

(No Model.)

A. BOECHER.
SEWING MACHINE HOOK.

No. 300,683.

Patented June 17, 1884.

Fig. 1.

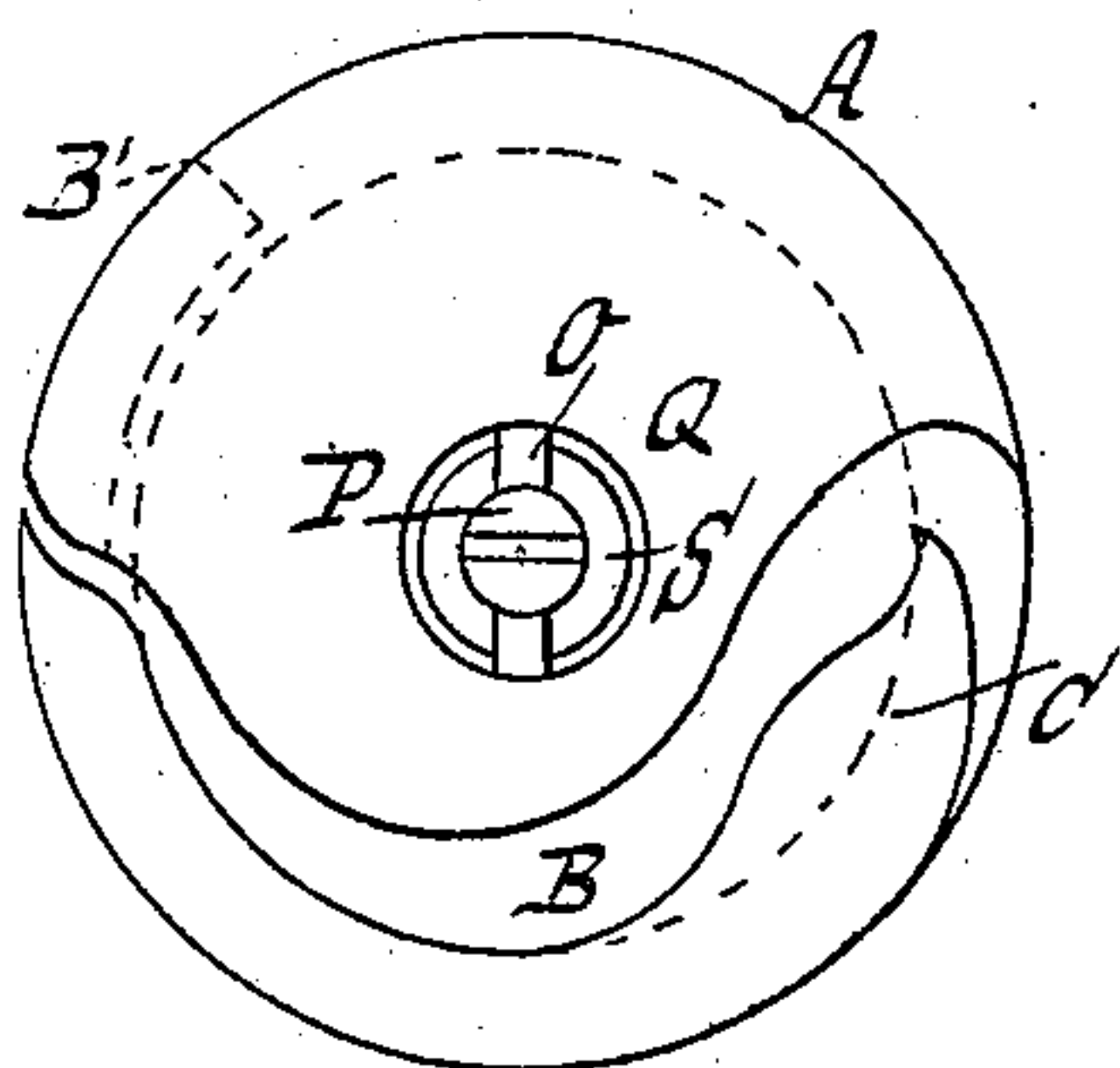


Fig. 2.

