

(No Model.)

J. B. DAUDELIN.
SELF THREADING SHUTTLE.

No. 579,046.

Patented Mar. 16, 1897.

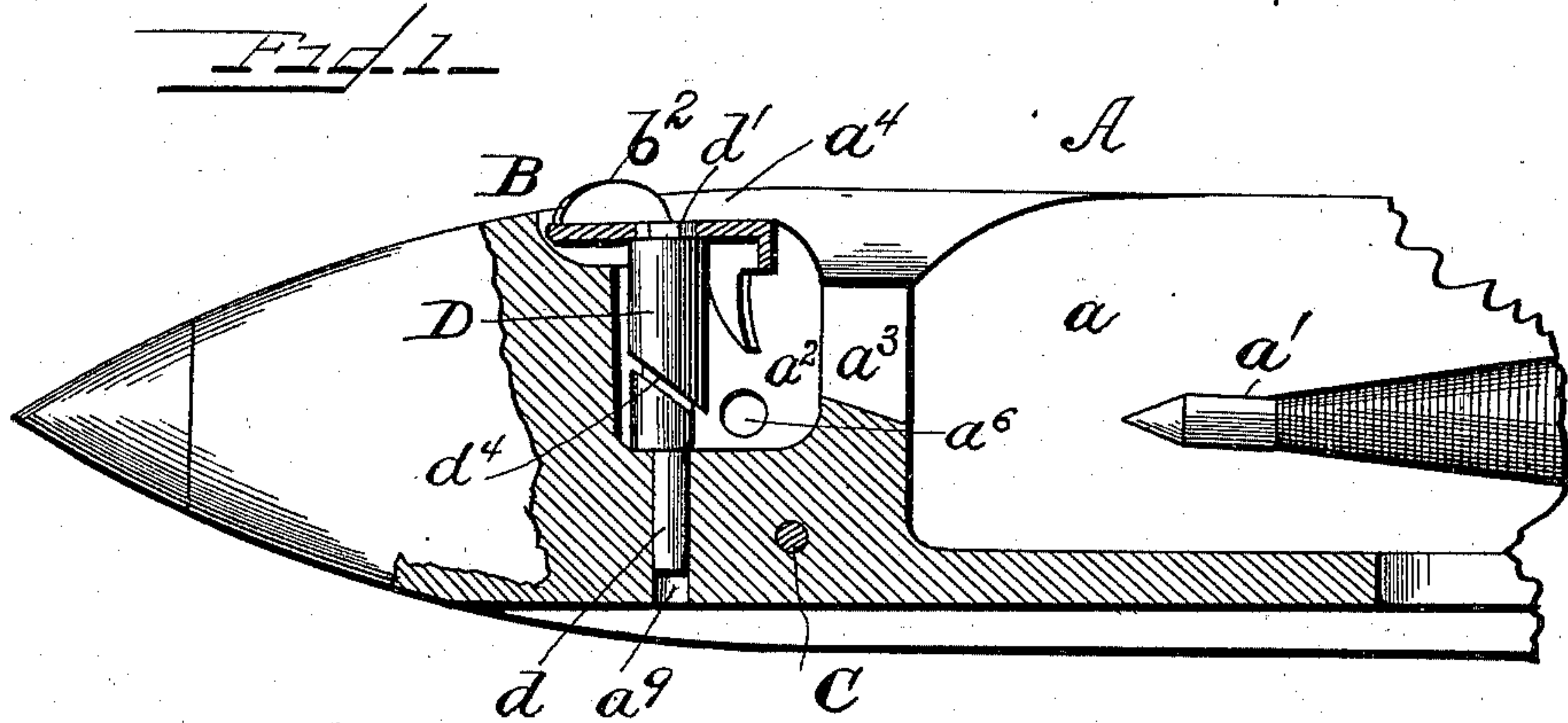


Fig. 3

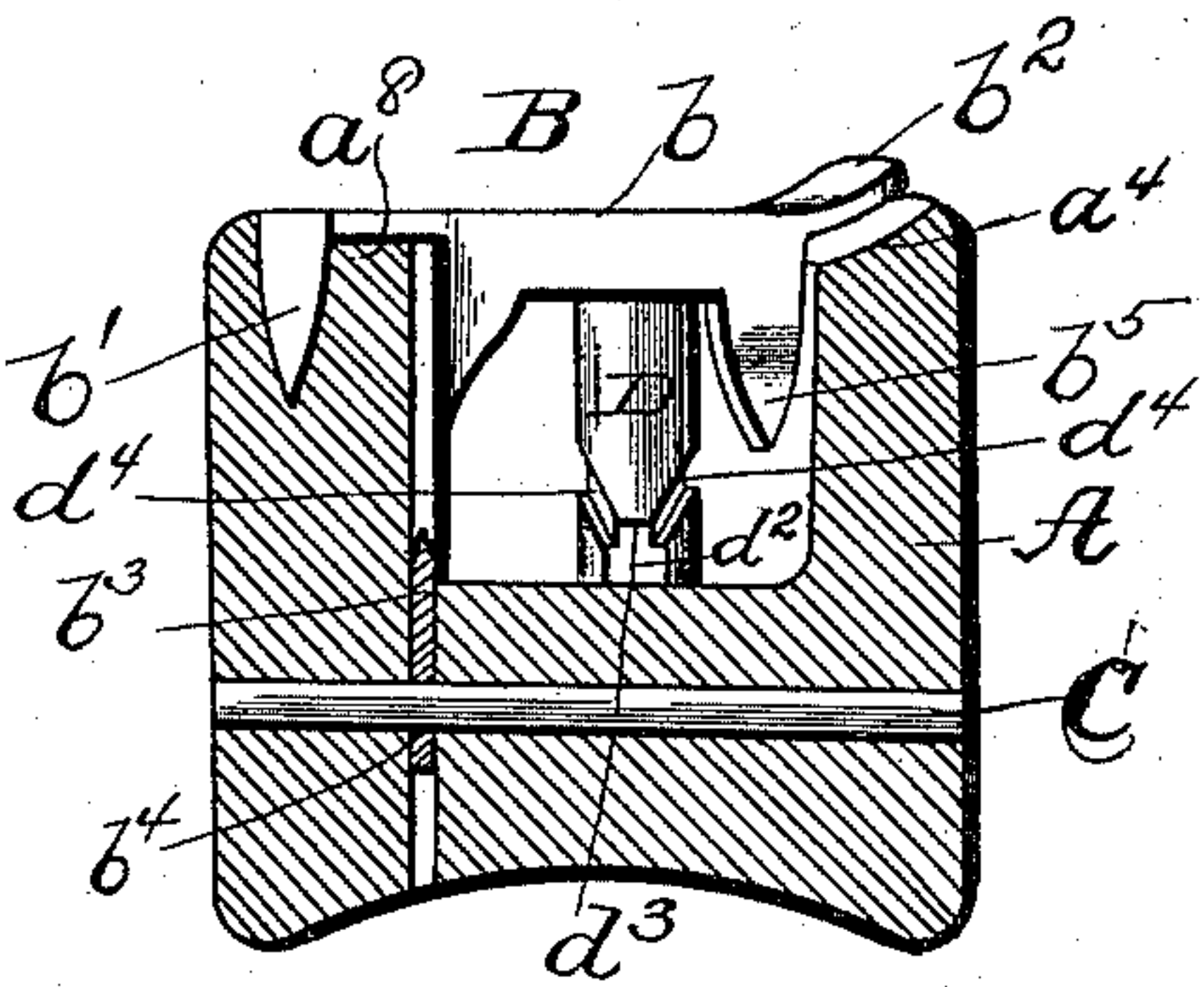


Fig. 4

