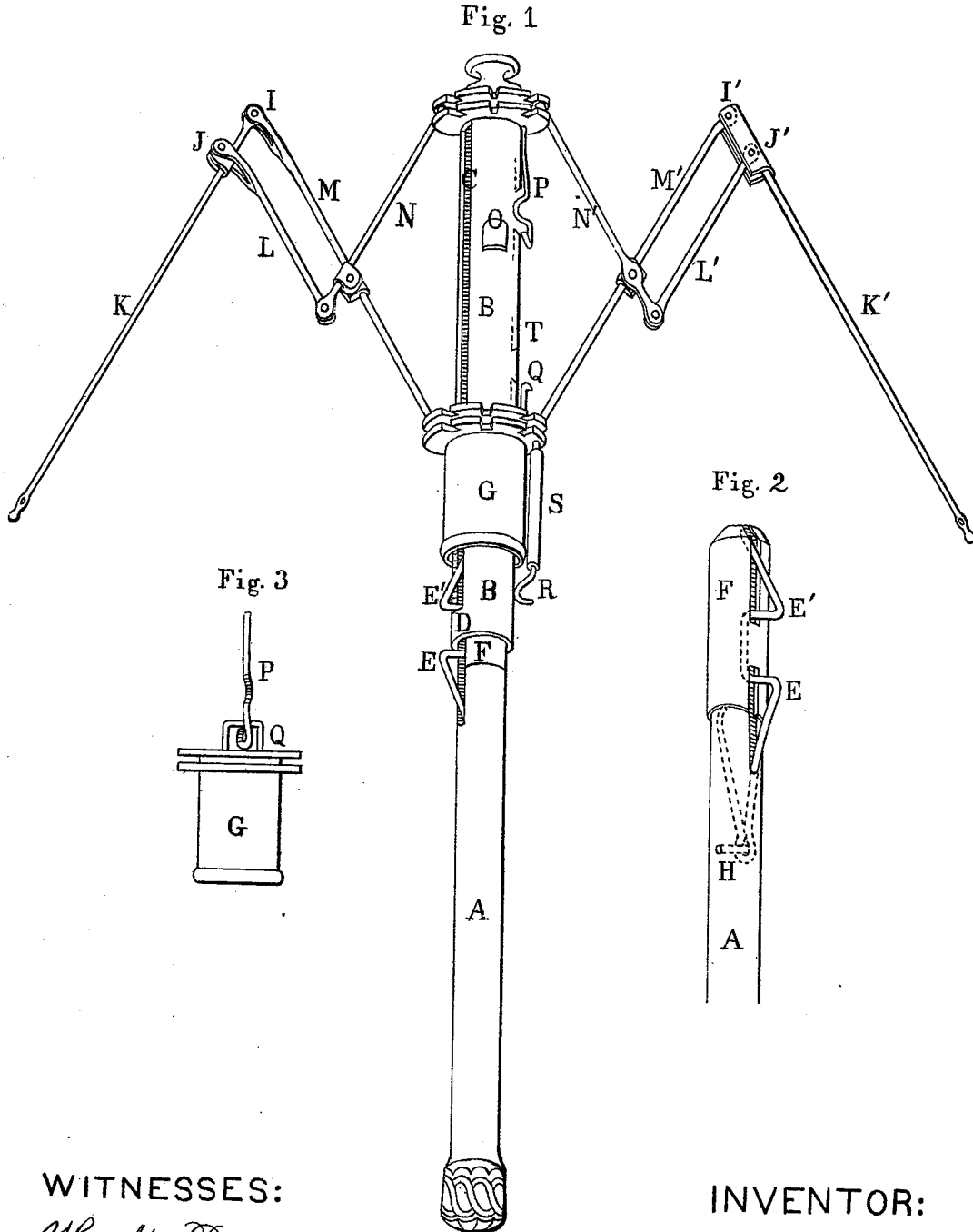


G. B. KIRKHAM.
 UMBRELLAS.

No. 180,719.

Patented Aug. 8, 1876.



WITNESSES:
H. M. Paine
A. L. Watson

INVENTOR:
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UNITED STATES PATENT OFFICE.

GEORGE B. KIRKHAM, OF NEW YORK, N. Y.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. 180,719, dated August 8, 1876; application filed January 22, 1876.

To all whom it may concern:

Be it known that I, GEORGE BYRON KIRKHAM, of 167 East 33d street, New York city, county and State of New York, have invented a new Folding Umbrella, of which the following is a specification:

The object of this invention is to provide an umbrella which can be folded up into a very small compass and carried in the pocket or any other convenient place.

In the drawing the umbrella is represented with two of its ribs and without any covering, as the latter will be similar to that on common umbrellas.

In Figure 1, the stick A slides up and down in the tube B, the whole forming the handle of the umbrella. This tube B has a slot, C, extending the entire length of it, except at the lower end, where there is a plate, D, to catch the spring. The spring E E' slides freely in the groove C, and passes under the thimble G either way without catching on it. The form of the spring E E' is shown plainly in Fig. 2, and it is prevented from rising too far out of the stick A by the ferrule F, while it is secured in the stick at the lower end by the pin H or any other suitable means. When the stick A is pulled down the tube B the lower part of the spring E passes under the plate D, but the upper part E' catches against it, and together they hold the stick in its proper position. On bringing down the thimble G to close the umbrella, it presses in the spring E' E, and thus allows the stick A to be shoved up into the tube B. The general form of the ribs or braces resembles that in a previous invention of mine on the same subject, except that I have found that putting the two pivots I' J' in a line with each other, as shown at the right side of Fig. 1, is not a good plan, and prevents the umbrella from opening readily. I have therefore made a special improvement, as seen on the left, by placing the pivot J outside of the rib K, and splitting the braces or rods L and M,

to allow them to straddle the rib K. This greatly facilitates the opening or closing of the umbrella.

To prevent the thimble G from going up too far, a projection, O, may be used when necessary. The thimble also strikes against the spring P, and engages with it by means of the wire Q, Fig. 3, which wire is rigidly secured to G, and slides under the lower end of P, and holds to it until P is pressed up by the ferrule F on the stick A, which releases G and allows it to be pulled down to D. In addition, to secure the thimble G, a spring, R, can sometimes be used with a tube or thumb-piece, S, to catch hold of. This spring R catches in a small slot, (shown at T,) and is released by the ferrule F when the stick A is shoved up into the tube B.

It will be seen that the umbrella is automatic, since it can be extended by simply catching hold of A and G and pulling them as far apart as possible, the springs all working themselves, while, to shut the umbrella, only E E' need be pressed in, the upper springs R, S, and P, being worked by the ferrule F.

What I claim as my invention is—

1. The spring E E' and ferrule F, combined and arranged substantially as described and represented.
2. The combination of the spring P, wire Q, and ferrule or handle F A, substantially as described and represented.
3. The spring R and thumb-piece S, combined and arranged substantially as described and represented.
4. The joints I J and ribs K, L, and M, combined and arranged substantially as described and represented.
5. The combination of the slotted tube B C, plate D, and spring E E', substantially as described and represented.

GEORGE BYRON KIRKHAM.

Witnesses:

H. M. PAIN,
A. L. WATSON.