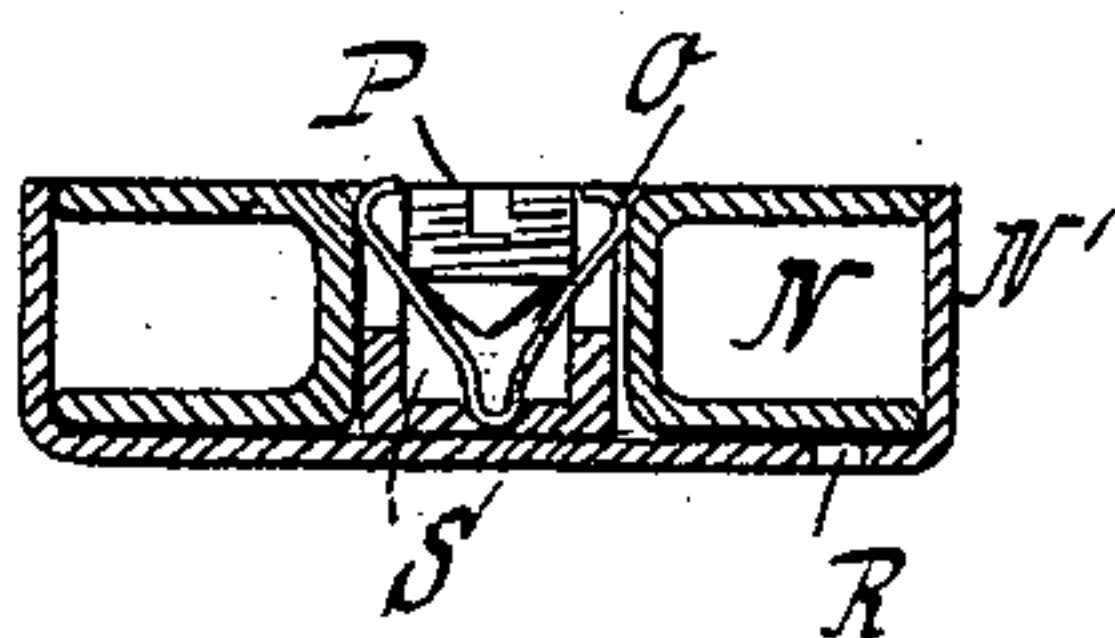


Fig. 3.

