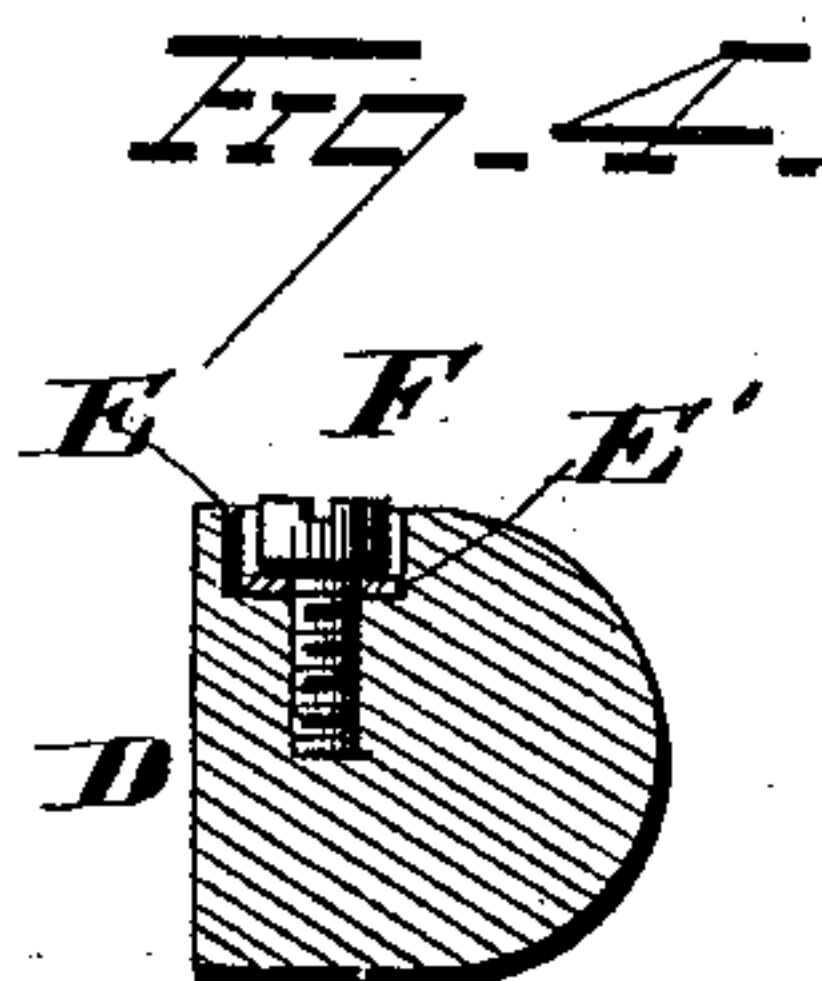
