

P. GAUTHIER.

SHUTTLE.

APPLICATION FILED JAN. 2, 1909.

944,855.

Patented Dec. 28, 1909.

Fig. 1.

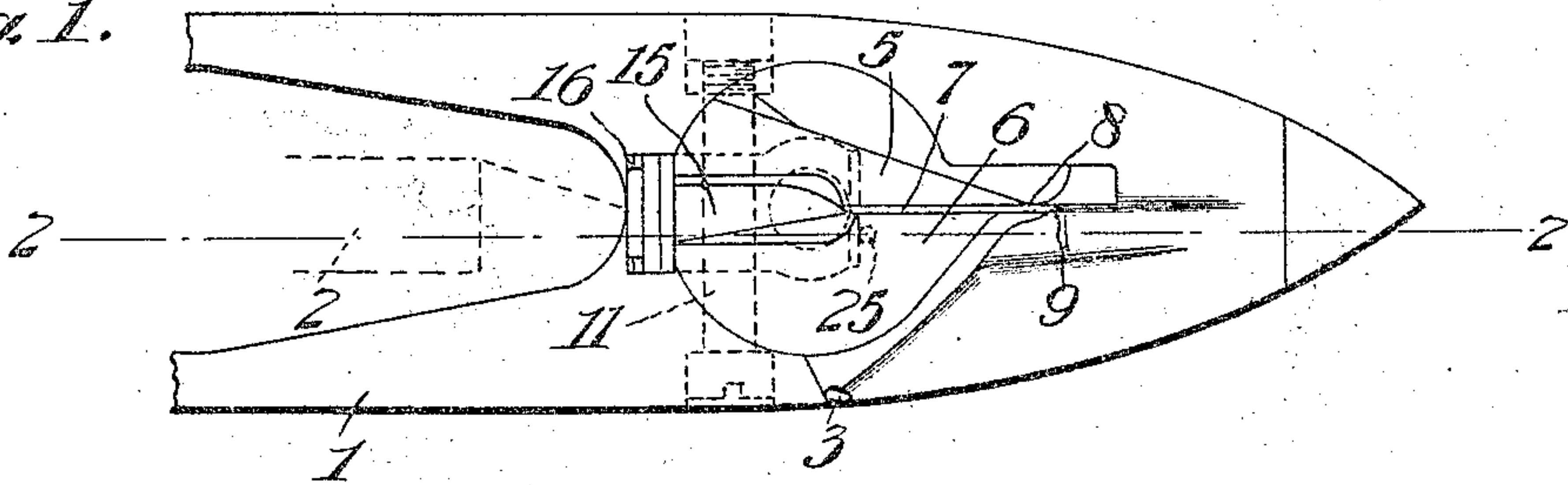


Fig. 2.

