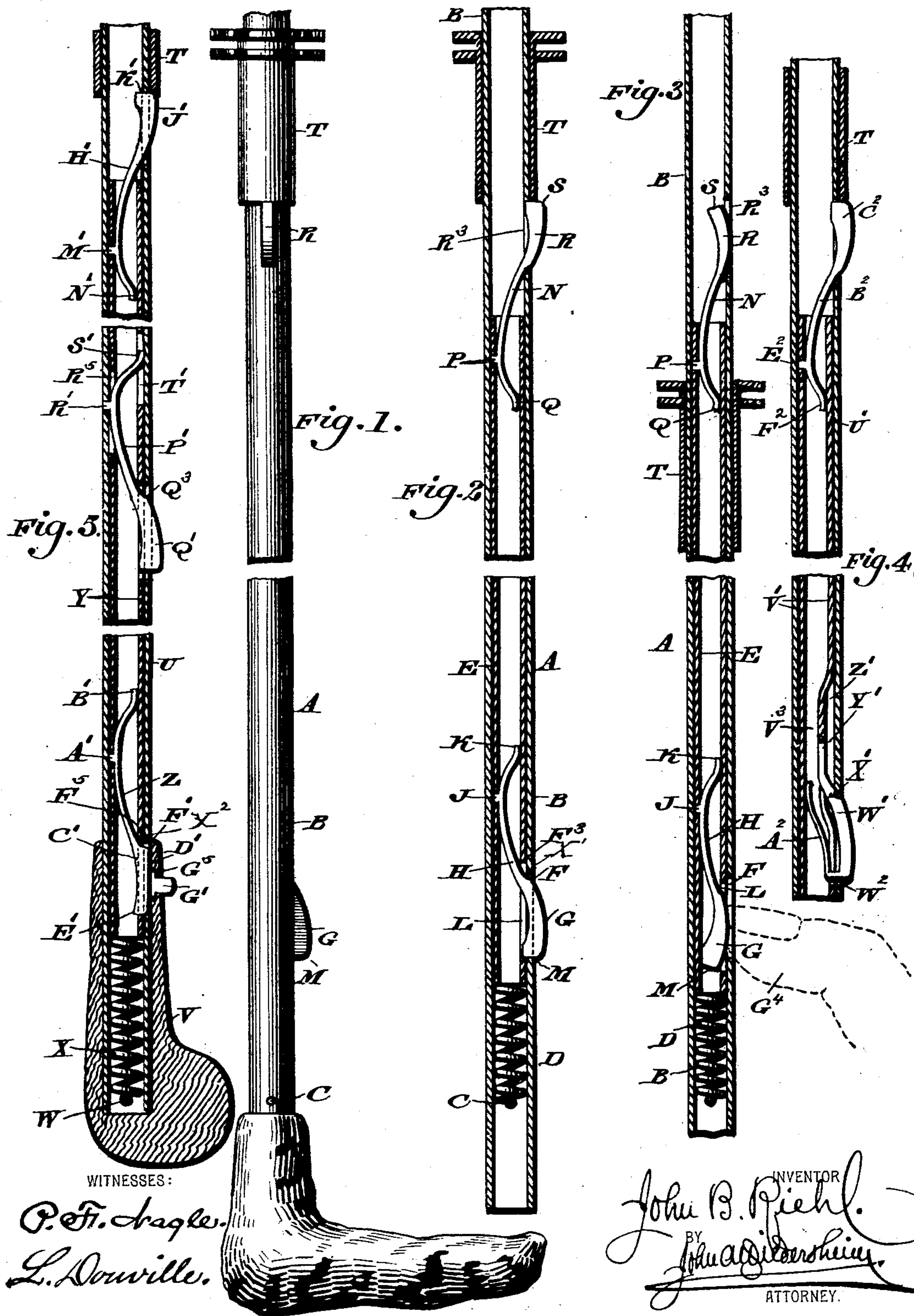


(No Model.)

J. B. RIEHL.  
CLOSING DEVICE FOR UMBRELLAS.

No. 591,637.

Patented Oct. 12, 1897.





# UNITED STATES PATENT OFFICE.

JOHN B. RIEHL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOHN B. RIEHL CO., LIMITED, OF SAME PLACE.

## CLOSING DEVICE FOR UMBRELLAS.

SPECIFICATION forming part of Letters Patent No. 591,637, dated October 12, 1897.

Application filed December 9, 1896. Serial No. 615,000. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. RIEHL, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Automatic Closing Devices for Umbrellas, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a novel construction of automatic closing device for umbrellas whereby a single movement of the lower catch or retainer or a part analogous or adjacent thereto permits the umbrella-runner to descend from its elevated or open position, thereby enabling the user to effect the closing of the umbrella without necessitating the employment of both hands, said lower retainer serving the double function of holding the runner of the umbrella when the latter is in closed position and also serving as a finger-piece to effect the closing of the umbrella.

It further consists of novel details of construction, all as will be hereinafter set forth, and specifically pointed out in the claims.

