

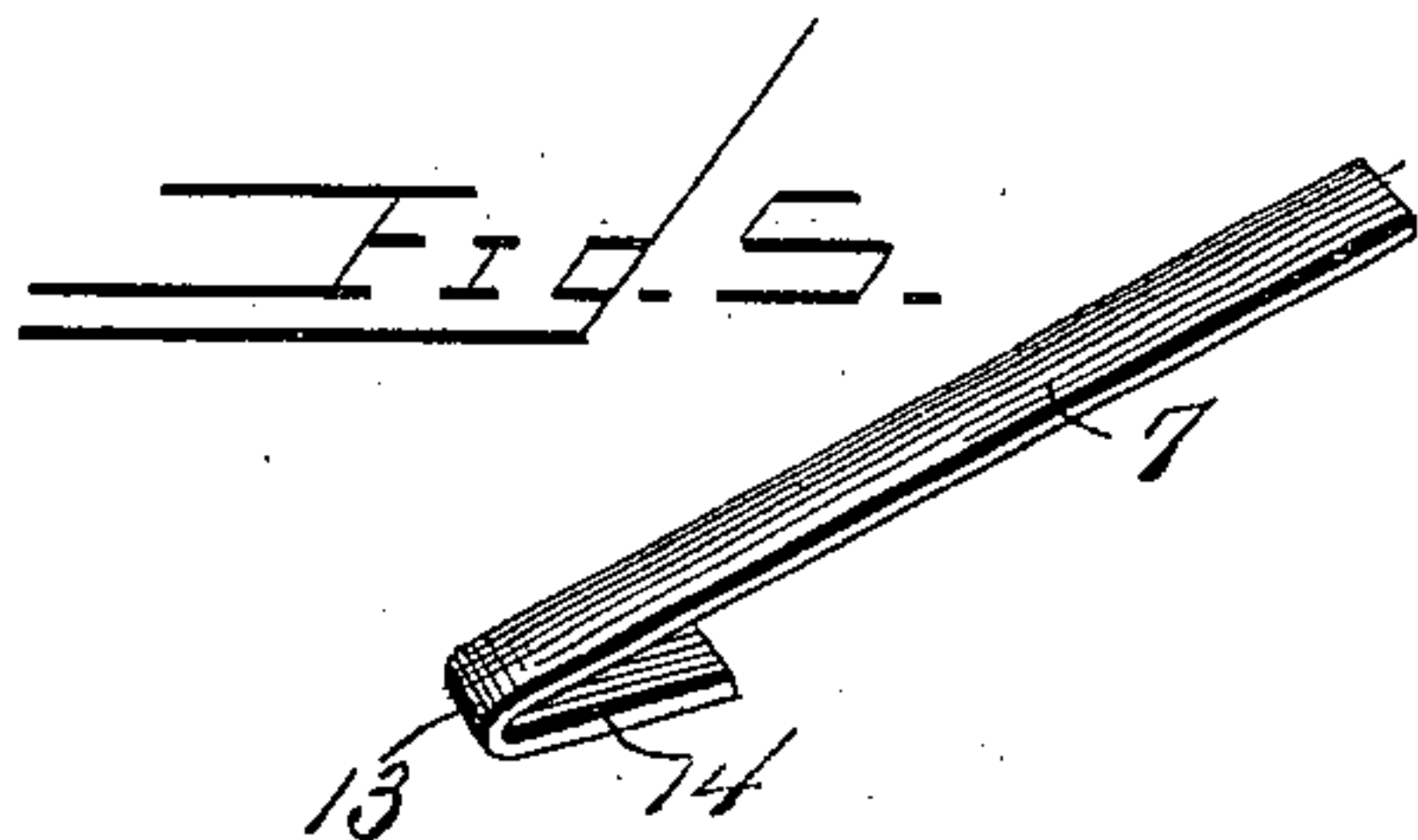
