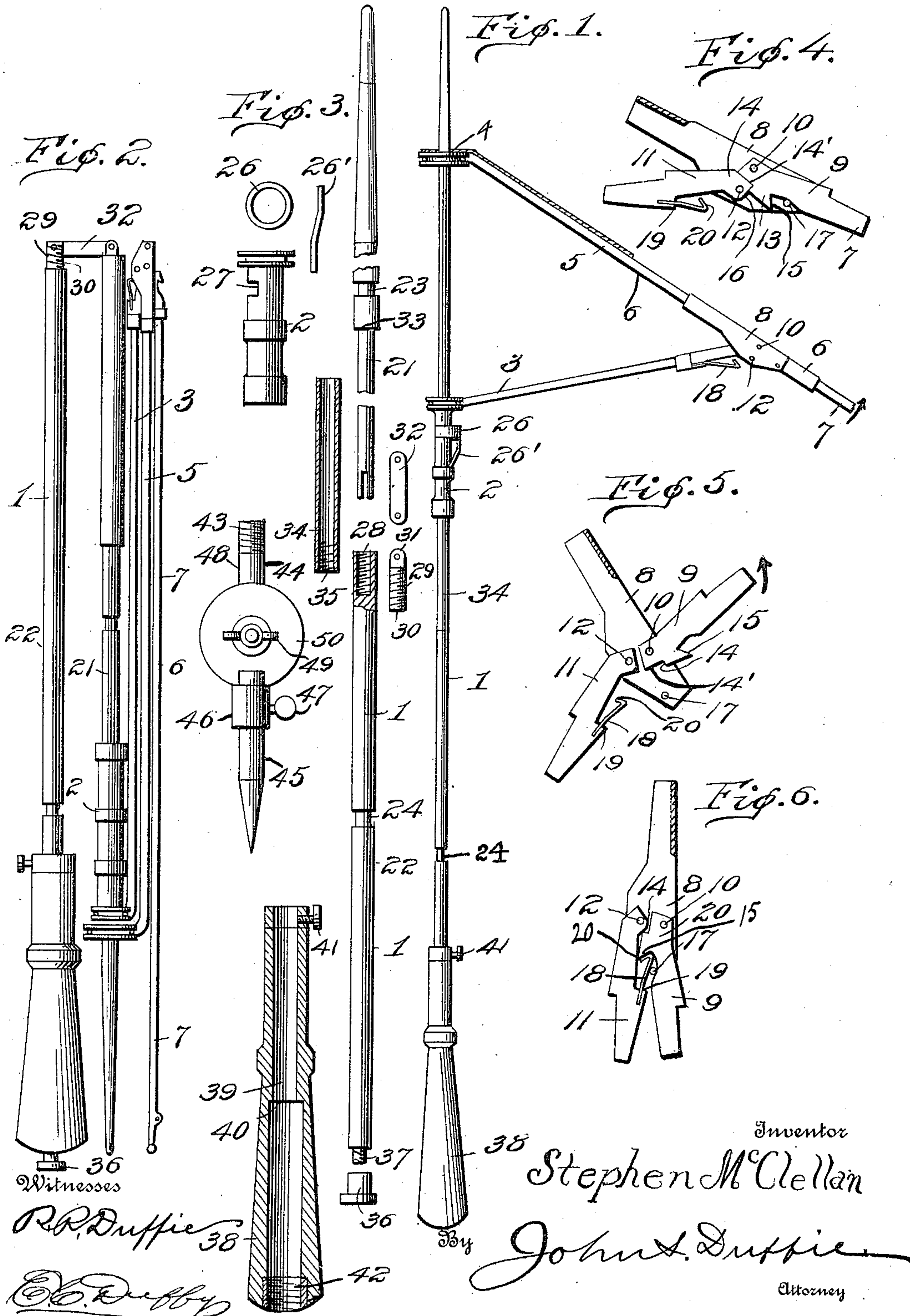


S. McCLELLAN.
FOLDABLE UMBRELLA, TENT, OR CANOPY.
APPLICATION FILED MAY 17, 1910.

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UNITED STATES PATENT OFFICE.

STEPHEN McCLELLAN, OF BROOKLYN, NEW YORK.

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Specification of Letters Patent.

Patented May 23, 1911.

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To all whom it may concern:

Be it known that I, STEPHEN McCLELLAN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Foldable Umbrellas, Tents, or Canopies, of which the following is a specification.

My invention has relation to new and useful improvements in foldable umbrellas, and especially to that class of foldable umbrellas in which the lower sections of the ribs are positively locked in their closed and opened positions, and my present invention especially relates to improvements over my allowed application, filed May 1, 1909, Ser. No. 493,322.

The main object of my invention is to afford means whereby the lower sections of the ribs of an umbrella may be positively locked against movement in any direction while said umbrella is in raised position.

Another object of my invention is to provide means whereby the lower sections of the ribs of said umbrella will be locked when the umbrella is in closed position.

Another object of my device is to produce a foldable rod, and furthermore, a handle so constructed that the same may be slid upon the rod so as to reduce the length thereof when the umbrella is in folded position, and thus doing away with the necessity of employing two joints as hitherto necessary, enabling the same to be more cheaply manufactured.

A further novel feature of my device is to produce a foldable rod so constructed that the sections thereof are not liable to come apart.

A further object of my device is to provide means for enabling the umbrella to stand alone while being employed as an umbrella canopy or tent.

