

(No Model.)

J. B. RIEHL.
UMBRELLA RUNNER RETAINER.

No. 509,684.

Patented Nov. 28, 1893.

Fig. 1

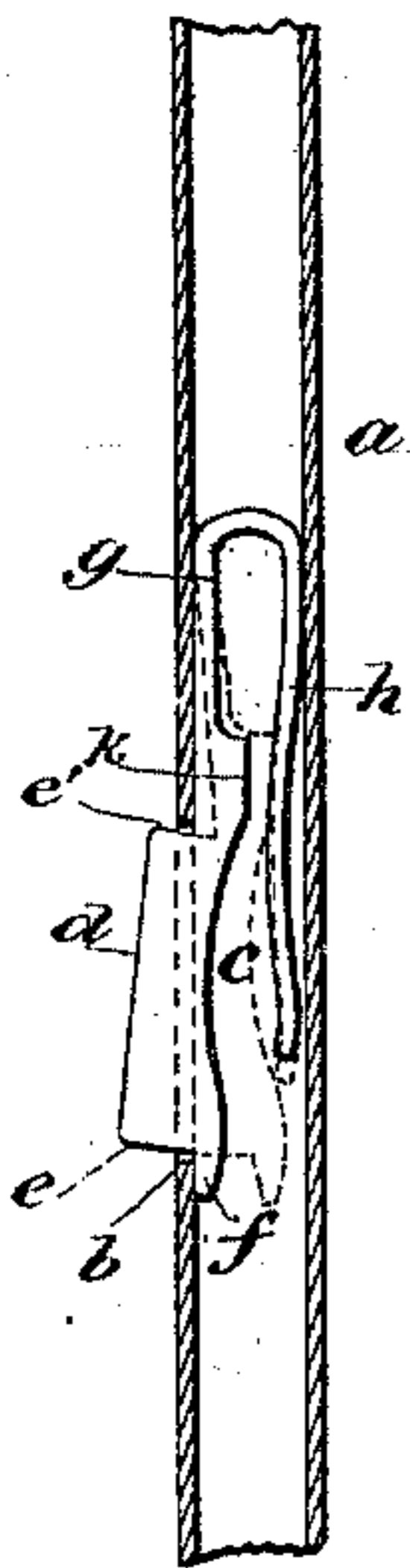