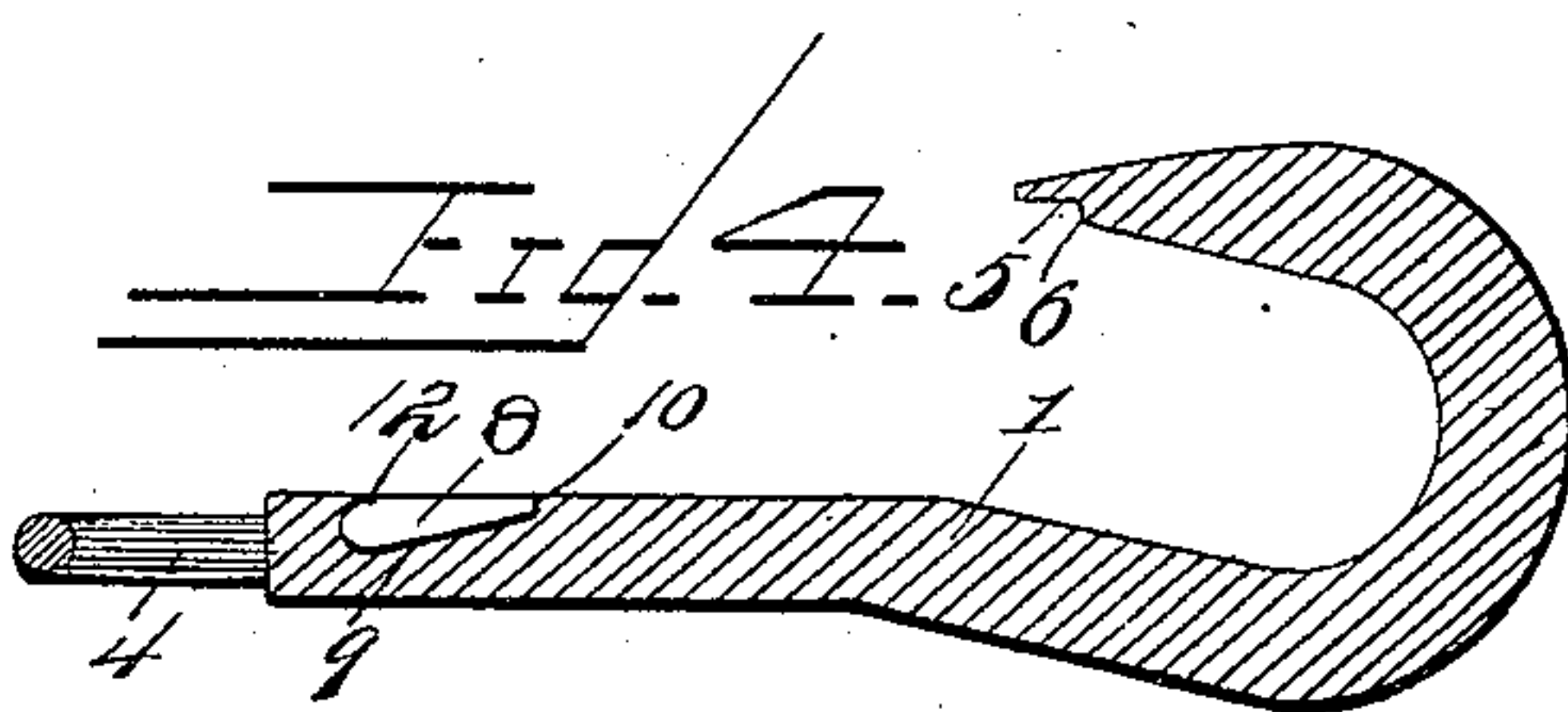
