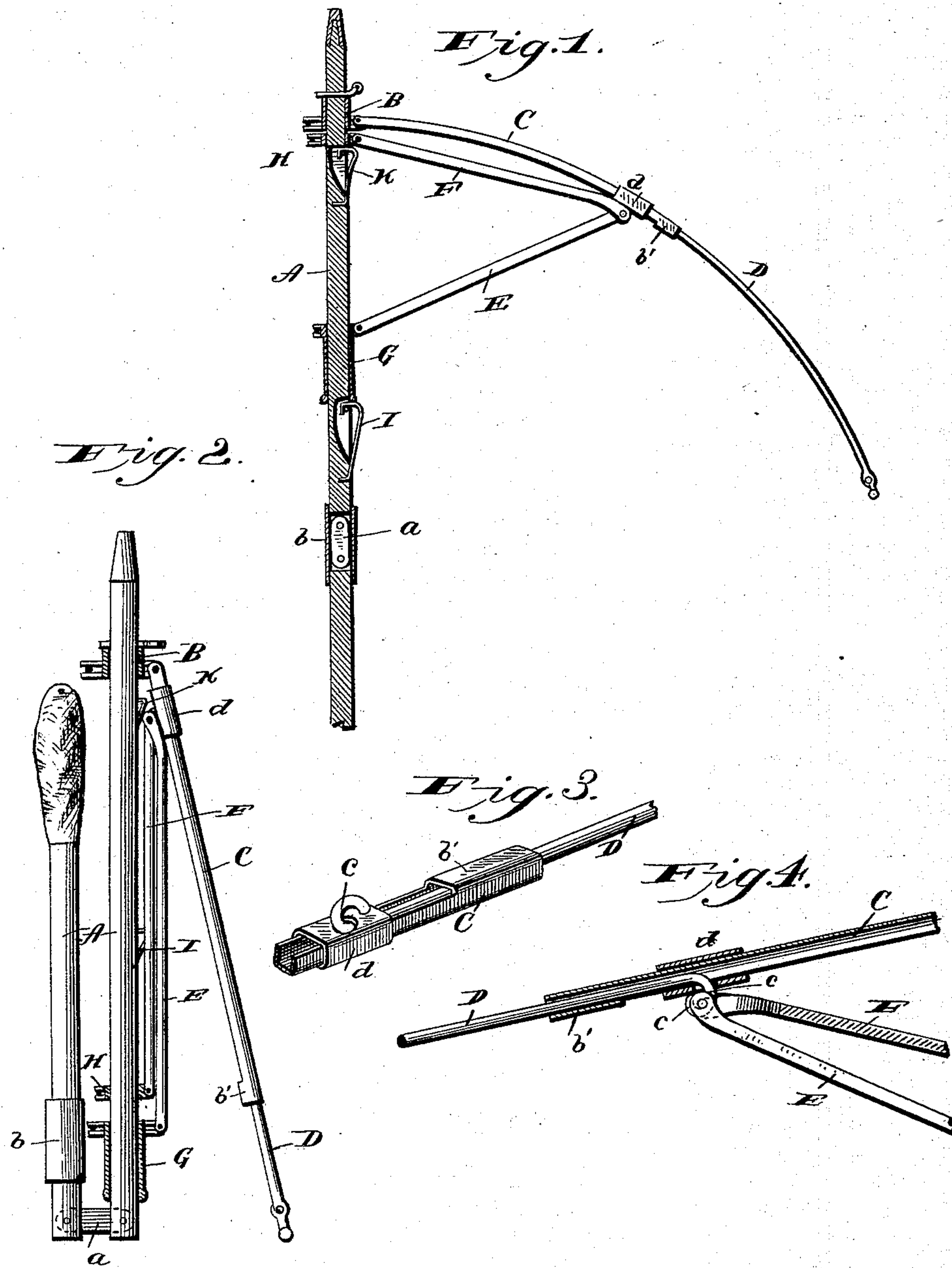


(No Model.)

E. J. PRESTON.
FOLDING UMBRELLA

No. 410,114.

Patented Aug. 27 1889.



Witnesses
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UNITED STATES PATENT OFFICE.

ELIJAH J. PRESTON, OF DAYTON, OHIO.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 410,114, dated August 27, 1889.