Fig. 2

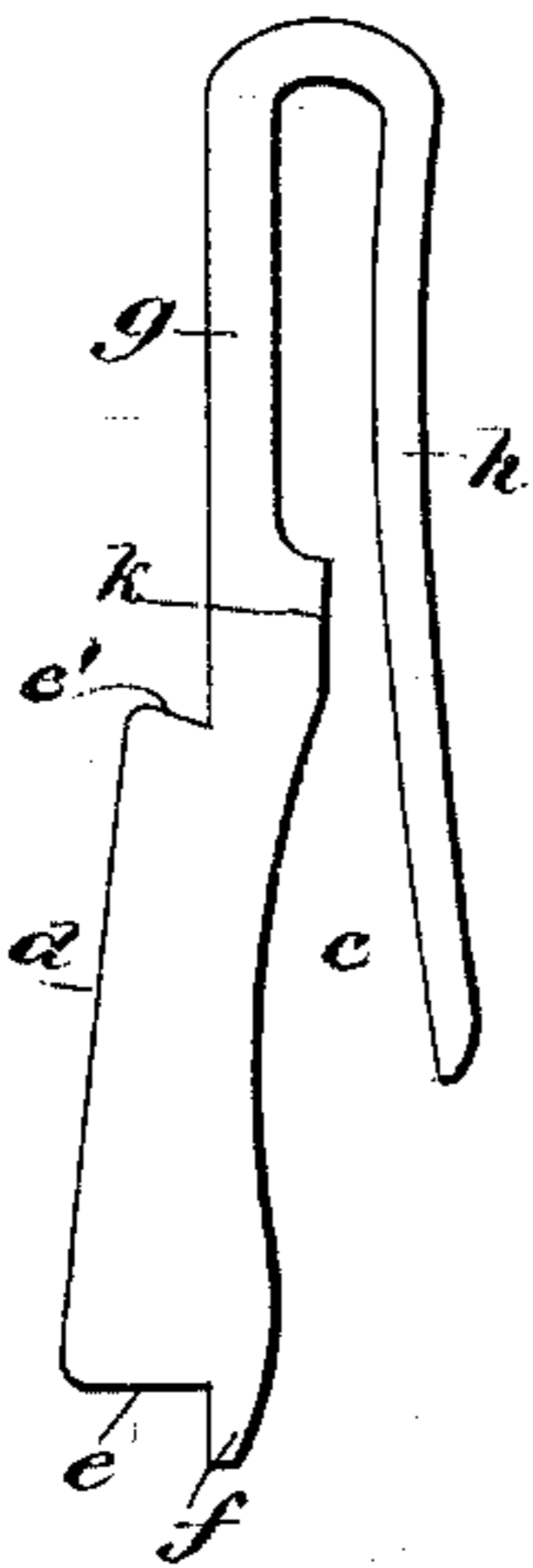


Fig. 3

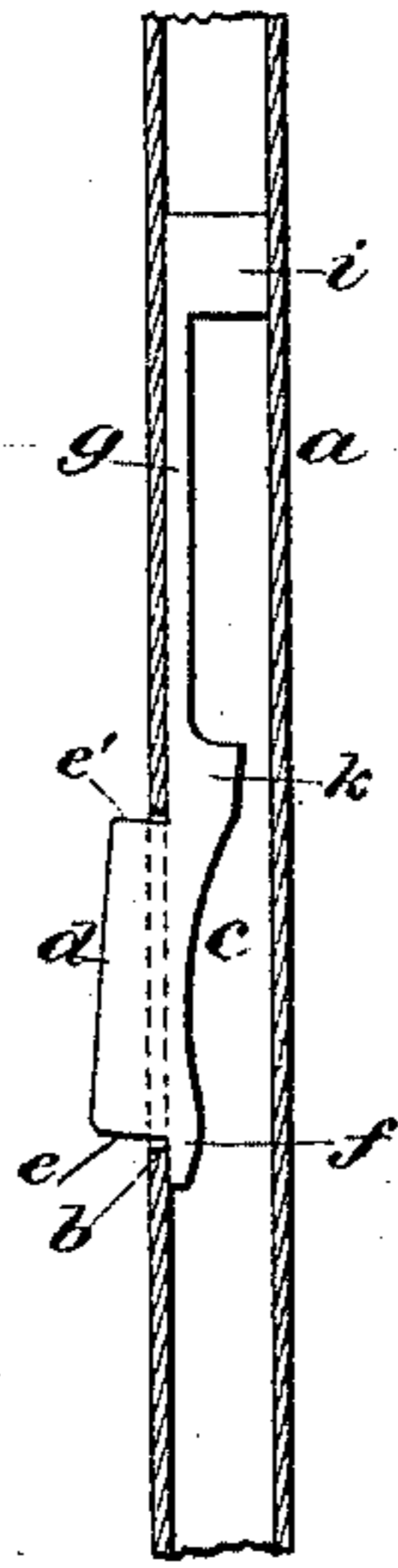


Fig. 4

