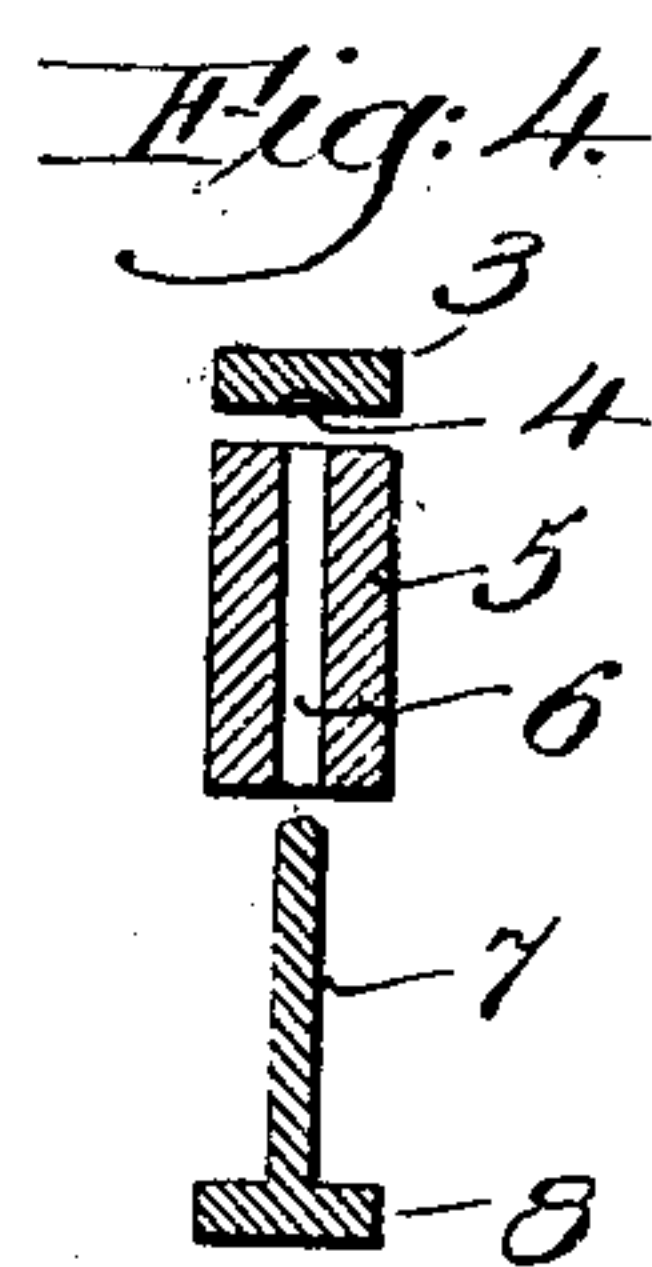
