

No. 620,729.

Patented Mar. 7, 1899.

J. E. BERTRAND.
SEWING MACHINE SHUTTLE.

(Application filed June 8, 1898.)

(No Model.)

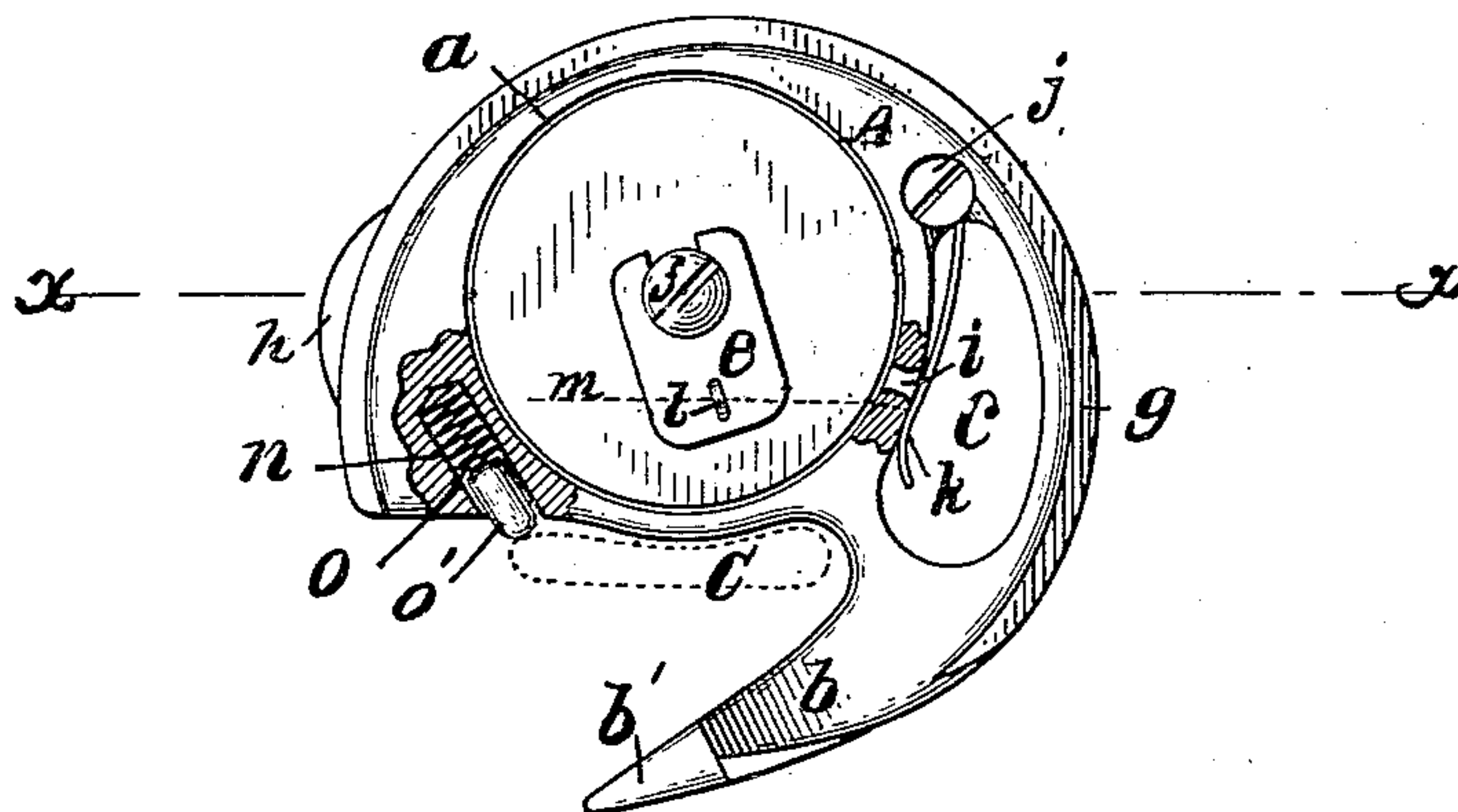


Fig. 1.

