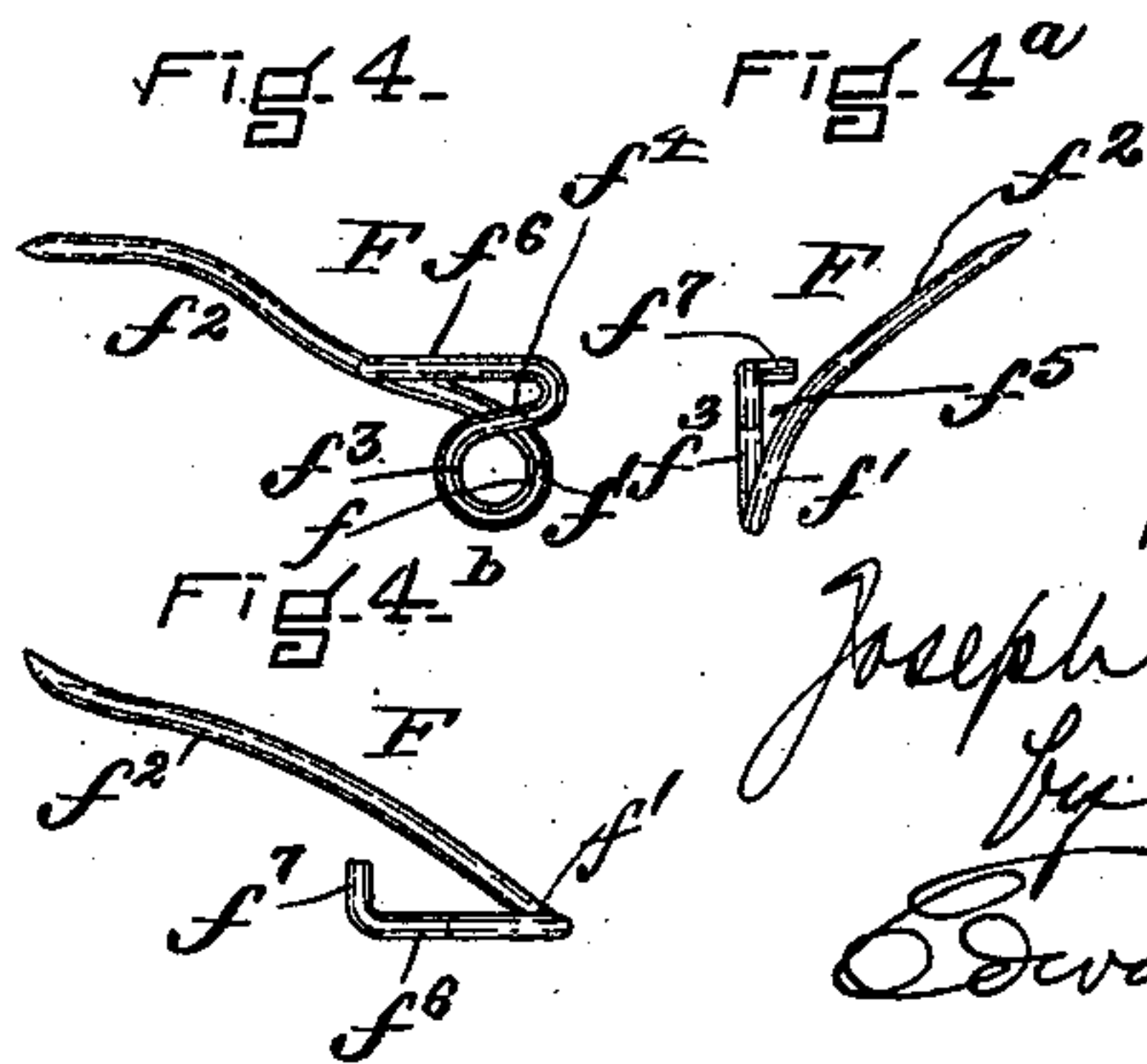
