

(No Model.)

A. N. SPERRY.
SNAP HOOK.

No. 359,408.

Patented Mar. 15, 1887.

Fig. 1

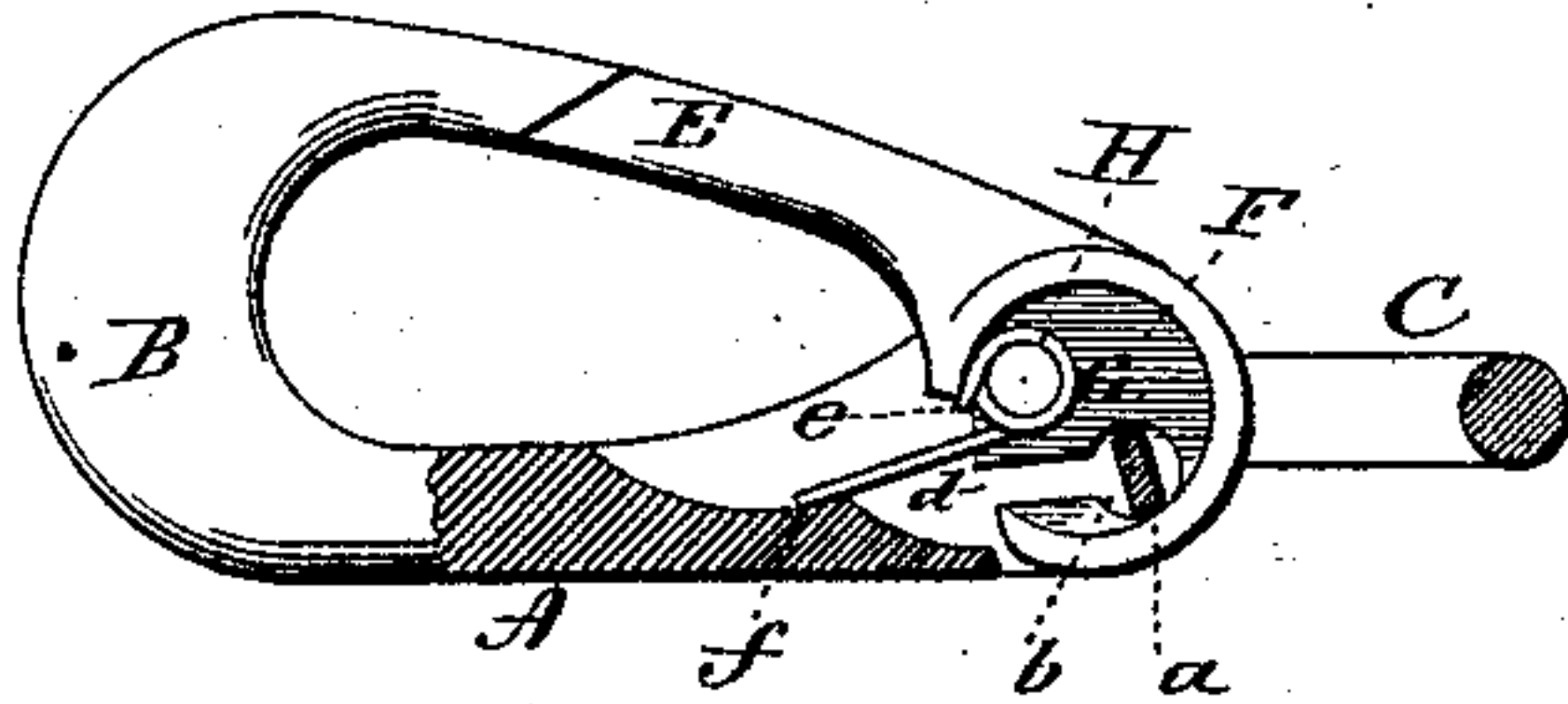


Fig. 2

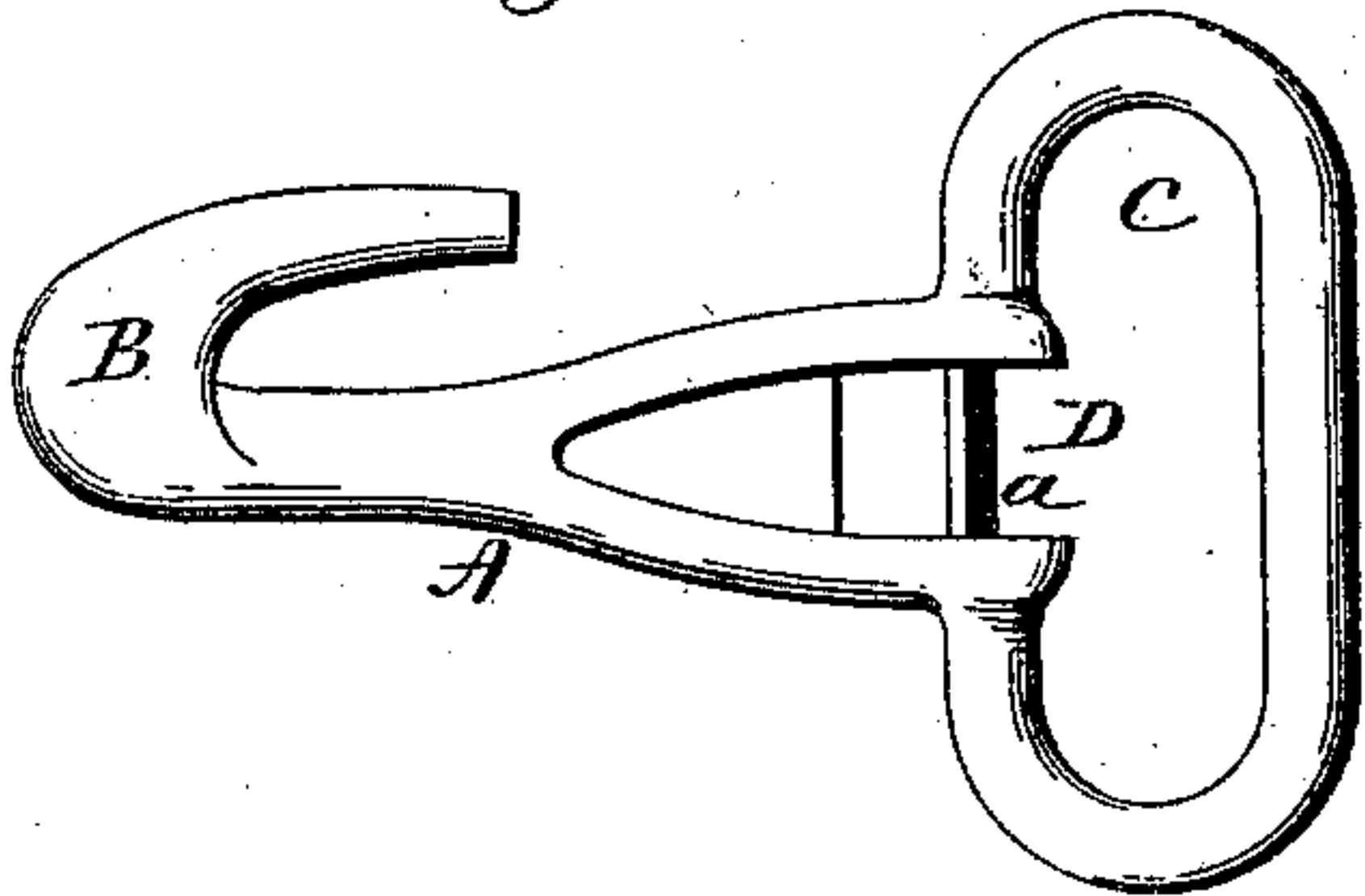


Fig. 3