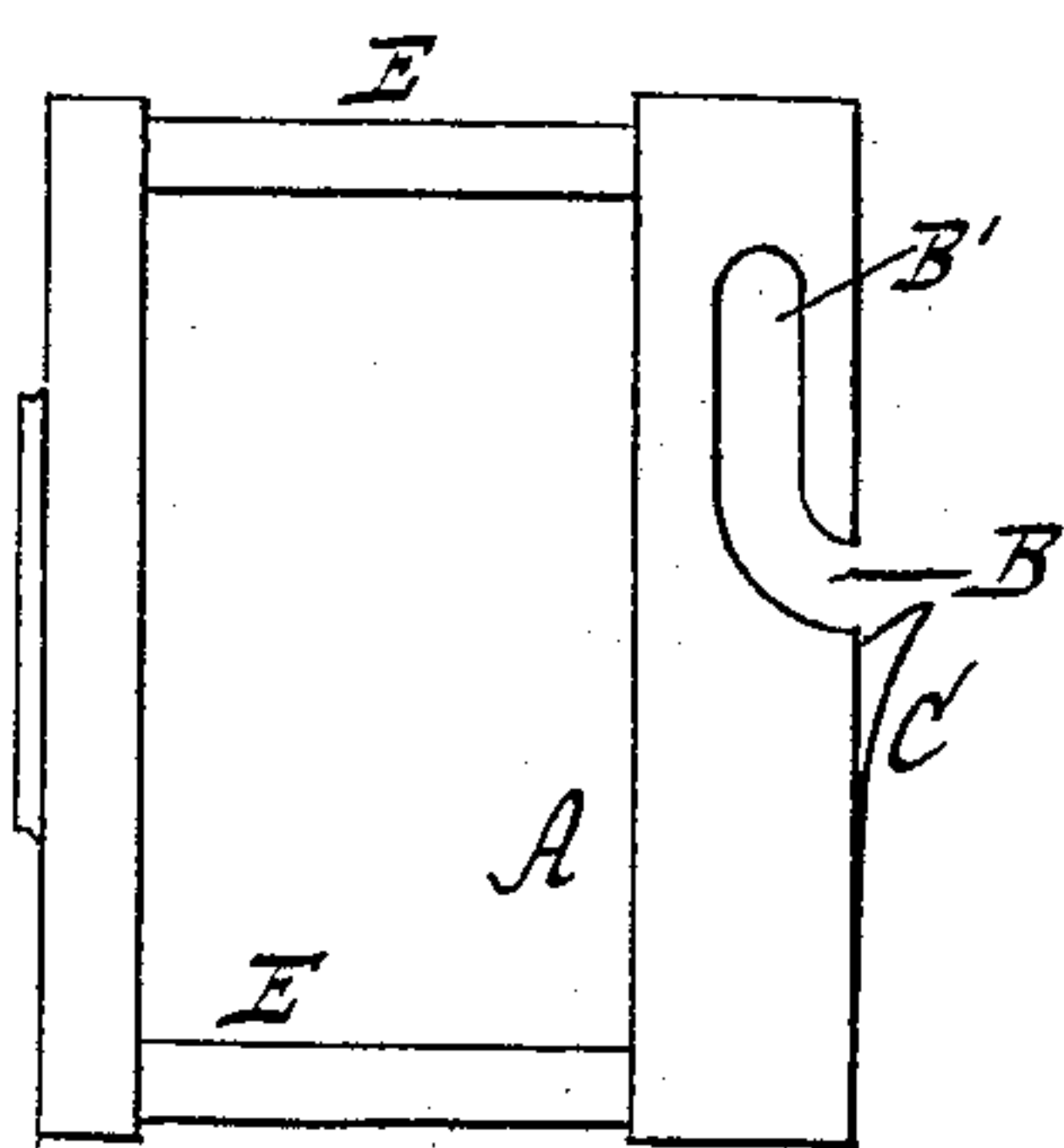


Fig. 4.