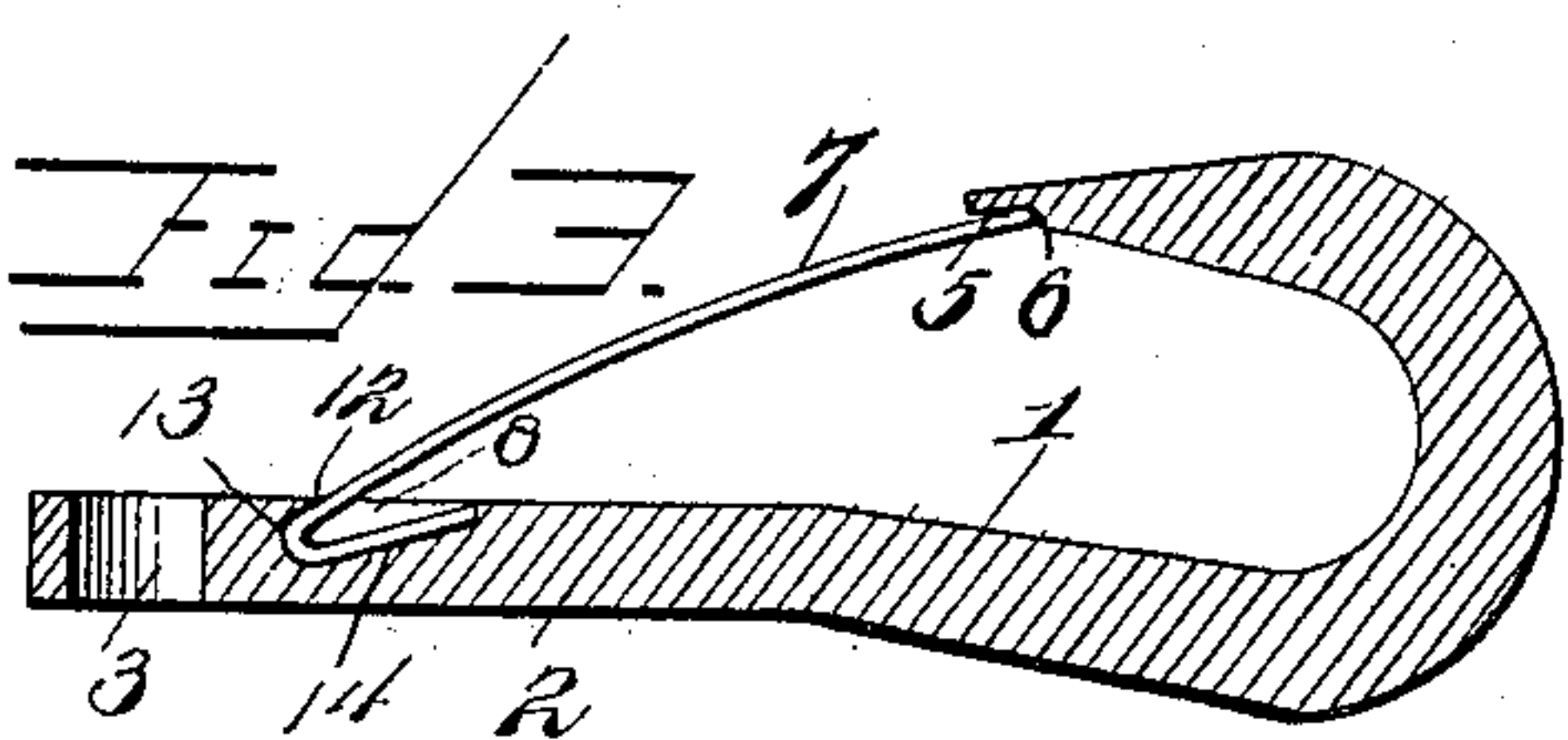
