

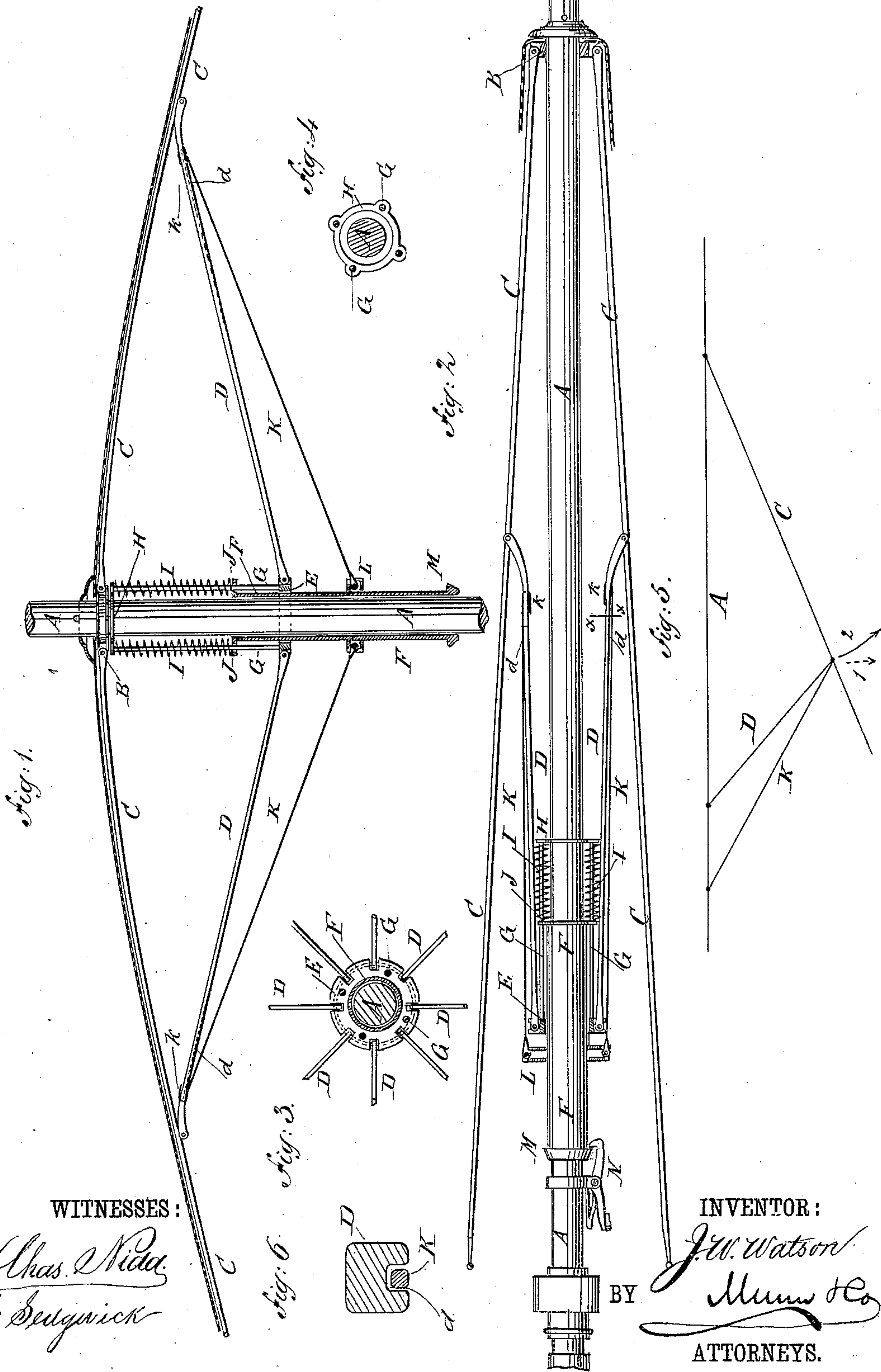
(No Model.)

J. W. WATSON.

UMBRELLA.

No. 256,774.

Patented Apr. 18, 1882.



WITNESSES:

Chas. Nida.
C. Sedgwick

INVENTOR:

J. W. Watson
Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN W. WATSON, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO WILLIAM GRANT, OF SAME PLACE.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 256,774, dated April 18, 1882.

Application filed October 5, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. WATSON, of the city, county, and State of New York, have invented certain new and useful Improvements in Self-Opening Umbrellas, of which the following is a specification.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a part of an umbrella to which my improvement has been applied, the umbrella being shown open. Fig. 2 is a sectional view of the umbrella-frame closed. Fig. 3 is a plan view of the upper movable runner, the handle and sleeve being shown in section. Fig. 4 is a plan view of the collar that carries the rods, the handle being shown in section. Fig. 5 is a diagram to illustrate the movement. Fig. 6 is a cross-section of a pair of stretchers, taken through the line *x x*, Fig. 2.

