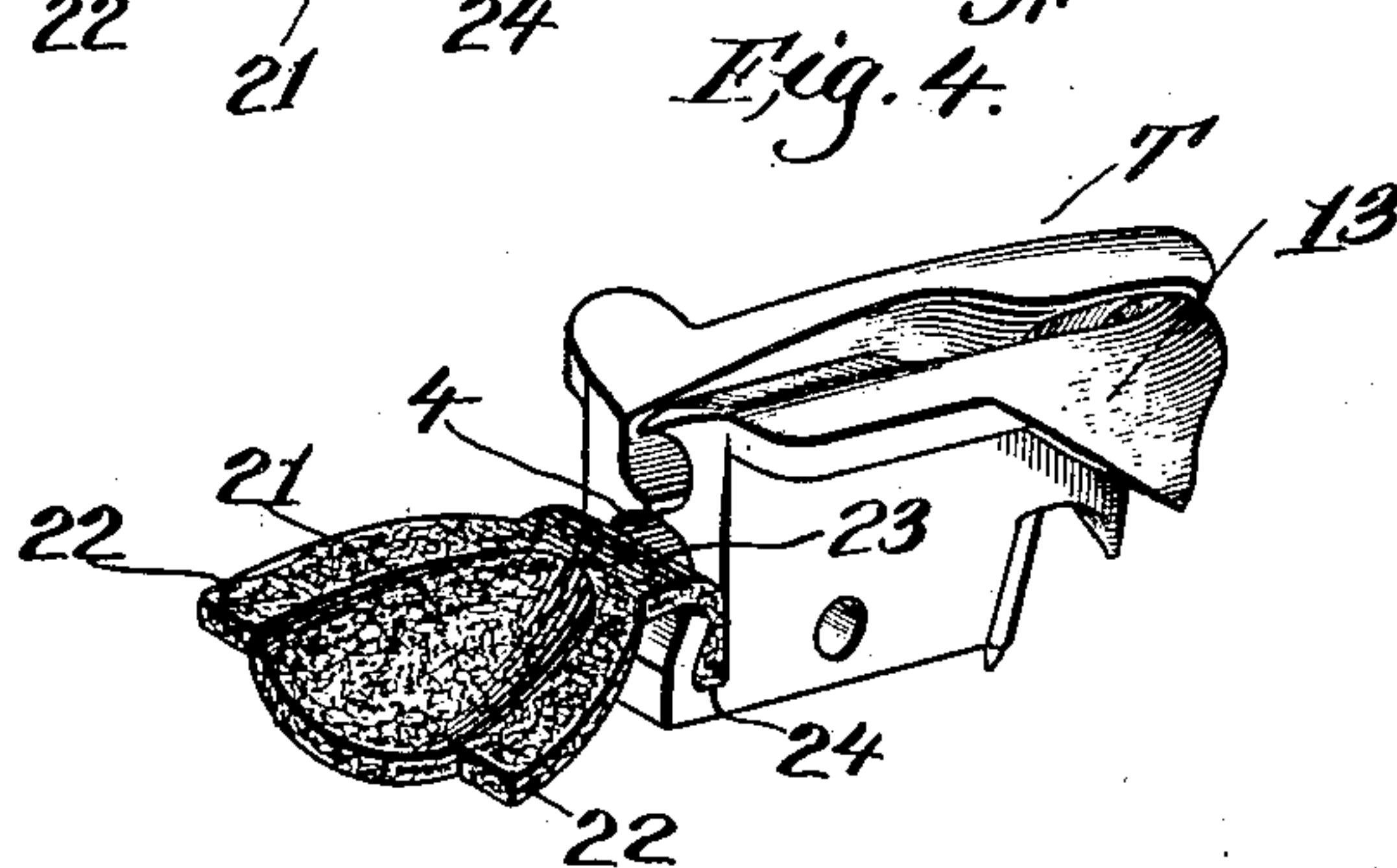
