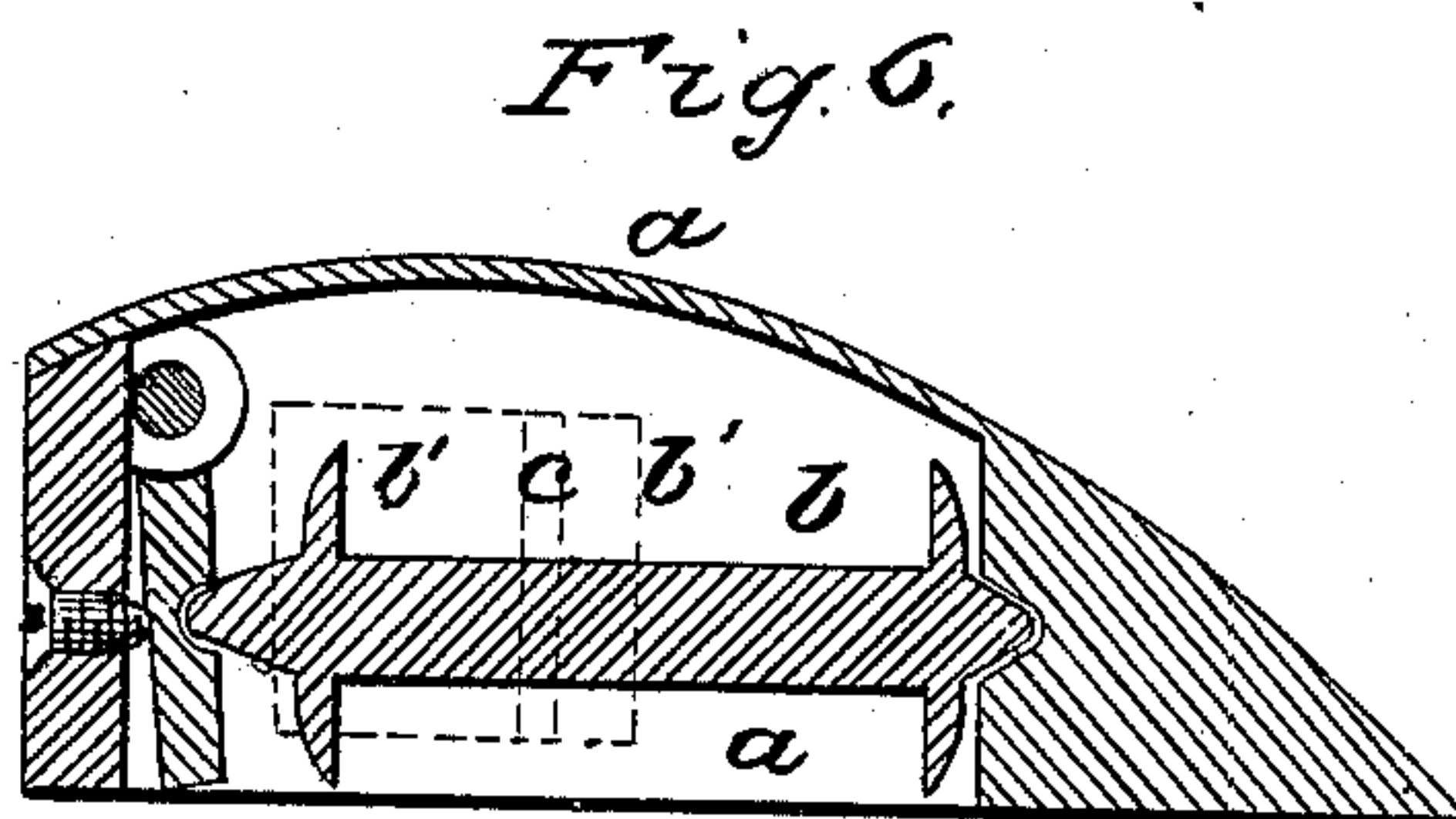
