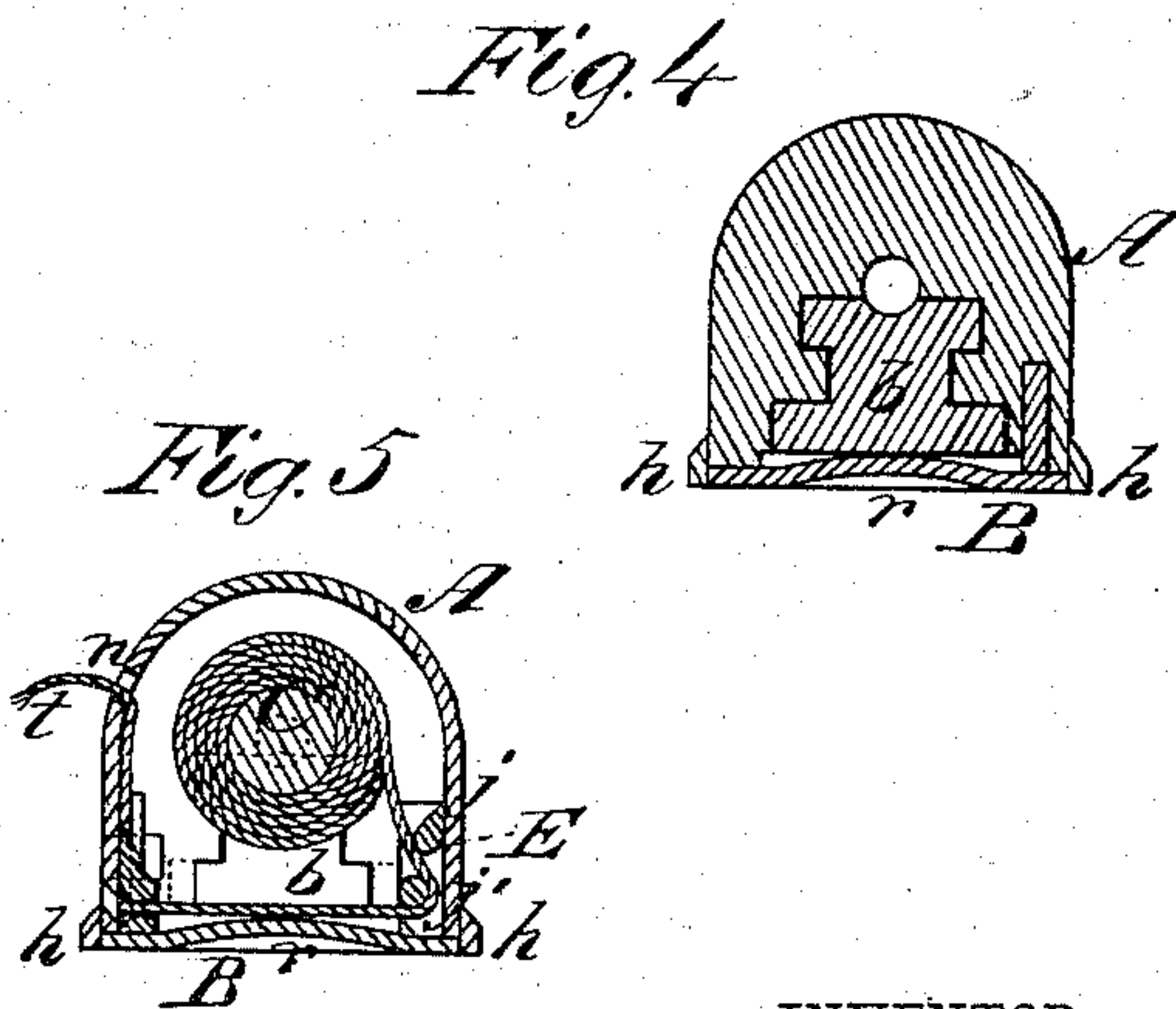
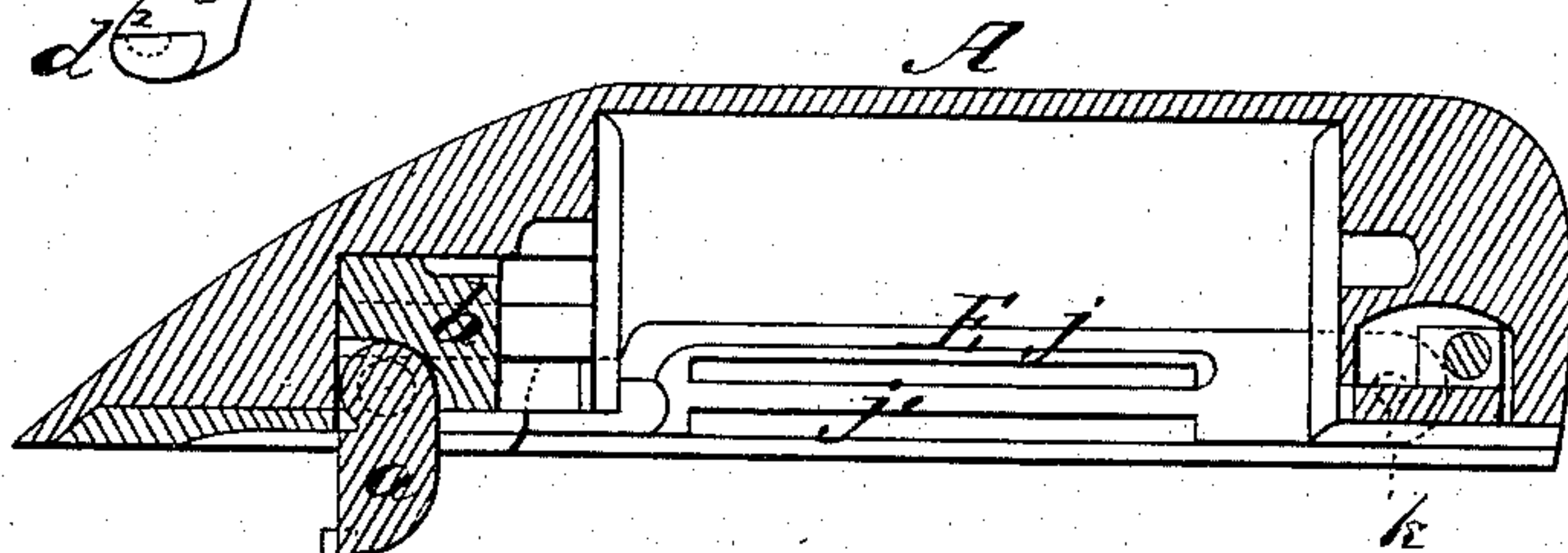
