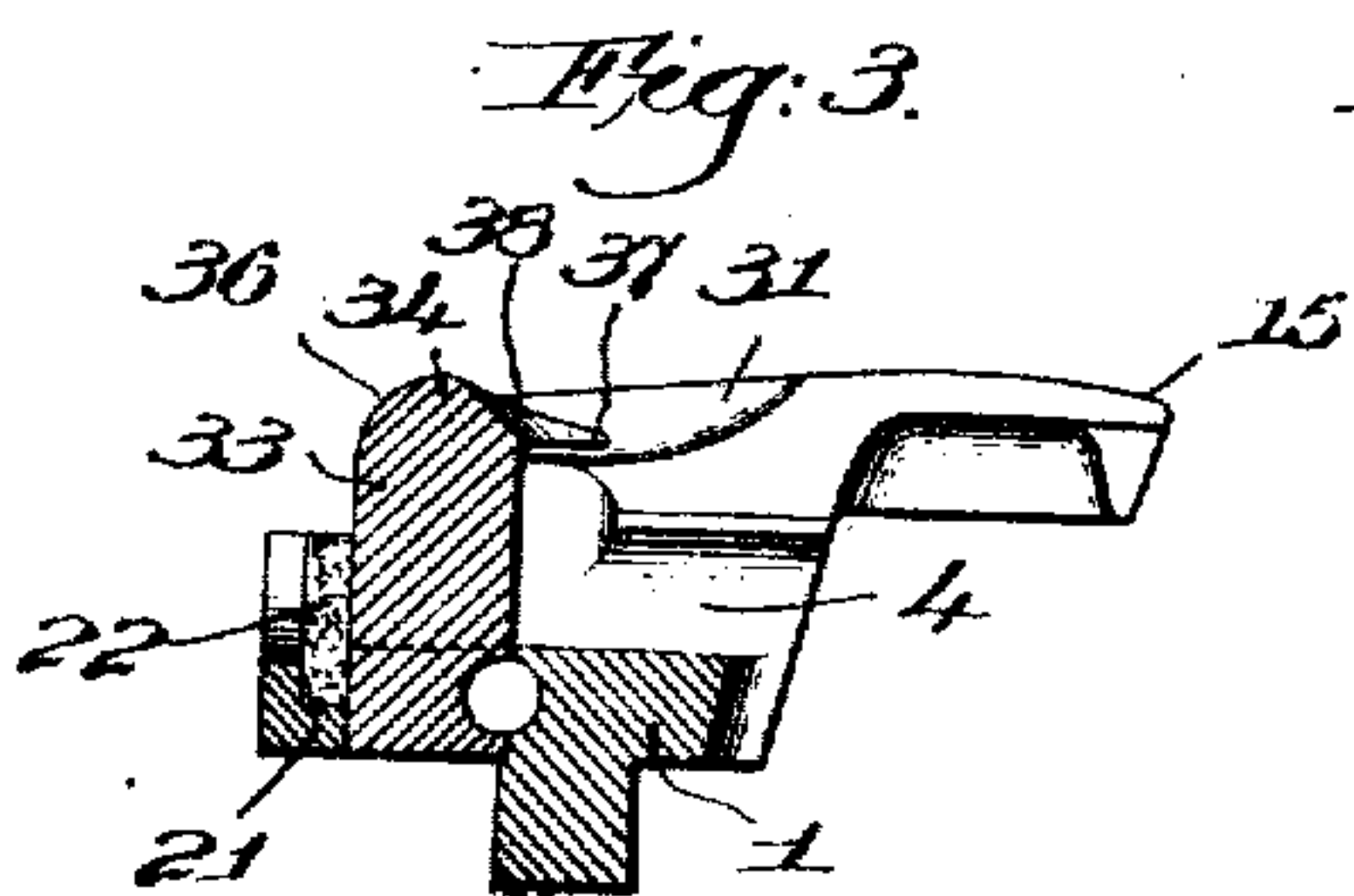