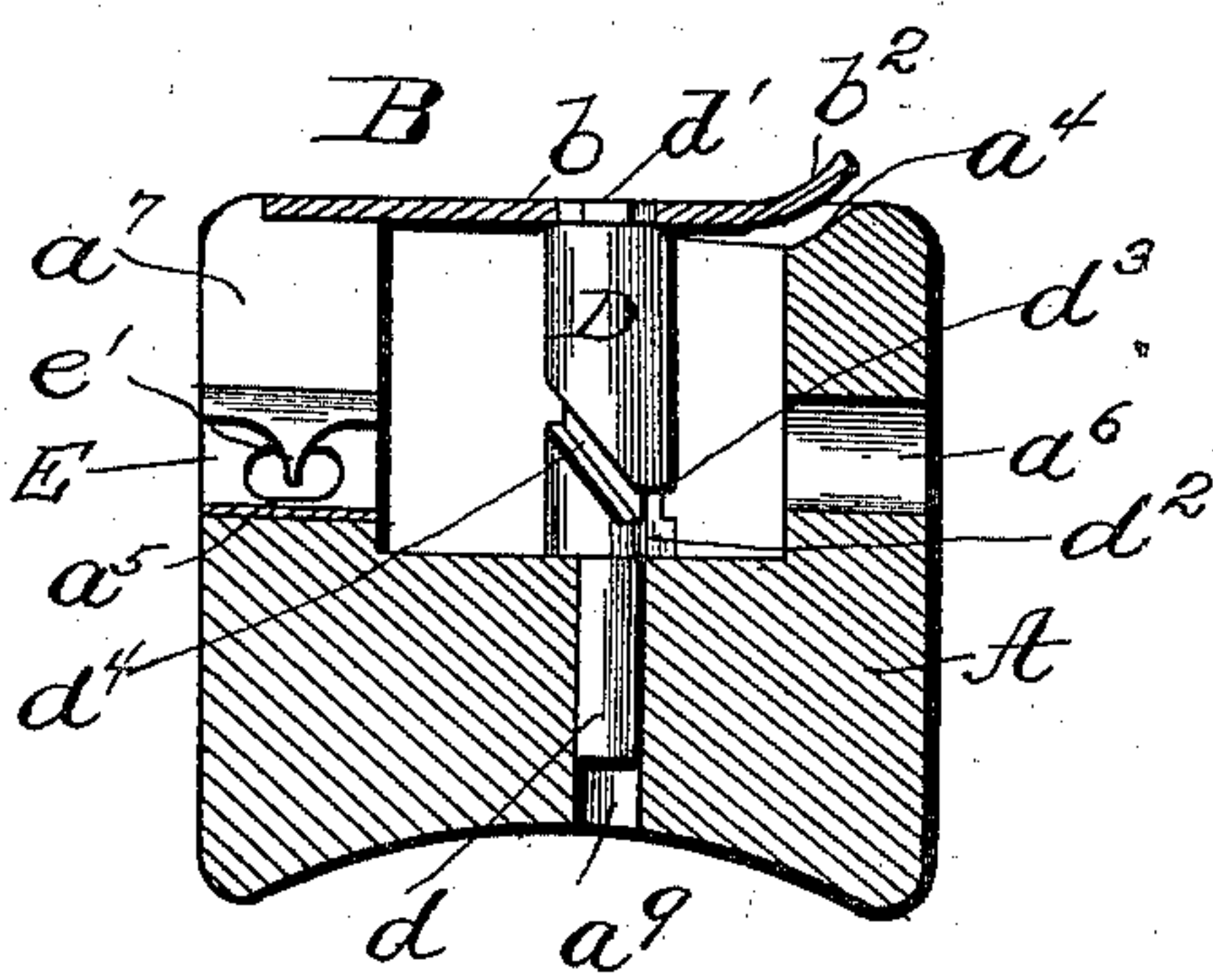


Fig. 5

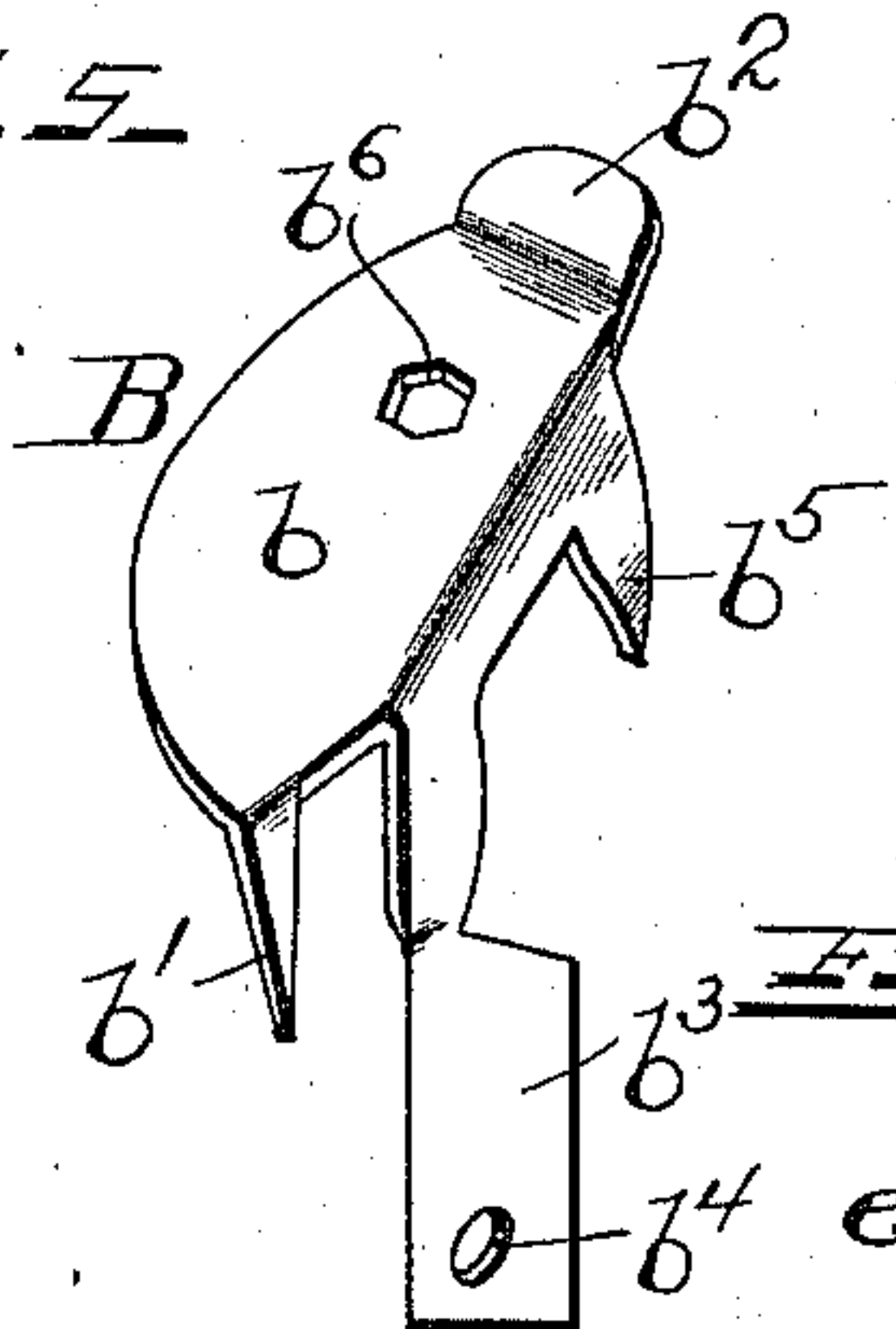


Fig. 6