Figure 1 represents a side elevation of the umbrella-stick containing the improvements embodying my invention. Fig. 2 represents a longitudinal sectional view of Fig. 1, showing the position the parts assume when the umbrella is open and the runner is in elevated position. Fig. 3 represents the position the parts seen in Fig. 2 assume in the act of closing the umbrella. Fig. 4 represents another embodiment of the principle of my invention to be hereinafter referred to. Fig. 5 represents another embodiment of the principle of my invention.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a tubular umbrella-stick, the same consisting of the outer tube B, which has at the lower portion thereof the stop C, upon which the spring D or other resilient device is sustained, said spring supporting thereupon the inner tube E, the extent of which will be evident from Figs. 2 and 3.

F designates a slot in the wall of the outer tube, through which projects the finger-piece G of the retainer H, the latter being provided

with the projection J, which is seated in an adjacent recess in the inner tube E, the extremity K of said retainer being substantially in contact with said inner tube E.

L designates a slot or recess in the inner tube, the lower wall of said slot being in the present instance in substantial alinement with the lower wall of the slot F, the base M of the finger-piece G resting normally on the lower wall of said slot F. The upper wall F<sup>3</sup> of the slot L normally terminates slightly above the end of the slot F, as will be evident from Fig. 2, so that the tube E may have sufficient play.

N designates the upper retainer, the same having the projection P thereon, which is in engagement with a seat or recess in the upper portion of the tube E, the stop R of said retainer N projecting through the slot R<sup>3</sup> in the outer tube and being provided with the face S, adapted to retain the runner T in elevated position, the end Q of said retainer being substantially in contact with the inner periphery of the tube E, it being noticed that the runner T when the umbrella is open, the inner tube E, and the retainers N and H are supported upon the lower wall of the slot F of the outer tube B, while the contact of the face S of the retainer N with the upper wall of the slot R<sup>3</sup> prevents the displacement of the inner tube E, it being also evident that the contact of the shoulder X', formed by the junction of the finger-piece G with the body of the lower retainer, with the upper wall of the slot in the outer tube serves to prevent displacement of said inner tube.

The operation is as follows: The parts assume the position seen in Fig. 2, when the runner T is in elevated position, the umbrella then being open. When it is desired to close the umbrella, it is only necessary for the operator to press the finger-piece G inwardly from the position seen in Fig. 2 to the position seen in Fig. 3, which can be done by means of the finger or thumb G<sup>4</sup>, whereupon it will be seen that the base M of said finger-piece is moved out of contact with the lower terminus or wall of the slot F, and the tube E being now capable of a slight downward movement the stop R will be forced inwardly into the position seen in Fig. 3 and the run-



ner T can pass by the same and thus descend to the position it assumes when the umbrella is closed. It will of course be understood that in practice as soon as the runner passes the upper retainer and assumes the position seen in Fig. 3 said upper retainer at once springs outwardly into the position illustrated in Fig. 2. The finger being removed from the finger-piece G the resiliency of the retainer H will cause the finger-piece to again assume the position seen in Fig. 2 and the resiliency of the spring D will move the tube E into its proper position again, the upward movement of the inner tube being limited by the contact of the head R with the upper slot R<sup>3</sup>, and it will further be apparent that the lower retainer serves a double function, since it serves as a catch and holds the umbrella-runner in proper position when the umbrella is closed, while the finger-piece of said retainer serves also to assist in effecting the closing of the umbrella.

Fig. 5 shows a slightly-modified form of my invention. U designates the outer tube, which is seated in a recess in the handle V. W designates a suitable projection or stop on which the spring X is supported, the extremity of said spring sustaining in position the inner tube Y. Z designates the body of the retaining device, the same being provided with a projection A', which seats in a suitable recess in the tube Y. C' designates the lower portion of the retaining device Z, the same being provided with a straight wall or surface D', with which the finger-piece G' contacts, said finger-piece being held in position by means of the wings G<sup>5</sup>. E' designates the base of the portion C', the same being located in a suitable slot F' in the outer tube U, the inner tube Y being also provided with a slot F<sup>5</sup>, substantially coincident with said slot F', through which the portion C' projects, it being noted that the outer or right-hand lower corner of the portion C' when the parts are in position seen in Fig. 5 rests upon the lower wall of said slot F', upon which all the parts are supported when the umbrella is open, the same as in Figs. 2 and 3. H' designates the upper retainer, the same being provided with the stop J', which passes through substantially coincident slots in the inner and outer tubes U and Y, the upper edge K' of said head J' being adapted to support the runner T thereon, it being evident that the contact of the outer shoulder X<sup>2</sup> on the lower portion of the retaining device C' with the slot in the outer tube serves to prevent displacement of the inner tube Y. M' designates a projection of the retainer H', which is adapted to seat in a recess in the inner tube Y, the end N' of said retainer being in substantial contact with said inner tube. P' designates the lower retainer, which has the finger-piece Q' projecting through the slots Q<sup>3</sup>, which are substantially coincident with the inner and outer tubes, the retainer P' having the projection R', which is seated in an opening or recess in

the outer tube U, the inner tube being provided with the slot R<sup>5</sup> adjacent this point for the purpose of enabling the inner tube Y to make the requisite movement. The end S' of the retainer P' rests in substantial contact with the inner periphery of the outer tube U, while the inner tube is provided with a slot T' of sufficient length to permit the proper extent of movement of the said inner tube.

