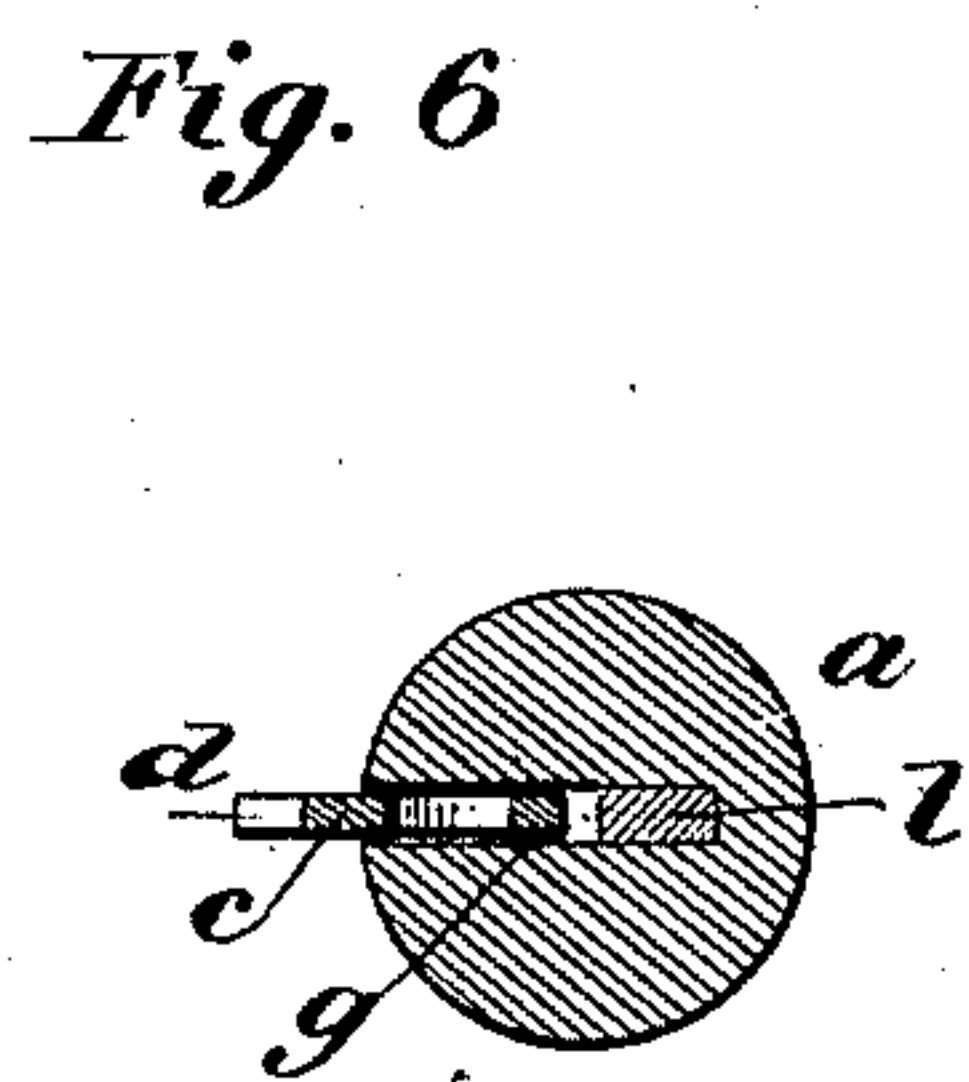