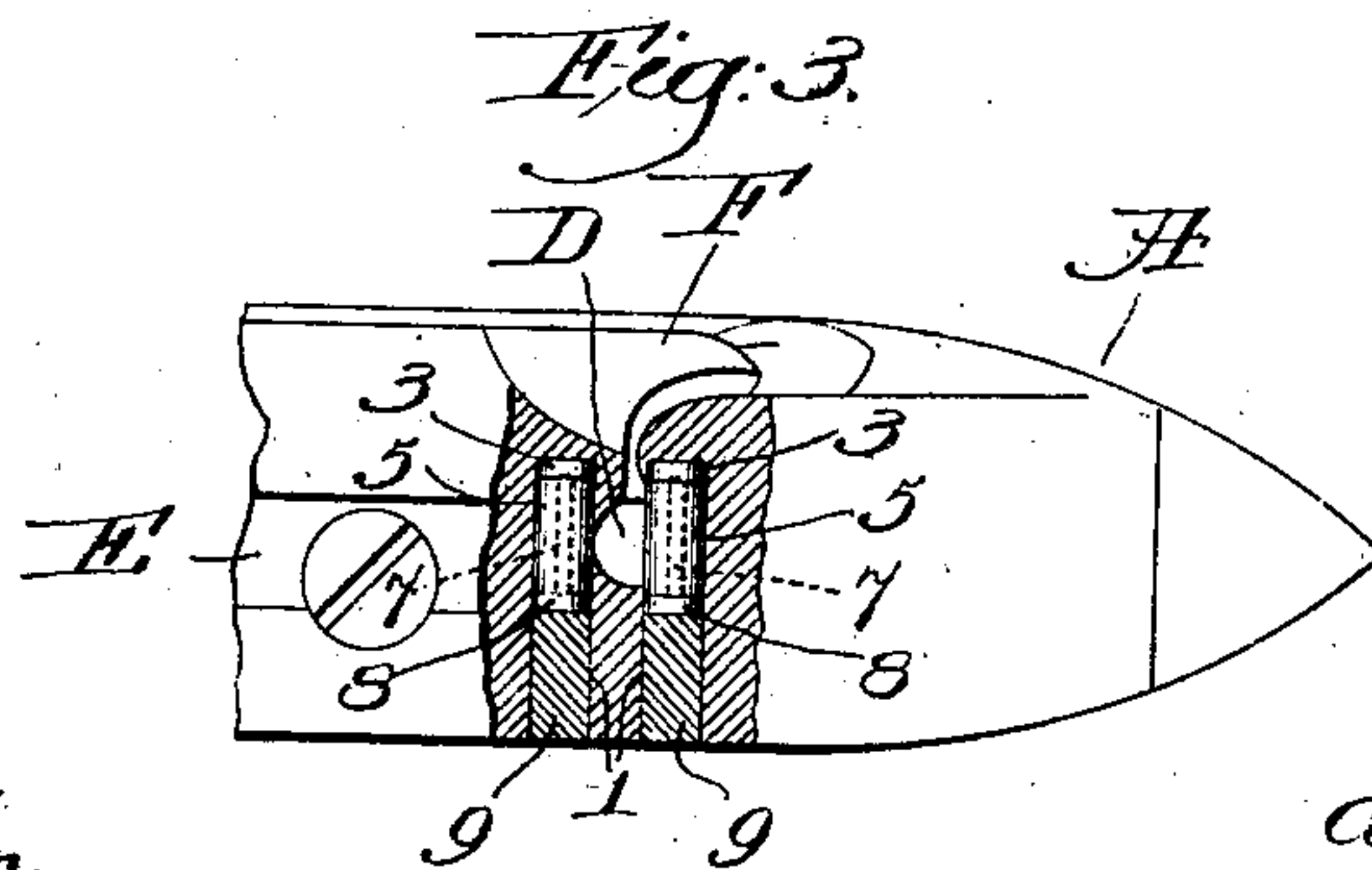