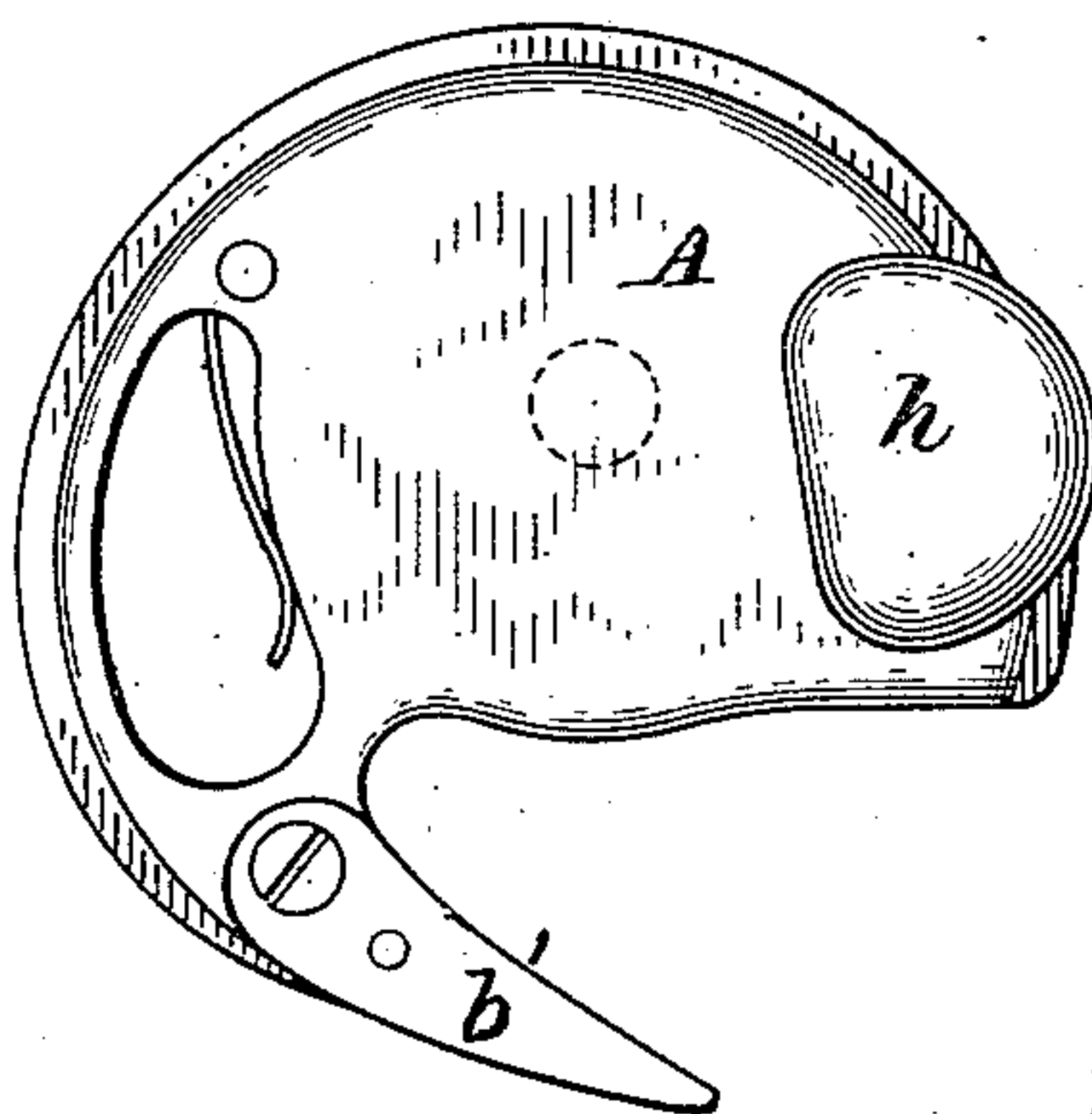


Fig. 2.