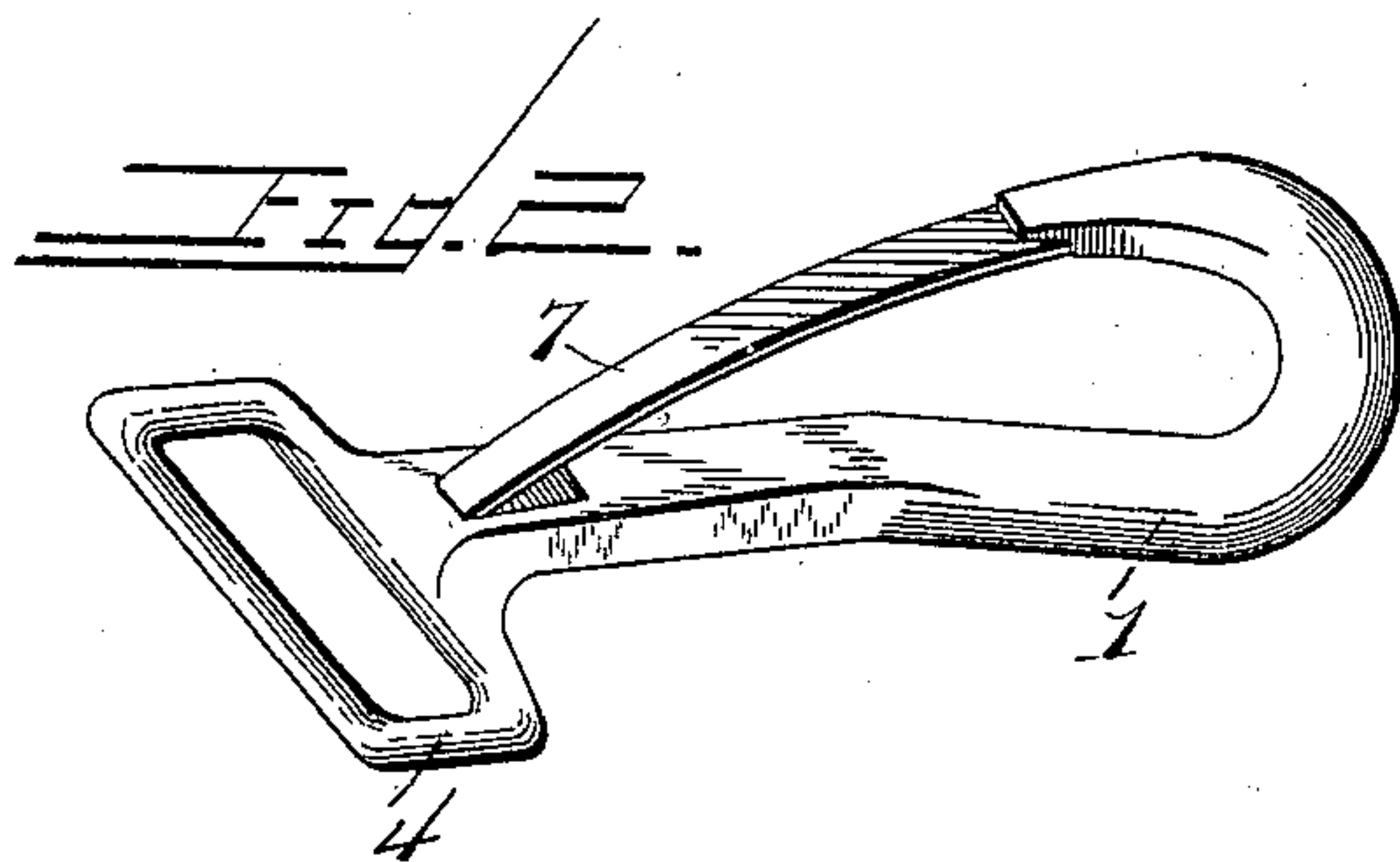