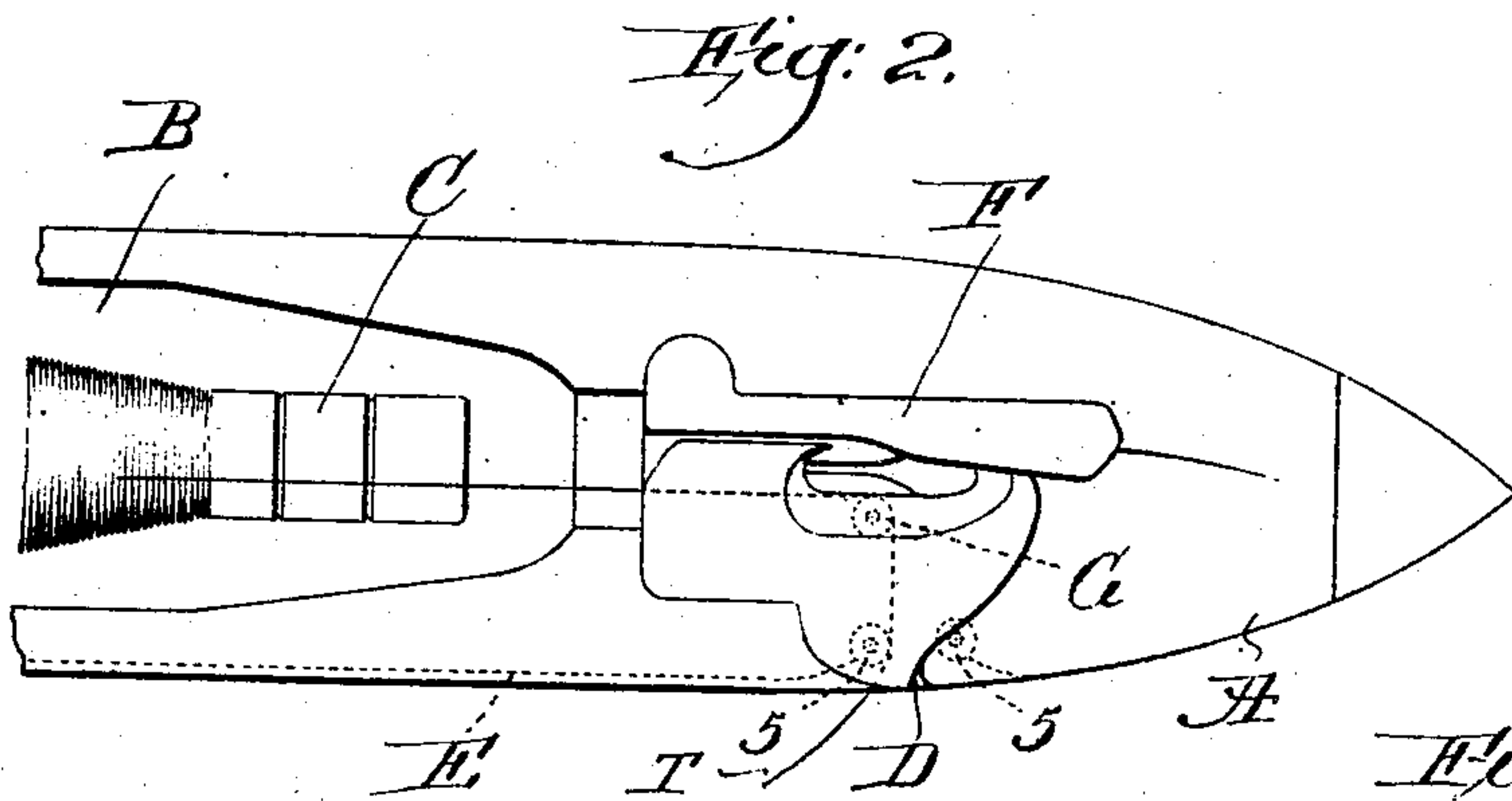