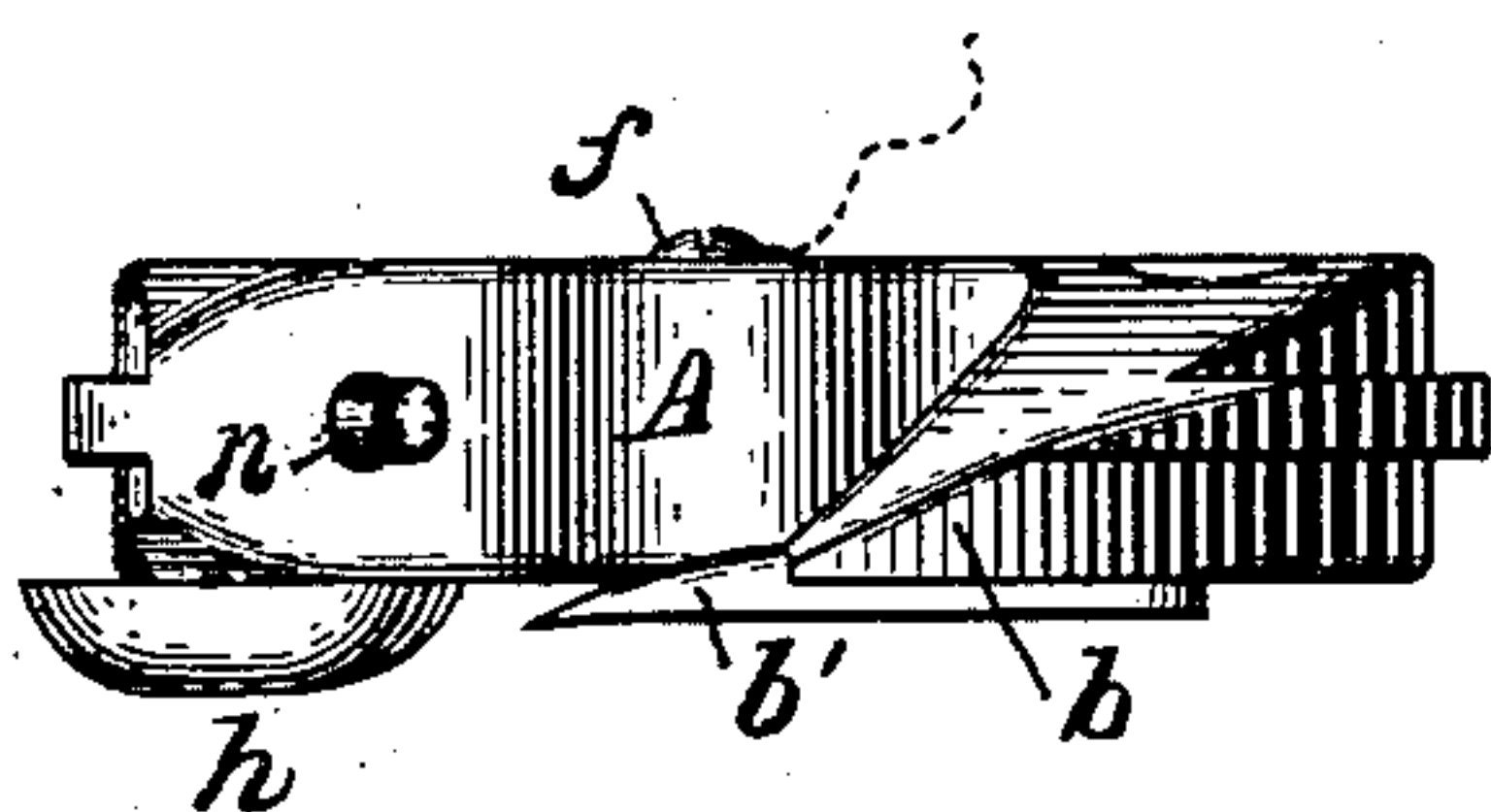


Fig. 3.