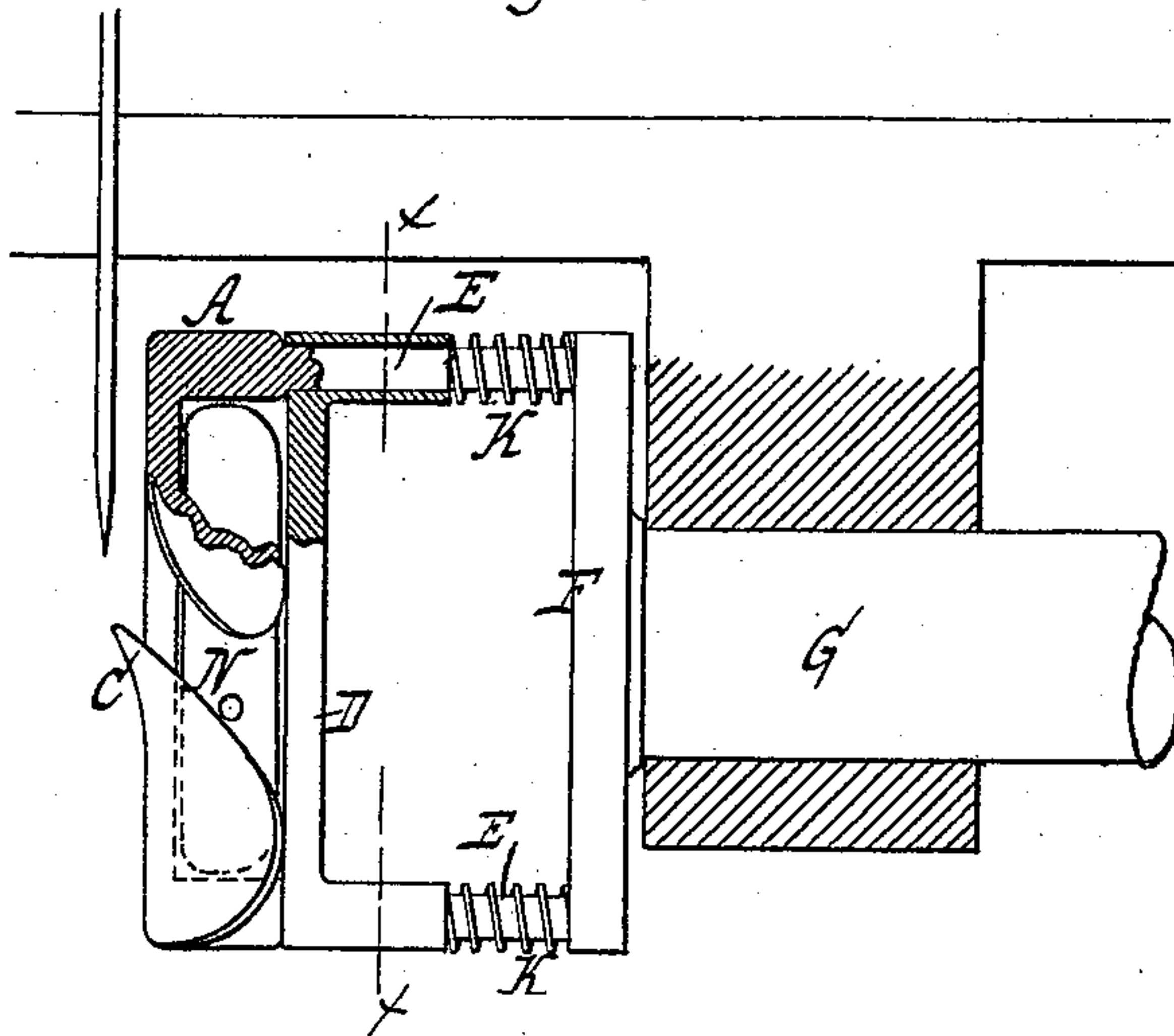


Fig. 6.