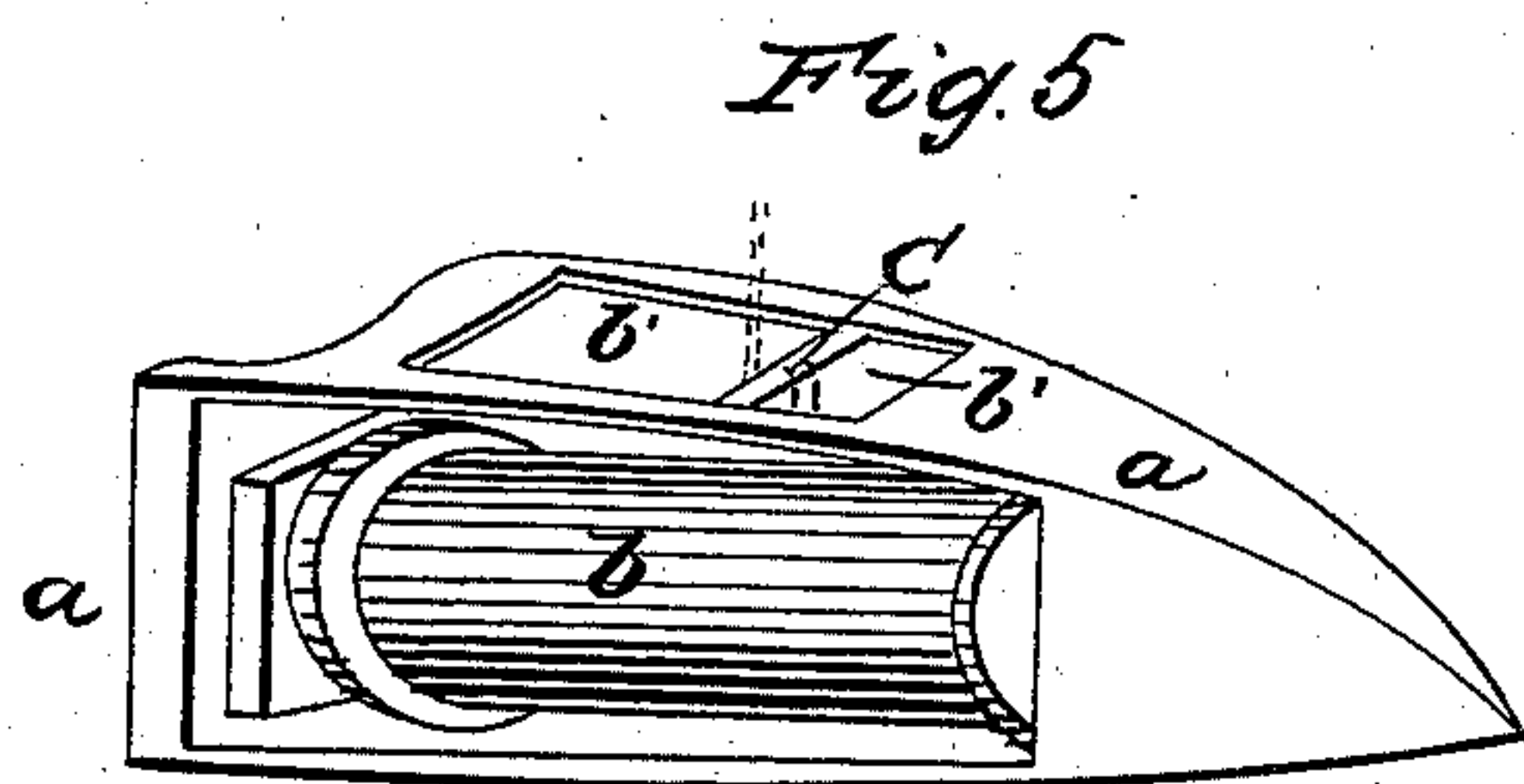