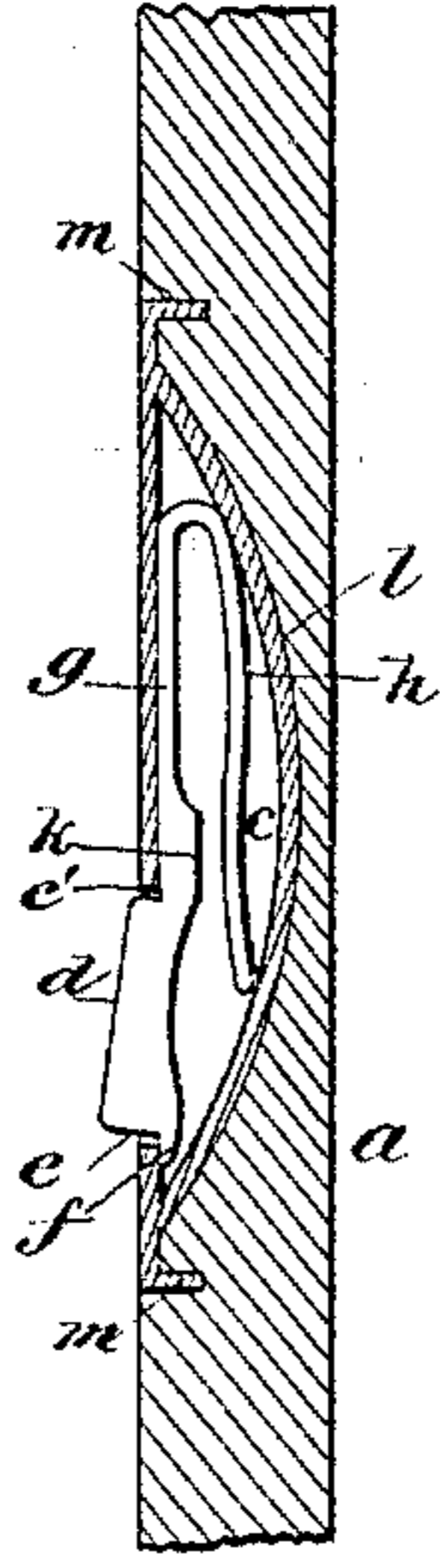


Fig. 5

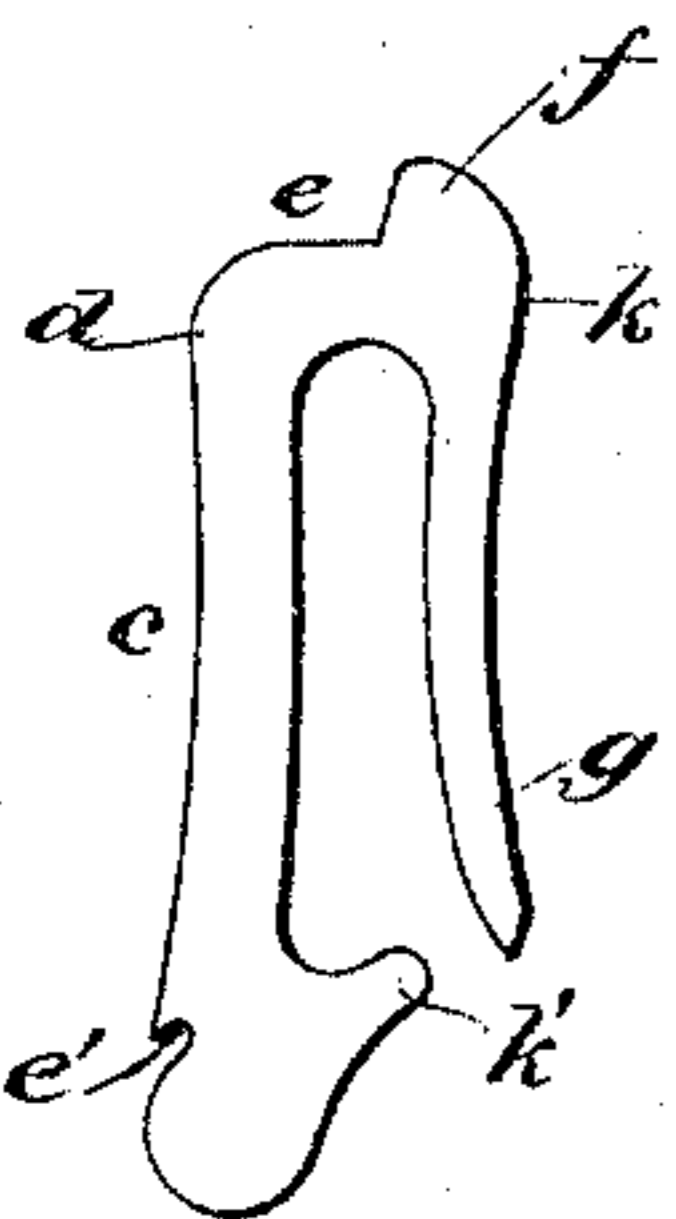


Fig. 6

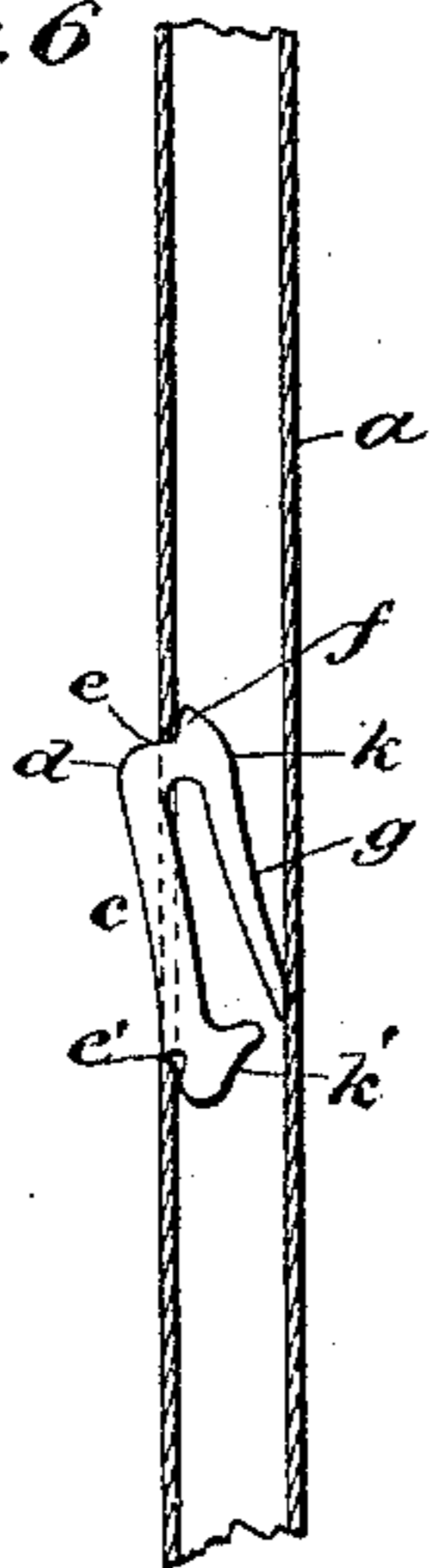