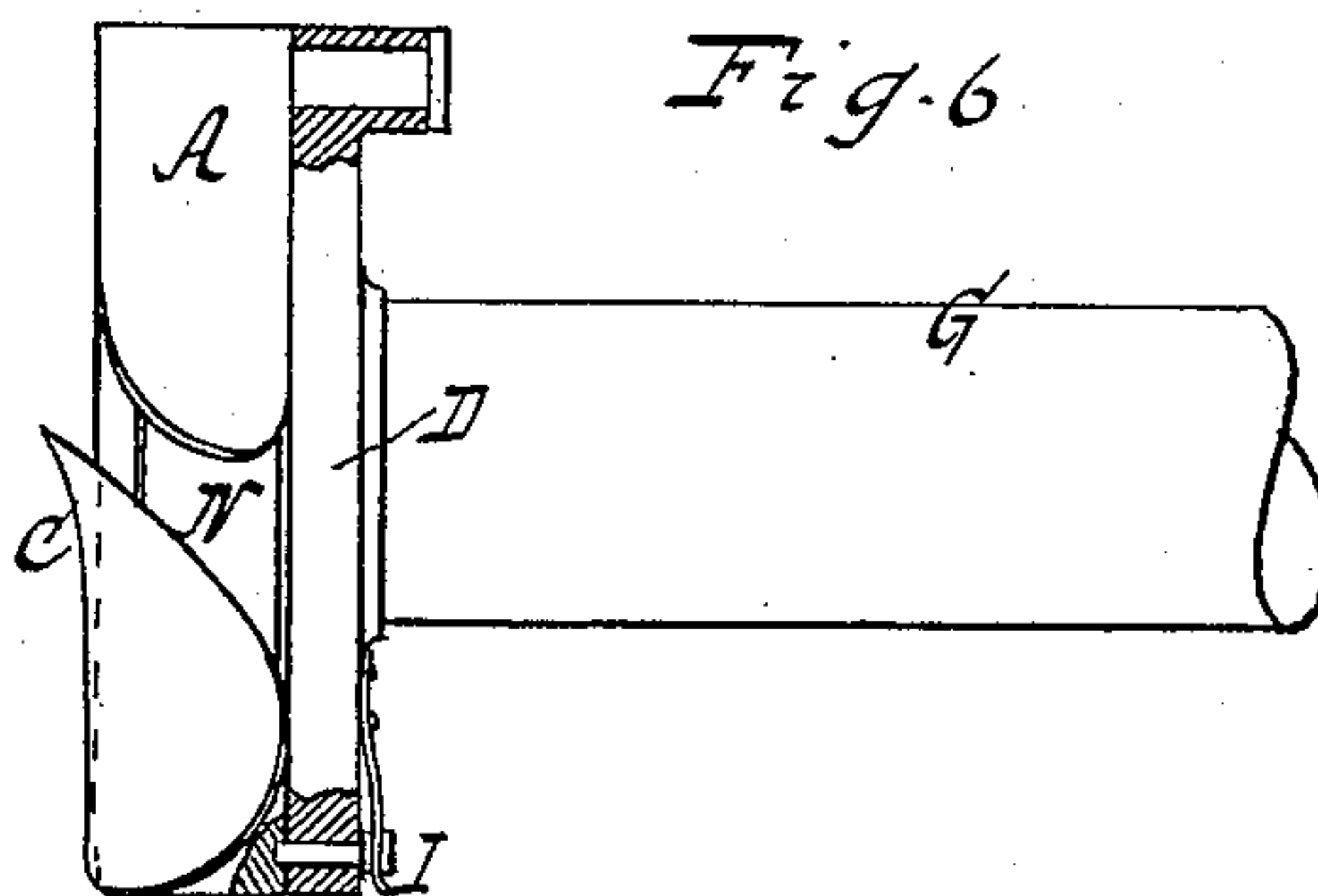


Fig. 7.