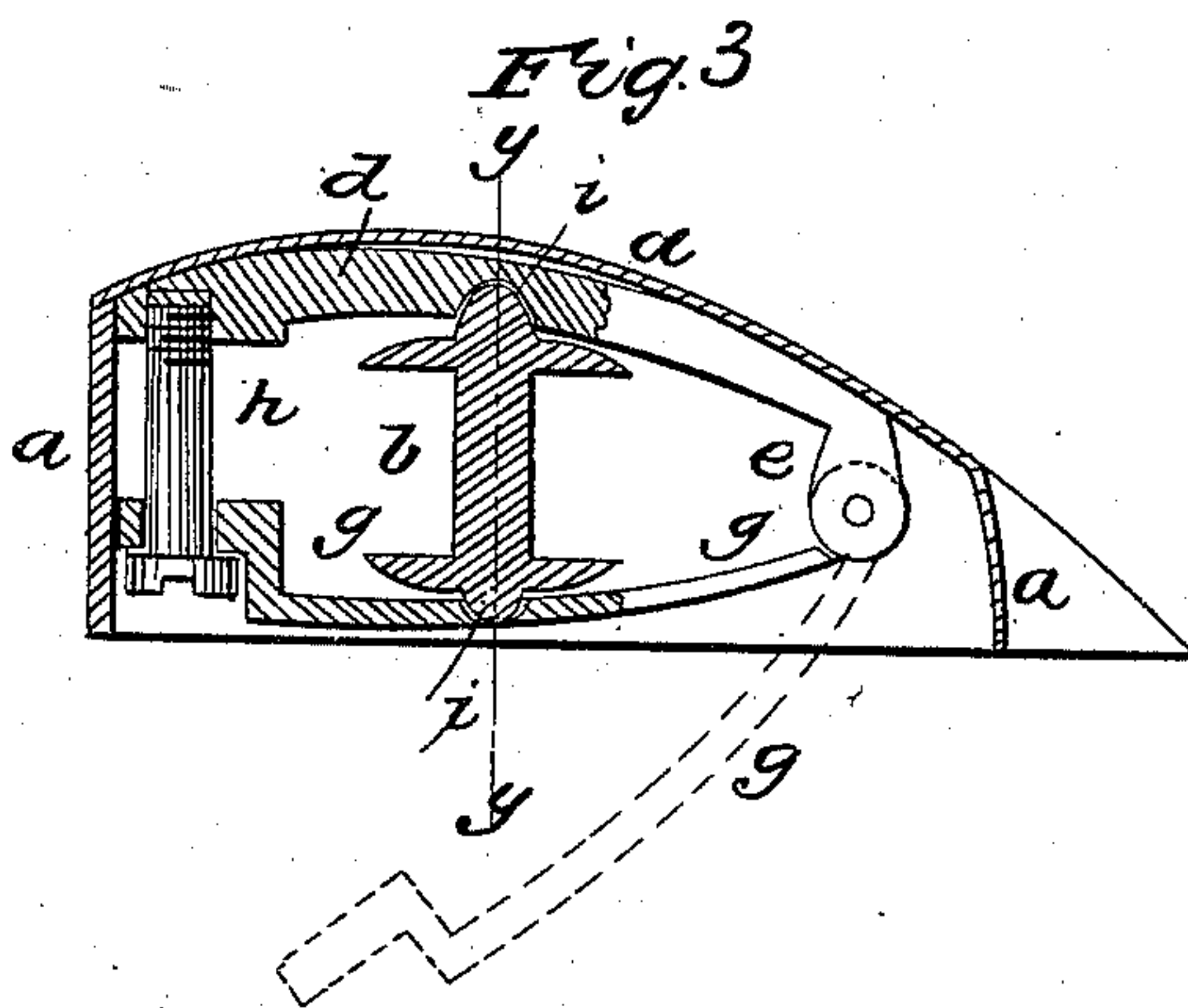
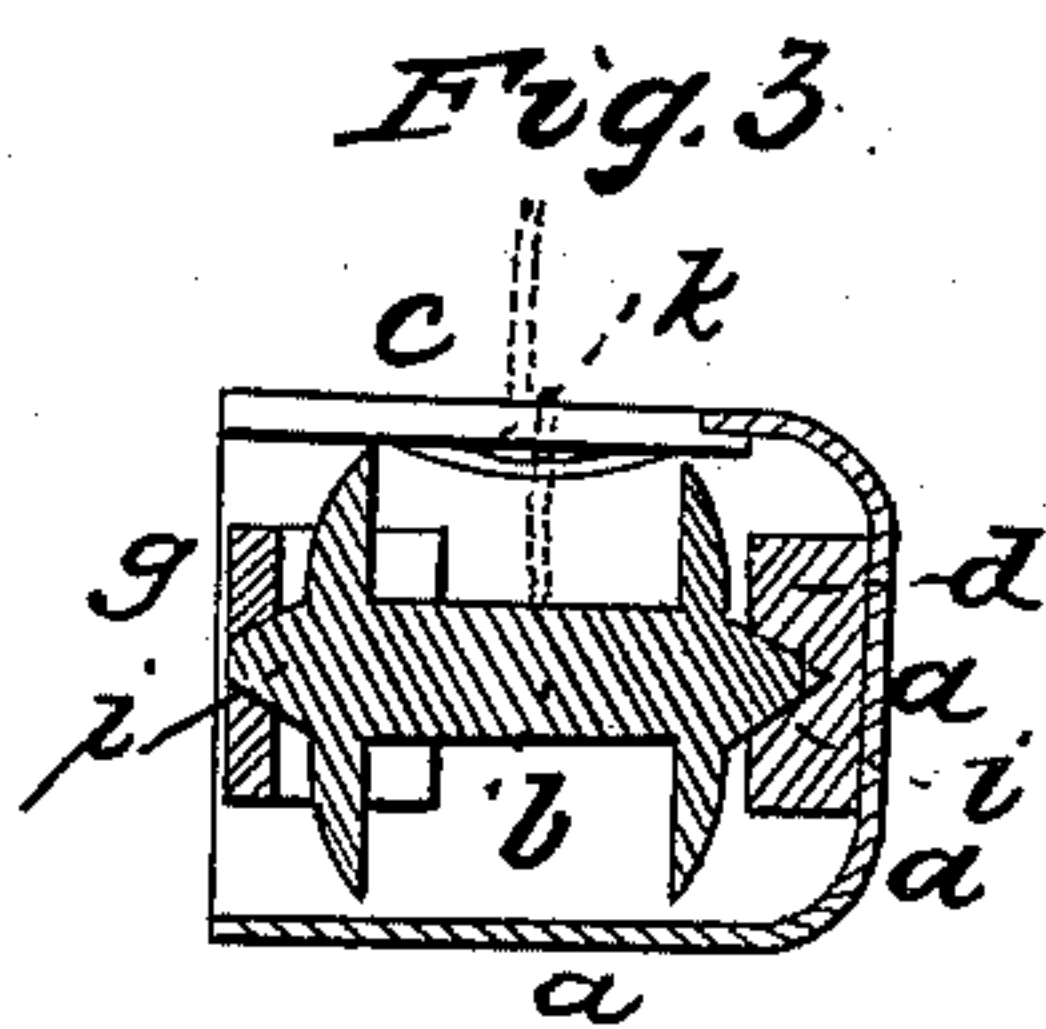