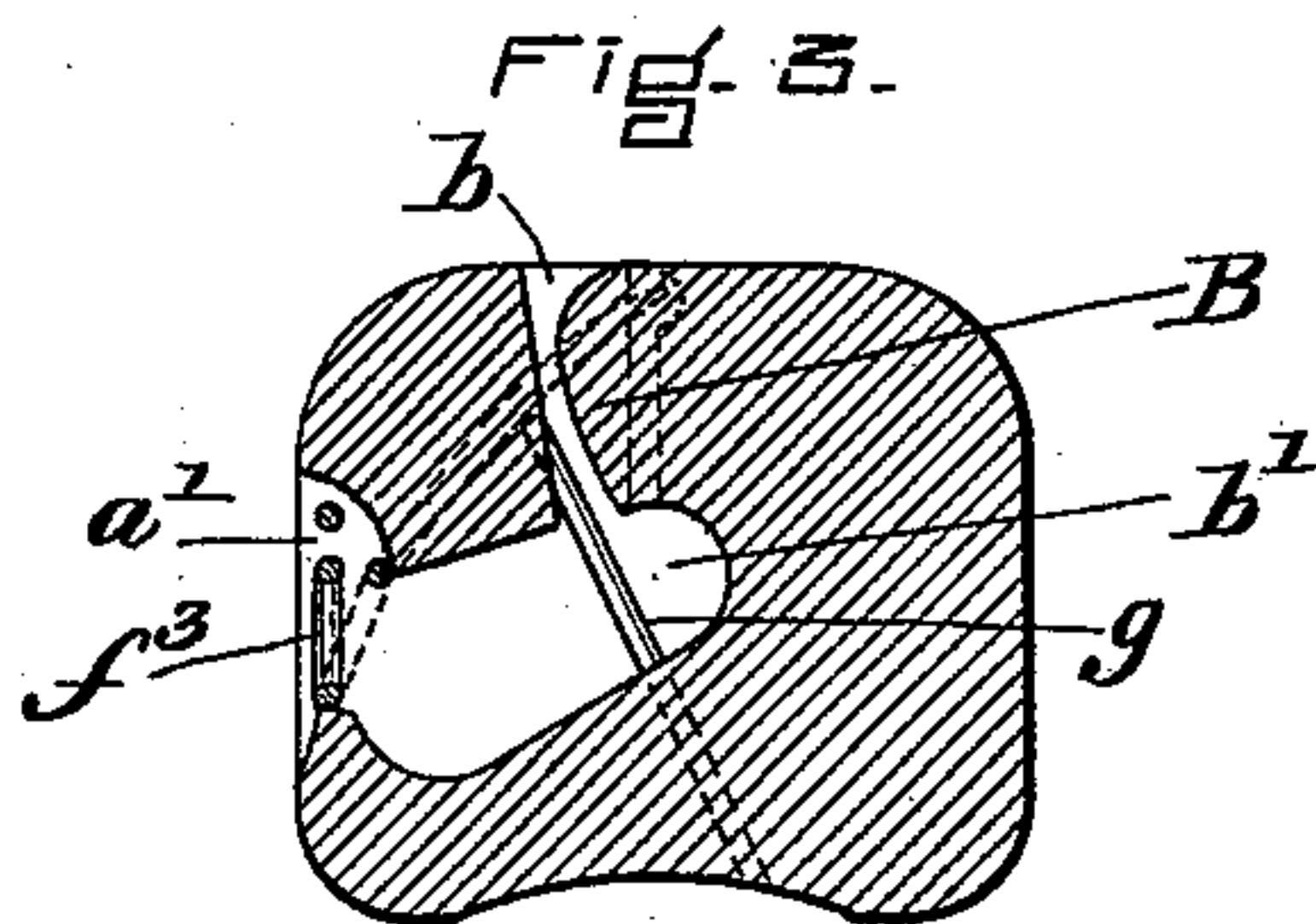
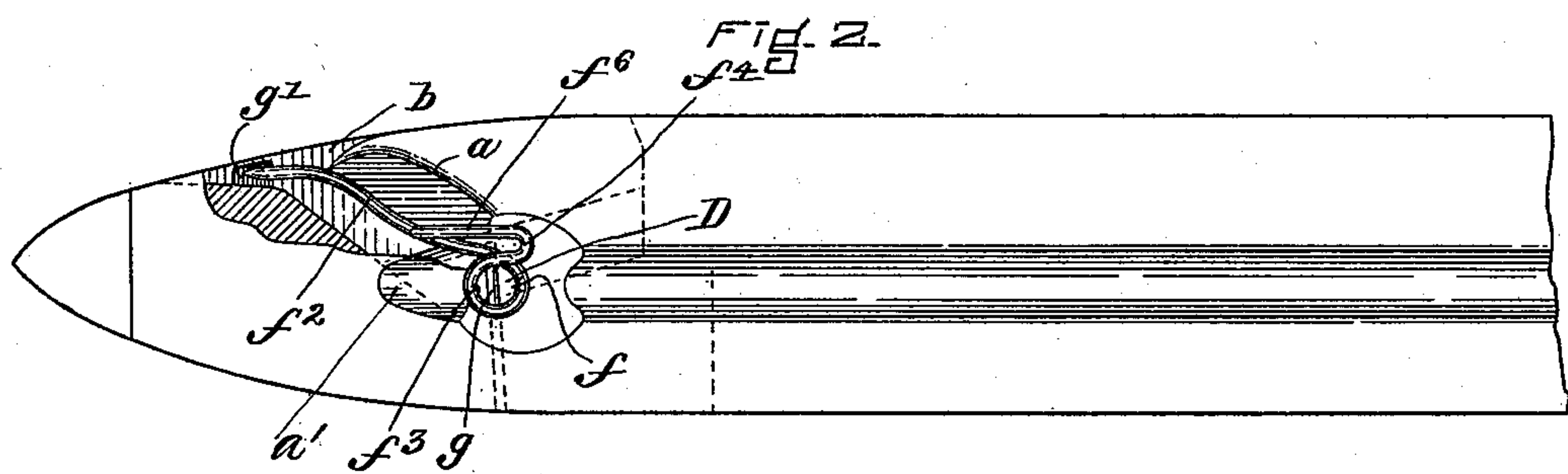