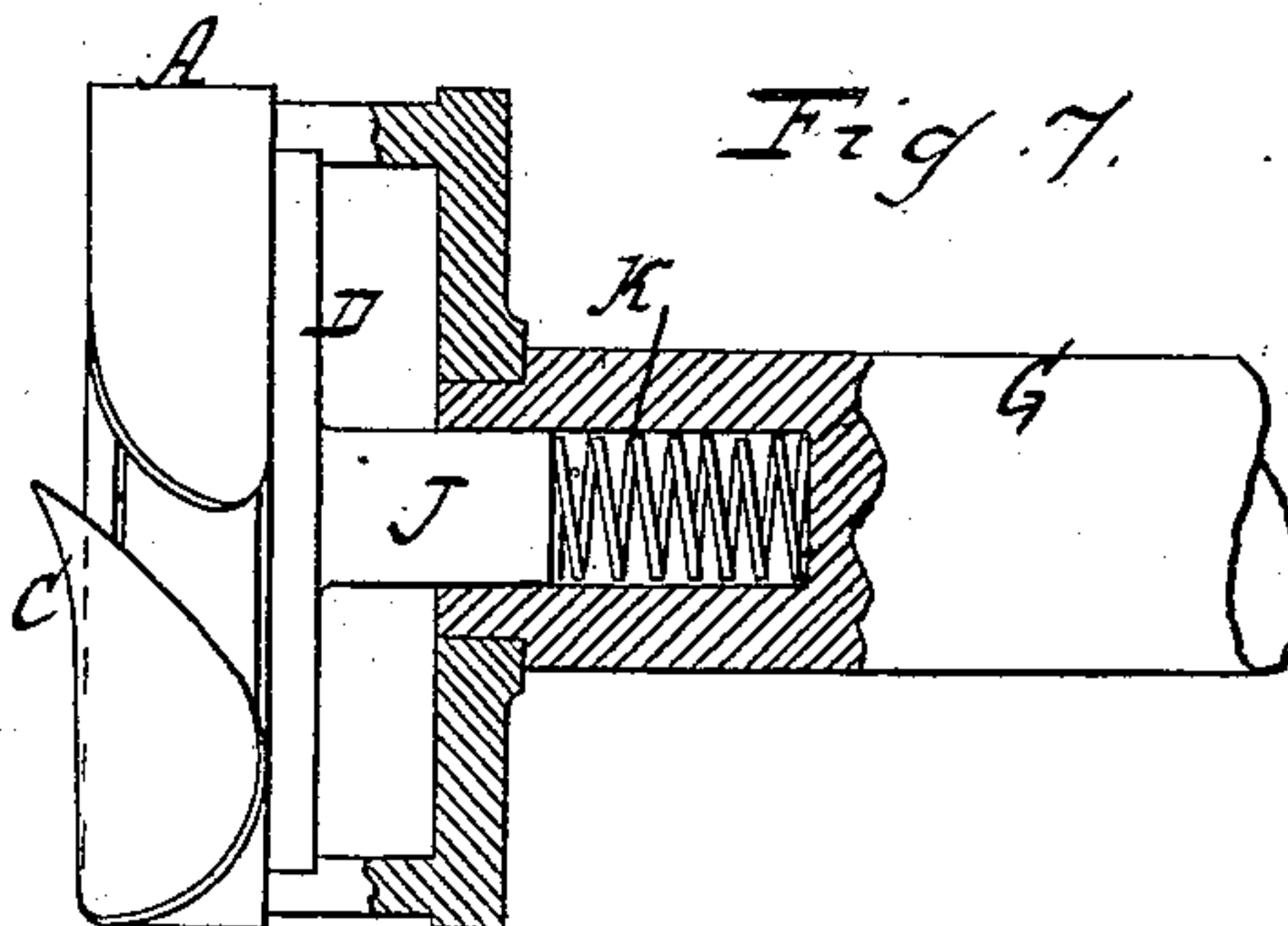
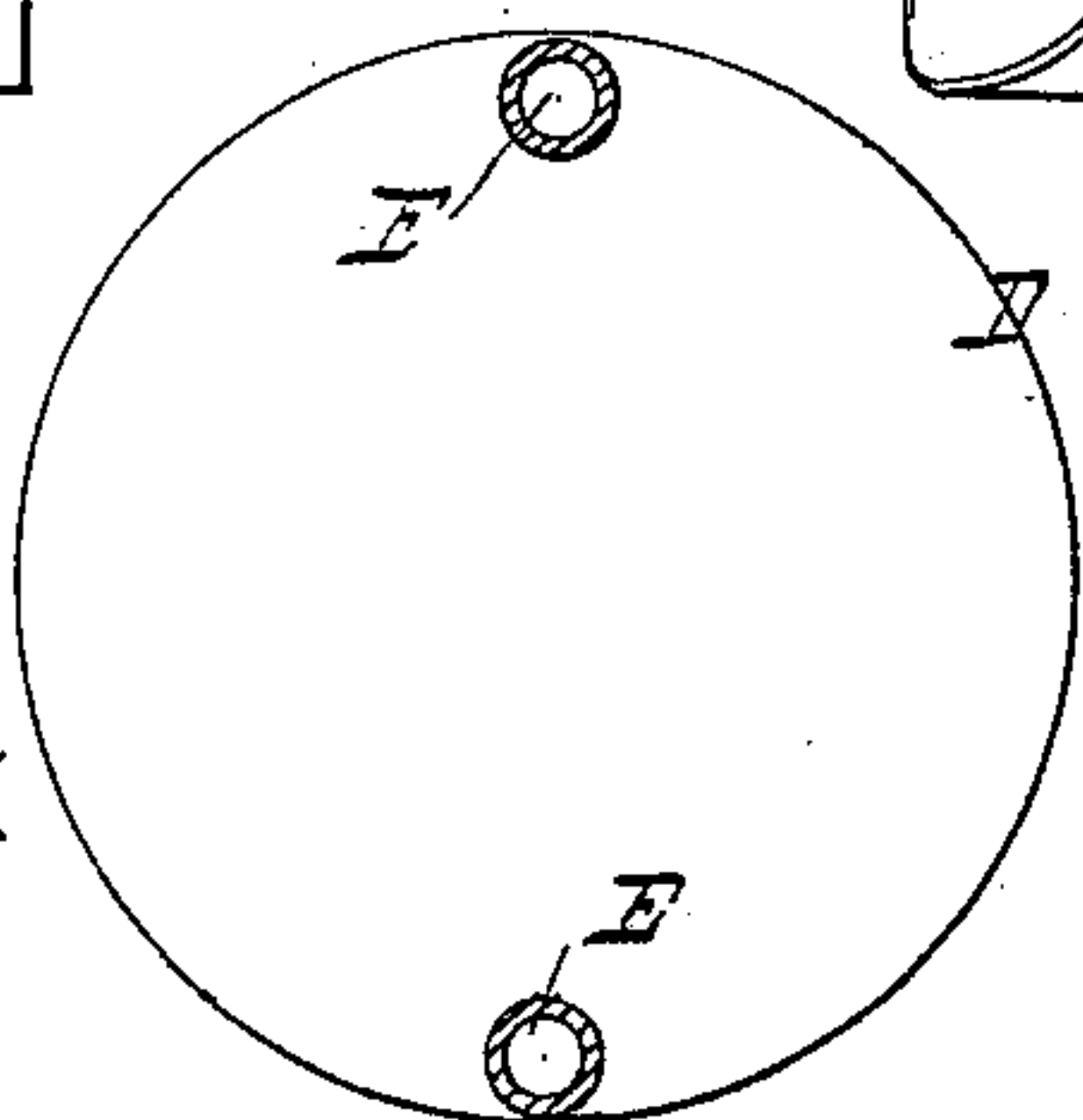