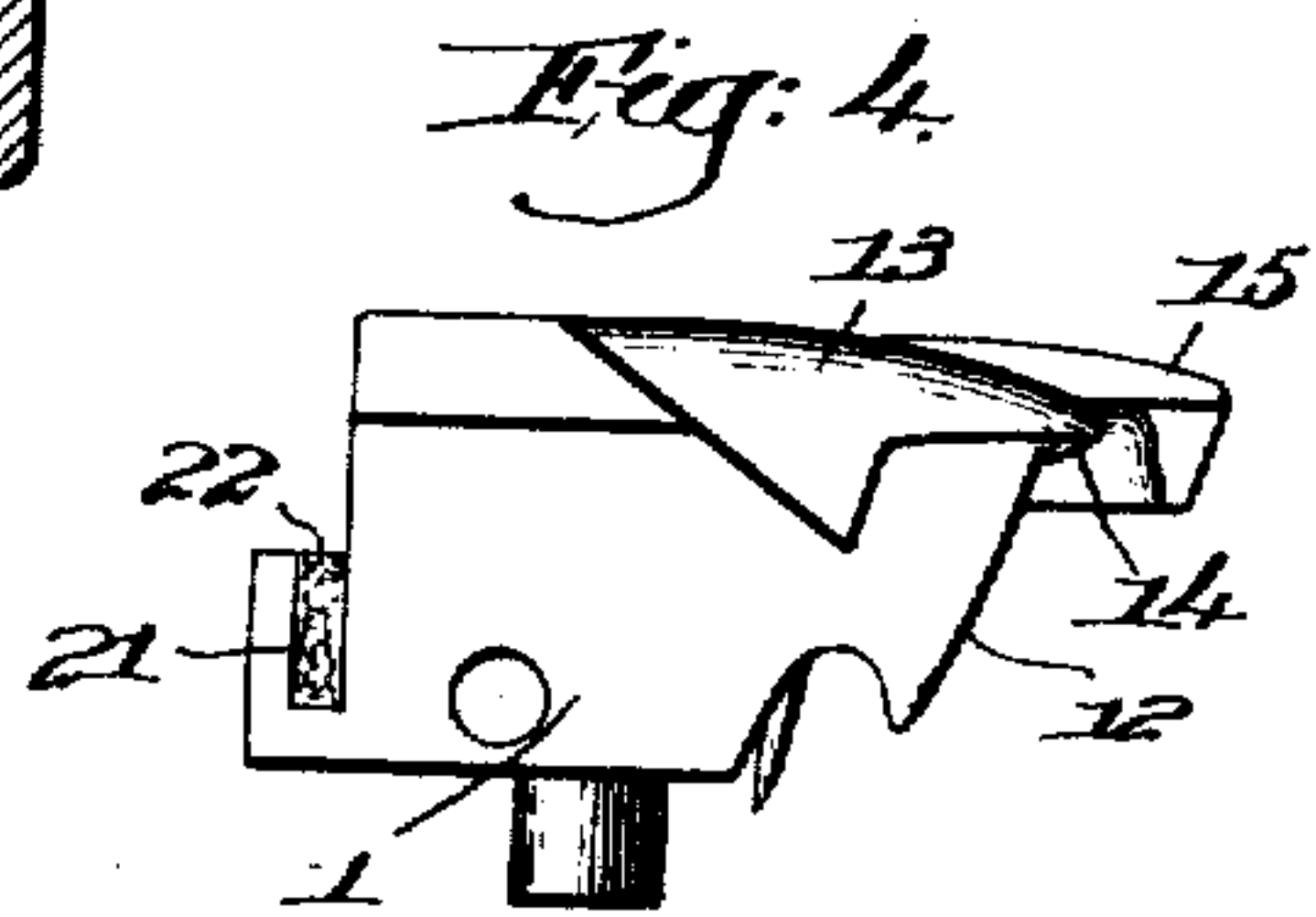