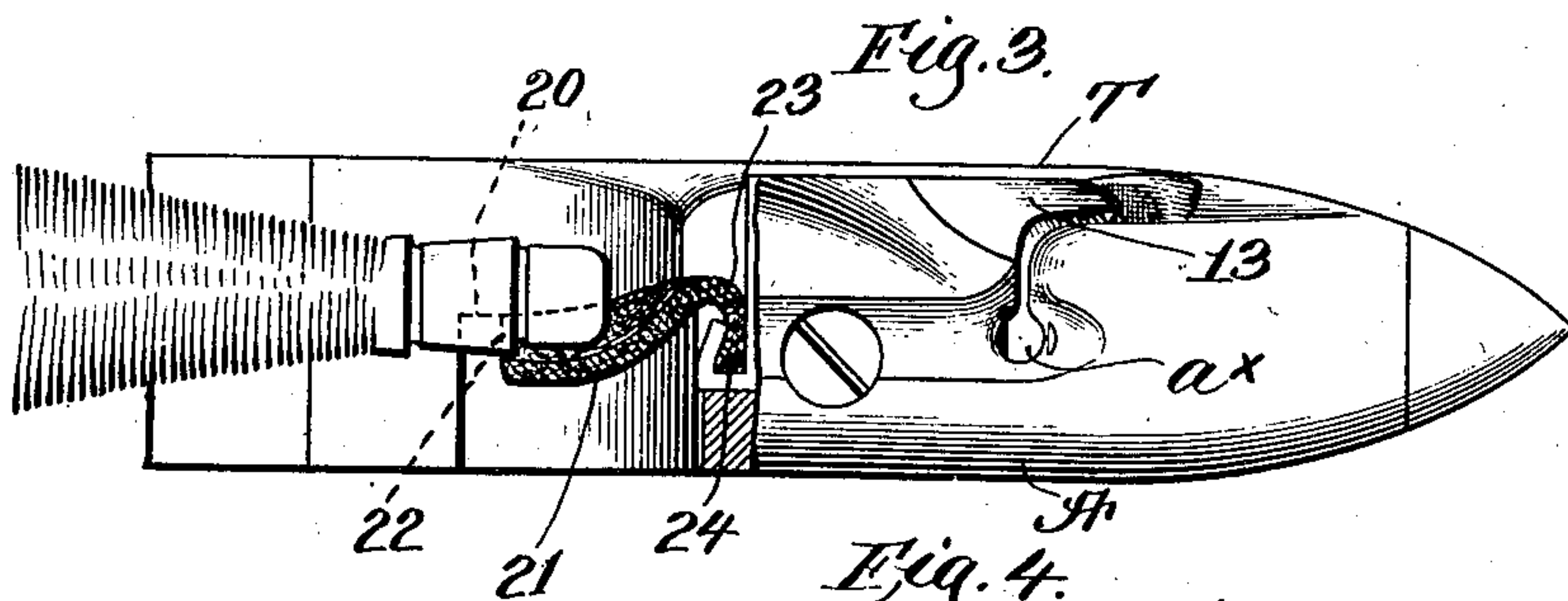