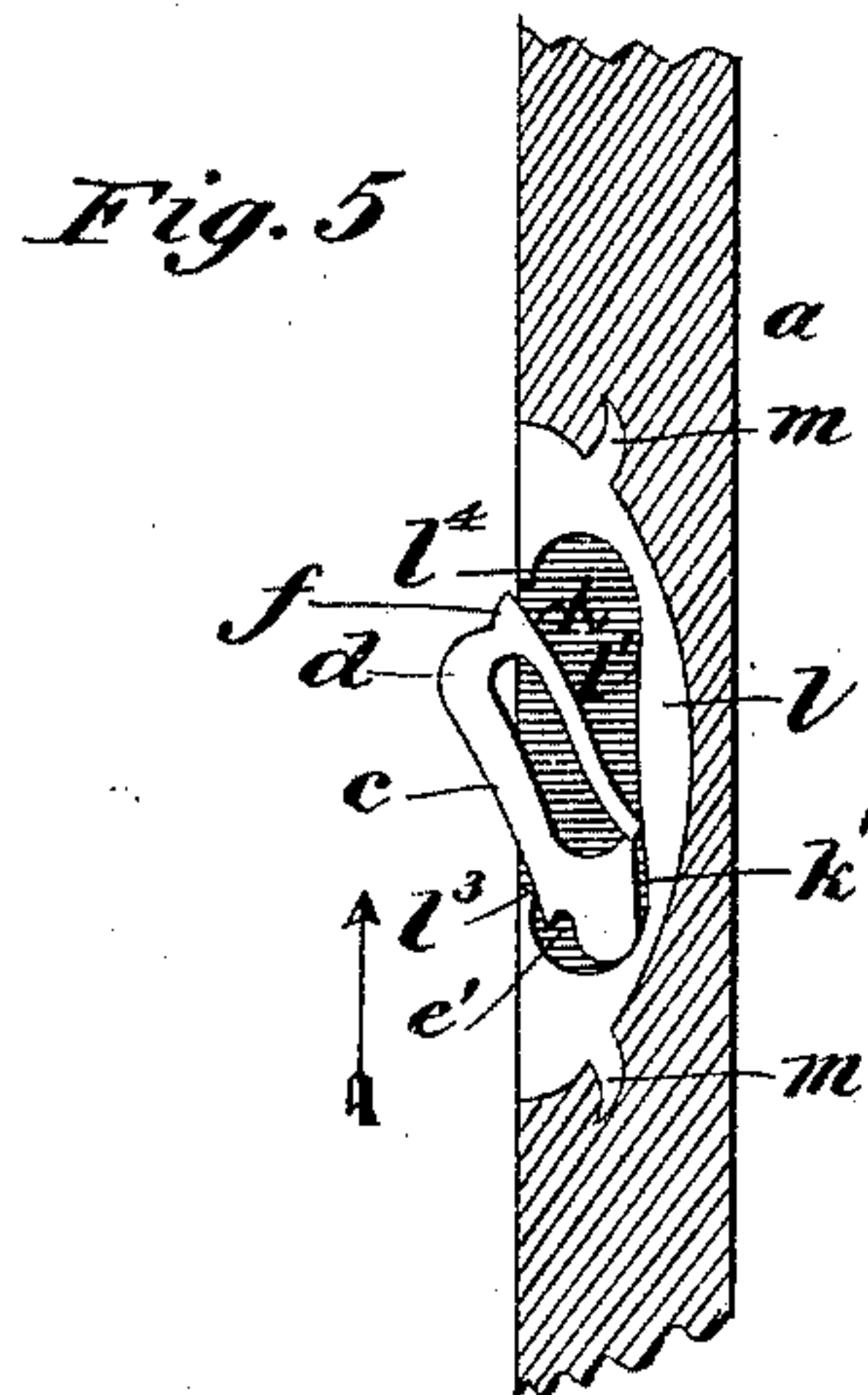