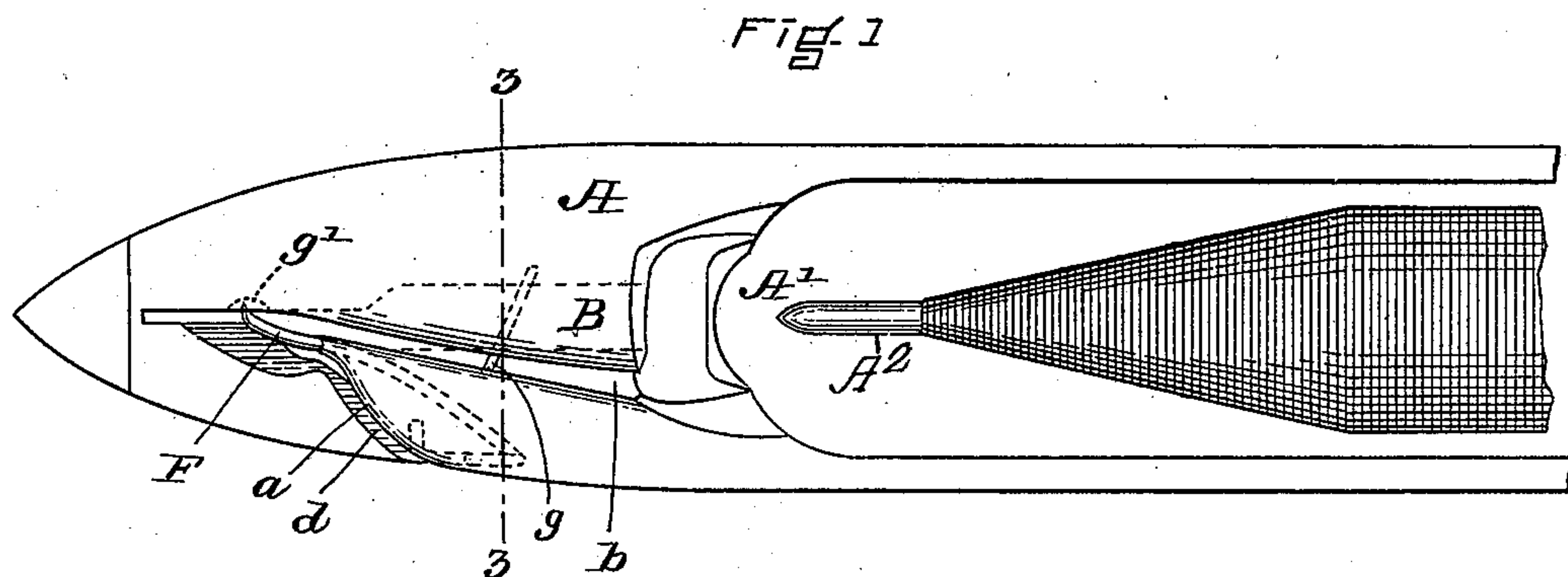