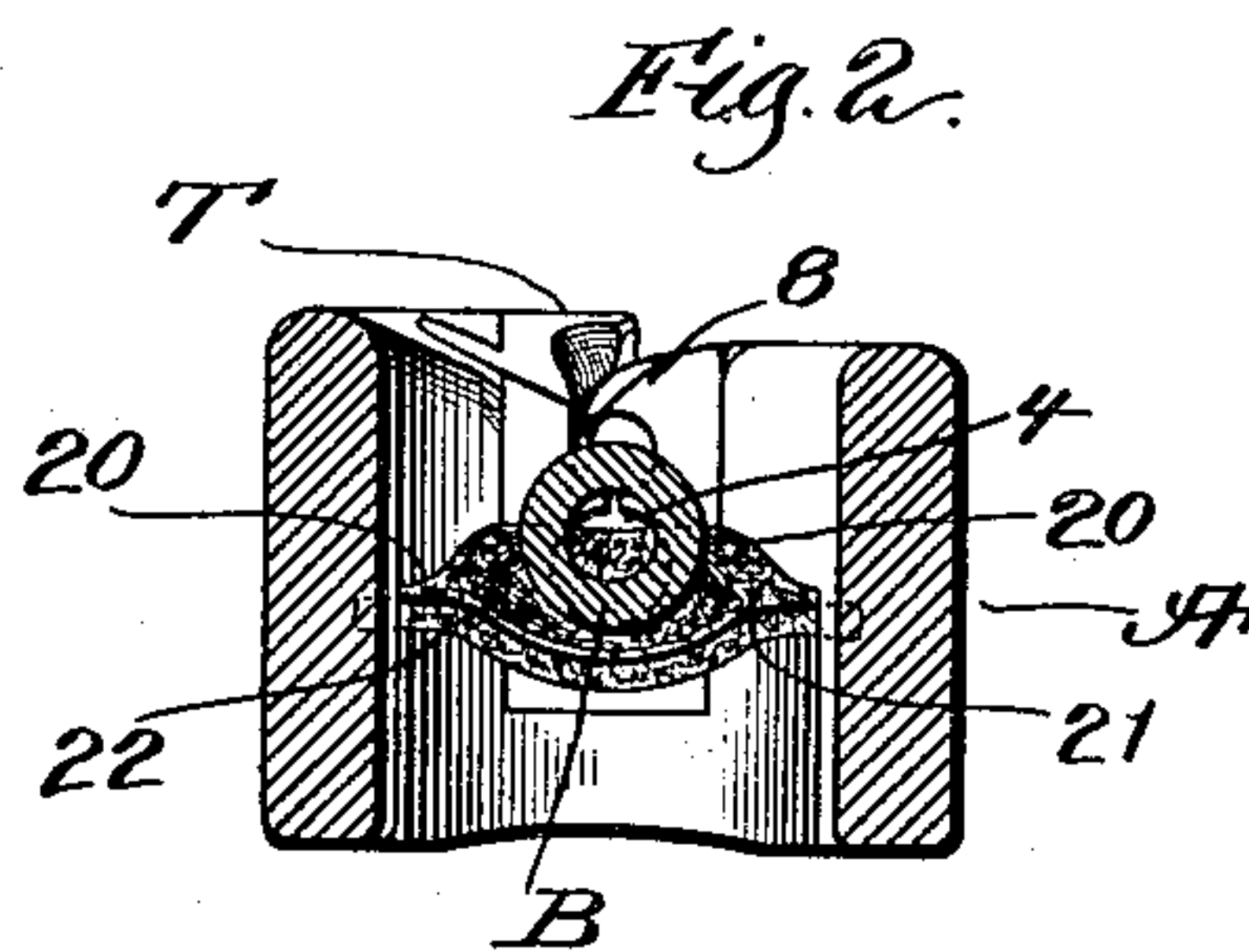