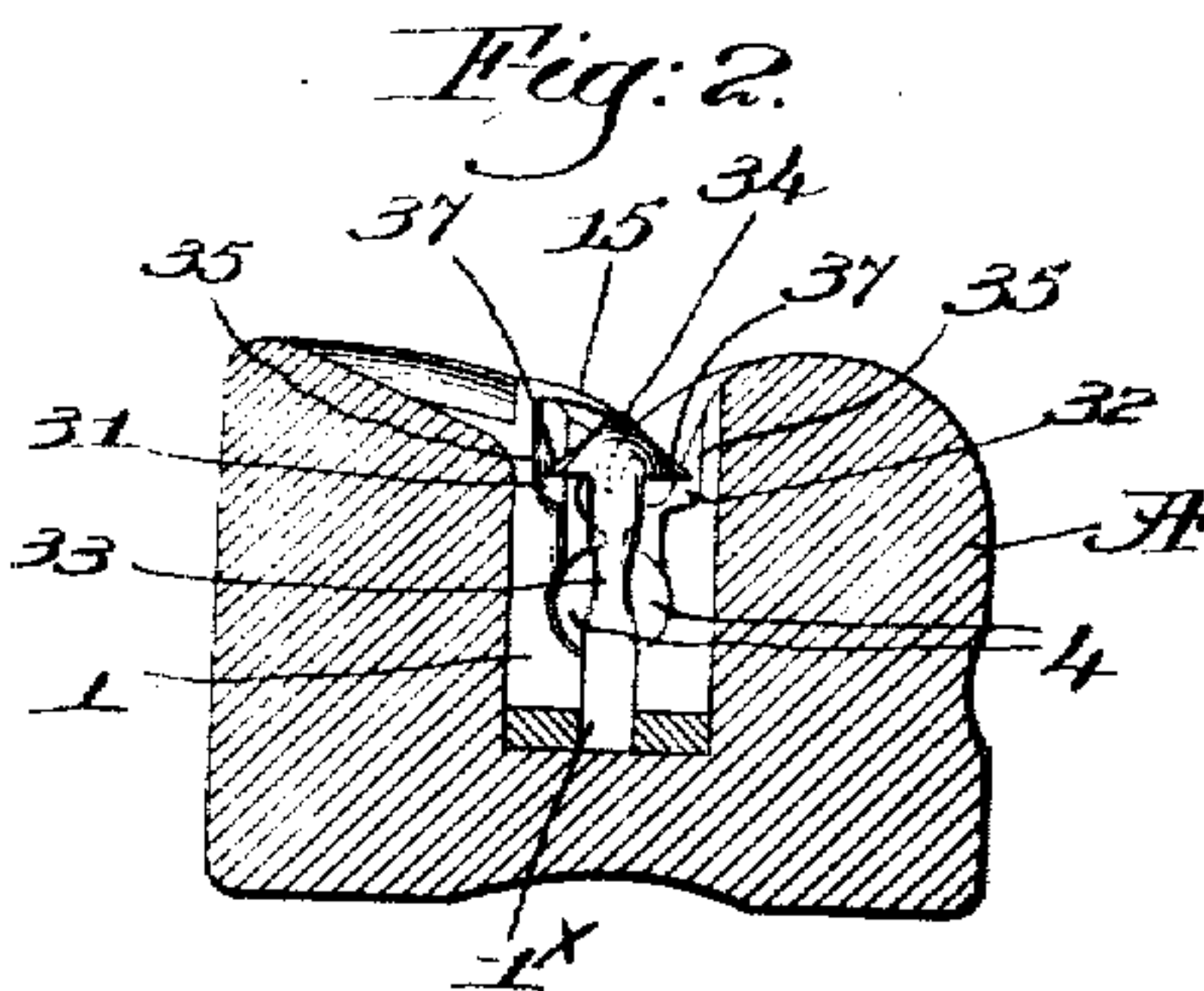