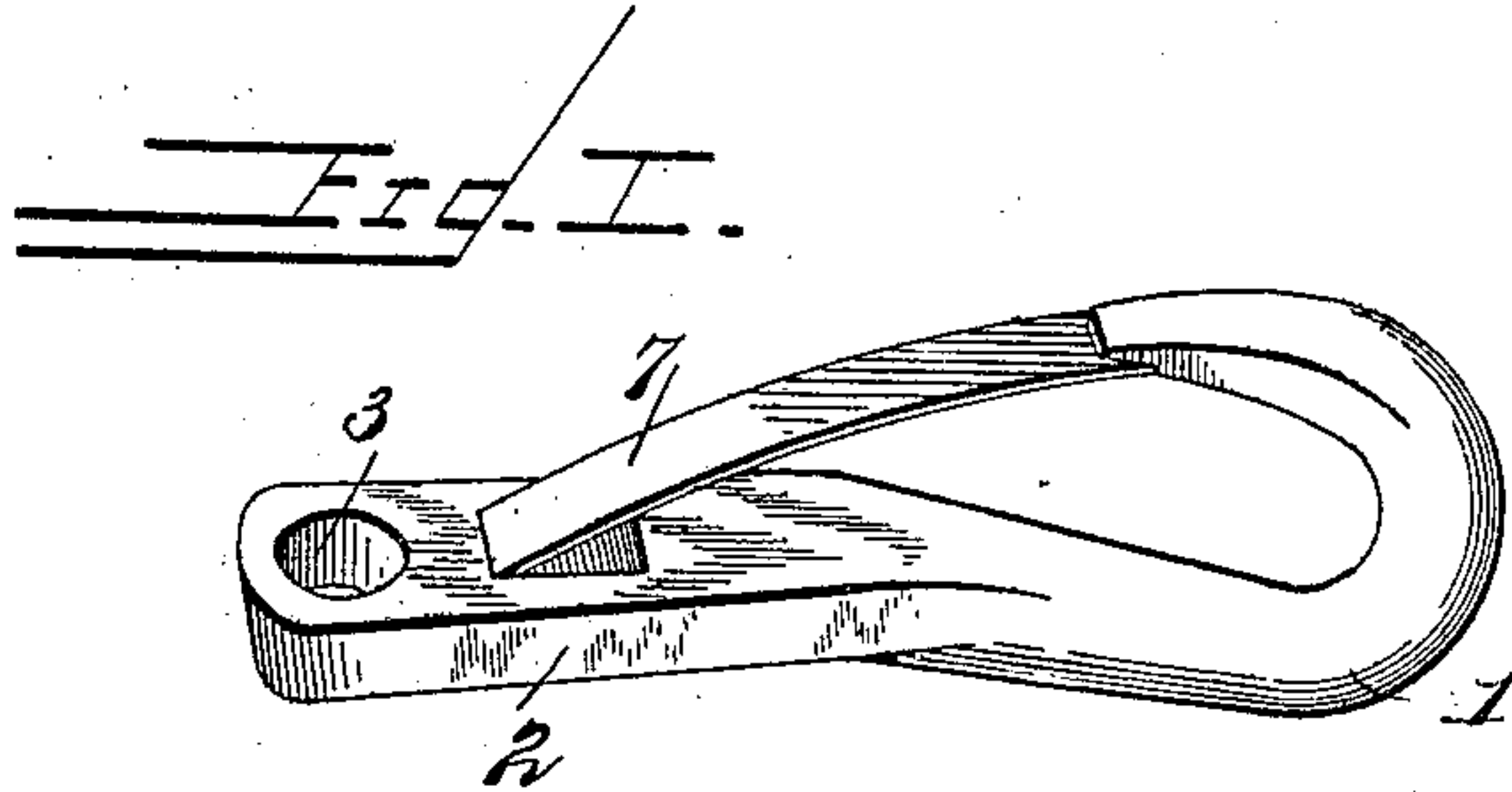
No. 616,145.