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ADAM BOECHER, OF NEW YORK, N. Y.

SEWING-MACHINE HOOK.

SPECIFICATION forming part of Letters Patent No. 300,683, dated June 17, 1884.

Application filed November 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, ADAM BOECHER, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Sewing-Machine Hooks, of which the following is a specification.

This invention relates to that class of sewing-machine hooks which are arranged to receive a rotary reciprocating motion for casting the loop of needle-thread about the bobbin; and it consists in the novel means, hereinafter described, for retaining the bobbin within the hook, whereby the face of the hook where it is presented to the needle may be left plain; also, in the novel arrangement, hereinafter described, of a tension-spring to act on the bobbin.

In the accompanying drawings, Figure 1 is a face view of a hook embodying my invention. Fig. 2 is a cross-section of the bobbin and its case. Fig. 3 is a side view of the hook. Fig. 4 is a similar view, partly in section, looking in an opposite direction to Fig. 3. Fig. 5 is a cross-section on the line *xx*, Fig. 4. Figs. 6 and 7 illustrate modifications.

Similar letters indicate corresponding parts.

The letter A designates the body of the hook, which is substantially circular, and is closed on outer side, which I denominate the "face" of the hook, the other side or back thereof being left open. In said face of the hook is a slot, B, which extends inward in a curved line from the rim of the hook to a point diametrically opposite, or nearly so, to its mouth or inlet, and is thence continued in the rim, in which latter it terminates, as at B'. The hook-point C is arranged at one side of the open end or inlet-mouth of the slot opposite the terminus B' thereof, and this hook-point is formed by a tapering projection of the peripheral rim of the hook, which extends laterally in a curved path, with its extreme end projecting slightly outward beyond the closed face of the hook.

The hook rotates back and forth alternately—that is, in the direction in which the hook-point projects, and then in the reverse direction, which I designate "forward" and "rearward" motions. In the forward motion the hook-point, by projecting beyond the front face of the hook, readily catches in the loop of the

needle-thread. A part of said loop then enters into the hook-body through the inlet-mouth of the curved slot B, and thereby becomes cast about the bobbin which is contained in the hook-body. In the rearward motion of the hook the loop is freed from the hook-point and the loop leaves the hook-body through the slot at the inner or closed end, B', thereof.