The object of this invention is to make a self-opening umbrella. I provide a runner that traverses the umbrella-stick in the usual manner with stretchers from the runner to the ribs. In addition thereto I have a secondary runner having secondary stretchers extending to the ribs. The secondary runner surrounds and moves upon the exterior of the stick-runner. With the two runners I connect springs in such a manner that they will be contracted or put under tension by the act of closing the umbrella—that is, by pulling the stick-runner down toward the handle in the usual manner; but when the stick-runner is released the force of the springs will carry the stick-runner back to the opposite end of the stick, and thereby spread the stretchers and automatically open the umbrella.

The invention consists in the peculiar construction of parts by which the above results are accomplished, and which I will now proceed to describe and claim.

A represents the stick of an umbrella, to the upper part of which is attached the stationary runner B. To the stationary runner B are hinged the inner ends of the ribs C, to the middle parts of which are hinged the outer ends of the stretchers D. The inner ends of the

stretchers D are hinged to the runner E, which slides up and down upon a sleeve, F, placed upon the stick A.

To the runner E are attached the lower ends of four (more or less) rods, G, the upper ends of which are attached to the collar or ring H, sliding upon the stick A. Upon the rods G are placed spiral springs I, the upper ends of which rest against the collar H. The lower ends of the spiral springs I rest against lugs J, formed upon the upper end of the sleeve F, and which are perforated for the passage of the rods G, the lugs J thus serving as guides to the rods G and as supports for the ends of the springs I.

To the outer parts of the stretchers D are attached the outer ends of the stretchers K, the inner ends of which are hinged to lugs or a runner, L, formed upon or attached to the sleeve F a little below its middle part.

Upon the outer ends of the stretchers K are formed hooks *k*, which are hooked into notches in the forks at the outer ends of the stretchers D, as shown in Figs. 1 and 2. The outer parts of the sides of the stretchers D, adjacent to the stretchers K, have longitudinal grooves *d* formed in them, as indicated in Figs. 2 and 6, to receive the stretchers K, and allow the stretchers D K to come close together, and the umbrella to fold compactly. Upon the lower end of the sleeve F is formed, or to it is attached, a shoulder or collar, M, with which engages, when the umbrella is closed, the spring-lever catch N, attached to the lower part of the stick A, to lock the said umbrella closed; and which is operated to release the sleeve F by pressing its lower end inward. With this construction, when the sleeve F is released from the catch N, the springs I tend to force the rods G, and with them the runner E, and the inner ends of the supplementary stretchers D, upward, and the sleeve F, and with it the inner ends of the stretchers K, downward. The attempted movement of the inner ends of the stretchers D K from each other would cause the connected outer ends of the said stretchers to move outward in the direction of arrow 1 if the said outer ends were left free; but the outer ends of the stretchers D K are hinged to the ribs C, so that the said outer ends can only

move in the arcs of circles having their centers at the hinging-points of the said ribs C, as indicated by arrow 2, which movement causes the sleeve F and its attachments to slide up the stick A, opening the umbrella. The umbrella is closed by drawing the sleeve F downward until the collar M meets and engages with the lever-catch N.

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

1. A self-opening umbrella, made substantially as herein shown and described, with secondary runner, secondary stretchers, and springs carried with the two runners, as set forth.

2. In an umbrella, the combination, with the stick A, the ribs C, the stretchers D, and the runner E, of the rods G, the springs I, the runner L, and the secondary stretchers K; substantially as herein shown and described, whereby the umbrella will be opened automatically when the main runner is released, as set forth.

3. In a self-opening umbrella, the combination of the rods G and springs I, with the two runners E L, substantially as herein shown and described, whereby the said runners will be forced apart and the ribs extended by the tension of the said springs, as set forth.

4. In a self-opening umbrella, the combination, with the spring-carrying rods G, of the

collar H, substantially as herein shown and described, whereby the upper ends of the said rods are supported from the umbrella-stick and held in place, as set forth.

5. In a self-opening umbrella, the combination, with the springs I, the collar H, the rods G, and the runner E, of the lugs J, formed upon the runner-sleeve F, substantially as herein shown and described, whereby the said springs are held against the pull of the said rods, as set forth.

6. In a self-opening umbrella, the combination of the two sets of stretchers D K, with the two runners E L, substantially as herein shown and described, whereby the ribs will be extended by moving the two runners from each other, as set forth.

7. In a self-opening umbrella, the combination, with the stretcher K, provided with the hooks k, of the stretcher D, having its outer forked end notched and provided with the longitudinal groove d, substantially as and for the purpose set forth.

8. In a self-opening umbrella, the stretchers K, made with hooks k, and fitted into notches in the forks of the stretchers D at their outer ends, whereby the two sets of stretchers can be readily connected, as set forth.

JOHN W. WATSON.

Witnesses:

JAMES T. GRAHAM,
C. SEDGWICK.