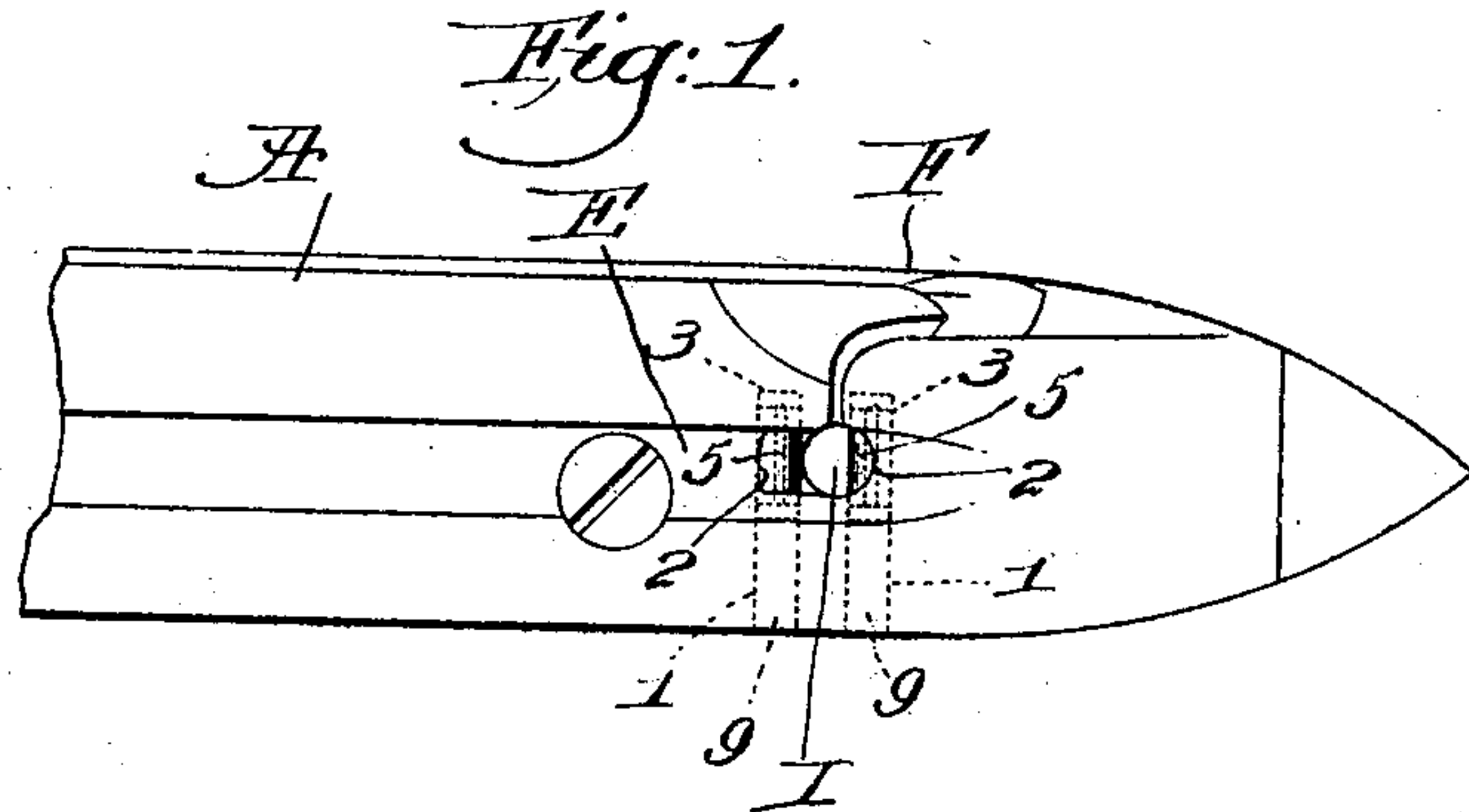