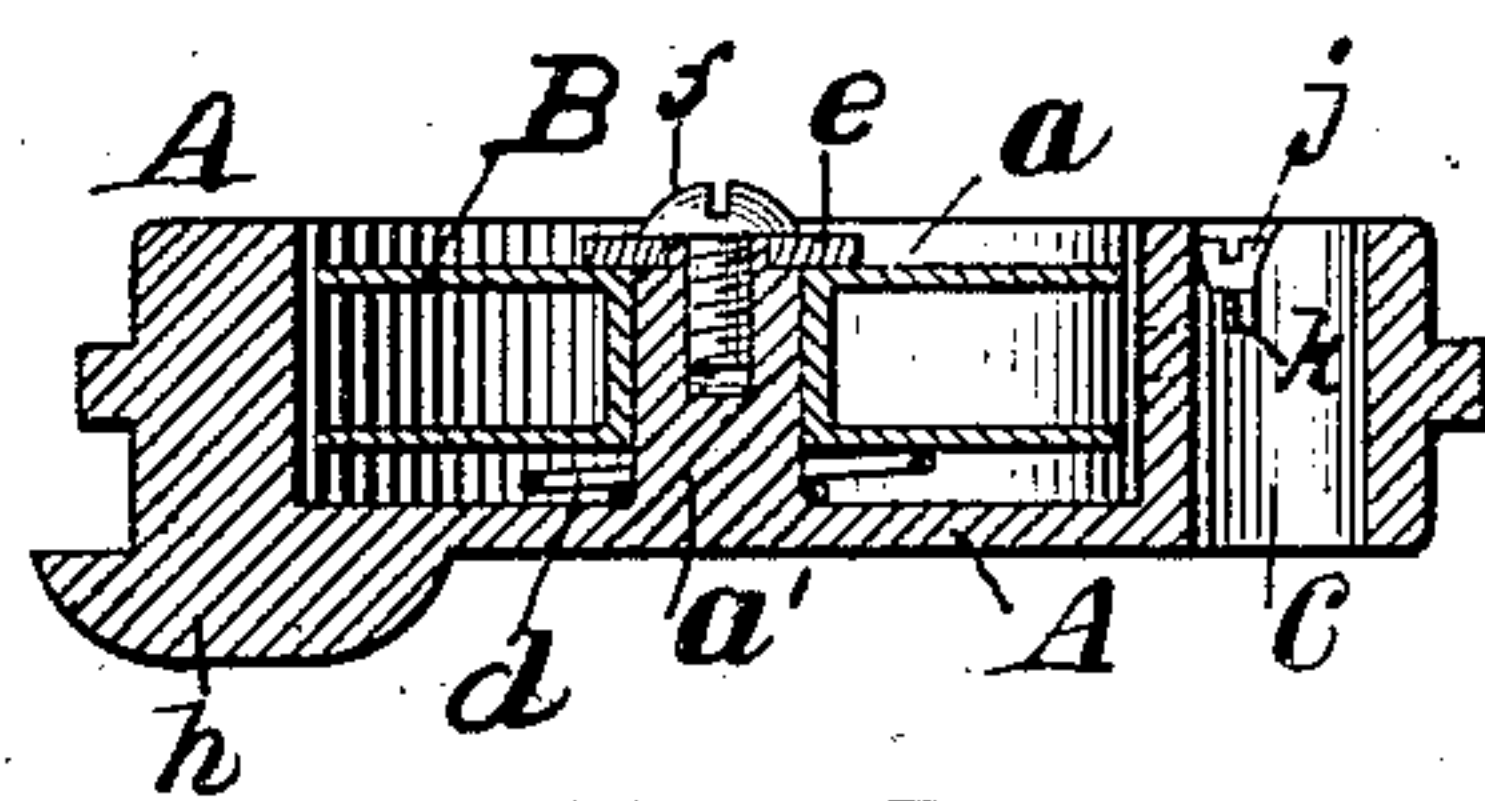


Fig. 5.