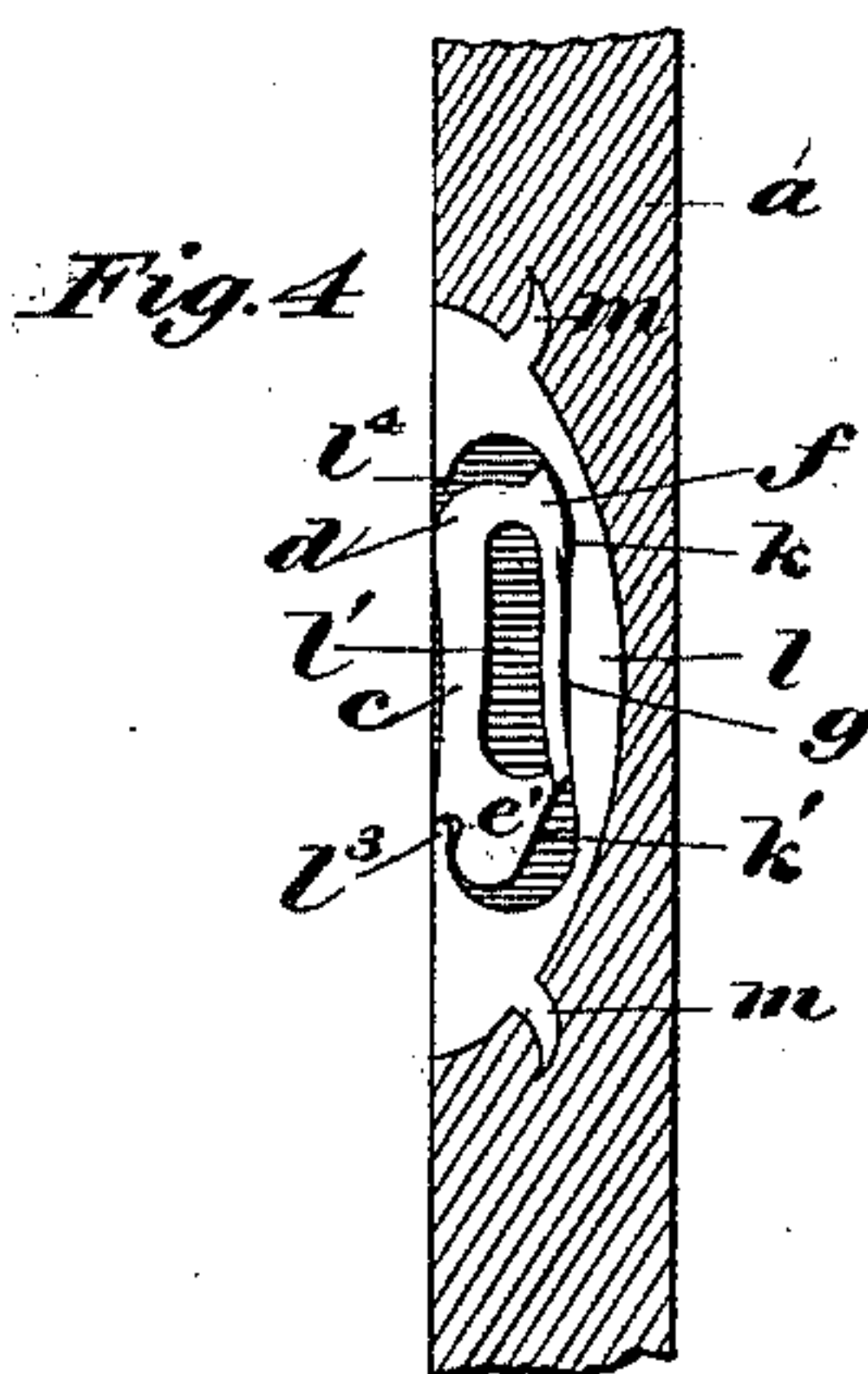
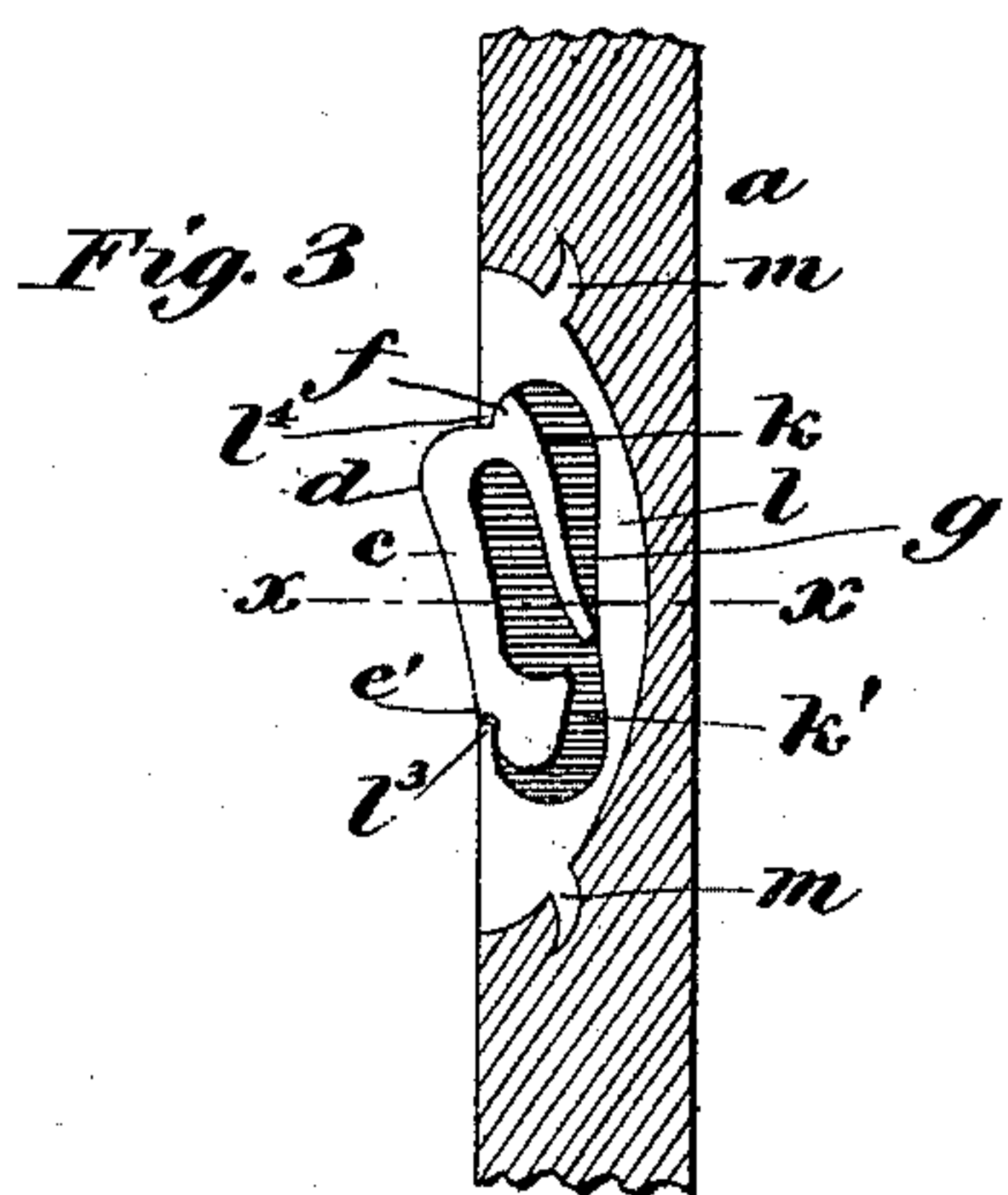