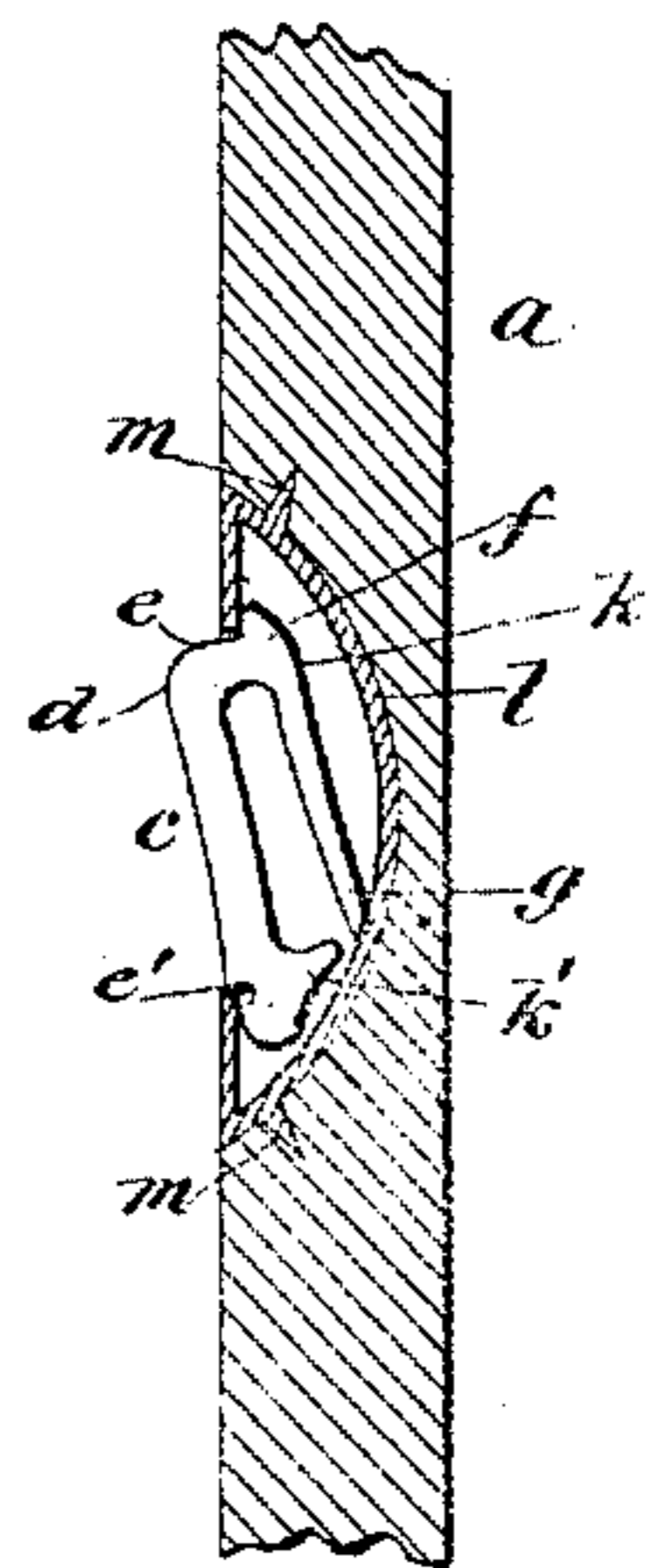


Fig. 7



Fig. 8



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. 509,684, dated November 28, 1893.

