upon the spindle to expand the member to engage and bind the bobbin.

3. The combination of a shuttle body provided with a bobbin-receiving chamber, a pivoted tapering spindle, an expansible bobbin-receiving member surrounding the spindle, means for moving said member in one direction when the latter is moved from within the chamber, and means for moving

said member in the other direction upon the spindle when the latter is moved into the chamber.

4. The combination of a shuttle body provided with a bobbin-receiving chamber, a pivoted tapering spindle, an expansible bobbin-receiving member surrounding the spindle, an arm extending from said member adjacent to a wall of the shuttle and so located with relation to the pivotal connection of the spindle that said arm will engage said wall and move said member longitudinally upon the spindle when the latter is moved from within the chamber, and means for engaging said arm to move said member in the reverse direction when the spindle is moved into the chamber.

5. The combination of a shuttle body provided with a bobbin-receiving chamber, a bobbin having a central opening therein, a tube extending part way through said opening, a hollow expansible bobbin-receiving member extending into said tube, a spindle extending through said member and into the opening in said bobbin and beyond said member and said tube, and means for expanding said member to engage and bind said tube.

6. The combination of a shuttle body provided with a bobbin-receiving chamber, a bobbin having a central opening therein, a tube extending part way through said opening, a hollow expansible bobbin-receiving member extending into said tube, a spindle extending through said member and into the opening in said bobbin and beyond said member and said tube and movable into and from said chamber, and means for expanding said member when said spindle is moved into said chamber.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR BUCKLER.

Witnesses:

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