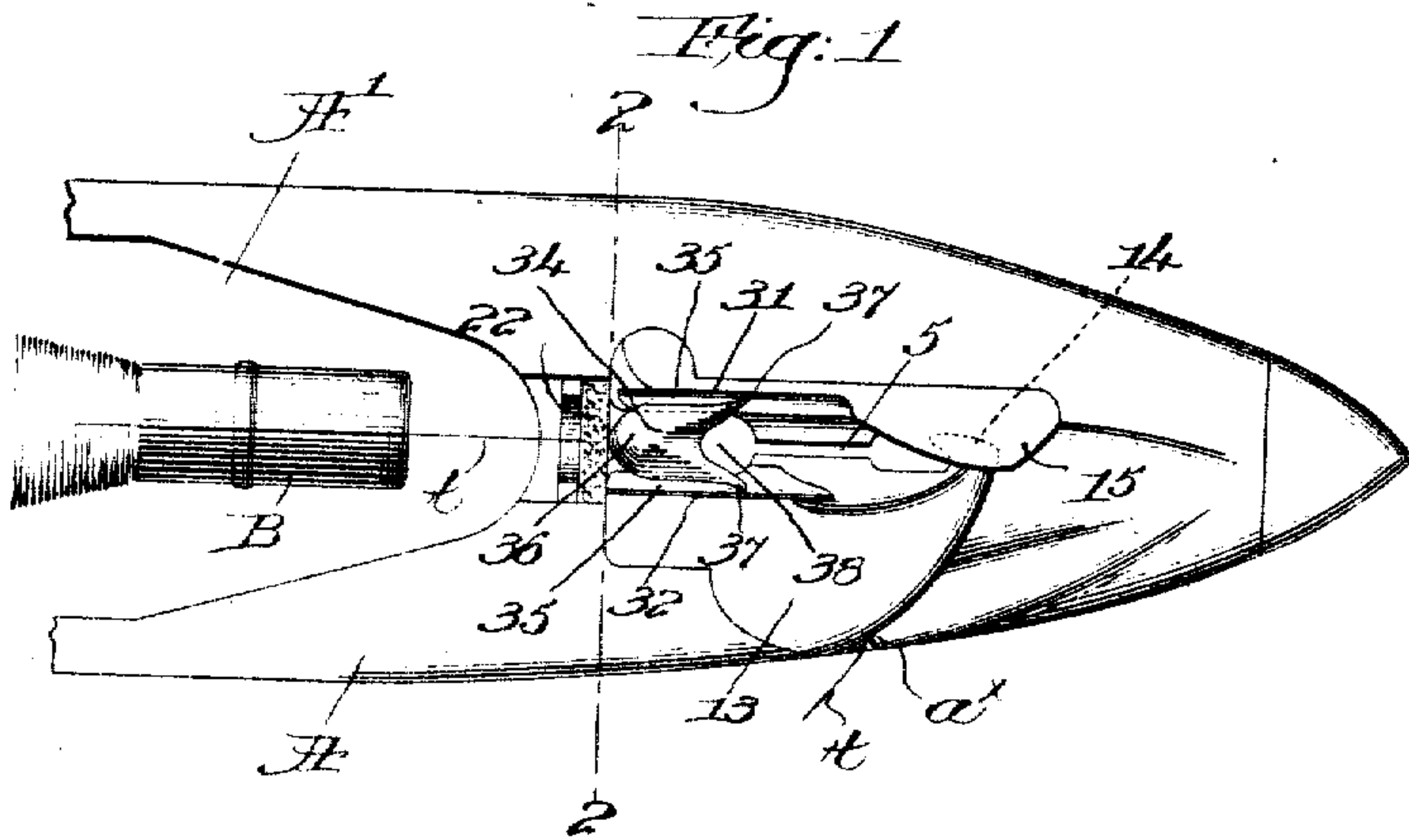