Opposite to the open back of the hook is arranged the bobbin-holder D, consisting of a plate, which, in the example shown in Fig. 4, is movable toward and from the hook on guide-rods E, projecting from a cross-head, F, on the hook-shaft G. The bobbin-holder, however, may also be fixed to the hook-shaft G, as shown in Fig. 6, in which case the hook is pivoted to swing in a lateral direction, and a catch, I, is used to secure the hook; or the bobbin-holder may be provided with a central stem, J, sliding in a socket of the hook-shaft, as shown in Fig. 7.

When the bobbin-holder is made in the form shown in Figs. 4 and 7, a spring or springs, K, are used to keep it in position.

The letter N indicates the bobbin of the hook. This bobbin is fitted into the usual case, N', and is subjected to the action of a tension-spring, O, which is arranged axially to the bobbin in a post, S, of the case, the post being provided with longitudinal slots, from which the spring projects. The tension-spring O is substantially V-shaped, and in the post S is arranged a set-screw, P, of tapering form, to act on the spring, so that the spring may be adjusted to exert a greater or less pressure.

Access may be had to the set-screw P through a central hole, Q, in the face of the hook, and a hole, R, in the bobbin-case serves to admit a push-pin for throwing out the bobbin against the action of the tension-spring.

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

1. The sewing-machine hook herein described, provided with the outer face, having a curved slot extending across the face of the hook from the rim thereof, and having an inlet-mouth in said rim, said hook having a hook-point arranged at one side of the inlet-mouth of the slot and projecting outside the plane of the outer face of the hook, for engaging the

loop of needle-thread and causing it to enter the inlet-mouth of the slot, substantially as described.

2. The sewing-machine hook herein described, provided with a curved slot in its outer face, which extends inward from the rim of the hook and terminates at the other end in said rim, said hook having a hook-point arranged at one side of the inlet-mouth of the slot, for engaging the loop of needle-thread and causing it to enter the inlet-mouth of the slot, substantially as described.

3. The combination of the hook having an open back for the insertion of the bobbin, a closed face provided with a transverse slot, one end of which is closed and the other open through the rim of the hook, to form an inlet-mouth, and a hook-point arranged at the inlet-mouth of the slot, with the bobbin-holder opposite to the open back of the hook, and the shaft supporting both the hook and the bobbin-holder, said hook-point serving to catch the loop of needle-thread and carry one part thereof through the transverse slot and the other part into the inlet-mouth of the slot and cast it about the bobbin, substantially as described.

4. The combination of the hook having an open back for the insertion of the bobbin, a closed outer face provided with a curved slot, having an inlet-mouth opening into the hook-body, and a curved projecting hook arranged at one side of the inlet-mouth of the slot, with the bobbin-holding plate arranged opposite the open back of the hook, and the shaft carrying both the hook and the bobbin-holding plate, said hook-point serving to engage the loop of the needle-thread and carry it into the transverse curved slot and through the inlet-mouth of the slot for casting the loop about the bobbin, substantially as described.

5. The combination of the hook having an open back, a slot across its closed face, and

a projecting hook-point, with the bobbin-case having an axial post provided with longitudinal slots and arranged in the hook, the bobbin arranged upon the post, the axial tension-spring composed of arms the extremities of which project through the slots of the post against the bobbin, and the set-screw for adjusting the pressure of the arms of the spring against the bobbin, substantially as described.

6. The sewing-machine hook herein described, having an open back, in combination with the bobbin-holder opposite the open back of the hook, the spring or springs acting on the bobbin-holder to keep it in position against and over the open back of the hook, and the hook-shaft supporting the bobbin-holder and the spring or springs, together with the hook, substantially as shown and described.

7. The combination of the bobbin-case having the axial hollow post provided with longitudinal slots, the bobbin fitted to the post, the axial tension-spring arranged in the post to project from its slots, thereby acting on the bobbin, and means for adjusting the pressure of the spring against the bobbin, substantially as shown and described.

8. The combination of the bobbin-case having the axial hollow post provided with longitudinal slots, the bobbin fitted to the post, the axial V-shaped tension-spring arranged in the post to project from its slots, and the tapering set-screw arranged in the post to act on the tension-spring, substantially as shown and described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

ADAM BOECHER. [L. S.]

Witnesses:

CHAS. WAHLERS,
E. F. KASTENHUBER.