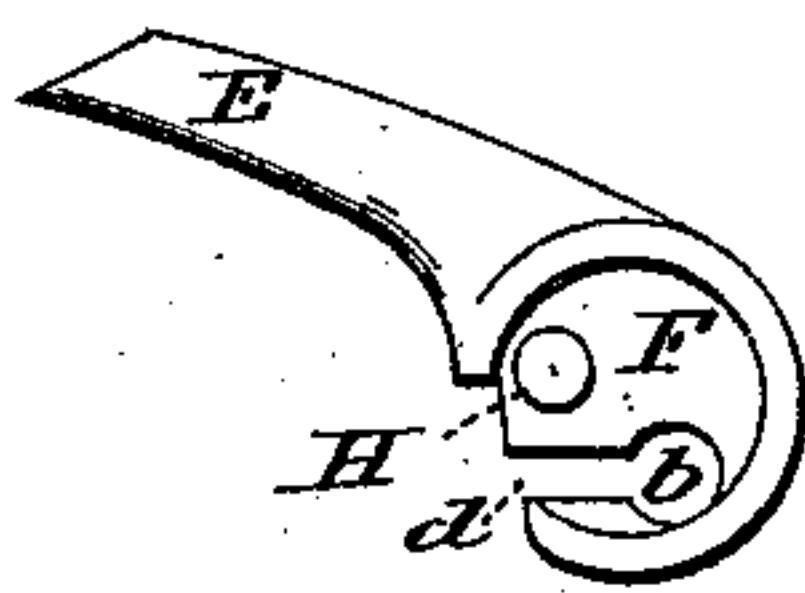


Fig. 4

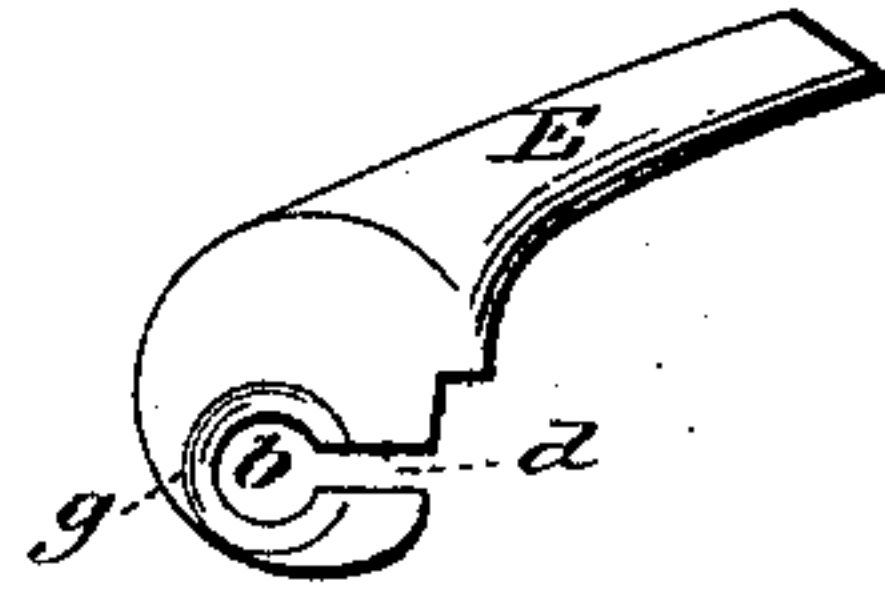


