

No. 871,911.

PATENTED NOV. 26, 1907.

A. BUCKLER.
LOOM SHUTTLE.

APPLICATION FILED JULY 27, 1905.

Fig. 1.

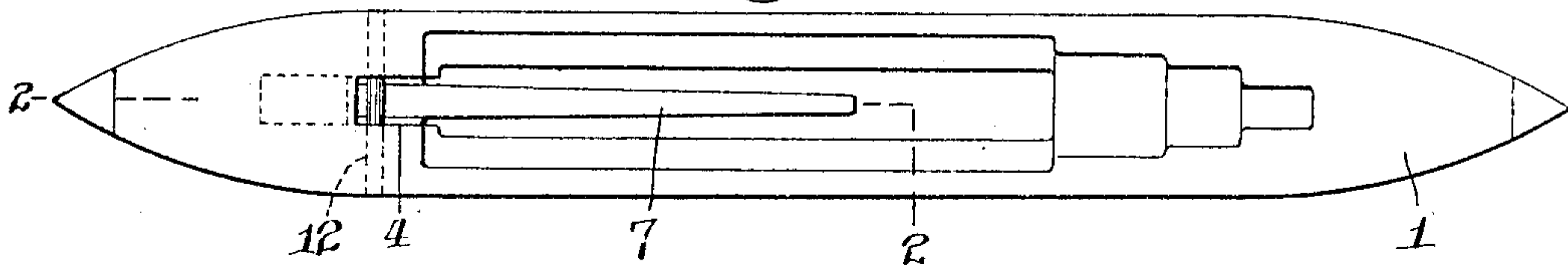


Fig. 6.

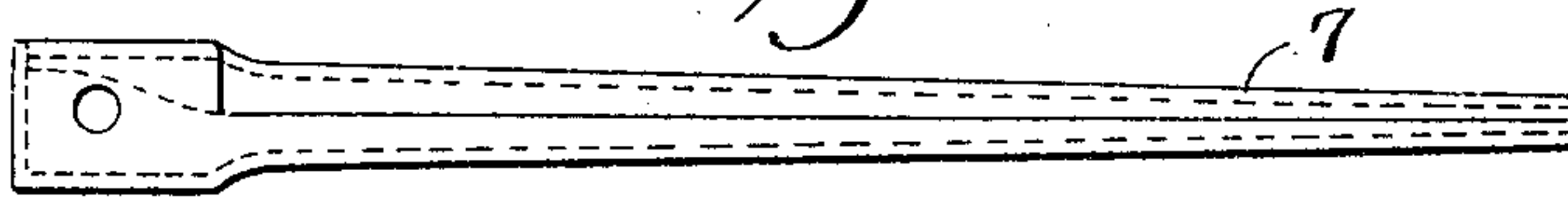


Fig. 2.