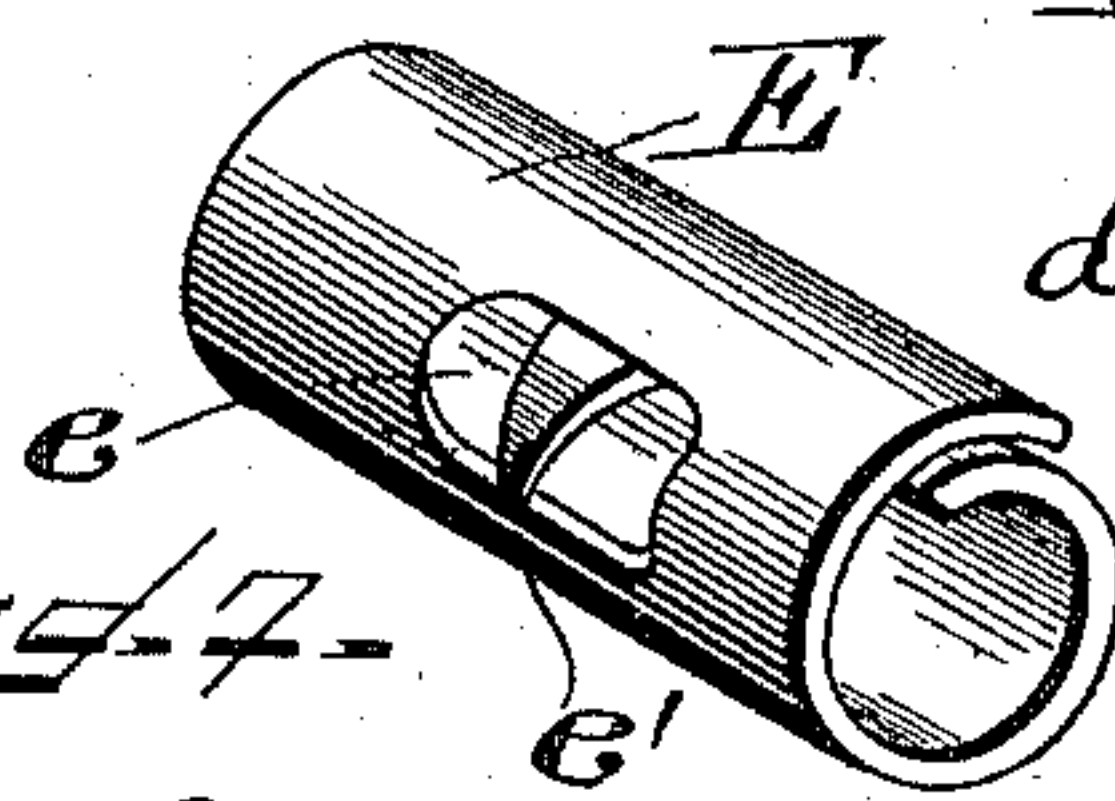


Fig. 8

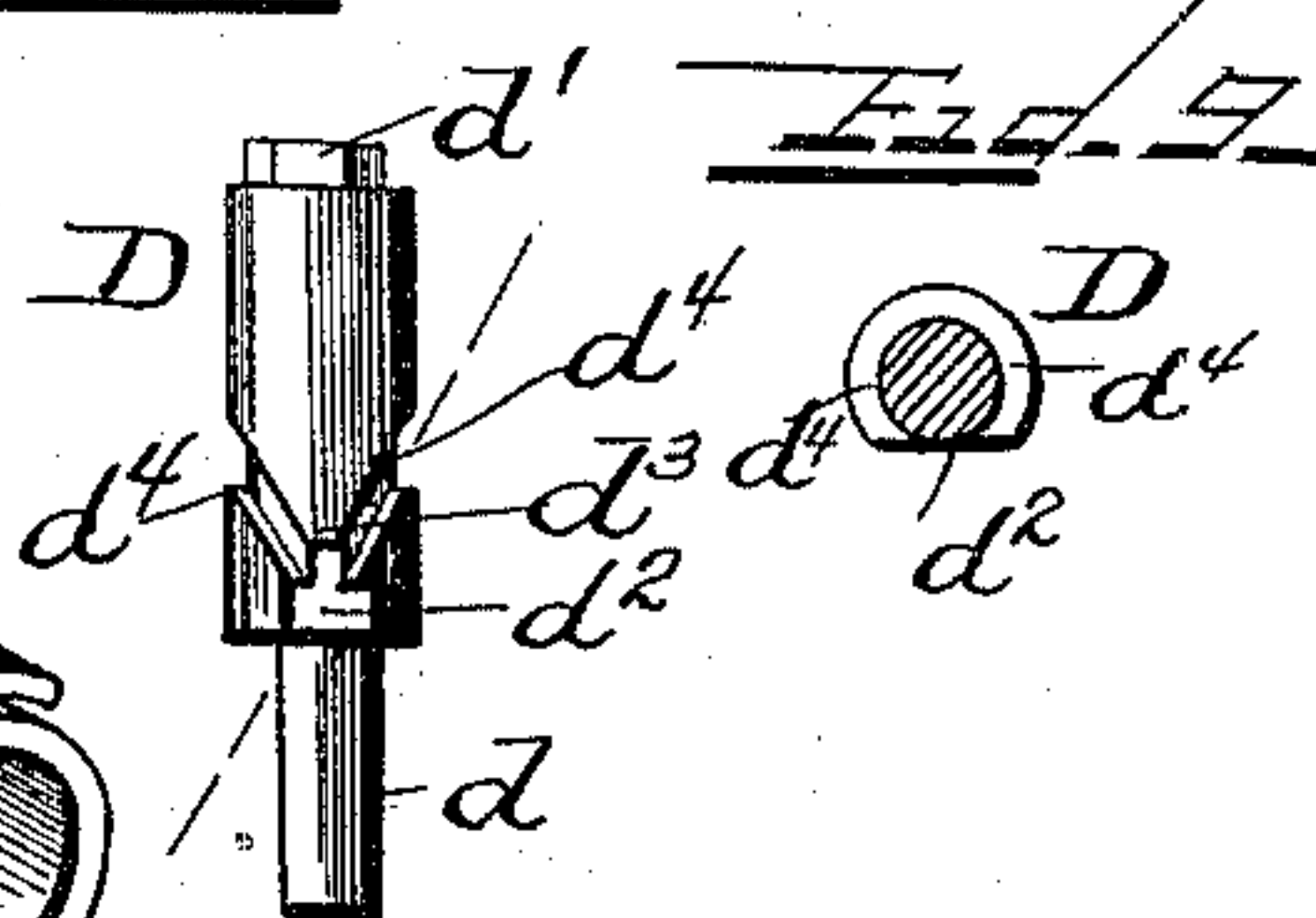


Fig. 7