Fig. 6

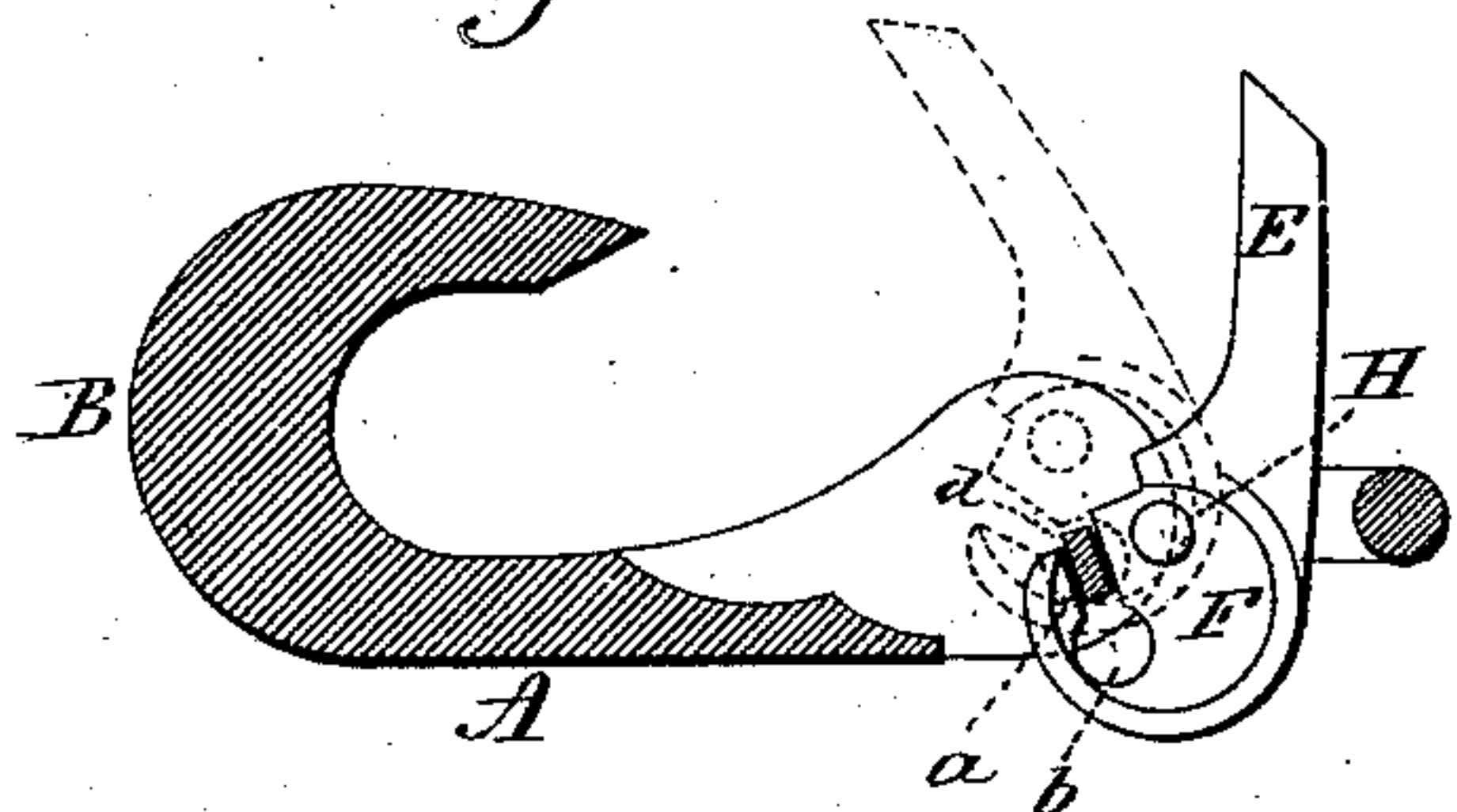
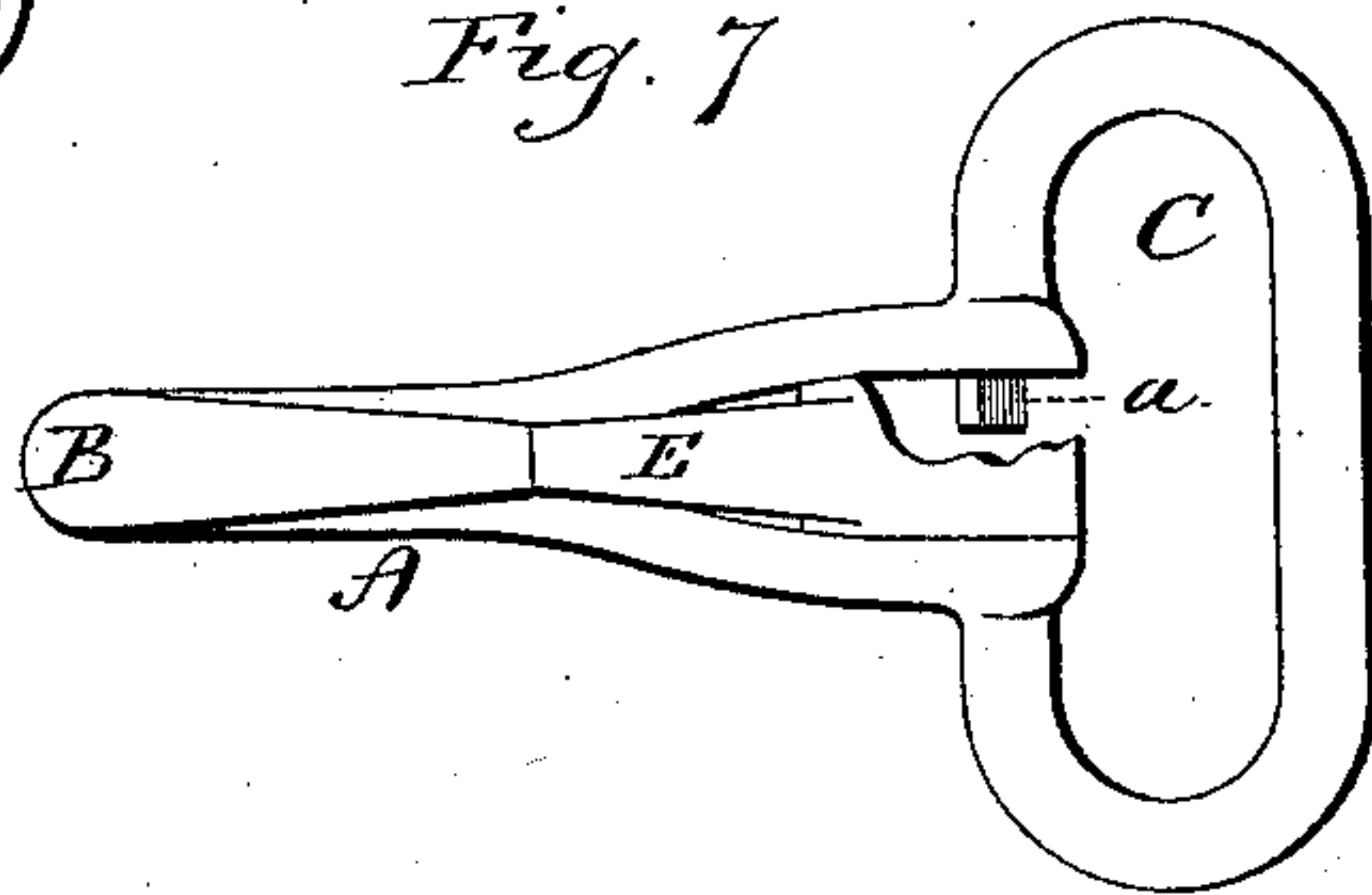


