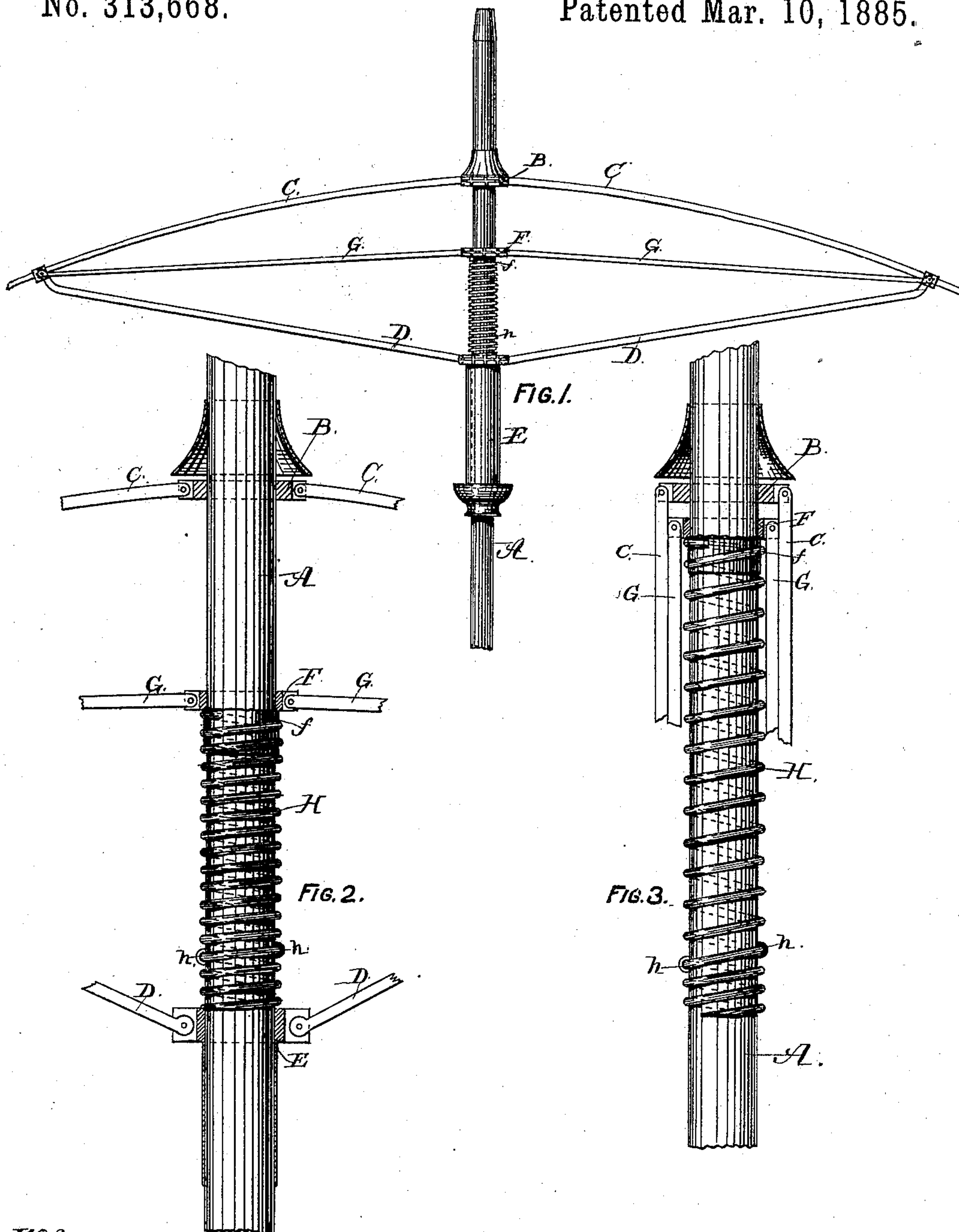


(No Model.)

C. R. HICKS.  
UMBRELLA.

No. 313,668.