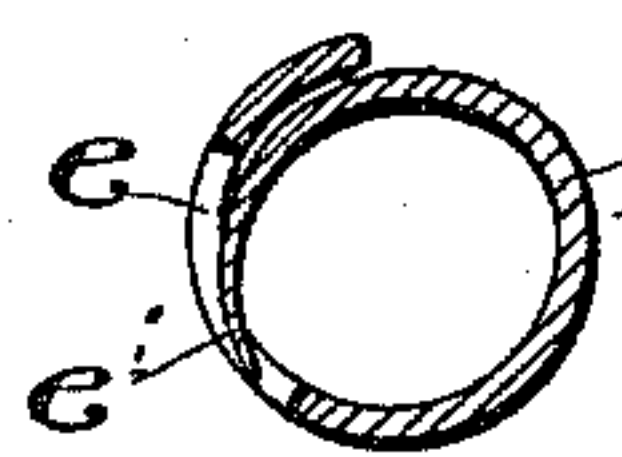
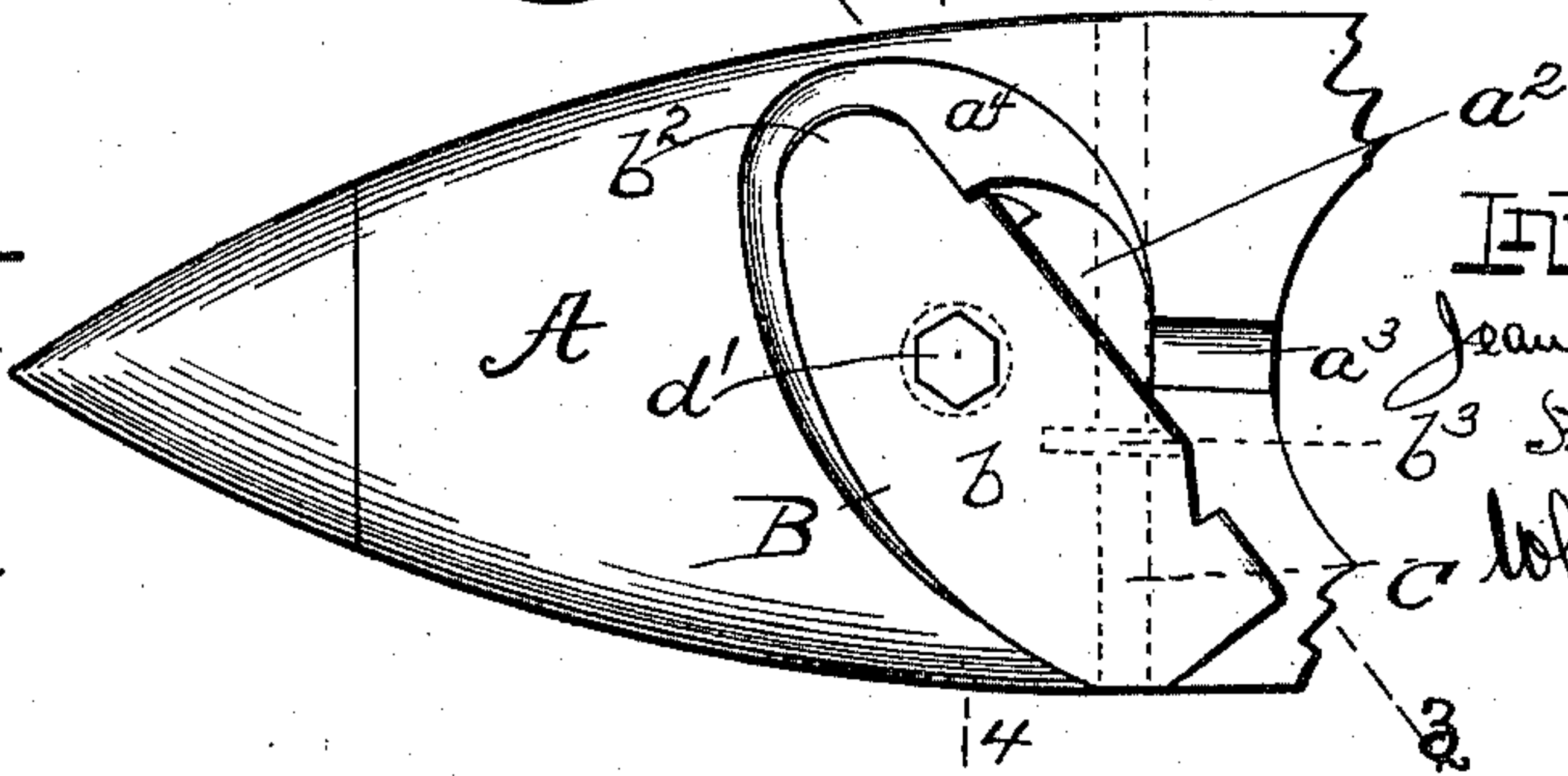


Fig. 2



Witnesses
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JEAN BAPTISTE DAUDELIN, OF FALL RIVER, MASSACHUSETTS.