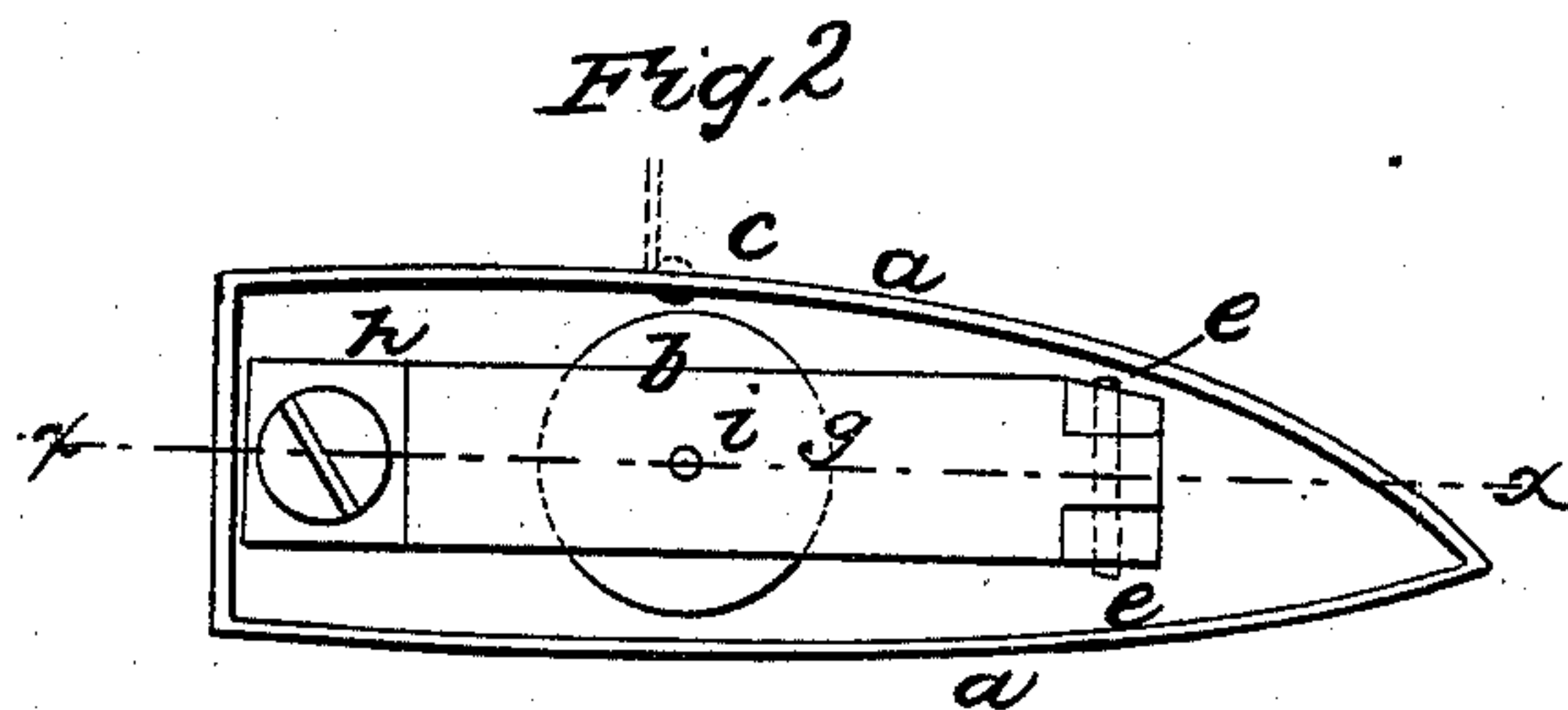