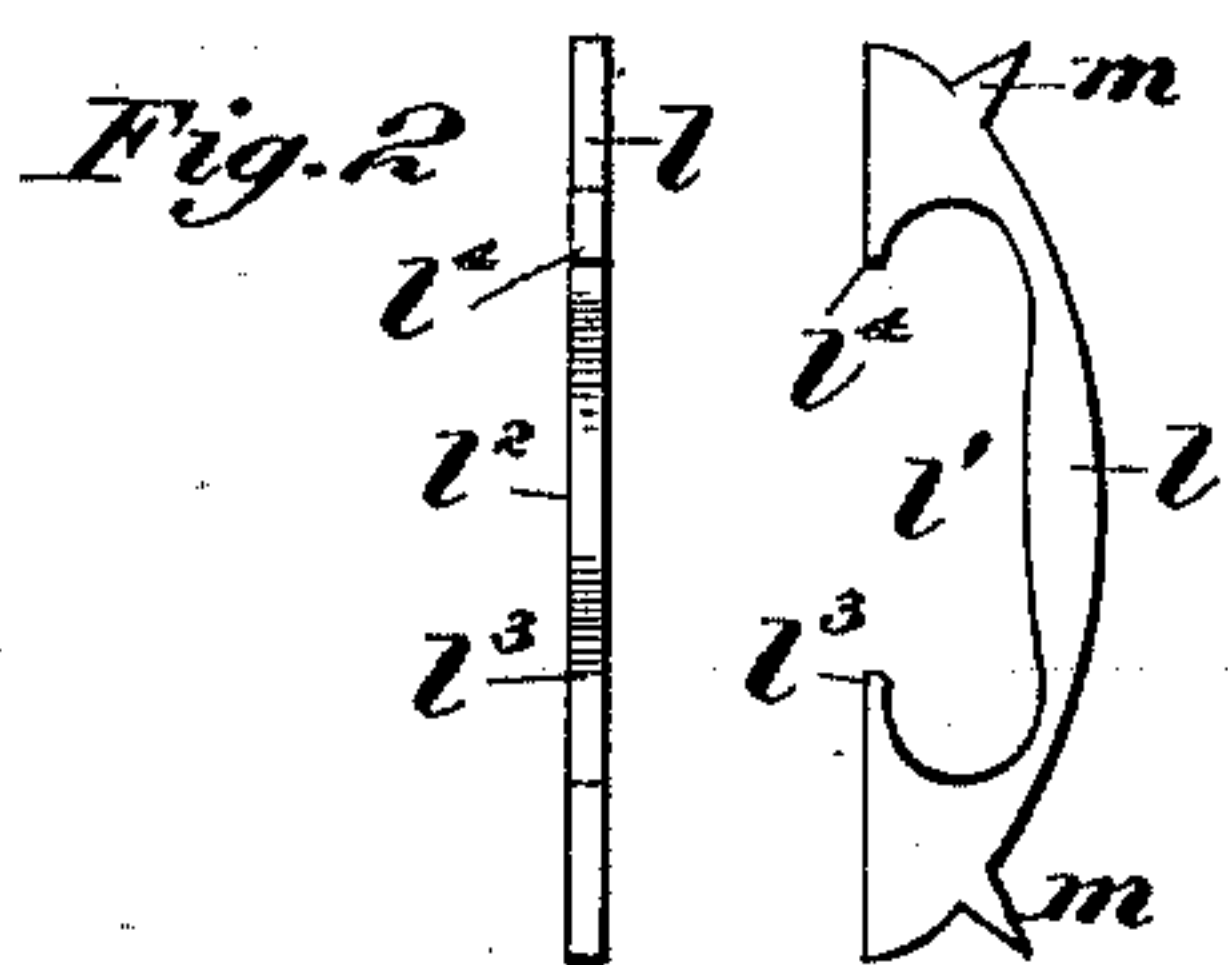