Patented Dec. 20, 1898.

G. ROTHAR.
HARNESS SNAP HOOK.

(Application filed Nov. 18, 1897.)

(No Model.)



Witnesses

R. H. Shepard

H. J. Pennington

By *W. H. S.* Attorneys,

Inventor
George Rothar

C. H. Snow & Co.

UNITED STATES PATENT OFFICE.

GEORGE ROTHAR, OF OLIVER'S MILLS, PENNSYLVANIA.

HARNESS SNAP-HOOK.

SPECIFICATION forming part of Letters Patent No. 616,145, dated December 20, 1898.

Application filed November 18, 1897. Serial No. 658,964. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ROTHAR, a citizen of the United States, residing at Oliver's Mills, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Snap-Hook, of which the following is a specification.

My invention relates to improvements in snap-hooks designed for service as a trace-hook, a breast-snap, and line-snap, or in any place where a snap-hook may be used to advantage.

Prior to my invention it was common to provide a snap-hook in which the body was cast in a single piece of metal with a recess, and a spring was employed to close the throat or space between the extremity of the hook and the body or shank. In all instances known to me, however, the heel of the spring is secured in place in the slot or recess of the body by the employment of rivets or pins, which are fastened through the body and the heel of the spring in such a manner as to prevent the ready displacement of the spring. Such prior constructions are open to the serious objection that when the spring becomes broken the device must be discarded or thrown aside. This is due, primarily, to the feature of securing the spring to the body incidental to the riveting of the spring in place. In my present invention I aim to overcome this objectionable feature connected with the employment of snap-hooks, and I so construct the body and arrange and connect the spring thereto that the spring is held or seated so securely in place in the body that it cannot become detached except when the spring is broken, at which time the heel of the spring may readily be slipped out of place in its seat in the body and a new spring quickly and easily substituted therefor.

A further object of my invention is to provide an improved construction of the spring with a view to enable the same to be secured in the body without the employment of extraneous fastening means, such as rivets or pins, and to also impart to the spring a tension which is equally distributed throughout the entire length of the spring, thereby increasing its durability and efficiency.

To the attainment of these ends, my invention consists in a body provided with a pocket

which does not extend entirely through the body, the bottom of the pocket inclining outwardly from the deepest point to an abrupt shoulder or stop in said pocket and the rear end of said pocket provided with an overhanging ledge or shoulder of less length than the bill of the hook, combined with a leaf-spring having its heel doubled or bent upon itself, one end of the heel abutting against the abrupt shoulder or stop at the front end of the pocket and the heel and spring at the point where they are joined together fitting snugly in the deepest part of the pocket beneath the overhanging shoulder or ledge of the body. This disposition of the spring within the inclined pocket having the overhanging ledge causes the heel to abut against the shoulder and the spring to exert its tension against the overhanging ledge, whereby the spring is housed in the pocket in a manner to securely hold the same in position therein without the employment of any fastening means therefor.

To enable others to understand my invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of a snap-hook embodying my invention. Fig. 2 is a similar view of a snap-hook in which the body is constructed with a loop to receive a strap. Fig. 3 is a vertical longitudinal sectional view taken centrally through the snap-hook shown by Fig. 1. Fig. 4 is a sectional view through the body of the snap-hook with the spring omitted, and Fig. 5 is a detail perspective view of the spring.

Like numerals of reference denote corresponding parts in each of the several figures of the drawings.

The body 1 of my improved snap-hook is cast in a single piece of metal. The detailed construction of the body, with the exception of the pocket, to be presently described, may be the same as ordinary snap-hooks familiar to the trade.

In Fig. 1 I have shown the snap-hook as provided with a shank 2, having a transverse eye 3; but in Fig. 2 the body of the snap-hook is somewhat differently constructed on the lines of snap-hooks used in connection with harness—that is to say, the rear end of the body is provided with a loop 4, through

which a strap may readily be passed. The hook, as is usual, curves over the body and terminates in a beak or bill provided with a recess 5, which forms an abrupt shoulder 6, said recess and shoulder constituting a seat for the free end of the spring-tongue 7.