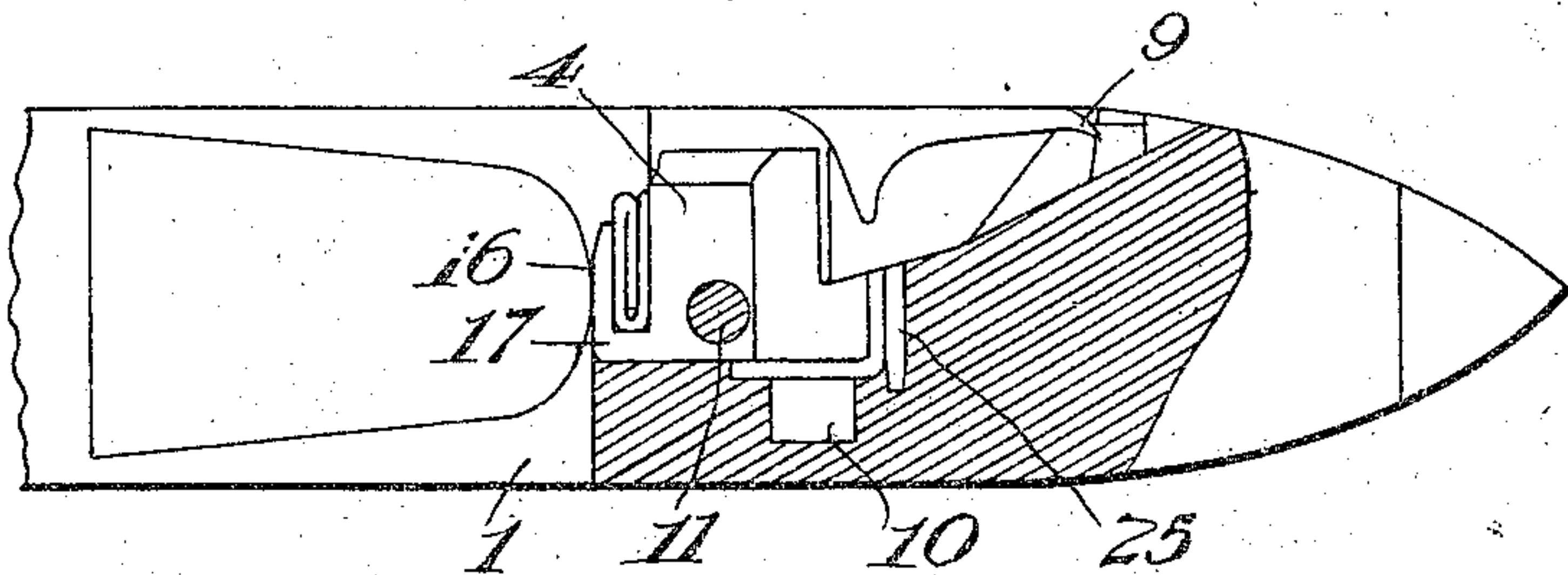


Fig. 3.