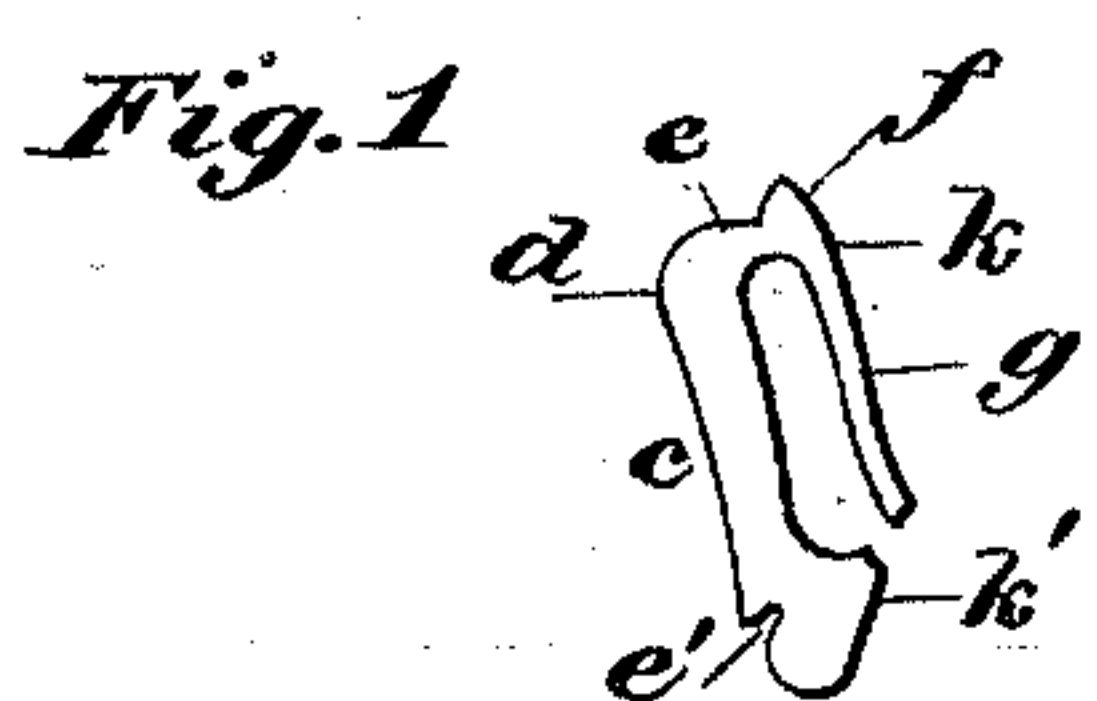