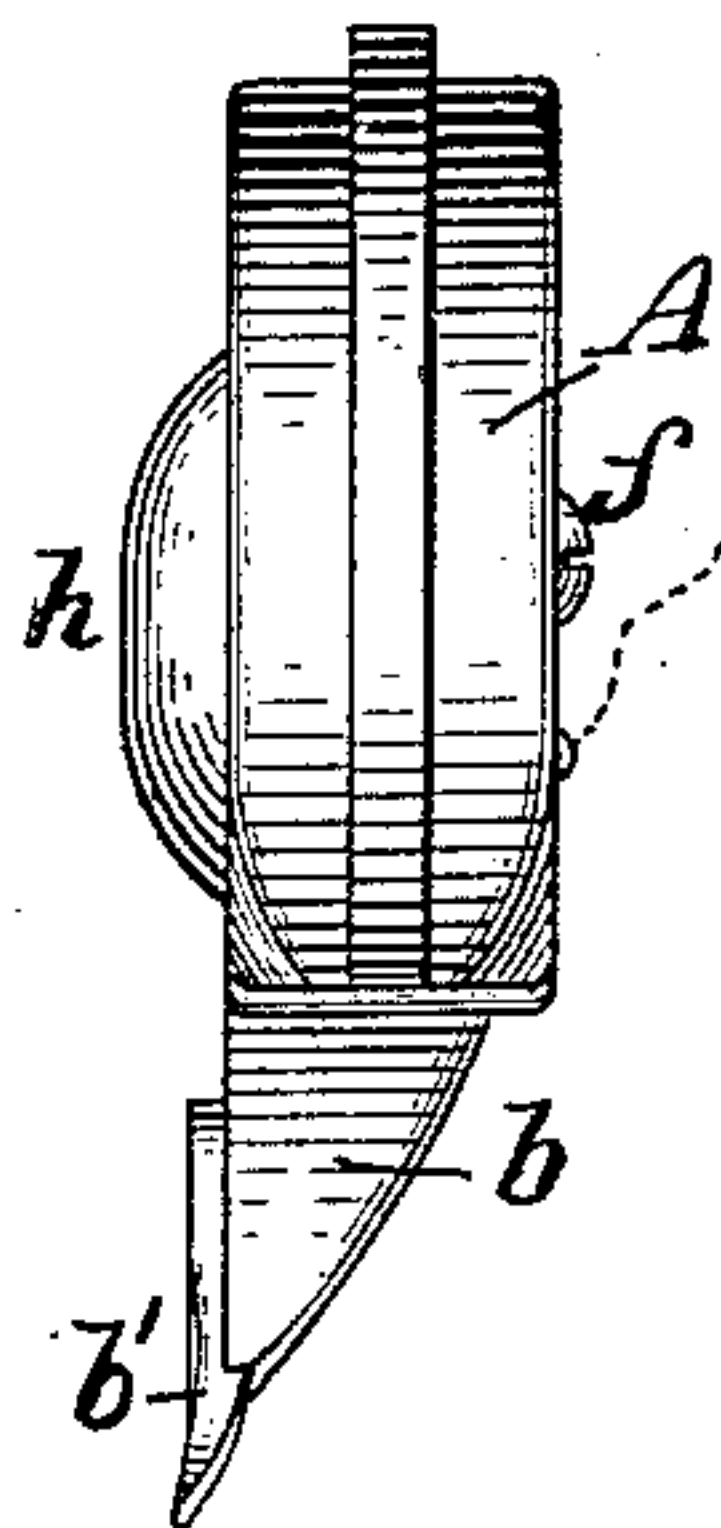


Fig. 4.

Witnesses:

J. W. Perkins
Geo. A. Sewall

Inventor:
Joseph Eli Bertrand
by N. C. Lombard
his Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH ELI BERTRAND, OF BOSTON, MASSACHUSETTS.

SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 620,729, dated March 7, 1899.

Application filed June 8, 1898. Serial No. 682,929. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ELI BERTRAND, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machine Shuttles, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to sewing-machine shuttles, and particularly to that class of such shuttles known as "oscillating" shuttles; and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the accompanying drawings and to the claims hereto appended and in which my invention is clearly pointed out.

Figure 1 of the drawings is a front elevation of a shuttle, illustrating my invention with small portions cut in section. Fig. 2 is a rear elevation of the same. Fig. 3 is an edge view looking directly at the point of its hook or upward relative to Fig. 1. Fig. 4 is an edge view looking toward the right of Fig. 1; and Fig. 5 is a section on line $x x$ on Fig. 1, looking upward or toward the top of said figure.