(Model.)

J. H. NASON.
SELF THREADING SHUTTLE FOR LOOMS.

No. 599,860.

Patented Mar. 1, 1898.



WITNESSES.

A. D. GROUT.
Charles W. Jones

INVENTOR.
Joseph Herbert Nason
By his attorney,
Edward S. Beach.

UNITED STATES PATENT OFFICE.

JOSEPH HERBERT NASON, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR
OF ONE-HALF TO HENRY M. HEWES, OF BOSTON, MASSACHUSETTS.

SELF-THREADING SHUTTLE FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 599,860, dated March 1, 1898.

Application filed July 6, 1896. Serial No. 598,166. (Model.)

To all whom it may concern:

Be it known that I, JOSEPH HERBERT NASON, a citizen of the United States of America, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Self-Threading Shuttles for Looms, of which the following is a specification.

Referring to the accompanying drawings, Figure 1 is a top plan view; Fig. 2, a side view; Fig. 3, a view in section on line 3 3 of Fig. 1 of the delivery end of my new shuttle. Figs. 4, 4^a, and 4^b show its feeding-pin, detached.

The object of my invention is to produce a cheaply-constructed and sufficiently light and durable shuttle for practical use in that class of looms (the well-known Northrop loom, for example) wherein the shuttle is automatically threaded during the operation of the loom and while the shuttle is moving, or, as expressed in Northrop's patent, No. 454,810, dated June 23, 1891, so that "the weft or filling thread will be automatically laid into the delivery-eye of the shuttle ready to be delivered from the bobbin through the delivery-eye into the shed, as in ordinary weaving;" but I have discovered that by means of my present improvement I can not only utilize the invention of my said Patent No. 528,550 in shuttles for Northrop or comparable looms by adding the old and well-known cross-cut, but also produce for such looms a distinctly new shuttle which is lighter, stronger, simpler, and cheaper than any comparable shuttle heretofore produced.

My present invention consists, broadly, in the combination of any suitable overhang for the thread-passage in front of the bobbin or cop space with a lateral open thread-passage to the delivery-eye and an open feeding-pin which lines the delivery-eye in full or in part and extends from the delivery-eye inwardly and thence upwardly to the thread-passage in front of the bobbin-space, the opening in the guiding-pin communicating with the lateral open thread-passage.

In Figs. 1 to 4^b, inclusive, of the drawings illustrating my improvement, A is a shuttle, and A' its bobbin or cop space.

B is one form of overhang for the thread-

passage *b* in front of bobbin-space A, this overhang being obtained, preferably, as in my said patent, by the doubly-slanted slot therein described.

D is the delivery-eye, and *d* the open lateral thread-passage from thread-passage *b* into delivery-eye D.

F is the feeding-pin, which guides a bent portion of the thread drawn from the bobbin or cop down into the delivery-eye. The rear or inner end of thread-passage *b* is disposed at one side of the lengthwise axis of the bobbin-spindle and extends forwardly in a diagonal line, slanting downwardly and inwardly to form an overhang B over the bottom portion *b'* of the thread-passage *b*, which preferably extends straight away from the tip of the spindle A², as will be plain to all skilled in the art without further description.

The function of the overhang B is to prevent the thread from jumping or being jumped out of the thread-passage after the thread is drawn into the delivery-eye.

Feeding-pin F is mounted in the body of the shuttle and extends from the delivery-eye first inwardly and then upwardly into and preferably across the upper front portion of thread-passage *b*, so that the front end of the feeding-pin also overhangs the lower portion of the thread-passage *b* and assists in preventing the running thread from displacement. The feeding-pin guides a bent portion of the thread downwardly through the lateral thread-passage and into the delivery-eye D, which is lined in part or wholly by an extension of the feeding-pin, the feeding-pin having a portion the inner half *f* of which forms the inner vertical thread-bearing wall of the delivery-eye D and sustains the friction of the moving thread when the shuttle moves forward. From its lining portion or rearward thread-bearing *f* the feeding-pin slants first inwardly at *f'*, thread-bearing *f* being the inner surface of that part *f'* of the feeding-pin that is inwardly deflected and from which the upwardly extending or slanted portion *f*² springs, and then has an upwardly-slanted portion *f*³ on the back or rearward side of the lateral thread-passage *d*. Consequently the feeding-pin does not itself cross the lateral

thread-passage and the delivery-eye is left open into the lateral thread-passage. The purpose of having the feeding-pin extend first inwardly from the delivery-eye and thence
 5 upwardly is to keep the thread from running down the corner a into the eye.