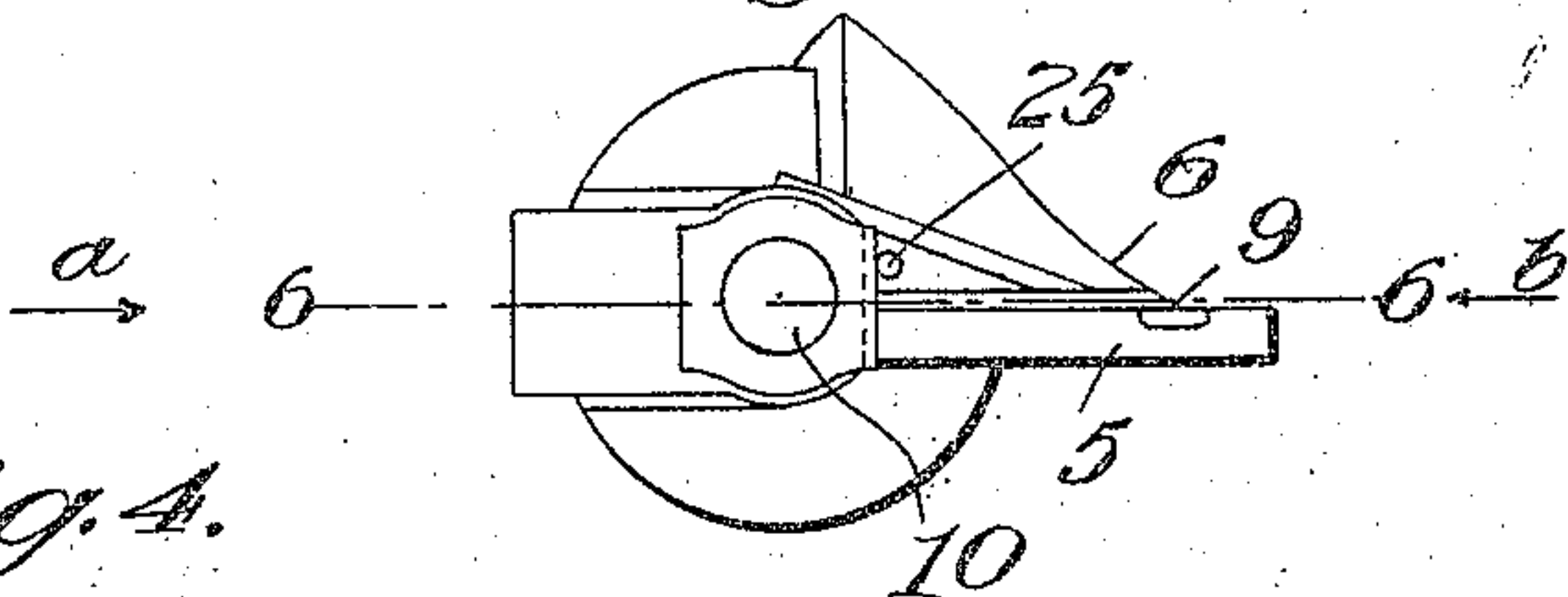


Fig. 4.

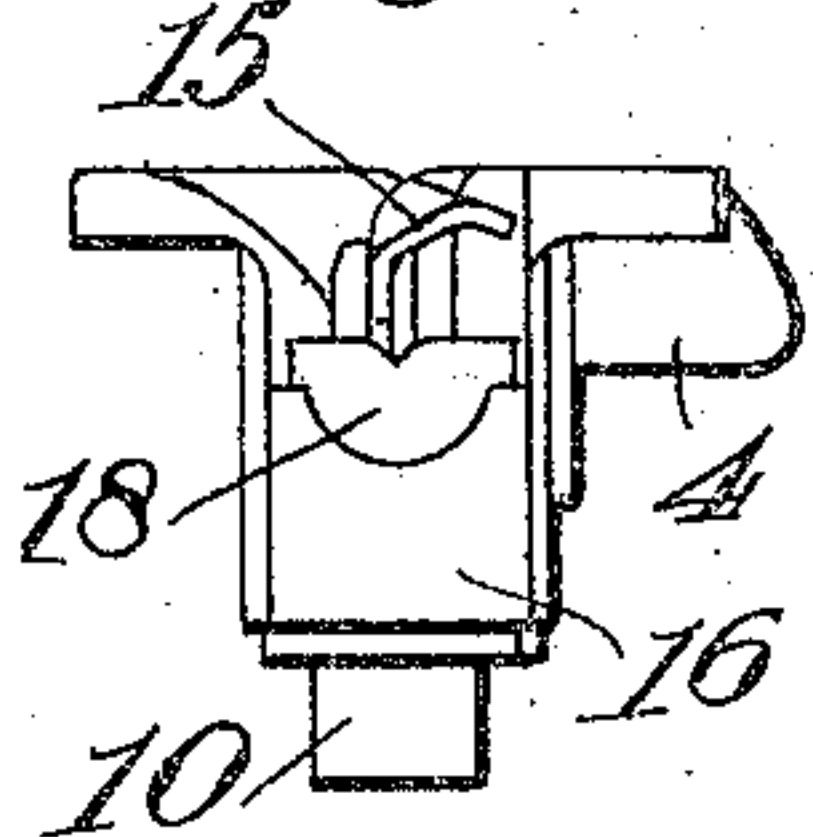


Fig. 5.