Application filed October 24, 1892. Serial No. 449,808. (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.

This invention relates to that class of retainers, catches or latches for engaging umbrella runners to hold the umbrella closed or opened, which are produced from spring brass or like metal in sheet or wire form; and the object of the invention is to provide a retainer, which is inserted in the tube, stick, staff or receptacle without the use of rivets, pins or other extraneous fastening devices, and which avoids liability to disabling in use.

This invention consists of a retainer having its finger-piece made with angular ends or shoulders, which engage the ends of a slot in the receiver and prevent longitudinal motion; that one of these angular shoulders or ends which bears the strain when the runner is held, being undercut if need be and designed to engage with the end of the slot of the receiver to prevent it being pushed down or into the receiver either when used by the finger to open or close the umbrella or having the runner pass over it, and thereby hold the retainer in position without the use of rivets, pins or other fastenings, the retainer being inserted in the receiver when the latter is *in situ*.

The invention also consists of a retainer having a stop-lug or lugs to limit the inward movement thereof, and thereby prevent the disabling of such retainer.

The invention also consists of a retainer having a returned-spring with which the stop-lug co-operates for the purpose last above stated, and which keeps the angular ends or shoulders of the finger-piece in the slot.

In the accompanying drawings illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a longitudinal section of part of a tubular stick or staff, showing in elevation one of my retainers in position. Fig. 2 is an elevation, on a larger scale, of a form of retainer similar to that shown in Fig. 1. Fig. 3 is a sec-

tional elevation similar to Fig. 1, of another form of retainer. Fig. 4 is a longitudinal section of a wooden or other solid stick showing my retainer boxed therein in a peculiar form of box. Fig. 5 shows in elevation another form of retainer, detached and on a larger scale. Fig. 6 shows the form of retainer illustrated in Fig. 5, applied to a tubular stick or staff and in normal position. Fig. 7 is a view similar to Fig. 6, showing the retainer depressed to permit the passage of the runner, and Fig. 8 shows the retainer of Fig. 5 applied in a box to a wooden stick.

Umbrella sticks, staves or shanks are made of wood, solid and tubular, and of metal tubes and are provided with devices in the nature of catches or latches to engage the runners to hold the umbrella closed or opened.

In applying my invention to hollow sticks, as for example, a metal tube, *a*, I form therein longitudinal slots *b* at the desired points and insert the retainers, catches or latches *c* therein by thrusting them into the open end of the tube and pushing them through the tube until their finger-pieces *d* enter the said slots and project outwardly; or in the case of form shown in Figs. 5, 6, 7 and 8, by inserting the retainer in the slot, one end first and allowing it to spring back into position, as more fully described later.

Heretofore, pins, rivets, and other extraneous fastenings have been used to secure the retainer in the stick or tube and all such fastenings are frequently bent in application, are difficult to remove for replacing a damaged retainer, and tend to weaken the stick or tube by reason of the piercing thereof for their reception. In order to dispense with such fastenings and avoid their disadvantages, I make each finger-piece and its receiving-slot take the place of such fastenings to secure the retainer in place, thus making the retainer self-fastening; and to this end, each finger-piece is provided with angular ends or shoulders *e*, *e'*, which prevent longitudinal motion, the end *e'* being undercut if need be and designed to enable the finger-piece to lock itself in the end of the slot as hereinbefore described. A projection *f* is provided at one end to engage the inside of the tube or receiver to limit the outward movement of

the finger-piece. The finger-piece is made or provided with the spring portion *g*, which may have the returned extension *h*, as in Figs. 1, 2 and 4, which is resilient also; or the said spring portion *g* may terminate in a block *i*, or may extend directly from the movable end as in Figs. 5, 6, 7 and 8, and in all cases the spring portion or portions normally keep the finger-piece projected outwardly in the slot to engage the runner and hold it. The width from outside to outside of spring *g*, *h*, or spring *g*, and block *i*, or spring *g* and shoulder *e'* in Figs. 5, 6, 7 and 8, is substantially equal to the bore of the tubular stick or receiver and therefore, the retainer by this feature has a frictional hold in such stick to assist in keeping it in place.