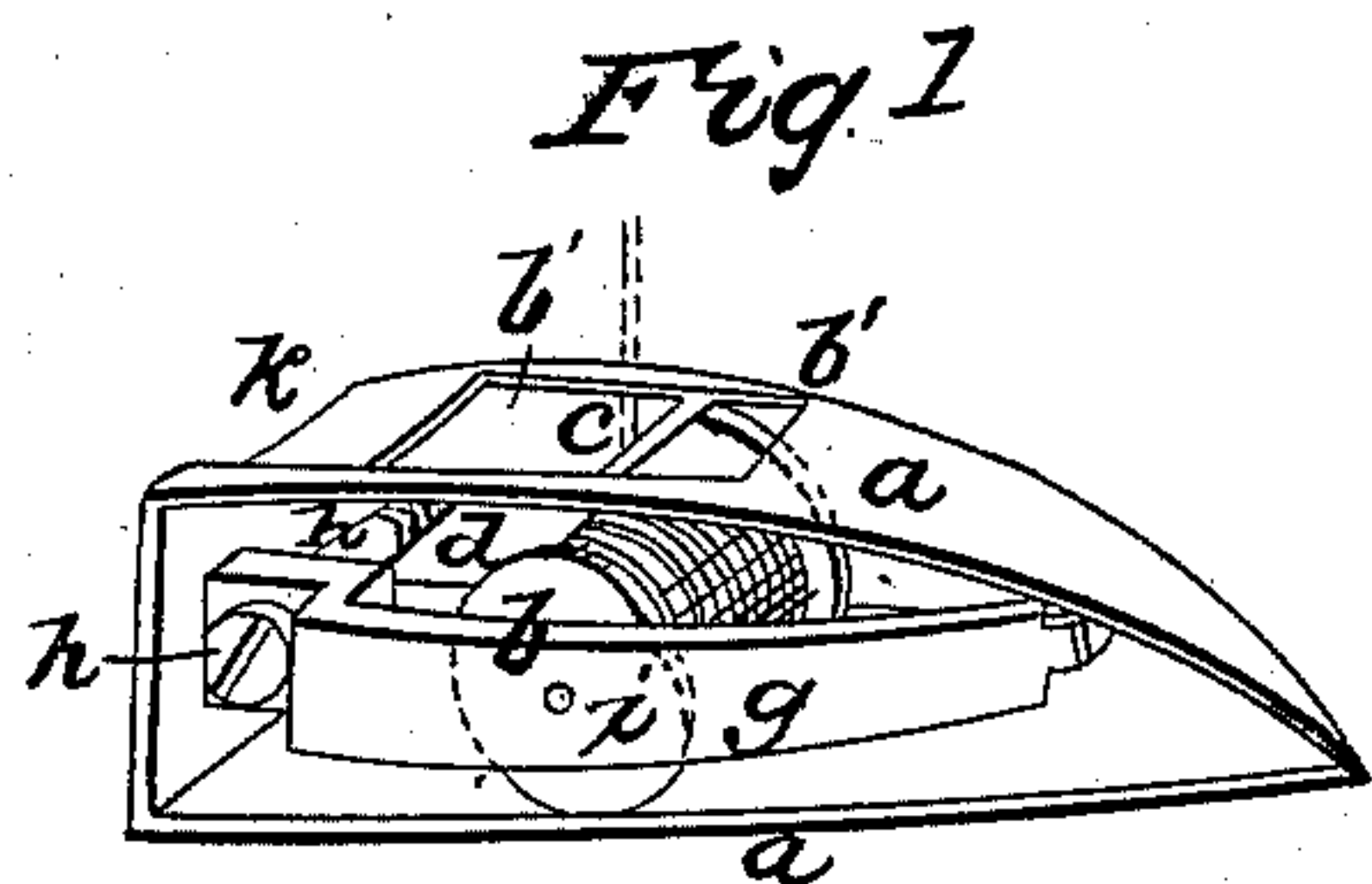