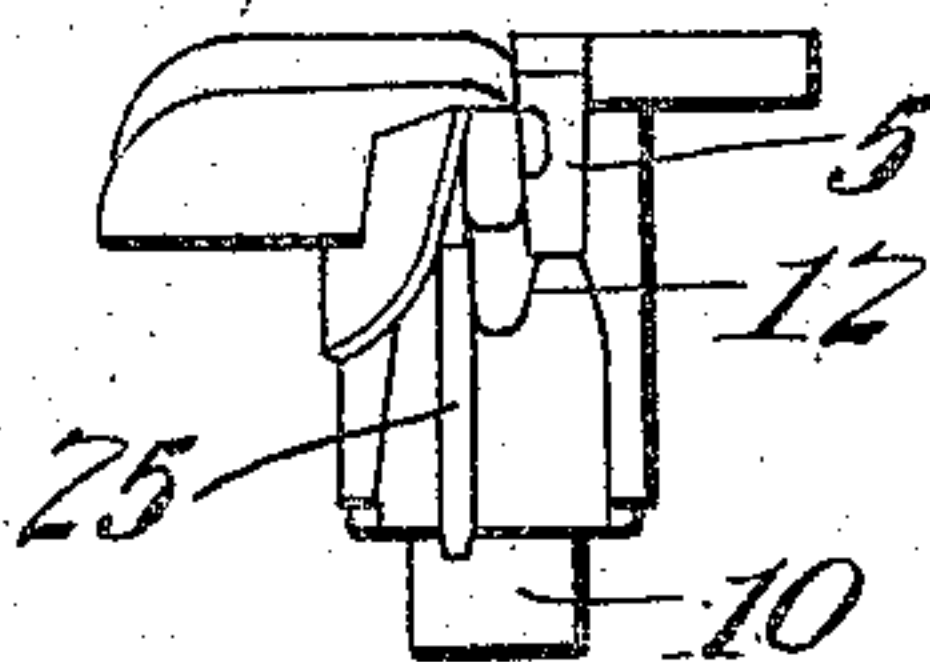


Fig. 6.