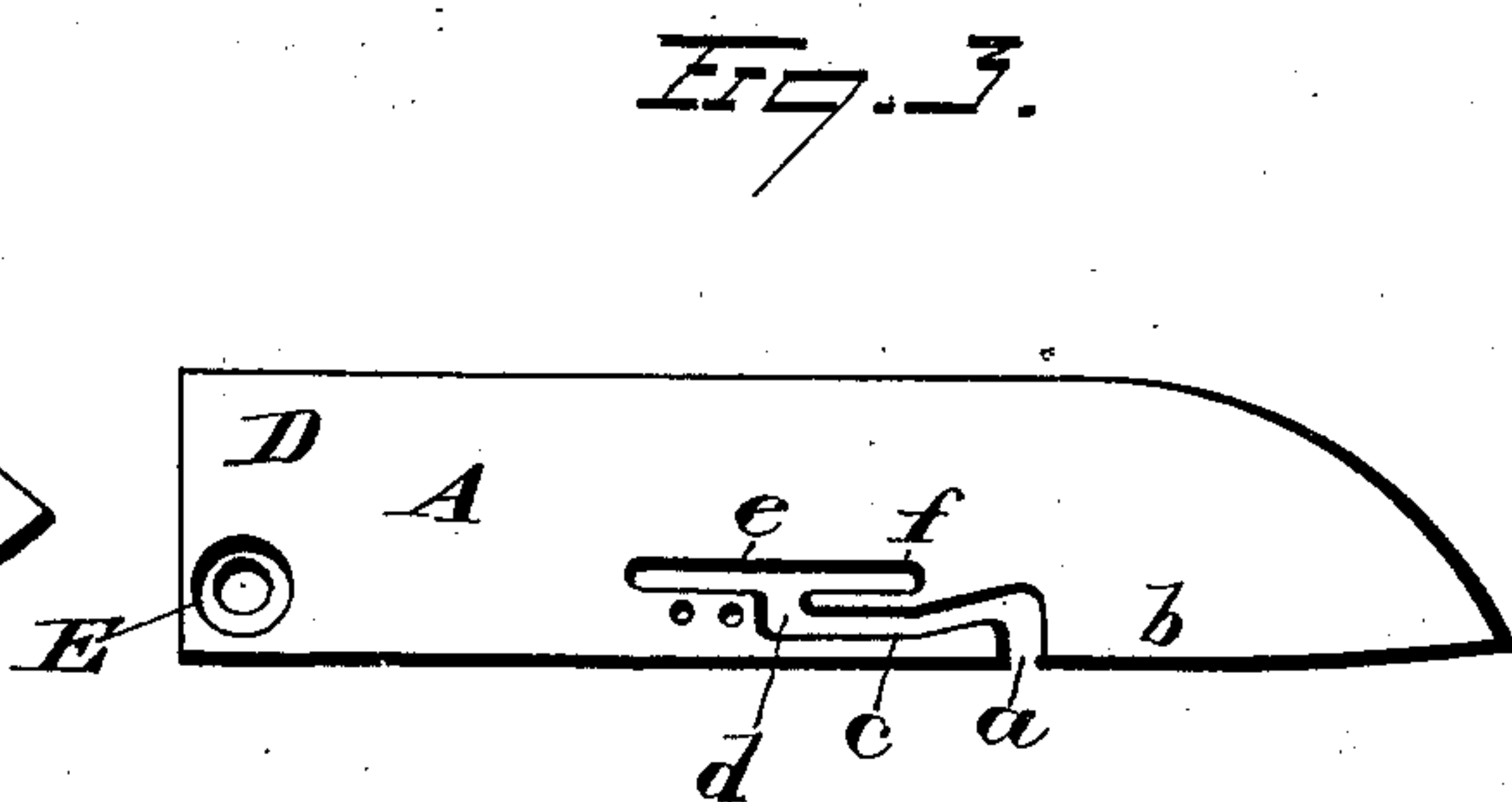
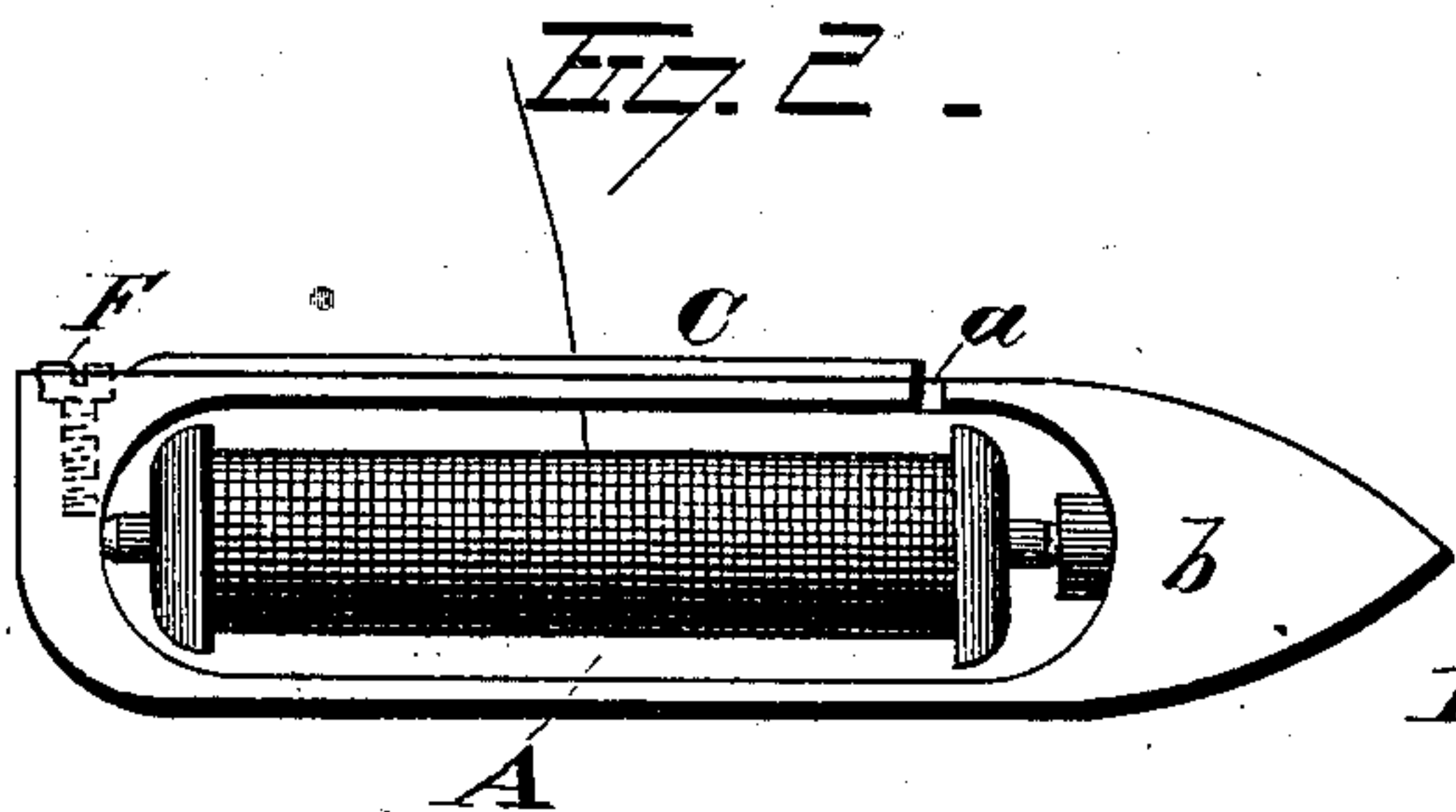