The slanted finger-like portion f^2 of my guiding-pin is, except at its free end portion, within the shuttle-body and forms a thread-
 10 guide which keeps the thread well down within the open eye, so that the path of the thread at the point where it is bent is very near the bottom of the open eye and not, as heretofore, along a downwardly-sloping corner (of
 15 the open eye) on the outer surface of the shuttle. The upper or free end of the guiding-pin is guarded by a slight overhang g' , conveniently formed by recessing a wall of thread-passage b .

Herein lies a feature of my invention—viz., a feeding-pin having a thread-bearing portion f on the rearward side of the delivery-eye and an integral inward and upward extension f^2 , forming the rearward or thread-guiding side
 25 of the lateral thread-passage d ; but in practice I prefer to extend the lower or base portion of the feeding-pin entirely around the delivery-eye to form an integral thread-bearing f^3 at the front side of the delivery-eye and
 30 an overhang f^4 for the open passage f^5 of the feeding-pin, this open passage f^5 connecting the open lateral thread-passage d with the delivery-eye D . Preferably the guiding-pin is formed of bent wire, as shown, the base or in-
 35 ner end of the wire forming a tang f^6 , (having, preferably, an angular portion f^7 , as shown,) which is socketed in the side of the shuttle with an open annular bend of the wire lining the delivery-eye. The overhang f^4 co-
 40 operates with the overhang B to keep the thread properly in place during the reciprocation of the shuttle. The construction is cheap, light, and simple, and when either thread-bearing portion f or f^3 becomes un-
 45 duly worn the shuttle is quickly repaired by putting in a new feeding-pin.

It will be seen that the embodiment of my present invention obviates the cutting away of the wood and consequent undue weaken-
 50 ing of the shuttle at its front end where the prior casting 2, above described, is mounted, and also the cutting out of the bottom of the shuttle to take the threaded shank of the casting and its countersunk retaining-nut.
 55 This is a very important advantage due to

my present invention. That portion of the feeding-pin which lines the delivery-eye and is formed with the overhang or eye-guard f^4 is within the outer surface of the shuttle, so as not to interfere with the action of the shut- 60 tle by striking threads in the shed, and the shuttle side is therefore preferably recessed at a' around the delivery-eye. In practice a guiding-pin g is used.

What I claim is—

1. The herein-described combination of a shuttle-body having a delivery-eye and provided with a groove in the top wall of the shuttle disposed with its front end at the middle line of the shuttle and its rear end to 70 one side thereof, forming a diagonal groove with reference to the middle, said groove slanting inwardly from top to bottom; and having a lateral open passage cut in the body of said shuttle between the delivery-eye and the said groove, and a feeding-pin, the upper end of which forms an extension of the upper part of the shuttle-body lying between the said open lateral passage and the said groove 75 and which extends nearly across said groove the lower portion of said pin forming a lining for the delivery-eye and also a guard or overhang for said delivery-eye, and its middle portion forming a guide for the thread to the delivery-eye, separate and apart from the 85 shuttle-body, a portion of the feeding-pin, between its free end portion and the delivery-eye, being within the body of the shuttle.

2. The combination with a shuttle-body having a thread-passage and open delivery- 90 eye of a feeding-pin which at one end is formed with a tang; and with an adjacent bend forming a delivery-eye, open on its upper side, said opening being overhung by a portion of the pin; and with a portion finger- 95 like extension which is deflected from near the delivery-eye first inwardly and thence upwardly across the thread-passage of the shuttle-body; said shuttle-body being provided with a guard for the free end of said 100 finger-like extension.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 16th day of June, A. D. 1896.

JOSEPH HERBERT NASON.

Witnesses:

EDWARD S. BEACH,
 H. M. HEWES.