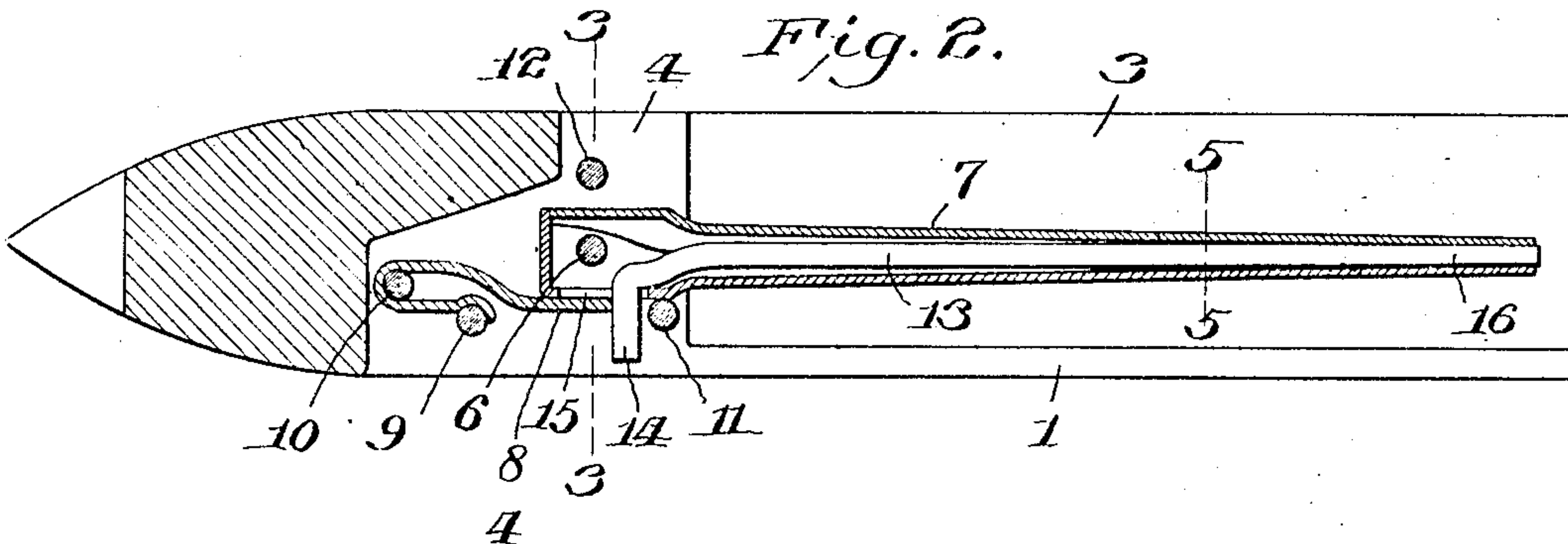


Fig. 4.