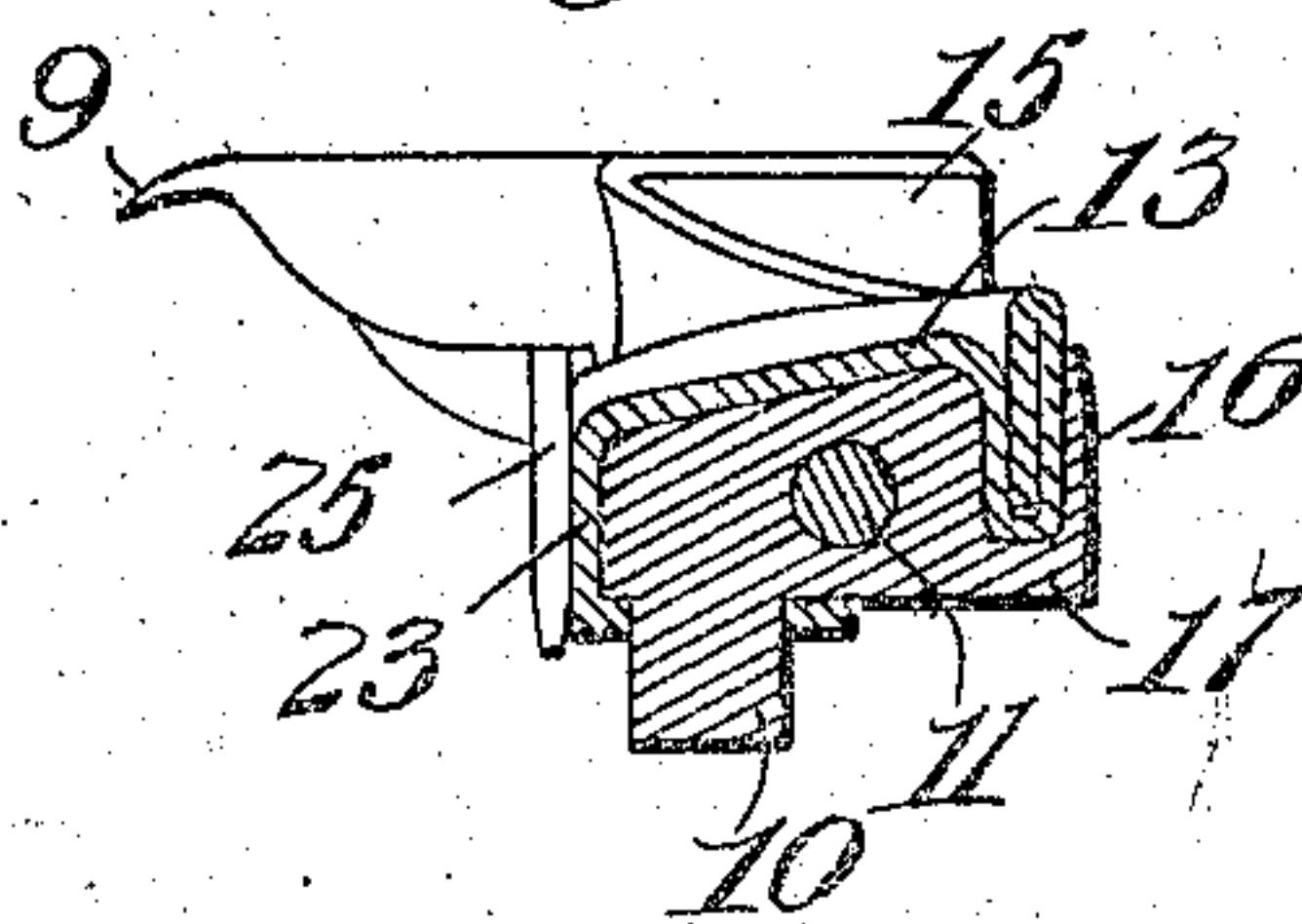
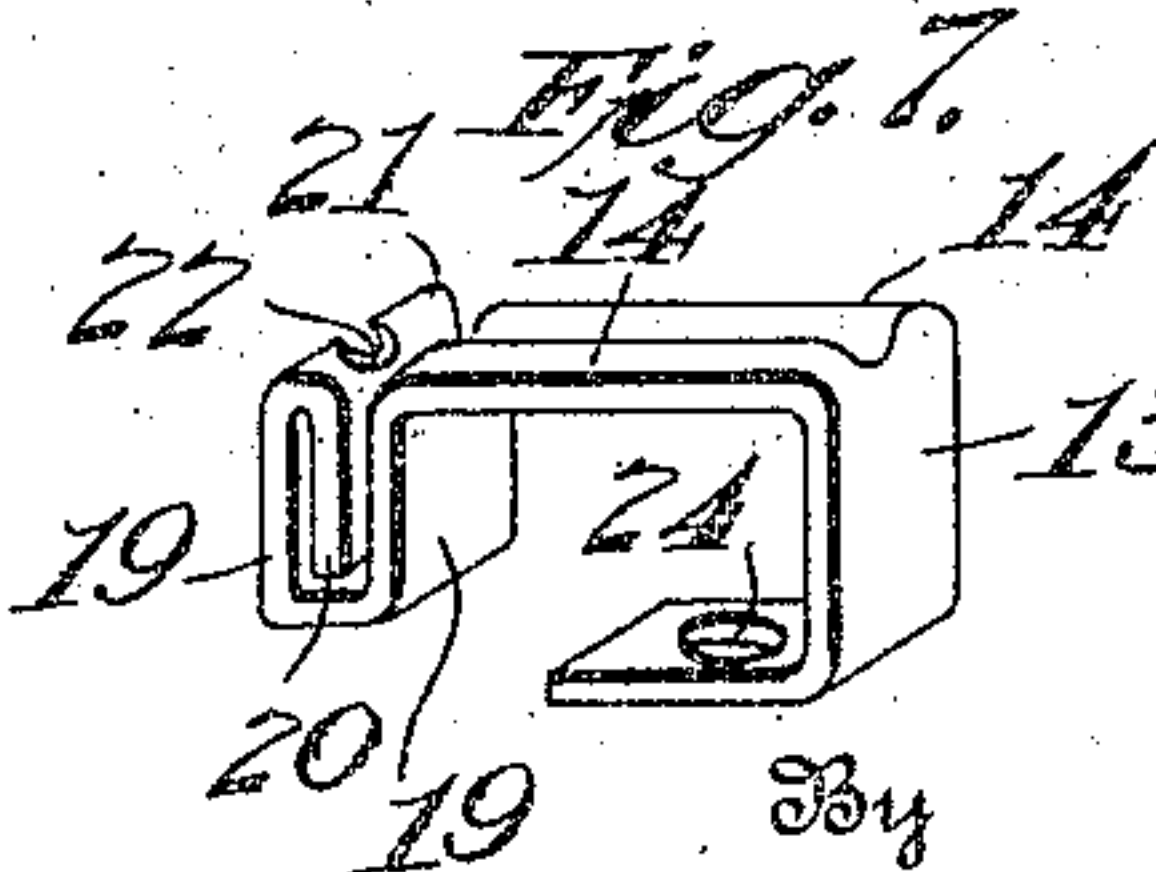


Fig. 7.