A. W. BEARDSSELL.
 AUTOMATICALLY THREADING LOOM SHUTTLE.
 APPLICATION FILED NOV. 12, 1908.

929,817.

Patented Aug 3, 1909.



Witnesses,
 Edward G. Allen,
 Joseph M. Ward.

Inventor:
 Arthur W. Beardsell,
 by Lemby Ferguson.
Atty

UNITED STATES PATENT OFFICE.

ARTHUR W. BEARDSSELL, OF MILFORD, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY,
OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

AUTOMATICALLY-THREADING LOOM-SHUTTLE.

No. 929,817.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed November 12, 1905. Serial No. 462,190.

To all whom it may concern:

Be it known that I, ARTHUR W. BEARDSSELL, a citizen of the United States, and resident of Milford, county of Worcester, State of Massachusetts, have invented an Improvement in Automatically-Threading Loom-Shuttles, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

Filling yarn is spun on bobbins with either a right or a left hand wind, and consequently the yarn unwinds from the bobbin in the shuttle in the opposite direction when the shuttle is operating in a loom, the yarn whirling around to the right or to the left as it draws off over the tip of the bobbin to be delivered from the eye of the shuttle.

In automatically threading shuttles, wherein the bobbin is inserted while the loom is in motion, the threading device which assumes control of and automatically directs the thread of an incoming bobbin to the delivery-eye of the shuttle must be adapted to the particular wind of the yarn on the bobbins used. That is, if the wind is right-handed the threading device must be so arranged that the yarn as it whirls around in drawing off will readily pass into the entrance to the thread passage from which it is led to the delivery-eye, but if the wind is left-handed the threading device must be changed at the entrance of the thread passage, to correspond. Such necessity requires the provision of both kinds of threading devices, so that when shuttles are supplied to a mill the particular wind of yarn on the bobbins used will be properly taken care of by the means whereby the automatic threading of the shuttles is effected.

My present invention has for its object the production of an automatically threading shuttle so constructed and arranged that it will operate properly with filling of either right or left hand wind.

I have shown my invention in connection with a threading device similar in its general features to that shown in United States Patent No. 76,314 granted to Northrop September 13, 1904 but while that device can be used with only one wind mine can be used with either wind, as will appear more fully hereinafter.

The various novel features of my inven-

tion 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-delivering end of an automatically threaded loom shuttle embodying one form of my present invention; Fig. 2 is a transverse section on the line 2—2, Fig. 1, looking toward the right; Fig. 3 is a side elevation and part central longitudinal section of the threading device or block, removed from the shuttle; Fig. 4 is a side elevation of the threading device.

The shuttle-body A, having a bobbin-receiving opening A' and provided with suitable bobbin-holding means (not herein shown) and the side delivery-eye α , Fig. 1, are and may be all of well known construction, and herein I have shown the threading device or block as provided in its base 1 with a tubular thread passage 4 having an elongated inlet slit 5 in its top at its outer end.

The head 13 surmounting the usual horn 12, Fig. 4, is prolonged to form a beak 14, Fig. 1, which extends above and across the front open end of the thread passage, and is overlapped by a shield 15 on the opposite side wall of the block, as in the Northrop patent, the opposed faces of the side walls converging downward to the edges of the inlet slit 5, and said faces longitudinally recessed, as at 31, 32, the recesses extending substantially to the rear end of the thread passage 4, and above the same.

In accordance with my present invention the inner or entrance end of the thread passage 4 is divided by an upright, central and relatively thin partition 38, which in practice is fitted into a slot 1*, Fig. 2, in the base 1 of the block, and rigidly secured therein in any suitable manner, said partition being surmounted by a thread-director shown as a laterally extended head 34 having its longitudinal edges overhanging the bottoms of the recesses 31, 32, Figs. 1 and 2, and closely approaching the upright walls thereof, to form two narrow and elongated thread-entrances 35.

The head is convexed or rounded at its inner end, at 36, and at its other, outer end is V-shaped to form forwardly extended and divergent prolongations or fingers 37, the tip of each finger extending quite close to the upright wall of the adjacent recess 31 or

32, and acting as a guard for the adjacent thread-entrance 35.

It will be seen, Figs. 1 and 2, that two narrow thread-entrances to the thread passage 4 are provided, one at each side of the partition 33, and it will also be seen that the thread-director or head 34 has oppositely sloping faces leading from its highest part in each direction to one of the thread-entrances 35, Figs. 1 and 2, the V-shaped notch 38 between the fingers being rounded, as shown in Fig. 1.