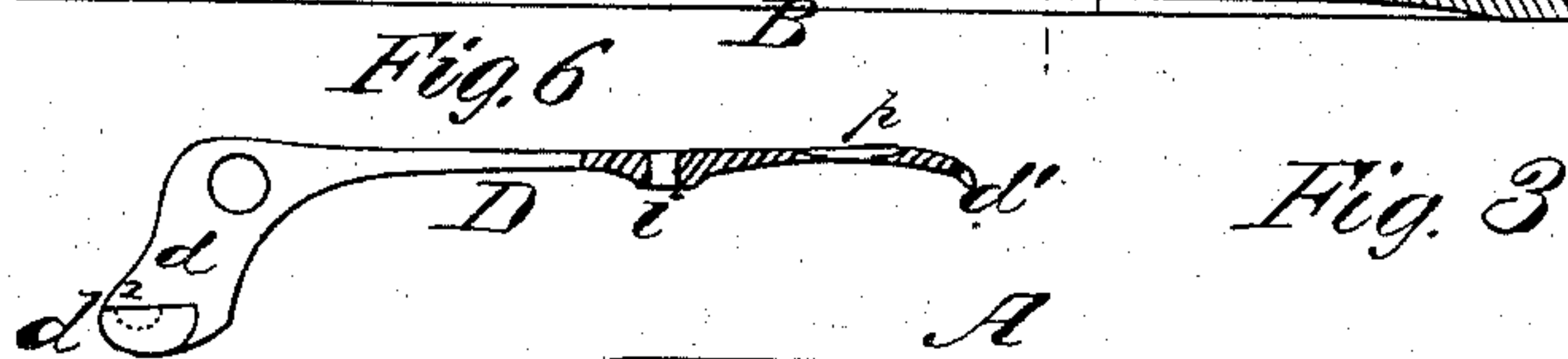