By virtue of the fact that the spring holds the finger-piece in position and admits of its operation, I designate said spring, whether made as in Figs. 1, 2, 4, 5, 6 and 7, or provided with the block *i*, as in Fig. 3, as a support for such finger-piece, since this is one of its main functions in the absence of an extraneous fastening.

In order to limit the depression of the finger-piece into the tube or receiver, consequent upon its movement to permit the passage of the runner, I provide a stop-lug *k* on the inside, which is adapted to come into contact with the spring *h*, in the form shown in Figs. 1, 2 and 4, and in contact with the tube or receiver in the forms shown in Figs. 3, 5, 6, 7 and 8, and thereby arrest the finger-piece, and inasmuch as blows of considerable force might be applied to the finger-piece, a further safeguard against the disabling of the retainer is provided by crowning or arching the spring *h*, in the form shown in Figs. 1, 2 and 4, at a point opposite or nearly opposite the stop-lug, so that such arched or crowned spring will tend to straighten out against the pressure of the stop-lug, but without impairing its resilience, all as illustrated by dotted lines in Fig. 1. Where no returned spring is employed, the stop-lug may be a little deeper, so as to impinge against the opposite side of the tube or receiver, as in Figs. 3, 5, 6, 7 and 8.

To apply my retainer to a wooden or other solid stick, a segmental saw-kerf is made as usual in the stick, as in Figs. 3, 4 and 8, to receive a metal box of complementary shape and of usual construction saving that instead of employing a rivet or pin to secure it, I use prongs *m* on the ends which are driven into the stick. Any of the forms of retainers described may be used in this box, the same as in the hollow tube. As one form of this retainer is slid in the tube or receiver the height of it must not be greater than the inside diameter of receiver which allows it to be forced below the slot and pushed through the tube. To obviate this I use retainer shown in Figs. 5, 6, 7 and 8. The lug *k* in this form is of sufficient depth to strike the receiver before the finger-piece is below the slot, thus prevent-

ing the retainer from being forced into the tubular stick tube or receiver. As this form cannot be slid into the tubular sticks, tubes or receivers it is inserted through the slot, the end with the shoulder *e'* first and pushed in until the projection *f* goes under the slot, when it is pushed back until the shoulder *e'* springs into place. It will be observed that the angular shoulder *e'* acts as a longitudinal stop and turns on the end of the slot as a fulcrum. As the form shown in Figs. 5, 6, 7 and 8 can be inserted after the ends of the receiver or hollow stick are closed, I consider it the most practical form.

In the retainer shown in Figs. 5 to 8, I provide a stop-lug *k'* at the fulcral end, so that when the retainer is depressed, as in Fig. 7, and the spring thereby lengthened by straightening out, the said stop-lug *k'* and spring will come into contact, and the retainer will be prevented from being pushed out of engagement with the slot at its fulcral end *e'*.

The retainers may be cut out of spring sheet brass or other metal with little waste, and hence very economically, or they may be made of wire. The spring has a long sweep, and hence is not liable to be ruptured or disabled. As already intimated, the retainer is self-fastening in its receiver, (the tube or box, as the case may be,) and so the weakening of the tube or stick and the other hereinbefore-referred-to disadvantages incident to the use of rivets, pins, and other extraneous fastenings are avoided, and in addition the retainer is much more readily and quickly applicable.

What I claim is—

1. An umbrella runner retainer composed of a finger-piece with angular ends or shoulders, one of which locks the retainer in its receiver under pressure of its spring, the said spring supporting the finger-piece, a projection on the finger-piece limiting the outward motion thereof, and a stop-lug depending from the finger-piece near its fulcral end and limiting the inward movement of said finger-piece, all made in one piece and adapted to be held in a receiver without extraneous fastenings, substantially as described.

2. An umbrella runner retainer, composed of a finger-piece provided with angular shoulders at opposite ends to restrain its longitudinal movement in the receiver and also having a depending stop-lug, and a spring-support integral with the finger-piece and having a returned portion, which is crowned or arched, the said stop-lug being arranged on the finger portion opposite the crowned or arched returned portion of the spring, substantially as and for the purpose described.

3. An umbrella runner retainer, composed of a finger-piece with angular ends or shoulders, one of which is undercut and locks the retainer under pressure, a supporting spring, a projection limiting the outward motion of the finger-piece, and a stop-lug limiting the

inward movement of the finger-piece, all made
in one piece, combined with a receiver into
which the retainer is introduced when the
receiver is in position, the retainer and re-
ceiver being connected together without pins,
5 rivets, or other extraneous fastenings, sub-
stantially 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.