The operation is as follows: When the parts are in the position seen in Fig. 2, the umbrella is in elevated position, the runner T being supported upon the stop J', the latter being sustained upon the inner tube Y by means of the projection M', the said inner tube being supported upon the projection A' the retainer Z, while the base E' of the latter rests on the lower terminal of the slot F' of the outer tube U. When it is desired to close the umbrella, the finger-piece G' is pushed inwardly, thereby moving the base E' out of contact with the slot, and the inner tube Y being now supported only upon the spring X it is evident that the runner T will instantly pass by and over the stop J' and assume the position seen in Fig. 3, the resiliency of the spring X afterward restoring the parts to their normal position automatically, as seen in Fig. 5, when the finger is removed from the finger-piece G'.

In Fig. 4, U' designates the outer tube, and V' the inner tube, the latter having a portion V<sup>3</sup> deflected inwardly, the same being sustained upon the extremity Y' of the finger-piece W', the latter projecting through coincident slots W<sup>2</sup> in the inner and outer tubes and being pivotally attached to one of said tubes at the point X'. A<sup>2</sup> designates a spring or other resilient arm attached to said finger-piece W<sup>2</sup>, whereby the proper position of the parts is assured. B<sup>2</sup> designates the upper retainer, which is provided with a stop C<sup>2</sup> and head E<sup>2</sup> and the free end F<sup>2</sup>, the above parts being located at substantially the same relative position to the inner and outer tubes, as indicated in the upper portion of Figs. 2, 3, and 5, and supporting thereupon the runner T.

The operation is as follows: When the finger-piece W' is pressed inwardly, the extremity Y' occupies the space Z' and the runner T (seen in the drawings) will instantly descend in the manner already explained, it being of course understood that the inner tube V' is supported upon a spring similar to the spring B or X. (Seen in Figs. 2, 3, and 5.)

It will be evident that various changes may be made by those skilled in the art which may come within the scope of my invention, and I do not therefore wish to be restricted to the exact construction I have herein shown and described.

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

1. In a device of the character named, a tubular stick, upper and lower retainers sup-



ported therein, each retainer being longitudinally movable relative to said stick, said lower retainer serving both as a catch to hold the umbrella in closed position and also as a finger-piece to close the umbrella and means for enabling said retainers to be actuated in unison.

2. In a device of the character named, a tubular stick, upper and lower retainers supported therein, each being longitudinally movable relative to said stick, and means connected with said lower retainer for supporting the upper retainer and also the umbrella-runner when the latter is in elevated position.

3. In a device of the character named, an umbrella-stick, an upper and lower retainer supported therein, each retainer being movable longitudinally in said stick, mechanism intermediate said retainers, whereby an umbrella-runner is enabled to readily pass by said upper retainer when the lower retainer is pushed inwardly, and means whereby the umbrella when in open position, is supported by the contact of said lower retainer with a wall of a slot in said stick, said lower retainer serving also as a finger-piece for effecting the closing of the umbrella.

4. In a device of the character named, an inner and outer tube, an upper and lower retainer, each of the latter being longitudinally movable relative to said outer tube, said lower retainer sustaining the inner tube and the umbrella-runner, when the umbrella is open, and means actuated by said lower retainer for facilitating the closing of the umbrella.

5. In a device of the character named, an inner and outer tube, means for limiting the upper and downward movement of said inner tube, a yielding support for the latter, an upper retainer supported on said inner tube, a resilient device located in the lower portion of the inner tube and supported upon a wall of a slot in the outer tube, said inner tube

being supported on said resilient device, and means for enabling the latter to be pressed inwardly out of engagement from its support, whereby said inner tube is permitted to move downwardly and the closing of the umbrella is effected.

6. In a device of the character named, an inner and outer tube, a yielding support for said inner tube, an upper retainer supported on said inner tube, and having a head projecting through a slot in the outer tube, a lower retainer having a projection engaging the inner tube, and a finger-piece projecting through slots in said tubes, the base of said finger-piece supporting normally the inner tube and its adjuncts.

7. In a device of the character named, an umbrella-stick consisting of inner and outer tubes, an upper retainer supported by the inner tube, and having a portion projecting through a slot in the outer tube, a lower retainer having a projection engaging said outer tube, slots in said inner tube for permitting proper movement thereof, a resilient device located in the lower portion of said inner tube, the latter being supported thereon, a spring on which said inner tube rests, slots in said inner and outer tubes through which a portion of said resilient device projects, and a finger-piece for actuating said projecting portion.

8. In a device of the character named, an inner and outer tube and an upper retainer supported on said inner tube, in combination with a lower resilient device, which primarily controls said upper retainer, and which when pushed inwardly, causes said upper retainer to be unsupported, so that the latter is automatically forced into the adjacent tube by a descending runner.

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Witnesses:

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E. HAYWARD FAIRBANKS.