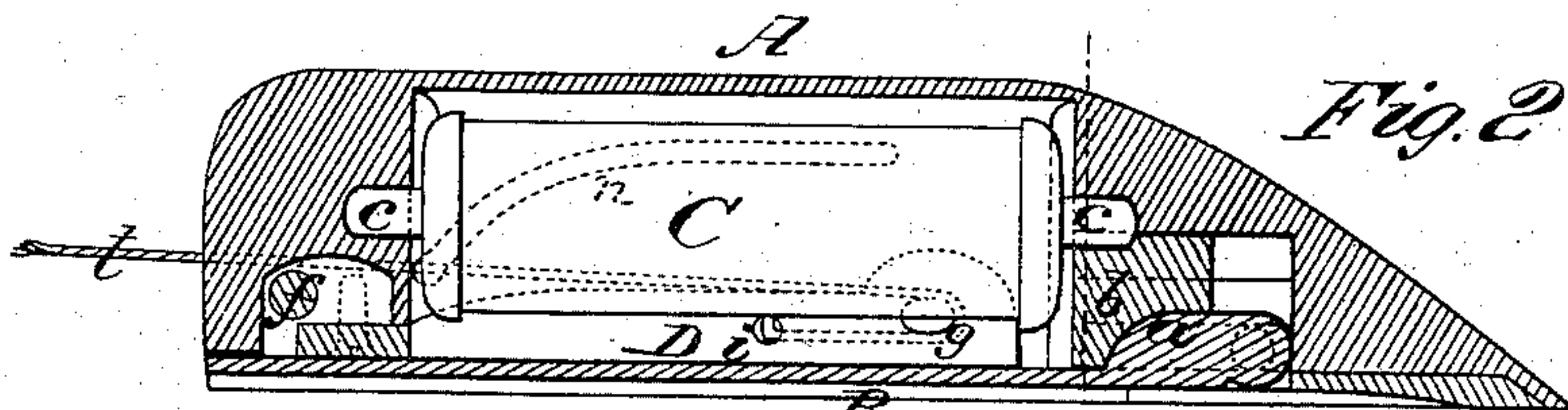
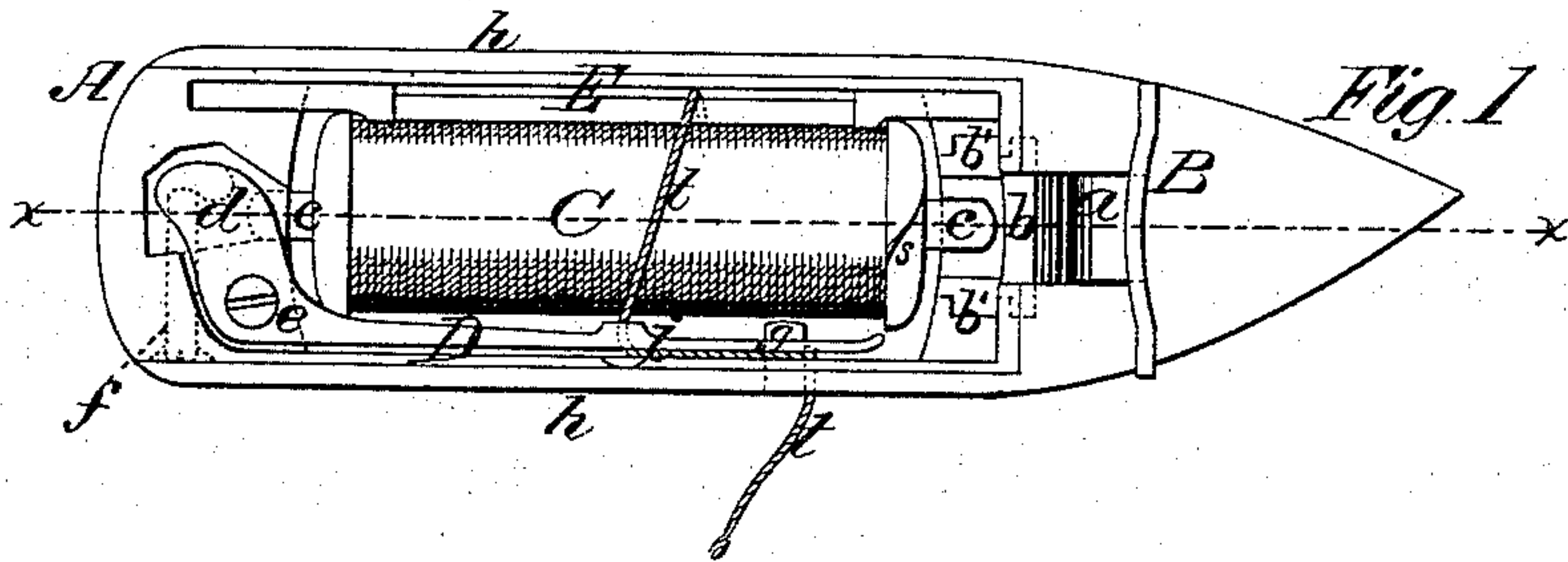