(No Model.)

J. B. RIEHL.  
UMBRELLA RUNNER RETAINER.

No. 509,685.

Patented Nov. 28, 1893.



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN B. RIEHL, OF PHILADELPHIA, PENNSYLVANIA.

## UMBRELLA-RUNNER RETAINER.

SPECIFICATION forming part of Letters Patent No. 509,685, dated November 28, 1893.

Application filed October 24, 1892. Serial No. 449,809. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. RIEHL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Umbrella-Runner Retainers, of which the following is a full, clear, and exact description.

In an application for patent for umbrella runner retainers of even date herewith, I have shown and described a self-fastening or pinless retainer, by means of which the retainer may be secured in the umbrella stick, staff, shank or tube by its own peculiarities of construction and without the aid of extraneous fastenings, such as pins or rivets, heretofore commonly employed; and I have pointed out the fact that such extraneous fastenings are disadvantageous in that they are frequently bent in applying them, are difficult to apply and remove, and necessitate piercing the stick, staff or shank to admit them and thereby to that extent weaken the tube, stick, staff or shank; and I have shown wherein my pinless or self-fastening retainer avoids these objections, and is otherwise an improvement over the old forms of retainers.

The present invention relates to self-fastening or pinless retainers, such as those set forth in said other case, and to the box or casing therefor, and the invention consists of a pinless retainer, combined with a solid receiver, which takes the place of the common box or casing, substantially as hereinafter particularly set forth and claimed.

In the accompanying drawings illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 shows the retainer detached. Fig. 2 shows in edge and side views the receiver. Fig. 3 shows the retainer and receiver assembled, and in normal position in an umbrella stick. Fig. 4 is a similar view showing the retainer depressed to permit the passing of the runner. Fig. 5 illustrates the manner of inserting the retainer into the receiver after the receiver is fastened into the stick. Fig. 6 is a cross-section, on line  $x-x$ , of Fig. 3, on a larger scale, and showing the clearance for the retainer.

As in the other case, so here,  $a$  is the stick,

and  $c$  the retainer, and this retainer is composed of the finger-piece  $d$  having the angular or shouldered ends  $e$  and  $e'$ , the projection  $f$ , the spring support  $g$ , and the stop-lugs  $k, k'$ . The functions of these several parts of the retainer are as in the other case, and as hereinafter will appear.

Instead of a box or casing made of sheet-metal folded or bent to shape as heretofore to receive the retainer, I stamp, press, cut, or otherwise produce the receiver  $l$  from solid, flat metal, such as brass, and in shape to tightly fit the saw-kerf or recess or groove, made in the stick for it, and into which groove the receiver is driven before the retainer  $c$  is inserted. The metal of this receiver is of such greater width or thickness than the retainer as to give clearness on both sides of the retainer, and thereby prevent the retainer from binding in the stick, as clearly indicated in Fig. 6. The receiver is recessed at  $l'$  to a length greater than the corresponding dimension of the retainer to afford room for the insertion lengthwise of the retainer, and it is cut away at  $l^2$  on its face for a distance less than the length of the retainer to receive the retainer, and to provide a hook  $l^3$  at one end to engage with the shoulder  $e'$  and to provide a hook  $l^4$  at the opposite end to co-operate with the shoulder  $e$  and projection  $f$  of the retainer to keep the retainer in place in the receiver.