Fig. 7



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UNITED STATES PATENT OFFICE.

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SNAP-HOOK.

SPECIFICATION forming part of Letters Patent No. 359,408, dated March 15, 1887.

Application filed January 13, 1887. Serial No. 224,182. (No model.)

To all whom it may concern:

Be it known that I, ALFRED N. SPERRY, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Snap-Hooks; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a sectional side view of the hook complete; Fig. 2, a top view, the tongue removed, showing the nose of the hook as turned to one side; Fig. 3, a side view of the tongue, looking into the spring-recess; Fig. 4, the reverse side of the tongue; Fig. 5, an end view of the tongue, showing front side view of the hub. Fig. 6 illustrates the method of assembling the parts; Fig. 7, a top view of the hook complete, a portion broken away to show the pivot-bar extending only from one side of the recess.

This invention relates to an improvement in that class of snap-hooks in which the body is constructed with a hook at one end and a loop or other attaching device at the opposite end, with a recess at the rear end of the body in the plane of the hook, and in which recess a tongue is hung upon a pivot, so as to swing down from the nose of the hook in opening and up in closing, a spring being provided to force the tongue to its closed position, but to yield for opening.

Various devices have been resorted to to avoid the introduction of a pivot upon which the tongue will swing—that is to say, to make the pivot a part of the tongue and body.

In the more general construction the tongue-recess in the body is cast open to a greater extent than the thickness of the hub of the tongue, and then the pivot cast either upon one cheek of the recess in the body, with a corresponding seat in the side of the tongue, or vice versa, and so that when the tongue is set in place the cheeks are closed upon the hub, so that the pivot entering its seat will hold the tongue in place, but yet permit it to work freely. Such bending of the body, however, causes a very considerable loss by breakage. Interlocking devices of various characters have been employed to avoid this bending, but generally they are more or less com-

plicated and add greatly to the expense of manufacture, because in assembling the parts considerable more time is required than when the body is closed upon the tongue, even when an independent pivot is introduced.

The object of my invention is to avoid the bending at the recess in the body and permit the tongue and recess in the body all to be cast in their final shape, so that in assembling the parts no bending about the tongue is required for its security, and yet so that the tongue is so securely locked that detachment is impossible without destroying the hook.

A represents the body, which terminates at one end in a hook, B, and at the other end in a loop, C, or other common attaching device. The body is cast at its rear end with a recess, D, opening into the loop, as seen in Fig. 2, and in the normal plane of the nose of the hook. The nose of the hook is turned out of its normal plane, as seen in Fig. 2, as required in casting, in order that the loop and hook may both be cast without coring. This is substantially the usual form of casting hooks of this class. The recess D corresponds in width to the hub of the finished tongue.

Transversely across the recess D, I form a bar, *a*, preferably as an integral part of the body and formed in the process of casting; or it may be a flat bar introduced in the mold and so that the metal of the hook will be cast about its ends to secure it in place. This bar stands at right angles to the plane of the hook, as seen in Fig. 2. It is flat, its greatest width being equal to the diameter of the pivot required for the tongue to turn upon, but in thickness considerably less than such diameter.