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LOOM SHUTTLE.  
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968,647.

Patented Aug. 30, 1910.



Witnesses,  
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# UNITED STATES PATENT OFFICE.

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## LOOM-SHUTTLE.

968,647.

Specification of Letters Patent.

Patented Aug. 30, 1910.

Application filed February 23, 1910. Serial No. 546,276.

*To all whom it may concern:*

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

This invention relates to loom shuttles wherein the filling thread is led from the filling-carrier or bobbin to a delivery-eye through which the thread passes to be delivered, and it has for its object the production of novel guiding means to cooperate with the thread as it is delivered from the eye.

My invention is more particularly adapted for use in automatically threading shuttles, wherein the delivery-eye is made open or slitted for the passage of the thread thereinto as it is directed to the eye by suitable means.

In my present invention I mount rotatable guides at opposite sides of the delivery-eye of the shuttle, the friction of the thread as it draws over such a guide rotating it and so reducing friction that all cutting, scoring, or other roughening of the guide is eliminated, and I have provided novel means for mounting the guides in the shuttle.

Figure 1 is a side elevation of the delivery end of a loom shuttle with one practical embodiment of my present invention applied thereto; Fig. 2 is a top plan view of the shuttle illustrated in Fig. 1; Fig. 3 is a view similar to Fig. 1 but with a portion of the shuttle-wood broken out to show the rotatable thread-guides and the means for supporting the same in operative position; Fig. 4 is an enlarged detail in section of one of the guides, the supporting pin on which it is rotatably mounted, and the end washer, the parts being slightly separated.

The shuttle-body A having an opening B for the filling-carrier or bobbin C, partly shown in Fig. 2, the side delivery-eye D which at its outer end opens into the usual longitudinal groove E in the side wall of the shuttle, and the threading device F, may be and are all of well known construction, the eye D being of the slotted or open type for the passage of the thread thereinto when directed thereto by the threading device.

In the present embodiment of my invention I form in the shuttle-wood two upright sockets 1, 1, Fig. 3, by boring into the wood preferably from the bottom of the shuttle-body, said sockets being so located as to intersect the opposite sides of the eye D adjacent its outer end, within the longitudinal groove E, as at 2, 2, Fig. 1. A suitable metallic or other disk-like washer 3 is driven tightly into each socket to seat on its closed end, such washer having a slight central pit or depression 4, see Fig. 4, and then I insert loosely in each socket a tubular and preferably metallic thread-guide, shown as a rather short roll or sleeve 5, having a bore 6, the guide being freely rotatable in its socket and being exposed for a part of its length at one side of the eye D, see Fig. 1. It will be seen that the exposed portions of the guides are at opposite sides of the eye D adjacent its outer end, and in position to cooperate with the thread T, Fig. 2, as it passes through the eye to be delivered, the upper and lower ends of the guides being covered by the shuttle-wood so that the thread cannot be caught or pinched thereat.

To rotatably support the rolls I provide headed pins or studs, the cylindrical shank 7 of a pin entering loosely the bore of a guide as shown in Fig. 3, the circular head 8 of the pin supporting the guide vertically and fitting tightly in the socket 1. The free upper end of the pin projects slightly beyond the upper end of the guide and seats in the depression 4 of the washer 3, thereby centering the pin and also keeping the head 8 and washer 3 the proper distance apart, with the rotatable guide between them. I finally close the open end of the socket and permanently secure the parts therein by means of a wooden retaining plug 9, preferably dipped in glue and driven tightly into the socket, the exposed end of the plug if necessary being cut off flush with the bottom of the shuttle-body.

From the foregoing description it will be apparent that whatever the direction of travel of the shuttle through the shed the filling thread T will draw over the exposed portion of one or the other of the guides 5, the pull of the thread rotating the engaged guide and thereby not only reducing friction to a minimum but constantly presenting a fresh portion of the guide for contact with the thread. By making the guides



freely rotatable I find that the cutting, scoring or other roughening of its surface by the action of the thread thereon is wholly eliminated, so that the effective life of a shuttle so fitted is greatly prolonged.

5 In Fig. 2 I have shown by dotted lines a guide G around which the thread draws as it changes its direction to pass laterally through the delivery-eye, and in practice  
10 this guide may be made rotatable in a manner somewhat similar to that described for the guides at the sides of the delivery-eye.

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

15 In a loom-shuttle adapted to contain a supply of filling and having a delivery-eye through which the filling thread passes, upright sockets in the shuttle-wood, open at

their lower ends and intersecting the opposite sides of the delivery-eye adjacent its outer end, a metal washer in the upper end of each socket, a metallic guide-roll rotatably seated in each socket and exposed for a portion of its length at the side of the eye, 20  
25 a headed pivot-pin on which the roll is rotatably mounted, the inner end of the pin abutting against the washer, and a retaining plug closing the open end of each socket and holding said pin and the guide-roll in position in the socket. 30

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

GEORGE A. DRAPER.

Witnesses:

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E. D. OSGOOD.