T. J. HALLIGAN.
Sewing Machine Shuttle.

No. 39,567.

Patented Aug. 18, 1863.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

THOMAS J. HALLIGAN, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINE SHUTTLES.

Specification forming part of Letters Patent No. 39,567, dated August 18, 1863.

To all whom it may concern:

Be it known that I, THOMAS J. HALLIGAN, of New York, in the county and State of New York, have invented a new and Improved Sewing-Machine Shuttle; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view, showing the interior arrangement of my improved shuttle. Fig. 2 is a side view of Fig. 1. Fig. 3 is a horizontal section through Fig. 2, taken in the plane $x x$. Fig. 4 is a vertical transverse section through Fig. 3, taken at the point indicated by red line $y y$. Figs. 5 and 6 represent a modification of the shuttle of Figs. 1, 2, 3, and 4.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement in the construction of shuttles which are to be used in machines for sewing leather, &c., the object of which is to enable me to use waxed thread without liability of scraping off the wax therefrom, and also to obtain a uniformity of tension, as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In leather-sewing-machine shuttles hitherto used two objections exist—viz., the waxed thread which it is necessary to use in these shuttles does not run off the bobbin freely and with a uniformity of tension, thus causing the stitching to be uneven, some of the stitches being loose while others are drawn too tight. Another serious objection is that the tension device used scrapes the wax from the thread, abrades and renders the thread knotty. These evils I remedy, and at the same time obtain a direct-acting tension device, as follows:

The shuttle box or shell a may be constructed somewhat in the form represented in Figs. 1, 2, 3, of the drawings, with one vertical side open to enable the removal of the bobbin b , and with an opening, b' , in its top, across which latter extends transversely a round bar, c .