SELF-THREADING SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 579,046, dated March 16, 1897.

Application filed August 12, 1896. Serial No. 602,565. (No model.)

To all whom it may concern:

Be it known that I, JEAN BAPTISTE DAUDELIN, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Self-Threading Shuttles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improvement in self-threading shuttles; and it consists in the novel features hereinafter fully described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 represents a vertical central sectional view of a portion of a shuttle embodying my invention. Fig. 2 is a top plan view of the same. Fig. 3 represents a vertical transverse section on line 3 3 of Fig. 2. Fig. 4 represents a similar section on line 4 4 of Fig. 2. Fig. 5 is a detail perspective view of the threading-plate. Fig. 6 is a detail perspective view of the tubular thread-guide. Fig. 7 represents a transverse section of the said tubular thread-guide. Fig. 8 is an elevation of the tension-post. Fig. 9 represents a transverse section of said post on the plane of the inclined thread-grooves.

In the drawings, A represents the main body of the shuttle, which is provided with the usual spindle-recess a and spindle a' . a^2 represents a substantially circular threading-recess forward of the spindle-recess, communicating with the latter by means of a notch a^3 , through which the thread passes after leaving the spindle. The upper face of the shuttle surrounding the threading-recess a^2 is a larger recessed portion having inclined or curved walls or faces a^4 , sloping downwardly to said recess on three sides of the same. The body A of the shuttle is also provided at one side of the threading-passage with a delivery eye or passage a^5 , communicating with said recess, and on the opposite side with a blow-hole or passage a^6 , which is exactly in line with the delivery-eye. A vertical threading-slit a^7 is formed in the shuttle adjacent to the threading-re-

cess communicating with the delivery-eye. In rear of this threading-slit a^7 and at one side of the threading-recess a^3 is a horizontal shoulder a^8 , which is slightly higher than the adjacent inclined or curved walls or faces a^4 and serves as a support for the horizontal threading-plate B, so that said plate as it extends out from said shoulder over said curved face a^4 forms a thread-passage beneath said plate.

The plate B (shown in detail in Fig. 5) consists of a horizontal portion b , substantially semicircular, having a downwardly-extending lug or projection b' at one end adapted to enter a recess in the shuttle-body in rear of the shoulder a^8 , upon which the plate rests. The said horizontal portion of the plate is provided at the side of the shuttle opposite to the projection b' with a turned-up lip b^2 , which lies above and parallel to the inclined face a^4 , so as to direct the thread beneath the plate B. (See Fig. 4.) The plate B is also provided with a downwardly-extending securing-arm b^3 , which extends from the horizontal portion b down into a recess in the shuttle-body and is secured in position by a horizontal retaining-pin C, which passes entirely through the shuttle transversely at this point and passes through an aperture b^4 in said securing-arm. The horizontal part b of the plate B is also provided with a downwardly-extending guide-arm b^5 , which extends into the threading-recess below the level of the inclined or curved face a^4 and assists in guiding the thread into said recess after it has been drawn under the horizontal portion of the plate B.

D represents the tension-post, which consists of a post of cylindrical form, having at its lower end a reduced stem d , which is adapted to enter a vertical recess or aperture a^9 in the shuttle-body, (see Figs. 1 and 4,) and provided at the top with a reduced head d' , which is preferably of greater diameter than the stem d and is of polygonal form, in this instance being shown hexagonal. The horizontal part b of plate B is provided with a polygonal (in this case hexagonal) hole or aperture b^6 , adapted to engage the polygonal head d' of said post after its stem d has been inserted in the aperture a^9 , and the post will therefore be held in position without any nuts, screws, or other devices, and as the stem fits smoothly into the hole a^9 there is no

danger of splitting the shuttle-body. It will also be seen that by loosening the plate B (by removing the pin C) and disengaging it from the head of the post said post can be
 5 turned or adjusted to a number of different positions, according to the shape of the polygonal head, and when the plate B is again secured in place the post will be rigidly held in its adjusted position. The post D is pro-
 10 vided adjacent to the point where the stem begins with a flattened portion d^2 , forming a shoulder d^3 above the same, beneath which the thread passes, and from this flattened portion an inclined spiral groove d^4 leads up-
 15 wardly half-way around the post and terminates at a point considerably above the shoulder d^3 .