The receiver is provided with projections or prongs  $m$  on its inner edge, which when the retainer is driven into the stick, enter the stick and anchor the receiver firmly therein. These prongs stand off at an angle to the straight edge or face of the receiver so that when driven into the stick their ends curl up into the stick and so clinch themselves in it, and thus resist both longitudinal and transverse displacement and render pins entirely unnecessary.

In applying this device, the receiver is first driven into the stick until its flat, straight outer edge or face is flush with the outer surface of the stick, and then the retainer is inserted endwise in the receiver, as in Fig. 5, until the projection passes the hook  $l^4$ , when by a movement of the retainer in the direction of the arrow, Fig. 5, the shoulder  $e'$  is



brought into engagement with the hook  $l^3$  and the projection  $f$  is brought into engagement with the inner edge of hook  $l^4$ , the shoulder  $e$  brought into engagement with the nose of the hook  $l^4$  and the spring  $g$  into opposition with the bottom of the recess  $l'$ . The spring then is free to press out the finger-piece into normal position and to hold the shoulders and projection  $f$  up to their respective hooks, and then the said hooks in connection with the shoulders  $e$  and  $e'$  and projection  $f$  keep the retainer in proper position in the receiver, guarded against longitudinal and transverse displacement. The lug  $k$  limits the depression of the finger-piece and prevents its sinking unduly into the receiver, and the lug  $k'$ , by coming into contact with spring  $g$  as the latter straightens out under pressure in use, prevents the escape of the retainer at its fulcral end, ( $e'$ .)

Still another point of advantage possessed by my receiver is that it is alike at both ends and hence one form is applicable alike to the upper and the lower end of the umbrella, and consequently no mistakes can occur in inserting the receiver. The same sort of receiver may be placed in either position and the retainer  $c$  only need be reversed, and as the retainer  $c$  is inserted after the receiver is in position, it is obvious it may be inserted to work the right way. This is a great advantage even with skilled workmen and of paramount advantage in the hurry of manufacture.

I have shown and described my receiver as applied only to one particular form of retainer, but I wish it to be understood that I consider as within my invention any receiver formed not as a box made by folding or bending sheet metal or otherwise, but formed of flat metal cut to shape and provided with a recess of greater length than the retainer and thereby adapted to receive any kind of retainer by insertion of such retainer therein by endwise movement after the receiver has been inserted in the stick. In other words, while I restrict my invention in receivers to one that is formed from a single flat piece of metal, cut to receive the retainer, after such receiver has been applied to the stick, I do not restrict it to any particular form of re-

tainer, excepting that it shall be so insertible in the receiver.

What I claim is—

1. An umbrella runner retainer, composed of a retainer proper having a shouldered finger-piece and a spring, and a receiver constructed of a single flat piece of metal of greater thickness than the retainer and having an internal recess of greater length than the retainer to receive the retainer after it, the said receiver, is driven into the stick, substantially as described.

2. A receiver for an umbrella runner retainer, constructed of a single piece of flat metal of greater thickness than the retainer and having an internal recess of greater length than the retainer, to receive the retainer at either end after it, the said receiver, is driven into an umbrella stick, substantially as described.

3. A receiver for an umbrella runner retainer, constructed of a single piece of flat metal of greater thickness than the retainer and having an internal recess of greater length than the retainer to receive the retainer, and provided with projections or prongs extending from its inner edge at an angle to the outer straight edge of the receiver, and adapted to be driven into an umbrella stick and curl up into the stick, substantially as described.

4. A receiver for an umbrella runner retainer, constructed of a piece of flat metal, having the internal recess  $l'$  of greater length than the retainer to receive the retainer by lengthwise insertion therein after the receiver is inserted in the stick, and the hooks  $l^3$ ,  $l^4$  to engage the shoulder and projection at opposite ends of such retainer, combined with a retainer having its ends provided with a shoulder and projection and adapted to be inserted in the receiver after the receiver has been inserted in the stick, substantially as described.

In testimony whereof I have hereunto set my hand this 22d day of October, A. D. 1892.

JOHN B. RIEHL.

Witnesses:

CHARLES H. RICHARDSON,  
SAMUEL P. DELL.