In the drawings, A is the main body of the shuttle, provided in its front face with the circular chamber a , in which is the stud a' , formed integral with or set in said shuttle-body, and also having formed in one piece therewith the main body of the hook b and having cut through it the opening c , as shown. The stud a' has mounted thereon the thread-carrying bobbin B, having between it and the back plate of the chamber a the coiled spring d and secured thereon by the plate e and the screw f in a well-known manner, as shown in Figs. 1 and 5.

The body A has formed on its periphery the segmental lip g to fit a suitable guideway in the shuttle-raceway in the usual manner, and also has formed upon its rear, at about ninety degrees from the point of the shuttle-hook, the convex or rounded shallow boss or projection h , the outer edge of which projects slightly beyond the periphery of the lip g , as shown in Figs. 1 and 2. The office of this convex boss is to increase the spread of the loop of thread held by the barb of the needle and through

which the shuttle is passing just as the shuttle is completing its forward movement, and thus aid the discharge of the thread from the barb of the needle when the thread is drawn down to set the stitch.

The hook b has detachably secured to its rear side the extension-point b' of hardened steel, the extreme point of which is in a plane at the rear of the rear face of the main body A of the shuttle and projects beyond the periphery of the main body of the shuttle, as shown in Figs. 1, 2, 3, and 4. By this construction and arrangement of the shuttle-hook the point of said hook is adapted to intersect the path of reciprocation of the needle in close proximity to the point of said needle when at the extreme of its upward and backward movement and enter, open, and pass through the loop of thread held by the barb of the needle without the aid of other loop-opener and without injury to the needle, and said point may be replaced when injured or badly worn and the shuttle be rendered as effective as when new without replacing the whole shuttle, which is a great advantage.

The wall of the chamber a has formed therein the perforation i , which opens into the opening c and through which the thread is delivered from the bobbin B. (See Fig. 1.)

Within the opening c is firmly secured by the screw j the tension-spring k , arranged to press upon the bobbin-thread after it has passed through the perforation i and between said perforation and the thread-guiding eye l , set in the plate e in the axial line of said shuttle, the perforation i , point of contact of the spring k upon the thread, and the eye l being so arranged relative to each other and to the outline of the shuttle that when the shuttle has completed its forward movement and the stitch is to be set the shuttle-thread will draw in substantially a straight line from said spring through said eye without any bight upon said eye, as shown by the dotted line m on Fig. 1.

The heel of the shuttle-body A has formed therein a cylindrical chamber n , in which are inserted the coiled spring o and the short plunger o' , having its outer end convex and pressed outward by said spring into contact with the shuttle-carrier, (indicated by dotted lines at C in Fig. 1,) said plunger o' serving

to prevent the loop of thread being entirely discharged from the shuttle until force is applied thereto to set the stitch, at which time said plunger readily yields to allow the passage of said thread when such force is applied thereto. This yielding plunger is of great advantage when used in cooperation with the shuttle-carrier, as above described, as are also the relative positions of the thread-delivering perforation *i*, the spring *k*, and the eye *l*, whereby the shuttle-thread is drawn freely through said eye without any bight or chafing thereon when the stitch is set.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A shuttle constructed and arranged to move about its center, and provided with a bobbin-receiving chamber, a loop-engaging hook, the opening *c* through the same, and the thread-delivering perforation between said chamber and opening, in combination with a bobbin fitted to and revoluble in said bobbin-receiving chamber, and constructed and arranged to be filled with thread to be

unwound from its periphery; the spring *k* located in said opening *c*, and arranged to press toward the axis of the shuttle; and bear upon the thread between the delivery-opening *i* and the front face of the shuttle; and the thread-guiding eye located in the axial line of said shuttle.

2. A shuttle constructed and arranged to be moved about its center, and provided with a loop-engaging hook, and also having a rounded shallow boss on its rear face about ninety degrees from the point of the loop-engaging hook, the outer edge of which projects beyond the periphery of the main body of the shuttle, as and for the purpose specified.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of June, A. D. 1898.

JOSEPH ELI BERTRAND.

Witnesses:

N. C. LOMBARD,
E. H. TAVARY.