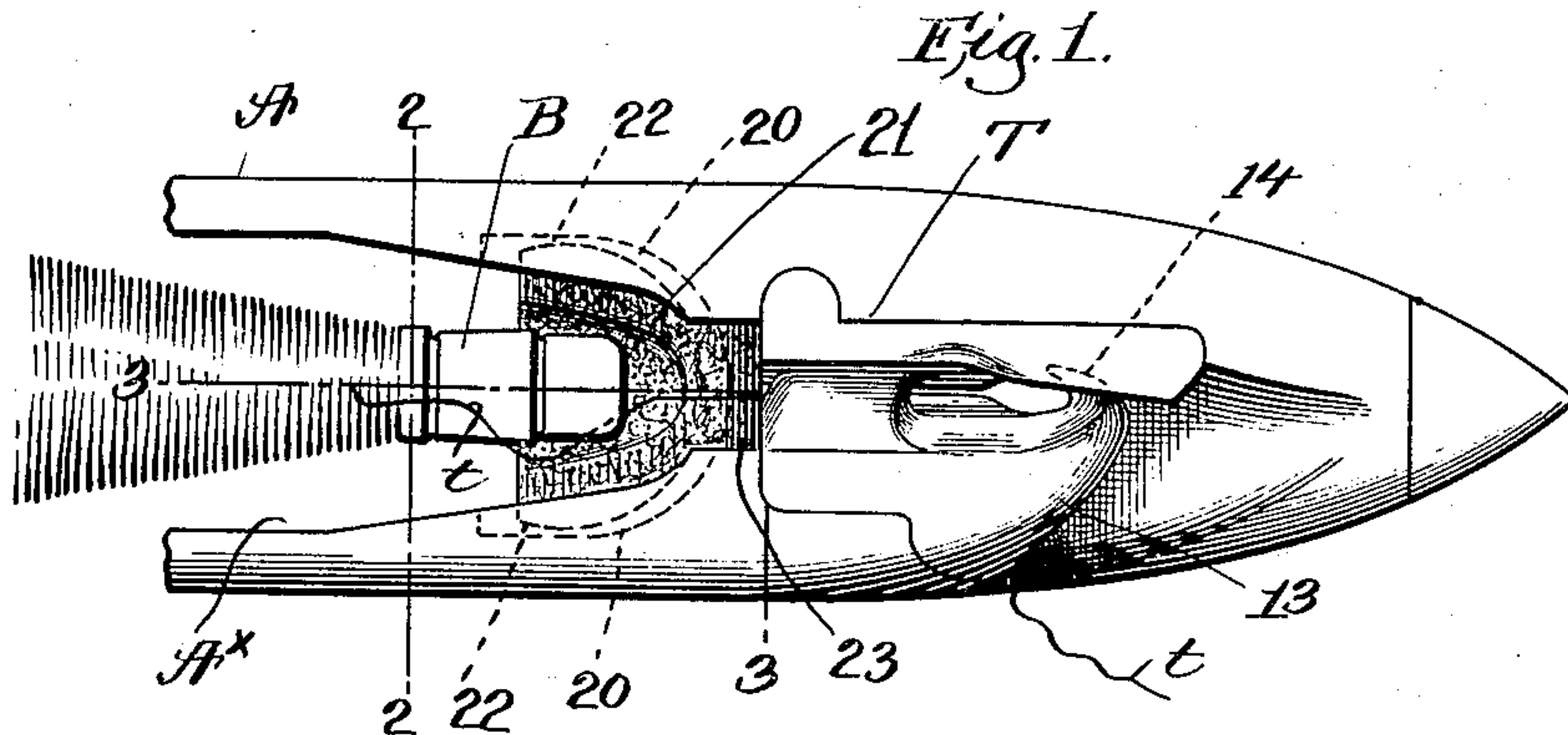