One of the important features of my invention is the construction of the pocket 8. This pocket is produced in the upper face of the shank or body at a point adjacent to the perforation or loop at one end of said body. The pocket is produced in the body during the operation of casting the same. Said pocket has its side walls parallel to each other, so that the pocket is of uniform width throughout its length; but the bottom 9 of the pocket is inclined to render the pocket of variable depth from one end toward the other end. At the shallow end of the pocket the bottom thereof terminates in an abrupt shoulder 10; but the rear wall of the pocket adjacent to its point of greatest depth curves upwardly and forwardly, so as to form a ledge or flange 12, which overhangs the deepest part of the pocket at its closed rear end.

The spring 7, which is disposed longitudinally of the hook, is constructed of a single piece of metal having the proper elasticity or resiliency. This spring is preferably of uniform width throughout its length, and at one end the spring is doubled or folded upon itself at the point indicated by 13, and forms a short arm 14, which constitutes the heel of the spring. By doubling the spring upon itself near one end the heel is caused to lie beneath the major length of the spring and at an acute angle thereto. The length of the heel is substantially the same as the length of the pocket, and when the spring is properly fitted in place its doubled end 13 occupies the deepest part of the pocket, while the heel 14 fits flat and close against the inclined bottom of the pocket, the free extremity of said heel abutting solidly against the abrupt shoulder at the front shallow end of the pocket. By having the doubled end 13 of the spring occupy the deep rear part of the pocket the spring has said doubled end confined below the overhanging flange or shoulder of the body and the tension of the spring causes it to bear or press against the said overhanging flange or ledge, thus limiting in a measure the play of the spring with relation to the shank or body of the hook.

To insert my spring in position, it is necessary to thrust the doubled end well into the pocket until the free extremity of the heel bears against the abrupt shoulder at the front shallow end of the pocket, thus bringing the doubled end of the spring into the deepest part of the pocket and beneath the overhanging ledge or flange thereof. When properly adjusted, the free extremity of the spring-tongue will seat itself in the recess at the overhanging end of the hook. As the overhanging ledge or flange 12 is shorter than the

beak or bill of the hook, the spring may be readily removed from the pocket and replaced therein.

The described construction of the spring and the manner of seating the same in the pocket of the snap-hook wholly dispenses with the necessity for rivets, fastening-pins, or other extraneous devices for securing the spring to the snap-hook. The spring is so securely held in position that it cannot become detached from the body under any circumstances, except in the event of breakage or fracture of the spring. Should the spring become broken, it can be removed from the body by forcibly displacing the fragment and removing the heel, after which a new spring of substantially the form shown may be placed in position to meet the requirements of the service.

My improved construction enables the owner of the snap-hook to replace the spring and avoids the necessity for discarding the body, because the spring can be replaced to render the device as good as new.

A further advantage of my invention is that the spring is constructed to distribute the tension equally throughout the entire length, thereby increasing the durability of the spring.

It is evident that my device is extremely simple in construction, consisting only of two parts—i. e., the cast-metal body and the plate-spring in a single piece. The device is therefore capable of manufacture very economically.

It is evident that slight changes in the form and proportion of parts may be made without departing from the spirit or sacrificing the advantages of the invention.

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

A snap-hook comprising a hook provided in its body with a pocket or recess which extends partly through the body and is arranged in line with the bill of the hook, and an overhanging flange at the end of the recess farthest from the bill, a flat spring disposed longitudinally of the hook and having its free end engaging under the bill of the hook and held thereby against outward movement, the other end of the spring being doubled upon itself to provide a heel which is arranged wholly within the said pocket or recess, with the bend of the heel fitting under the overhanging flange, so as to be held from springing outward, and means for engaging the heel of the spring to hold the same against longitudinal movement, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE ROTHAR.

Witnesses:

OLIVER P. REESE;
W. A. O'NEILL.