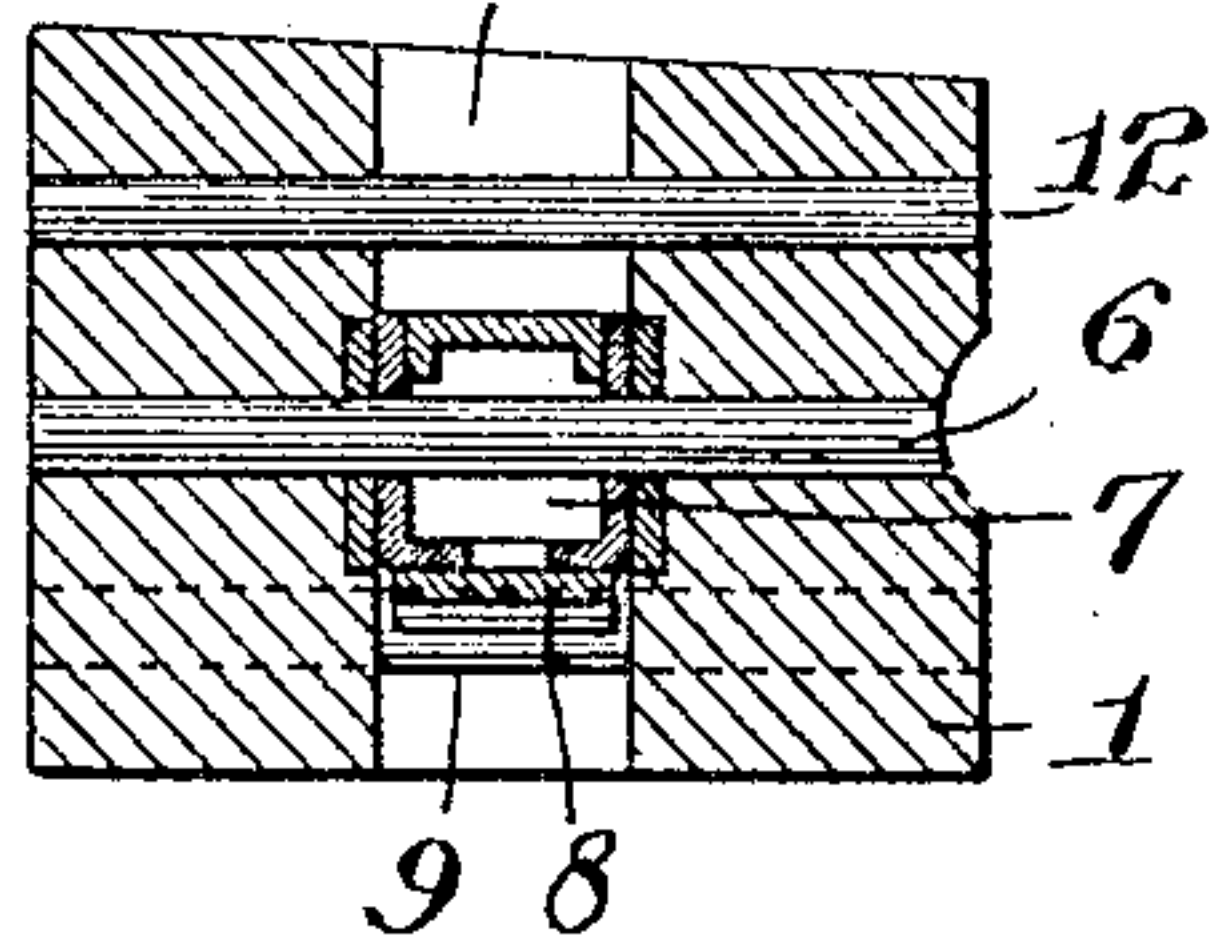
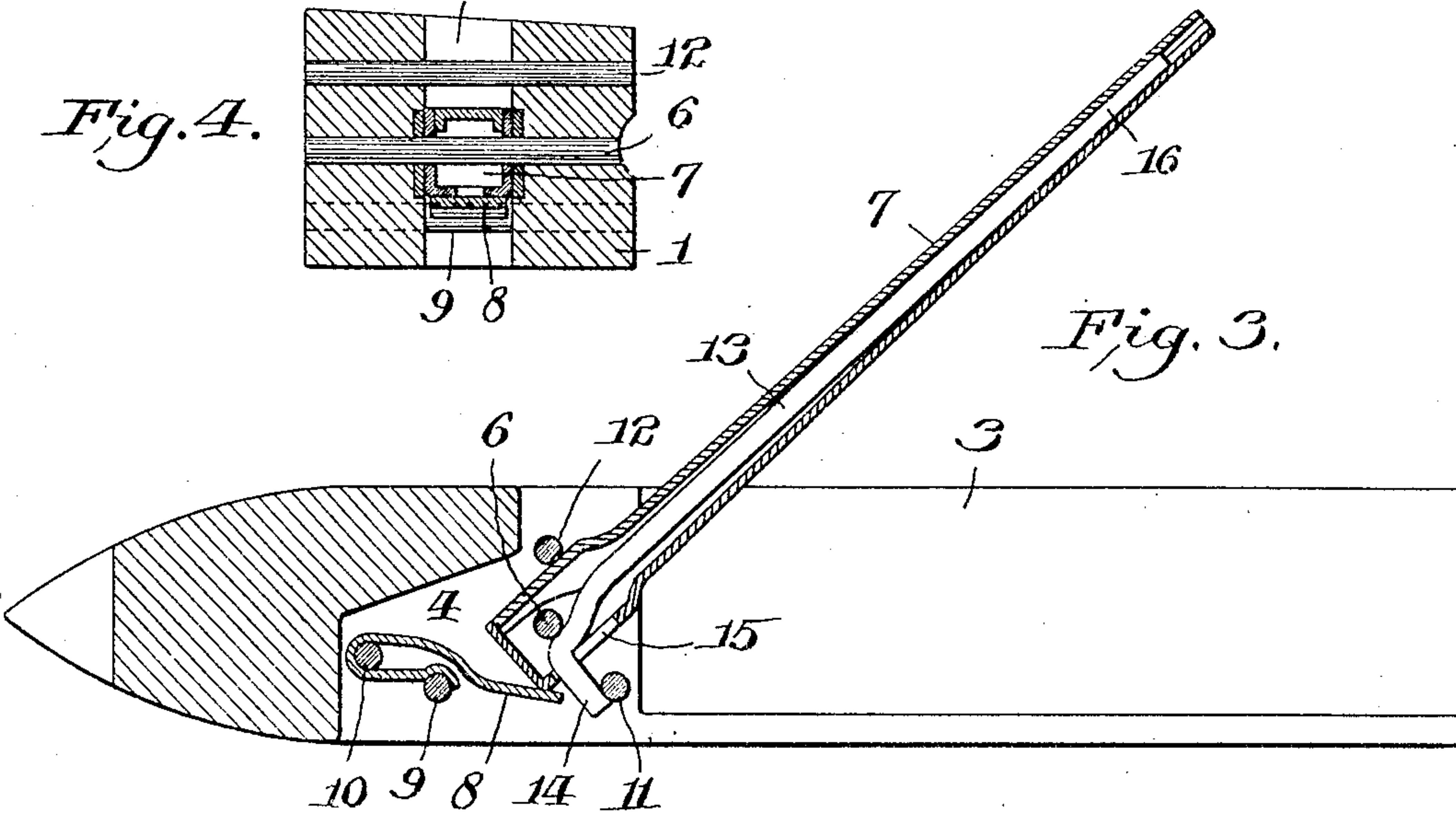


Fig. 3.



WITNESSES:

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Fig. 5.



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LOOM-SHUTTLE.

No. 871,911.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed July 27, 1905. Serial No. 271,407.

To all whom it may concern:

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

The object of this invention is to provide a loom shuttle with a simple and efficient bobbin or cop holding device movable into and from the bobbin receiving chamber of the shuttle and having provision whereby the bobbin after being applied to the device is firmly secured thereto upon the latter being moved into the chamber, and whereby the bobbin is released to permit its removal from the device upon the latter being moved out of the chamber.

The invention consists in the novel construction and combinations of parts hereinafter fully described and claimed.