No. 810,669.

PATENTED JAN. 23, 1906.

P. L. PETERSON.  
TENSION DEVICE FOR LOOM SHUTTLES.  
APPLICATION FILED JUNE 7, 1905.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## TENSION DEVICE FOR LOOM-SHUTTLES.

No. 810,669.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed June 7, 1905. Serial No. 264,041.

*To all whom it may concern:*

Be it known that I, PATRIK LEONARD PETERSON, a citizen of the United States, and a resident of North Grosvenor Dale, county of Windham, State of Connecticut, have invented an Improvement in Tension Devices for Loom-Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to loom-shuttles; and it has for its object the production of novel and effective means for exerting tension upon the thread or filling as it passes from the bobbin to the delivery-eye of the shuttle.

Sometimes the thread "balloons" between the bobbin and the thread-passage through which the thread leads to the delivery-eye, and such ballooning tends to throw out and forward a loop of the thread from the tip of the bobbin when the shuttle is boxed. This tends to remove the thread from the thread-passage, and the loop has a tendency to catch on the threading device and break. Such trouble is particularly apt to occur in automatically-self-threading loom-shuttles, the loop catching around the beak of the threading device.

My present invention prevents ballooning of the thread as it passes to the thread-passage, thereby materially diminishing the chances for the throwing out of the thread and formation of loops, and in automatically-self-threading shuttles it aids the threading operation by keeping the thread straight, and thereby causing it to more quickly and accurately cooperate with the threading device.

So, too, my invention obviates the formation of kinks in the thread, thus avoiding trouble with the filling-fork and with thread-cutting devices in looms provided therewith.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a top plan view of the thread-delivery end of a loom-shuttle provided with a tension device embodying one form of my present invention. Fig. 2 is a transverse section thereof on the line 2 2, Fig. 1, looking toward the right. Fig. 3 is a side elevation

and partial longitudinal section on the irregular line 3 3, Fig. 1; and Fig. 4 is a perspective view of the threading device removed with the tension device attached thereto.

I have herein shown my invention applied to a loom-shuttle provided with an automatically-self-threading device—such, for instance, as is shown in United States Patent to Northrop, No. 769,914, dated September 13, 1904—inasmuch as my invention is of very material value in connection with such type of loom-shuttle; but, as will appear hereinafter, my invention is not restricted to such use, as it is of value in other forms of shuttle.

The shuttle-body A, having an opening A<sup>x</sup> for the filling-carrier or bobbin B (partly shown in Fig. 1) and provided with a threading device T at one end of the opening, said device having a thread-passage 4, a beak 14 at its forward end, an overhanging guard 8 at the inner end of and above the thread-passage, and the head 13, which overhangs the delivery-eye a<sup>x</sup> of the shuttle, may be and are all substantially as in the patent referred to.

Referring to Figs. 1, 2, and 3, the inner faces of the side walls of the opening A<sup>x</sup> are cut away to leave opposite overhanging shoulders 20, which extend rearward to a point back of the tip of the bobbin when the latter is in operative position. A tension member 21, tongue-like in general shape, is shown in Fig. 1 as extended rearwardly from and beyond the threading device into the bobbin-receiving opening, said tension member being laterally enlarged at its rear or free end, as at 22, and extended beneath the shoulders 20. (See Figs. 1 and 2.) The forward narrower end or base of the tension member is decreased in width at 23 to fit into the seat 24 of the threading-block at the inner end of the thread-passage 4, the seat 24 being shown in Figs. 4 and 3. The tension member is made of any suitable flexible material, such as felt, having a roughened surface of such a character that it will act as a drag and exert tension upon the thread as the latter passes to the thread-passage, and the textile fabric may be stiffened or strengthened, if desired, in any suitable manner.

It will be manifest that the outer end of the tension member is rigidly held in place, in



the present instance by attachment to the threading device, said member extending rearwardly under the path of the thread between said device and the tip of the bobbin, as shown in Figs. 1 and 3, the inner free end of the tension member projecting past the tip, as shown.

The inner laterally-enlarged end of the tension member is transversely concaved to extend under the bobbin-tip without touching it, (see Fig. 2,) and it is also inclined rearwardly in the direction of its length, as clearly shown in Fig. 3, so that the thread must draw over the narrow portion or base 23 as it enters the thread-passage of the threading device.

As the thread  $t$  leaves the tip end of the bobbin in a spiral it whips over the upper face of the tension member, the tension or drag thus imparted to the whirling thread preventing it from ballooning, and thereby obviating any tendency to throw out or loop over any part of the threading device or to jump out of the thread-passage 4. A long tension-surface is provided extending from the bobbin to the inner end of the threading device and so increasing the tension on the thread that kinks are drawn out and the thread delivered smoothly and cleanly from the shuttle, avoiding fork troubles or trouble with thread-cutters in looms provided with such devices. The resiliency of the tension member retains its inner end up against the overhanging shoulders 20 on the shuttle-body, and when a bobbin is ejected from the shuttle, as in an automatic filling-replenishing loom, the descending tip of the bobbin strikes the concaved inner end of the tension member and momentarily depresses it as the bobbin passes out. Thus no obstacle is offered to the free ejection of the bobbin.