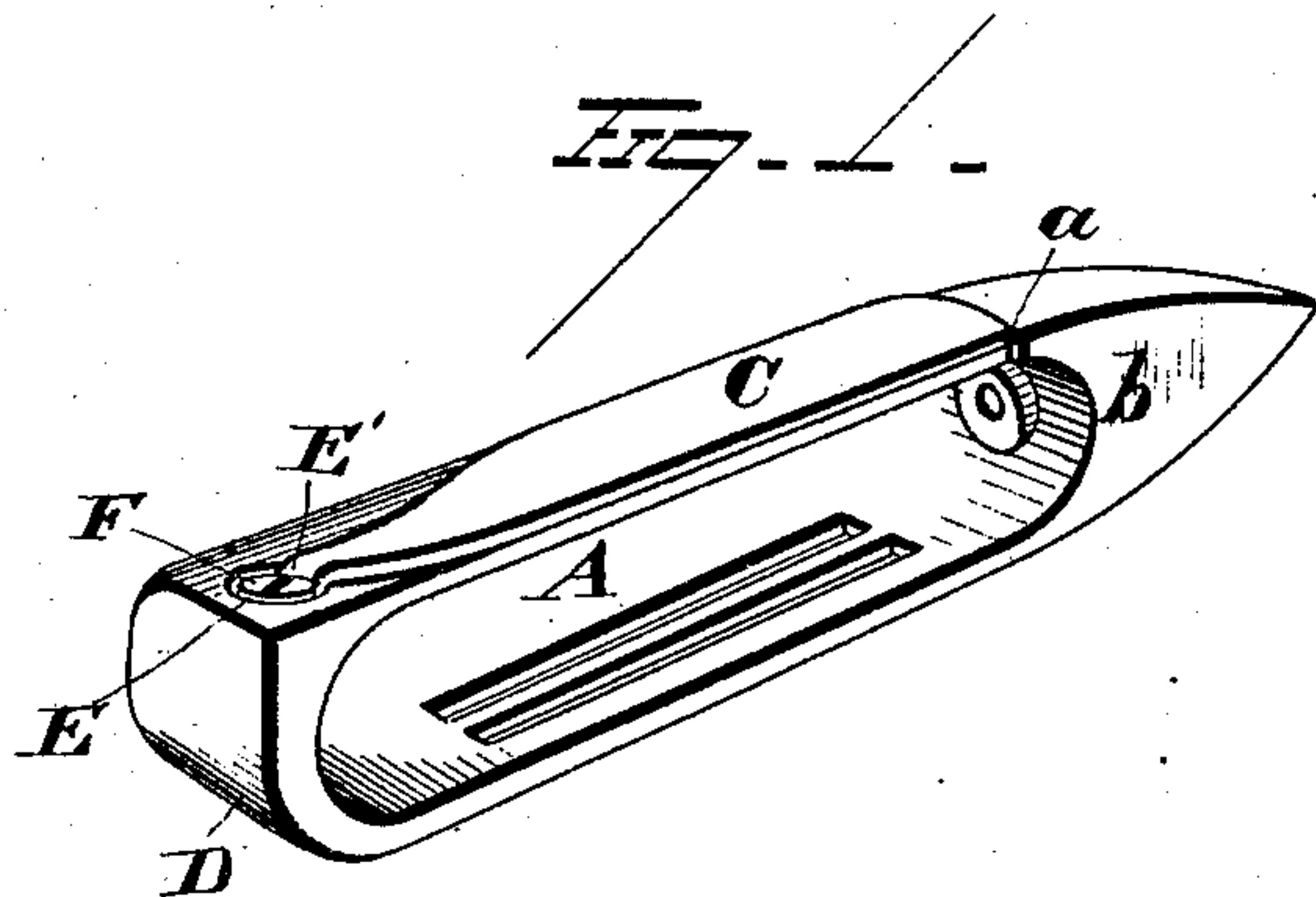