Patented Mar. 10, 1885.



Witnesses:

*S. B. Brewer,*  
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# UNITED STATES PATENT OFFICE.

CHARLES R. HICKS, OF TROY, NEW YORK.

## UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 313,668, dated March 10, 1885.

Application filed April 26, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES R. HICKS, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Umbrellas, Parasols, &c., of which the following is a full and exact description, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a side elevation of the upper part of the umbrella-frame with its ribs distended; Fig. 2, an enlarged side elevation of portions of the same with parts shown in vertical section; and Fig. 3 a like view with the ribs closed down.

My invention relates to improvements in self-opening umbrellas, parasols, and other similar articles; and it consists in providing that class of articles with a set of auxiliary braces, which are connected to an additional runner that is secured to the upper end of a spiral spring, which surrounds the stick of the umbrella, and whose lower end is permanently fastened to said stick in such manner that the contractile power of the spring will be exerted to pull down the additional runner, whose connected auxiliary braces will force out the ribs of the umbrella into their distended positions.

As represented in the drawings, A is the stick of the umbrella; B, the crown-ring; C, the ribs; D, the ordinary braces; E, the lower runner; F, the upper runner; G, the auxiliary braces, and H the spiral spring. The stick A may be of any suitable size and form, and has the crown-ring B secured to it near its upper end. The ribs C are jointed to the crown-ring B, and are connected by means of the braces D to the lower runner, E, the connections of said braces to the crown-ring and runner all being made by means of flexible joints. All of the last five named different parts are of the common and well-known construction, and consequently are not of my invention. The upper runner, F, is fitted to slide freely on the stick A, and is arranged between the crown-ring B and lower runner, E. The auxiliary braces G are jointed at one end to the upper runner, F, and at the opposite end to the ribs C, the joint with the latter coinciding with the joint of the braces D. The length of the auxiliary braces G should

be so proportioned that when the upper runner, F, is at the lowest point of its movement the said braces will cause the ribs C to be distended to the outermost extremity of their movements. The spiral spring H surrounds the stick A, and has its upper end permanently secured to the sleeve *f* of the upper runner. Near its lower end the spring H is rigidly secured, as at *h*, to the stick A in such manner that a few of the lower turns of said spring will be left free to serve as an elastic bumper for the lower runner, E, to strike against. The spring H should be so adjusted that when the upper runner, F, is drawn down to the lowest point of its movement the contractile power of said spring will not be expended, but will exert sufficient force to keep the ribs C distended, so that they cannot be thrown down by a slight external pressure. The ribs C are held in their closed-down position, as shown in Fig. 3, by having the lower runner, E, engage with any suitable catch or locking device that operates in any common and well-known manner, and while the ribs are retained in that position the umbrella will be in a collapsed or closed-down condition, with the upper runner, F, forced up to the highest point of its movement, near the crown-ring B, thereby elongating the spring H, so that it will exert its greatest contractile power. As soon as the lower runner, E, is released from the hold of its locking device the resilient action of the spring H will draw the upper runner, F, downward, thereby causing the auxiliary braces G to distend the ribs C and hold the umbrella in its opened condition.

I am aware that self-opening umbrellas operated by means of springs have heretofore been constructed, and that auxiliary braces connected to an additional runner and to the ribs of the umbrella have formerly been used; but in these earlier constructions these elements have been combined and arranged to operate in a different manner from the one herein shown and described.

I claim as my invention—

1. The combination, with the stick A, ribs C, braces D, and lower runner, E, of the upper runner, F, auxiliary braces G, and spring H, the upper end of said spring being permanently secured to the upper runner, F, and the

lower end being secured to the stick A, the parts being arranged so that the contractile power of the spring will draw down the runner F to effect the distension of the ribs C, as  
5 herein specified.

2. In a self-opening umbrella, the spring H, having its lower end secured to the stick A,

as at h, for the purpose of forming an elastic bumper for the lower runner, E, as herein specified.

CHARLES R. HICKS.

Witnesses:

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