The opening b' is made of such a size that the waxed thread in passing off from bar c will not, during the operation of the shuttle, touch or scrape the edges of the case surrounding the opening. In the drawings, this opening is

represented as occupying nearly one-half of the upper part of the shell of the shuttle above the bobbin b , with the bar c extending across it in a direction transversely of the length of the shuttle. Thus the thread can be passed directly up from the bobbin around the bar c , and thence to the work, without any liability of this thread impinging upon any abrading-surface. This bar c is secured rigidly to the shell a , and around it the waxed thread from the bobbin b is placed, as indicated in red lines, Fig. 1. Within the shuttle-shell a is suitably secured a longitudinal bearing-plate, d , (shown clearly in Fig. 3,) which has ears e formed on its end nearest the pointed end of the shell, to which ears is pivoted one end of a stiff tension-lever, g . The opposite end of this lever has a hole drilled through it to receive a tension-screw, h , which screws into the end of the fixed bearing-plate d , Fig. 3, and thus forms a transverse connection between the heel ends of the two plates $d g$, by means of which these ends can be brought nearer together or set farther apart; or by detaching the screw h from the fixed plate d the hinged lever g may be moved out to the position shown in Fig. 3 and indicated in red lines. The three parts d, g , and h constitute an adjustable lever-frame for the cone-bearings $i i$ of the bobbin b , one of which bearings is stepped in a conical depression in the fixed plate d , and the other is stepped in a corresponding depression in the adjustable lever g , so that by setting the screw h up the bobbin will be tightened and the friction on its bearings increased, and by loosening the screw the opposite effect will be produced. The waxed thread is wound upon the bobbin and passed up and around the transverse bar c , and thence to the needle, so that the thread is drawn around this horizontal bar c as it passes off from the spool to the work, and the bar being made round and smooth, it will have the effect of pressing the wax into the fibers of the thread and smoothing the thread, instead of scraping off the wax therefrom. The oblong opening b' through the top part of the shuttle is intended to prevent the waxed thread from binding or coming in contact with the shell a in its reciprocating movements in the raceway, and the concave depression k , which is made in the top plate of the shuttle-box, allows a free play of the thread at this point. The opposite edge of the opening b' need not be de

pressed, as it is desirable that the thread should be passed over and under the bar *c* in the direction indicated by the red lines in Figs. 1 and 2. This brings the thread over the bar *c* and over this latter edge of the opening without touching it; but in the former case, where the thread passes under the bar *c*, it will be necessary to extend the opening *b'* back some distance from this bar to prevent the thread from scraping over the edge of the shuttle-box *a*. In this way and by this construction of a waxed-thread shuttle there will be no liability of injuring the thread, and a uniform tension of the thread can be maintained.

The shuttle which I have represented in Figs. 5 and 6 differs from that above described in the following particulars: the bobbin extends in a direction with the length of the shuttle-shell *a*, and has its end bearings in one end of a solid block which is secured within the shell, and also in a hinged plate which is attached to the opposite end (inside) of the shell. This plate is acted upon by a tension-screw, which is tapped through the blunt end of the shell *a*, so that the pressure upon the bearings of the bobbin can be increased or diminished by tightening or loosening this screw; or by setting the screw some distance back the

bobbin may be removed from the shell. I have merely shown these views in order to show how the rod or bar *c* may be applied to a shuttle which does not employ the particular lever-frame herein claimed.

Having thus described my invention, what I claim is—

1. A shuttle for waxed-thread sewing-machines, constructed with the hinged lever bobbin-frame and direct-acting tension-screw, substantially as shown in Fig. 3, for the purposes set forth.

2. The combination and arrangement of a smooth transverse bar, *c*, opening *b'*, formed as described, and bobbin *b*, whereby I am enabled to obtain the desired tension on the thread, and while I pass the thread through the top of the shuttle prevent the scraping off of the wax from the thread, substantially as described.

Witness my hand in the matter of my application for a patent for improved sewing-machine shuttle.

THOMAS J. HALLIGAN.

Witnesses:

ALEX. ROCHE,
R. T. CAMPBELL.