(Model.)

W. H. KEELER.
SEWING MACHINE SHUTTLE.

No. 253,871.

Patented Feb. 21, 1882.



WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM H. KEELER, OF NORWALK, OHIO, ASSIGNOR TO HIMSELF AND
J. W. FOSTER, OF SAME PLACE.

SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 253,871, dated February 21, 1882.

Application filed March 9, 1881. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY KEELER, of Norwalk, in the county of Huron and State of Ohio, have invented certain new and useful Improvements in Sewing-Machine Shut-
tles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in sewing-machine shuttles, and is designed to provide a shuttle with new and improved threading and tension devices, whereby it may be easily and quickly threaded and have its thread regulated to any desired tension.

With these ends in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of a shuttle constructed in accordance with my invention. Fig. 2 is an interior view thereof, representing the shuttle as threaded. Fig. 3 is a view of the shuttle with the adjustable tension-plate removed; and Fig. 4 is a view in vertical section of the heel, showing the devices for regulating the tension of the said tension-plate.

The arrangement I have invented to enable the shuttle to be readily and easily threaded consists in a series of connected slots formed in the upper wall, A, of the shuttle, said slots being protected and concealed by the tension-plate C. The disposition of the slots is as follows: A vertical slot, *a*, formed near the point *b* of the shuttle and close to the fixed end of plate C, opens into a slot, *c*, extending diagonally upward toward the edge of the shuttle, and leads to a short vertical slot or passage, *d*, which in turn opens into an elongated slot, *e*, parallel with the length of the shuttle, and extending under the diagonal slot *c* in such manner that in connection with the short slot *d* it forms a shoulder, *f*, which holds the thread in place when feeding to the needle. If desired, the two elongated slots *c* and *e*, which communicate through passage or slot *d*, may be arranged to be parallel with each other.

In threading the shuttle the thread is slipped into the vertical slot *a* from the inside thereof, and after being passed under the upper edge of the forward end of the plate C it is carried toward the heel of the shuttle. This movement will cause it to be drawn through the diagonal slot *c*, and to drop through slot *d* into the elongated slot *e*. It is now carried forward toward the point of the shuttle and engaged under the shoulder *f*, as described.

The heel D of the shuttle is counterbored at E to receive the adjusting-screw F, which passes through the eye E', formed in the free end of the tension-plate C. The forward end of said plate is rigidly secured near the point of the shuttle, and has its lower edge flush with the edge of the upper wall, A, thereof. This plate is secured to the wall of the shuttle in such manner that only a point on its lower front edge is in contact with it. It is necessary that the upper edge of the forward end of the plate, and also the rear end thereof, be free, inasmuch as the thread is fed from the bobbin under the front end of the plate, and as a space must exist between the plate and shuttle-wall to obtain the leverage necessary to change its tension.

The extreme end of the plate C is provided with an eye, E', adapted to be received in the counterbore E in the heel of the shuttle by bending the end of the plate in which the eye is formed at right angles to itself, and again bending the eye E' at right angles with the bent portion and parallel with the body of the plate. By manipulating the screw F, which passes through the eye of the plate, as described, and is received in the counterbore E, the relative proximity of the plate and shuttle-wall A may be varied as desired. By lessening the space between the shuttle and plate the tension of the thread will be increased; but by widening the distance between them the tension of the thread will be diminished or entirely relieved. By these means extremely delicate tension adjustments are made possible, and by means requiring no especial skill to their successful management.

It is of course apparent that the form and arrangement of the slots described may be slightly varied, if desired, and also that they

may be so placed that the shuttle may be threaded from the heel thereof, instead of from the point, as shown.

It is also obvious that the tension-plate can be reversed and arranged to be manipulated by a screw sunk in or near the point of the shuttle; also, the tension-spring and threading-slots may be advantageously applied to cylinder-shuttles, if desired.

I would have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. The combination, with a shuttle provided with an open slot at its upper edge and an elongated slot communicating with said open slot, of a tension-plate the forward end of which is located in rear of said open slot, said tension-plate being constructed and arranged to cover the elongated slot, substantially as set forth.

2. The combination, with a shuttle provided with an open slot at its upper edge and an elongated slot communicating with the open slot, of a tension-plate arranged to cover the elongated slot and secured to the heel of the shuttle by a tension-adjusting screw, the forward end of said tension-plate being located in rear of the open slot, substantially as set forth.

3. The combination, with a shuttle provided with the open slot *a*, elongated slots *c e*, and communicating passage *d*, of the tension-plate *C*, adjustably secured to the heel of the shuttle, said tension-plate being arranged to cover the slots *c e* and allow the thread to be readily inserted in the open slot *a*, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of February, 1881.

WILLIAM HENRY KEELER.

Witnesses:

WM. B. WOOLVERTON,
J. W. FOSTER.