Application filed February 9, 1889. Serial No. 299,249. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH J. PRESTON, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Folding Umbrellas, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain improvements in folding umbrellas, sunshades, or parasols; and it has for its objects to directly and securely brace the folding-ribs of such articles at their joints, when raised, by means
15 of a series of sub-braces, and to provide for bringing the sub-braces into folding position when lowered or closed, as more fully herein-after set forth.

20 The above-mentioned objects I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 represents a sectional view of a portion of the skeleton of an umbrella, showing the parts in the position they assume
25 when raised or opened. Fig. 2 represents a view, partly in elevation and partly in section, showing the parts in a closed and folded position. Fig. 3 represents a perspective view showing the means of connecting the
30 folding ribs, so as to slide with respect to each other; and Fig. 4 represents a detached view, partly in section and partly in elevation, showing the relative arrangement of the folding ribs, the sub-brace, and the ordinary
35 brace.

40 The letter A indicates the stick or staff of the umbrella, which is constructed in two parts and connected by means of a link *a*, as is usual with the sticks of parasols, sunshades, and the like, to permit folding the same; and *b* indicates the sliding sleeve ordinarily employed to hold the parts of the stick in an extended position.

45 B indicates the usual radially-slotted collar, secured near one end of the stick to which the ribs are pivoted. Each rib is constructed in two parts C D, the upper or outer rib being grooved or fluted longitudinally, the groove being rectangular, semicircular, or
50 polygonal in cross-section to suit convenience. The free end of each of the outer or upper sections C of the ribs is constructed in the

shape of or provided with a short sleeve *b'*, through which the upper end of the corresponding lower section slides in and out of 55 the longitudinal groove in said upper section. The upper end of each lower section before mentioned is curved inwardly, as indicated by the letter *c*, the said curved end extending through an aperture on the inner 60 side of a sleeve *d*, fitting loosely on the upper or outer sections of the ribs, so as to slide thereon.

The letters E F indicate the main and supplemental or sub braces, respectively, which 65 are hinged to the hooked ends of the lower sections of the ribs, the ends of the respective braces being slightly curved toward each other, and the end of one of said braces bifurcated, so as to straddle the other, and thus 70 permit the said braces to move freely without interfering with each other. The braces E at their inner ends are pivoted to the radially-slotted ring of the ordinary runner G, which is arranged to slide on the stick, as 75 usual, and the inner ends of the sub-braces F are similarly connected to the ring of a supplemental runner H, which is arranged to slide on the staff between the runner G and the collar to which the ribs are pivoted. 80

The letter I indicates the ordinary latch-spring, by means of which the runner G is supported when the ribs are distended and the umbrella raised, and K a similar latch-spring which supports the runner H when 85 the parts are in such position. The spring I is located in the usual position, but the spring K is located just below the collar B, so that the runner H may rest closely against its under side when the umbrella is raised. 90

It is evident that a pin or other fastening device may be substituted for this latch-spring without departing from the spirit of my invention.

The operation of my invention is as follows: 95 The parts being folded in position, as shown in Fig. 2, to open the umbrella and distend the same, the parts of the stick are brought in line, as shown in Fig. 1, and are held in position by the sleeve *b*, which is slipped over 100 the joint, as usual. The runners are then drawn simultaneously toward the handle until they reach their limit in that direction, drawing the braces and lower sections of the

ribs with them. When in this position, the runners are simultaneously elevated until they pass, and are held by the latch-springs I K, distending the parts, as shown in Fig. 1.
5 To return the parts to a folded position, the runners are again drawn toward the handle until they reach their limit in that direction, and then by lightly grasping the ribs with one hand and moving the runners simultaneously from the handle with the other the
10 runners, braces, and ribs will assume the position shown in Fig. 2, after which the stick may be folded, as shown in said figure.

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

The combination, with a jointed stick pro-

vided with a stationary collar B, the jointed ribs having their inner sections pivoted to this collar, a runner G, pivotally connected 20 by the braces E to the outer sliding sections of the ribs, of the sliding collar H, located upon the umbrella-stick between the collar B and the runner G, and the sub-braces pivotally connecting the said sliding collar H to 25 the outer ends of the braces E, substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

ELIJAH J. PRESTON.

Witnesses:

ELIAS FAVORITE,
A. W. DECKER.