E represents the tongue, which is cast with the usual hub, and which corresponds in thickness to the width of the recess D. In one side of the hub is a recess, F, adapted to receive the spring. Through the closed side of the hub a pivot-hole, *b*, is formed, in diameter corresponding to the width of the bar *a*. From this pivot-opening *b* a radial slot, *d*, is formed below the tongue, as seen in Figs. 3 and 4, in width corresponding to the thickness of the bar *a*, considerably less than the diameter of the pivot-opening *b*. The relative positions of the bar *a* and the slot *d* are such that to pass the hub of the tongue onto the bar the point of the tongue must be turned

backward to a considerable distance from the nose of the hook, and, as seen in Fig. 6, the plane of the bar *a* being at that time in the plane of the slot *d*. The tongue is set upon the bar by passing the slot *d* in the hub over the bar, as seen in Fig. 6, and until the pivot-opening *b* comes upon the bar *a*. Then the tongue may be turned forward toward the hook, so as to bring the bar entirely within the opening *b*, and the width of the bar, corresponding to the diameter of the opening *b*, forms a pivot upon which the tongue will turn, the same as if the bar were a round pivot. The point of the tongue is then turned down below the nose of the hook, as seen in Fig. 1, and then the nose of the hook is turned into its proper plane and over the point of the tongue, so that the tongue will stand beneath the nose of the hook, and, held thereby, cannot be turned to a position where the plane of the slot *d* will coincide with the bar *a*. The tongue thus arranged is free to play, as in the usual construction, and any suitable spring may be applied to the tongue and the body of the hook to hold the tongue up to its place against the nose of the hook, but yet yield for the opening of the tongue. I prefer, however, to arrange a torsion or helical spring, *G*, upon a stud, *H*, formed in the spring-chamber *F* in the hub and parallel with the axis of the hub, and so that one arm, *e*, of the spring will bear against the hook and the other arm, *f*, against the body, as in the usual manner of springs in this class of hooks.

While I prefer to cast the bar *a* entirely across and so as to connect the two sides of the recess, it may extend but partly across the recess, as seen in Fig. 7, sufficiently far to take a bearing within that side of the tongue.

In casting the body with the pivot-bar therein the junction with the side of the recess will not always form a perfect angle, as is desirable, and such filling of the metal at that point would be liable to interfere with the working of the tongue if that side of the hub were flat—that is to say, that side of the tongue might not fit as closely against the side of the recess as desirable. To avoid mechanical work in fitting the parts, I cast the side of the hub with a countersink or recess, *g*, around the pivot-opening *b* sufficient to allow the maximum filling, which may occur at the junction of the bar with the side of the recess, and so that, notwithstanding the filling in at that point, that side of the hub may fit close up to the side of the recess.

The bar is best cast at the rear and so that the spring-stud *H* will stand forward of the pivot, as seen in Fig. 1. In assembling the parts it will be understood that the spring is introduced with the tongue.

I claim—

1. A snap-hook consisting of the body *A*, constructed with a hook, *B*, at one end and with an attaching device at the other end, the said body constructed with a recess, *D*, at its rear end open in the plane of the hook, combined with a tongue, *E*, its hub corresponding to said recess, a flat pivot-bar, *a*, in the said recess, the hub constructed with a pivot-opening, *b*, corresponding in diameter to the width of the pivot-bar *a*, and with a radial slot, *d*, in width corresponding to the thickness of the pivot-bar *a* and less than the width of the said pivot-bar, said slot extending from said opening through the side of the hub below the tongue, with a spring between said tongue and body of the hook, substantially as described.

2. The combination, in a snap-hook, of the body *A*, constructed with a hook, *B*, at one end and an attaching device at the opposite end, with a recess, *D*, at the rear end of the body in the plane of the hook, the said recess having a flat transverse pivot-bar, *a*, therein, the tongue *E*, constructed with a hub corresponding to said recess in the body, the said hub constructed with a spring-recess, *F*, in one side and with a pivot-opening, *b*, through the opposite side, the diameter of which opening corresponds to the width of the bar *a*, and with a slot, *d*, opening radially from said pivot-opening *b*, with a spring-stud, *H*, in said spring-recess *F*, and with a spring arranged upon said stud, one arm of said spring taking a bearing upon the tongue and the other upon the body, substantially as described.

3. In a snap-hook substantially such as described, the tongue-recess in the body constructed with a flat transverse bar, *a*, the tongue constructed with a hub corresponding to said recess, with a transverse opening through the said hub corresponding in diameter to the width of said bar, and with a slot, *d*, extending from said opening through the hub, the outer side of the hub constructed with a recess, *g*, around said pivot-opening, and with a spring between said tongue and bar, substantially as described.

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