L. MANGUS.
Shuttles for Sewing-Machines.

No.156,933.

Patented Nov. 17, 1874.



WITNESSES

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UNITED STATES PATENT OFFICE.

LEVI MANGUS, OF NORTH LIBERTY, INDIANA.

IMPROVEMENT IN SHUTTLES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **156,933**, dated November 17, 1874; application filed August 22, 1874.

To all whom it may concern:

Be it known that I, LEVI MANGUS, of North Liberty, in the county of St. Joseph and State of Indiana, have invented a new and valuable Improvement in Sewing-Machine Shuttles; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a top view of my sewing-machine shuttle. Figs. 2 and 3 are sectional views. Figs. 4 and 5 are detail views of the same.

This invention has relation to sewing-machine shuttles; and it consists in the employment, in combination with a lug on a hinged face-plate, of a sliding block for holding the bobbin in place, and allowing the same to be released by the act of opening said face-plate.

In the annexed drawings, A designates the bobbin-case, the point and heel of which are made solid, as shown by Figs. 2 and 3. The chamber in this case for containing the bobbin C is closed by a hinged face-plate, B, having a transversely-concave surface, *r*, which reduces friction on the shuttle in running, and also a cam-shaped lug, *a*, which is formed on the inner side of the hinged end of the plate B, and recessed into the solid point of the bobbin-case. The lug *a* is designed to move forward a block, *b*, which is movable between short ways, and which closes over one of the pivots, *c*, of the bobbin when the face-plate B is shut, thus holding the bobbin in place in the case A. When the plate B is opened, as shown in Fig. 3, the block *b* can be moved from the bobbin-pivot and the bobbin taken out of its case. D designates a tension-spring, which is pivoted at *e* in a recess formed in the heel of the case A, and adjusted by means of a screw, *f*, which bears against a boss, *d*², formed on the enlarged end of the spring. The free end of this spring lies against the upper side of the case A, and receives through a countersunk hole, *p*, an elliptical

stud, *g*, around which the thread *t* is drawn. The hole *p* being countersunk, as shown in Fig. 6, prevents the thread from catching as it is drawn around the said stud, and the stud being of the form described, it can be dressed when worn. Near the middle of the spring D is a funnel-shaped hole, *i*, which will allow rough or lumpy thread to pass freely through it. The thread is carried from the bobbin between two bars, *j j'*, on the opposite side of the shuttle to the tension-spring D, thence under the bar *j'*, thence through the hole *i* and around the stud *g*, and finally through a curved slot, *n*, through the top of the case A. The two bars *j j'* are connected together at their ends and pivoted to the lower side of the case A, so that they can be readily swung out for passing the thread between. The round bar *j'* keeps the thread at right angles to the length of the bobbin, and thus prevents dragging. One of the flanges of the bobbin C has a cut, *s*, in it, into which the thread can be drawn and firmly held when the bobbin is out of its case.

I construct the bobbin-case A with ribs *h h* along its upper and lower edges, which are designed to run in grooves made in the raceway of the sewing-machine, thereby keeping the shuttle in place while at work.

I also form a needle-guard or depression in the upper and face side of the shuttle, the object of which is to prevent the needle, should it become bent, from striking the shuttle and breaking.

What I claim as new, and desire to secure by Letters Patent, is—

The hinged face-plate, having a cam-shaped lug, *a*, on its hinged end, in combination with the sliding block *b* and bobbin C, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LEVI MANGUS.

Witnesses:

ISAAC R. COLE,
WASHINGTON STULL.