When used in shuttles employed in looms of the type wherein a full bobbin is inserted automatically in the running shuttle, (such a shuttle being herein illustrated,) the filling end is held at the filling-changing side of the loom, while the shuttle with the fresh bobbin is shot across to the opposite side. On such shot the thread is drawn down into the thread-passage of the threading device under the beak, and at such time my novel tension device acts upon the thread to keep it straight between the bobbin and the point whereat it is held, aiding very materially in the threading operation and assisting it to pass into the thread-passage.

My invention is not restricted to the precise construction and arrangement herein shown and described, as the same may be varied or modified in different particulars by those skilled in the art without departing from the spirit and scope of my invention.

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

1. In a loom-shuttle provided with a thread-

ing device, a tension member extended rearwardly from and beyond said device and projecting under the path of the thread to a point past and below the tip of the bobbin.

2. In a loom-shuttle having a bobbin-receiving opening and a threading device at one end thereof, a tension member extended rearwardly from and beyond said threading device, below the path of the thread and laterally widened to extend from one to the other side of the bobbin-receiving opening.

3. In a loom-shuttle provided with a threading device, a flexible tension member of textile material extended rearwardly from and beyond said device and laterally widened, and projecting below the path of the thread to a point past the tip of the bobbin.

4. In a loom-shuttle provided with a threading device, a non-metallic, tongue-like tension member extended rearwardly from and beyond said device and projecting under the path of the thread from the bobbin to the threading device.

5. In a loom-shuttle having a bobbin-receiving opening and a threading device at one end thereof, a flexible tension member located in said opening below the path of the thread between the bobbin and the threading device and having a transversely-concave upper face.

6. In a loom-shuttle having a bobbin-receiving opening and a threading device at one end thereof, a tension member of textile material attached to and extended rearwardly from the threading device into said opening and widened to engage the side walls thereof, said tension member projecting under the path of and to act upon the thread between the bobbin and the threading device.

7. In a loom-shuttle having a bobbin-receiving opening and a threading device at one end thereof containing a thread-passage, opposite overhanging shoulders on the side walls of the opening, and a flexible tension member extended rearwardly from and beyond the inner end of the thread-passage under the path of the thread between the bobbin and said passage and having its side edges extended beneath the overhanging shoulders.

8. In a loom-shuttle having a bobbin-receiving opening and an automatically-self-threading device at one end thereof, a flexible tension member extended rearwardly from and beyond said device and projecting under the path of the thread to a point past the tip of the bobbin, to exert tension upon and prevent ballooning and kinking of the thread and yielding to permit the ejection of the bobbin from the shuttle.

9. In a loom-shuttle having an automatically-self-threading device provided with a thread-passage, a tongue-like tension member of textile material extended rearwardly from the inner end of said passage below the path of the thread, the rear end of said member



being longitudinally and rearwardly inclined and transversely concaved beneath the tip of the bobbin.

5 10. In a loom-shuttle having a bobbin-receiving opening and an automatically-self-threading device at one end thereof, a flexible tension member attached to the inner end of said device and extended rearwardly therefrom  
10 into said opening under the path of the thread and the tip of the bobbin and widened to prevent the thread from catching between the sides of the opening and the edges of the tension member.

15 11. In a loom-shuttle having a bobbin-receiving opening provided at one end with overhanging shoulders on its side walls, and a threading device at the shouldered end of the opening, a flexible tension member fixedly secured at its outer end and rearwardly extended  
20 ed from and beyond the threading device under

the path of the thread leading from the tip of the bobbin, the free inner end of the tension member being widened and extending beneath the overhanging shoulders.

12. In a loom-shuttle provided with a threading device, a flexible, tongue-like tension member fixedly secured at one end adjacent the  
25 threading device, and extended rearwardly therefrom the opposite free end of said member being concaved and projecting under the  
30 tip of the bobbin and below the path of the thread passing therefrom to the threading device.

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

PATRIK LEONARD PETERSON.

Witnesses:

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JOHN A. LAMB.