Inventor

Philippe Gauthier

Robt. P. Harris

Attorney

Witnesses

T. L. Moench

Edw. A. Duwell

UNITED STATES PATENT OFFICE.

PHILIPPE GAUTHIER, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO WILLIAM F. DRAPER, OF HOPEDALE, MASSACHUSETTS.

SHUTTLE.

944,855.

Specification of Letters Patent. Patented Dec. 28, 1909.

Application filed January 2, 1909. Serial No. 470,474.

To all whom it may concern:

Be it known that I, PHILIPPE GAUTHIER, a subject of the King of Great Britain, residing at Lowell, county of Middlesex, and State of Massachusetts, have invented an Improvement in Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

The invention to be hereinafter described relates to shuttles and more particularly to the tension means employed to control the thread delivery as the shuttle passes through the shed.

The object of the invention is to provide a shuttle with a simple and efficient tension means, which shall maintain deliverable control or uniform tension on the yarn or thread during the flight of the shuttle irrespective of changes in the surrounding conditions of use.

The aims and purposes of the invention will be best made clear from the following description and accompanying drawings of one form or embodiment of the invention which in its true scope is hereinafter definitely pointed out in the claims.

In the drawings:—Figure 1 is a plan view of one end of a shuttle having the present invention associated therewith; Fig. 2 is a central longitudinal section on the line 2—2, Fig. 1; Fig. 3 is a view of the threading block detached from the shuttle and looking at the under portion of the block; Fig. 4 is an end view of the threading block looking in the direction of the arrow, *a*, Fig. 3; Fig. 5 is an end view looking in the direction of the arrow, *b*, Fig. 3; Fig. 6 is a section on the line 6—6, Fig. 3; and Fig. 7 is a perspective view of the fibrous material detached and showing its general form when in position on the threading block.

The shuttle 1 may be of any usual or preferred form and construction to carry a bobbin 2, and is herein shown as of the self-threading type having a thread delivery eye 3.

The threading block may be of usual and well understood construction adapted for au-

tomatically assuming control of the filling, the essentials in this respect, so far as the present invention is concerned, being a thread passage for the guidance of the filling as it passes from the bobbin to the delivery eye and adapted to form a seat for the fibrous tension means, all as will now be more fully explained. The threading block may be preferably made as a single casting 4 having side walls 5 and 6 between which is the threading slot 7, said walls 5 and 6 preferably extending forward to form the cooperating portion 8 and beak 9. The block 4 is supported in a proper seat formed in the shuttle body, and provided with a base pin or stud 10 which engages a recess in the shuttle, as indicated, and a bolt 11 passing through a hole in the block and into the shuttle body secures the threading block in place.

Extending longitudinally of the threading block is the supporting wall 12 for the fibrous tension material 13, Figs. 6 and 7, said wall 12 being preferably trough shaped in cross section, as indicated in Fig. 4, whereby the fibrous strip of material extending along the supporting wall has its side portions turned upward, as at 14, to form, in effect, a fibrous passage-way for the yarn or thread passing from the bobbin to the delivery eye, said supporting wall 12 and the fibrous passage-way being preferably, though not of necessity, inclined downwardly from the rear toward the front of the threading block.

The threading block may have a shield or guard 15 extending along one of its side walls, projecting transversely and downwardly, Figs. 1 and 4, to prevent accidental displacement of the yarn or thread by upward movement thereof from its fibrous passage-way.

As well understood by those skilled in the art the sudden start and stop of the shuttle during weaving is liable to loosen any ordinary holding means for the fibrous tension material, such as screws, bolts, or the like, and one phase of the present invention contemplates holding means for the fibrous material quite free from such objections and which will securely maintain said material

in conformity with the contour of the supporting wall to form a fibrous passage-way for the yarn or thread. To this end the threading block is provided with an upwardly projecting portion 16, Figs. 1, 2, 4 and 6, connected to the threading block by a bridge or wall 17, said portion 16 being recessed at its upper end 18, Fig. 4, in general conformity with the cross-sectional contour of the supporting wall 12, and being separated from the main body of the threading block to form a holding notch into which a portion of the fibrous material extends, as will presently appear.