In the drawings: Figure 1 is a plan view of a shuttle embodying my invention. Fig. 2 is an enlarged sectional view, as on the line 2—2 of Fig. 1. Fig. 3 is a similar sectional view, showing the parts in a different position. Fig. 4 is a sectional view, as on line 3—3, of Fig. 2. Fig. 5 is a sectional detail, as on the line 5—5 of Fig. 2. Fig. 6 is a view of the spindle detached.

1 designates the body of the shuttle which is of usual and well known construction, the same being provided with the bobbin-receiving chamber 3. Formed in the body of the shuttle and opening into one end of the chamber is a recess 4. Extending through the recess 4 is a pin 6 upon which is mounted the basal end of a hollow tapering spindle 7 adapted to receive a cop or bobbin. The free end of the spindle 7 extends into the chamber 3, as shown in Figs. 1 and 2, and it is adapted to be swung upon the pin 6 to the position shown in Fig. 3, for the purpose of applying a bobbin thereto or removing a bobbin therefrom. The basal or pivoted end of the spindle is made square in cross section, as shown, and bearing against the bottom of said end is a flat spring 8 which is mounted on pins 9 and 10 extending through the recess 4. The tendency of the spring 8 is to maintain the spindle 7 in the position shown in Fig. 2 against a stop pin 11, and also to maintain the spindle 7 in the position shown in Fig. 3 against a stop pin 12. Thus it will be seen that the

spindle may be moved into or from the chamber 3 and that said spindle is maintained in either position by the action of the spring 8.

The tapering spindle 7 is made in two parts and the long tapering portion of each part projecting from the squared basal end is made substantially semicircular in cross section, as shown in Fig. 5, and the two adjacent ends of said parts forming the basal end of the spindle are secured together by soldering or otherwise, leaving the free ends of the long tapering portions of the parts free to move from and toward each other, due to the springiness of the metal forming the spindle.

Extending through the spindle 7 is a pin 13 one end 14 of which is bent and extends at right angles to the axis of the spindle and out through an opening 15 and between the pin 11 and the spring 8. The other end 16 of the pin 13 is made tapering and extends into the free end of the spindle. When the pin 13 is moved toward the free end of the spindle, the free ends of the two parts forming the spindle are forced apart, and when the pin 13 is moved toward the basal end of the spindle, the free ends of said parts are permitted to spring together. Thus the free end of the spindle may be expanded and contracted by operating the pin 13.

When the parts occupy the position shown in Fig. 3, a cop or bobbin may be readily applied to the spindle, and by then moving the parts to the position shown in Fig. 2, to move the bobbin into the chamber 3, the end 14 of the pin 13 takes against the spring 8 which forces the pin 13 toward the free end of the spindle, thereby expanding said end and binding the bobbin to prevent its removal from the spindle. When the parts are moved from the position shown in Fig. 2 to the position shown in Fig. 3, the end of the pin 13 takes against the pin 11 and withdraws the pin 13 from the free end of the spindle thereby permitting the two parts of said end to move together to permit the bobbin to be removed from the spindle and the substitution of another one therefor.

The cops or bobbins placed upon the spindle 7 usually comprise a body of thread wound upon a paper tube, and the expanding of the free end of the spindle after the bobbin has been placed thereon not only expands the end of the bobbin tube but also the end of the body of the thread thus serving to effec-

usually retain the tube upon the spindle and the body of the thread upon the tube, it being understood that the expanded end of the bobbin prevents its movement toward the free end of the bobbin and the tapering spindle prevents the movement of the bobbin in the reverse direction during the motion of the shuttle.

I claim:—

1. The combination of a shuttle body provided with a bobbin-receiving chamber, a spindle therein having an expansible free end and adapted to receive a bobbin, and means for expanding the free end of the spindle to engage and bind the bobbin.

2. The combination of a shuttle body provided with a bobbin-receiving chamber, a spindle having an expansible free end and movable into and from the chamber and adapted to receive a bobbin, and means for expanding the free end of the spindle upon the latter being moved into the chamber.

3. The combination of a shuttle body provided with a bobbin-receiving chamber, a spindle supported at one of its ends and movable into and from the chamber and

adapted to receive a bobbin, said spindle including two parts connected near the supporting end of the spindle and having their free ends movable toward and from each other, and a tapering pin located between said parts and adapted when the spindle is moved into the chamber to engage said parts to move said ends from each other to engage and bind the bobbin.

4. The combination of a shuttle body provided with a bobbin receiving chamber, a bobbin-receiving spindle therein supported at one of its ends and including two parts connected near the supporting end of the spindle and having their free ends movable toward and from each other, and a pin located between said parts and having a tapering portion adapted to engage and move said ends from each other to engage and bind the bobbin.

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

ARTHUR BUCKLER.

Witnesses:

H. L. CHEESEMAN,
A. V. GROUPE.