I intend to make my improved shuttles having both left-hand and right-hand deliv-
 20 ery-eyes, and in order to make my post in such form that it can be used with either form of shuttle I provide it with two of such spiral grooves d^4 , which start from opposite sides of the shoulder d^3 and unite or merge on the
 25 opposite side of the shuttle. This saves making one kind of post for one shuttle and another post for the other. As the thread, after the shuttle is threaded, passes through the threading-recess in a horizontal direction, if
 30 the post is turned so that the thread shall simply pass beneath the shoulder d^3 there will be little, if any, tension on the thread. By turning the post, however, so as to force the thread to follow one of the upwardly-in-
 35 clined grooves d^4 the thread will be drawn out of a straight line and a tension will be put on it as it enters, passes through, and leaves the groove, the amount of tension depending upon the position of the post. The
 40 post can therefore be set, as before described, to give any desired amount of tension on the thread, and the device is simple and accurate and cannot get out of order.

E represents a tubular thread-guide which
 45 is placed in the delivery-eye of the shuttle below the vertical threading-slit a^7 , which communicates with the thread-passage below the plate B. It consists of a piece of sheet metal bent into tubular form and having its
 50 edges the one overlapping but separated from the other. The outer side is provided with an aperture e and the inner edge is provided with a curved projection e' , which extends into the aperture e and is bent slightly out-
 55 ward, so that its point is in the curved plane of the outer edge. (See Fig. 7.)

It will be readily seen that if a thread is drawn beneath the overlapping edge it will follow down on the outside of the projection
 60 e' until it passes over its point, when it cannot fly out of the thread-guide again even if the thread should become very slack.

The operation of threading is very quick and simple. The thread is drawn from the
 65 spindle toward the point of the shuttle and passed beneath the lip b^2 of plate B. The thread is then drawn toward the delivery-eye,

which causes it to pass into the thread-pas-
 sage beneath the plate B, slide down the in-
 70 clined face a^4 , strike the downwardly-extending guide-arm b^5 , and pass into the threading-recess and around the tension-post D, at the same time passing down the vertical thread-
 ing-passage E, when the threading is complete. In case the thread should catch in the thread-
 75 ing-recess or there should be a collection of fuzz or lint therein it may be removed or the threading completed by placing the mouth over the blow-hole and blowing or drawing air through it. It is also to be noted that the
 80 tube or thread-guide E is squared at both ends, so that it can be used in shuttles having either left or right hand delivery-eyes.

What I claim, and desire to secure by Letters Patent, is—

1. A shuttle provided with a spindle-recess and a threading-recess forward of and communicating with the spindle-recess, a tension-post in said threading-recess having a stem engaging a recess in the shuttle-body, pro-
 90 vided with an inclined thread-engaging groove and having a polygonal head and projecting portions below said head, and a threading-plate secured to the shuttle-body covering said threading-recess provided with a poly-
 95 gonal aperture to engage the polygonal head of said post, the adjacent portions of said plate engaging the projecting portions of said post below said head and holding the post rigidly in position, substantially as described. 100

2. A shuttle provided with a threading-recess, a tension-post in said recess having an inclined thread-groove therein, said post having a stem engaging an aperture in the shuttle-body, and having a polygonal head, a plate
 105 covering said threading-recess and having a polygonal aperture engaging the polygonal head of said post and means for removably securing said plate to the shuttle-body whereby said post may be adjusted by removing and re-
 110 placing said plate, substantially as described.

3. A shuttle provided with a threading-recess, a delivery-eye at one side of said recess, a tension-post having a portion engaging a recess in the bottom of the threading-recess, said
 115 post being provided with a shoulder adjacent to the bottom of said threading-recess and inclined grooves extending from said shoulder upwardly and meeting at a point above said
 120 shoulder on the opposite side of the post, said post having a polygonal head, and a plate detachably secured to the shuttle-body extending over the threading-recess and having a polygonal aperture fitting the polygonal head of
 125 said post, whereby said post can be used with shuttles having the delivery-eye at either side of the said threading-recess, substantially as described.

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

JEAN BAPTISTE DAUDELIN.

Witnesses:

GUY V. H. SLADE,

EDWARD A. THURSTON.