By the construction described the thread passage is provided with two narrow, elongated entrances for the filling thread, one at each side of the thread-director and the partition 33, and in the threading operation the whirling thread as it draws off over the tip of the bobbin B, Fig. 1, will be thrown to one or the other side of said director, according to the winding of the yarn on the bobbin. As the thread whirls around it is directed by a sloping face of the thread-director into one or the other thread-entrance 35, the thread being drawn under the adjacent finger 37 and passing downward by one or the other of the recesses 31, 32, as the case may be into the thread passage 4, the finger then acting as a guard, in connection with the overhang of the head 34, to prevent withdrawal of the thread after it has once passed through a thread-entrance. This is effected on the first shot of the shuttle after filling replenishment, or to the left, Fig. 1, and the thread is ordinarily drawn under the shield 15 and beneath the hook-like beak 14, and then down through the slit 5 into the thread passage, so that on the next shot, to the right, the thread is directed by the horn 12 into the delivery-eye α , completing the threading, substantially as in the Northrop patent referred to. The thread may fail to be drawn beneath the shield 15 and under the beak 14 on the first shot of the shuttle after replenishment, but in such event the thread will still be delivered uninterruptedly and properly from the shuttle independently of the delivery-eye thereof. After the thread has passed through a thread-entrance 35 and under the adjacent finger 37 it can draw off around or over the edge of the V-shaped notch 38, either across the forward part of the head 13 if the shuttle is moving to the left, Fig. 1, or across the thread-director 34 and a finger if the shuttle is moving to the right. When the thread is drawn down through either thread-entrance 35 into the inner end of the thread passage the thread passes through the narrow inlet slit 5 into the outer or forward part of the passage, from which it can not thereafter escape accidentally.

Viewing Fig. 2, if the thread unwinds from left to right its rotative movement

will cause it to be shed from the thread-director into the right hand thread-entrance 35, and down through it into the inner end of the thread passage at the right hand side of the partition 33, and the continued whirling or rotative movement of the thread tends to keep it in that part of the passage, the overhang of the thread-director and the finger 37 at that side positively preventing withdrawal of the thread. If the thread unwinds from right to left it will, in a similar manner be directed through the left-hand thread-entrance 35 into the passage 4 at the left of the partition 33. The thread passage is duplex at its inner end, as will be obvious, by reason of the interposed partition 33, but at its outer end nearer the delivery-eye it is single and tube-like, as in the patent to Northrop. At the inner end of the thread-block a seat 21 is provided, to receive a piece of felt 22 to act as a tension device for the thread t , shown only in Fig. 1, but in actual practice the sub-division of the inner end of the thread passage and consequent constriction of the two parts acts also with a retarding effect upon the thread.

The construction of the threading device or block, outside of the novel features of my present invention, may be varied, and so too the details of construction and arrangement of the novel features hereinbefore described may be varied or modified by those skilled in the art without departing from the spirit and scope of my invention as set forth in the annexed claims.

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

1. An automatically threading loom-shuttle provided with a delivery-eye and with a longitudinal thread passage having two elongated, narrow thread-entrances at its inner end, and means to automatically direct the filling-thread through one or the other entrance into the passage, according to the rotative movement of the thread as it is drawn off from the thread-supply; and two fixed and diverging prolongations on said means adjacent the thread entrances and extended toward the delivery end of the shuttle and around either of which the thread may draw to be delivered, each prolongation preventing withdrawal of the thread from the adjacent thread-entrance.

2. An automatically threading loom-shuttle provided with a delivery-eye and a thread-passage with two separate, narrow thread-entrances at its inner end, and having means to direct the filling-thread into the passage and thence to the delivery-eye, said means including a thread-director having oppositely sloping faces leading to the two thread-entrances respectively, to direct the thread into one or the other according to the direction of rotation of the thread as

it draws off from the thread-supply, and a fixed leader from which the thread may draw uninterruptedly and independently of the delivery-eye after it has passed through either thread-entrance.

5 3. An automatically threading loom-shuttle provided with a delivery-eye and a thread-passage with two separate, narrow thread-entrances at its inner end, and having means to direct the filling-thread into the passage and thence to the delivery-eye, said means including a thread-director having oppositely sloping faces leading to the two thread-entrances respectively, to direct the thread into one or the other according to the direction of rotation of the thread as it draws off from the thread-supply, the

thread-director being V-shaped at its forward end to form two diverging fingers and constitute a leader from which the thread may draw uninterruptedly and independently of the delivery-eye after it has passed through either thread-entrance, each finger serving to prevent withdrawal of the thread from a thread-entrance after it has passed therethrough.

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

ARTHUR W. BEARDSSELL.

Witnesses:

EDWARD DANA OSGOOD,
ALBERT W. EDWARDS.