The fibrous tension material is preferably formed as a strip of felt or the like 13, Fig. 7, which may readily conform to the trough-like contour of the supporting wall 12, and is bent reversely at 19, Fig. 7, with the end 20 disposed between the bends, the construction and arrangement being such that the reversely bent portion and end 20 may be readily forced into the space between the projecting portion 16 and main body of the threading block. At the bend 21, Fig. 7, the fibrous material is provided with removed portion or perforation 22, which, when the material is bent as shown, forms a continuation of the trough-like contour of the fibrous passage-way permitting the yarn or thread, as it comes from the bobbin 2, to assume direction into the bottom of the fibrous passage-way through the block and act, in a measure, as a threading or guiding eye disposed at the rear end of the block. At the exit end of the passage-way the fibrous material is carried down over the front wall 23, Fig. 6, of the block, and near its end portion is provided with a perforation 24 to engage the stud or pin 10, whereby this end of the material is secured.

Projecting down from the threading block 4 at the delivery side of the fibrous passage-way is a guiding pin 25 about which the yarn or thread turns on its way to the delivery eye 3, thereby obviating any wear upon the fibrous material at this point incident to change in direction of travel of the yarn or thread.

From the construction described it will be noted that the fibrous tension material extends from the point of entrance to the point of exit of the yarn or thread through the threading block, and between said points it forms, by its trough-like contour, a fibrous passage-way for the yarn or thread which is thus insured proper tension without liability of being thrown from the influence of the tension material by the action of the shuttle in use.

While the invention has been described as associated with a particular form of threading block, such form of threading block is not essential, and indeed, under proper for-

mation of the shuttle walls, it will be at once apparent that the essentials of the invention may be appropriated in other shuttle structures.

What is claimed is:

1. A shuttle having a threading block provided with a thread passage, and a strip of fibrous material having a trough-like tension surface extending throughout the length of the thread passage.

2. A shuttle having a threading block provided with a thread passage, a strip of fibrous material having a trough-like tension surface extending throughout the length of the thread passage, and means for securing said fibrous material in place.

3. A shuttle having a threading block provided with a thread passage, a strip of fibrous material having a trough-like tension surface extending throughout the length of the thread passage, and means for securing the end portions of said fibrous strips to said block.

4. A shuttle having a threading block provided with a thread passage and a stud or pin, and a strip of fibrous tension material extending throughout the length of said thread passage, one end being connected to the threading block at the threading eye and the other end being secured to said stud or pin.

5. A shuttle having a threading block provided with a thread passage, and a strip of fibrous material extending throughout the length of the thread passage and resting on the supporting wall, the ends of said strip of fibrous material extending beyond the ends of the thread passage.

6. A shuttle having a threading block provided with a thread passage, and a strip of fibrous material extending throughout the length of the thread passage and resting on the supporting wall, the ends of said fibrous strip extending beyond the end portions of the thread passage and being secured to said block.

7. In a loom shuttle, the combination of a threading block having a thread passage and side delivery eye, a strip of fibrous tension material extending throughout the length of the thread passage and having concaved thread tension surface, and means adjacent the opposite ends of the thread passage for securing the strip of fibrous material in place.

8. A shuttle provided with a threading block having a thread passage extending longitudinally thereof, and a strip of fibrous tension material extending along said thread passage, one end of the said fibrous material being secured adjacent the entrance to said thread passage and the other end extending past the exit of said thread passage.

9. A shuttle provided with a threading

block having a thread passage and a recess
adjacent the entrance thereof, a stud or pin
projecting from said threading block, and a
strip of fibrous material having a reversely
bent portion engaging said recess, extending
through the thread passage and secured be-
yond said passage to said stud or pin.

In testimony whereof, I have signed my
name to this specification, in the presence of
two subscribing witnesses.

PHILIPPE GAUTHIER.

Witnesses:

ALBERT O. HAMEL,
IDA C. COURVILLE.