A further novel feature of my invention is to provide a novel runner and novel spring clasp to secure the runner against vertical movement in either direction when said umbrella is either in closed or open position, which becomes a necessity in the construction of my device.

With the above and other objects in view my invention consists of the novel construction and arrangement of parts as are hereinafter described in this specification, illustrated in the accompanying drawings

forming a part thereof, and particularly pointed out in the appended claims.

Referring to the drawings: Figure 1 is an elevational view of one rib and the rod, as it would appear in open position, said rib and rod being connected together with its corresponding brace. Fig. 2 is an elevation of the above rib, rod, handle and brace as it would appear while in folded position. Fig. 3 is a view of the several parts of the rod, and handle, disassembled. Fig. 4 is a longitudinal, sectional view of the locking means as it would appear when the umbrella is in open position, as shown also in Fig. 1, said view being on an enlarged scale. Fig. 5 is a longitudinal, sectional view, on an enlarged scale, of the locking means, showing the position of the locking parts while in unlocked position. Fig. 6 is a longitudinal sectional view of the locking means as they would appear when the said umbrella is in closed position, said parts being on an enlarged scale.

Referring more particularly to the drawings, my invention is described as follows:

The rod 1, which may be hollow, is encircled by the runner 2, whereto is pivotally held the inner end of each of the braces 3. Held securely to the upper end of the rod is a "notch" 4, whereto is pivotally held the inner end of the upper section 5 of each rib 6. The lower section of each of the ribs will be designated as 7. Securely held to the lower end of each of said upper sections 6 is a pair of similar plates 8. In my former invention herein referred to only one plate was employed. Pivotally held between the plates 8 is the locking member 9 of the lower section 7, the pin 10 passing through the said plates and member 9. Pivotally held between said plates is the locking member 11 of said brace 3, the pin 12 passing through said plates and the member 11.

Where the locking members 9 and 11 are now used, I employed bifurcated portions in my former invention above referred to, thus rendering my present invention simpler in construction, stronger and neater. In pivoting the members between the plates 8, the pins 10 and 12 are almost in alinement with a line drawn at right angles to the longitudinal axis of the plates, that is a line drawn in such manner through the lower will be a tangent of the upper 10.

Formed integral with the locking member

9 is a lug 13, which provides a shoulder 14, forming in conjunction with the main portion of the locking member a right-angle bend 14', said right angle bend binding 5 against and interlocking with the upper and front edges of the rectangular end 16 of the locking member 11, when the umbrella is in open position. (See Fig. 4, which shows fully the construction).

10 A pin 17, which passes through the plates 8 further secures the lower rib section 7 against downward movement when the umbrella is in open position.

A resilient tooth 18 protrudes from the 15 shoulder 19 of the locking member 11, said tooth provided with an inwardly extending acute-angular portion 20, which portion binds against the tooth 15 of the locking member 9. When thus positioned the lower 20 section of each rib 6 is locked against movement while the umbrella is in closed position, as clearly illustrated in Fig. 6. Each section remains locked until the locking member 11 releases it when the umbrella begins 25 to open. The object of having one tooth resilient is to afford means whereby the lower section of each rib may be locked in position after the umbrella is closed, if desired. Both of said teeth may be solid, but 30 in such case the lower sections of the ribs would necessarily have to be unfolded first, that is, before the runner 25 reaches its lowest position, to prevent possible snapping of any of the parts.

35 The rod 1 is composed of two sections 21 and 22, each of said sections being provided with an annular groove 23 and 24, respectively. Traveling upon the rod is a runner 2, said runner being adapted to en- 40 gage either of said grooves 23 or 24, by means of the spring actuated ring 26, which encircles said runner and coincides with the notch 27 cut therein. The spring that supports said ring 26 is designated by 26'. The 45 advantages of the above ring lock or catch are in that the same will lock at any point within a circle and prevents vertical movement of the runner in either direction, and in assembling, the parts are more easily put 50 together. The lower section of the rod is provided with internal threads 28, which engage the external threads 29 of the plunger 30, which plunger is provided with two perforated ears 31, which receive one perforated 55 end of the extension member 32, the other perforated end of which member is received by the bifurcated lower extremity of the upper section 21 of the rod. The plunger 30 is held in position by the threads as 60 shown or by any other suitable means adapted for the purpose.

The upper section 21 of the rod is reduced from a point 33 to its lower end for the accommodation of a sleeve 34, the diameter 65 of which is no greater than the diameter of

any other part of the rod 1. When the rod is in straight or unfolded position the sleeve 34 is slipped down and its internal threads 35 are caused to engage said external threads 29 of the plunger 30, which threads 70 protrude above the upper end of the lower section 22. (See Fig. 2). By the employment of this sleeve I assure a locking means between the upper and lower sections of the rod which is not liable to come apart. Said 75 sleeve is made somewhat longer than absolutely necessary as is the runner 25 for the purpose of covering and strengthening the said reduced portion of the upper section 21 of the rod 1, and giving the appearance 80 of a stick having a constant diameter throughout.

Secured to the lower end of the rod 1 by means of the head 36, which is held thereto by means of the threaded neck 37, is a 85 handle 38, which handle is provided with a longitudinal hole 39 therein. Said hole 39 is reduced near the upper end of the handle forming the shoulder 40, which shoulder binds against the head 36, thus preventing 90 the removal of said handle from the rod. The handle 38 is adapted to be slid in upon the rod 1, to the position seen in Fig. 2, and is held in whatever position desired by the thumb-screw 41. 95

Provided in the lower end of the hole 39 are the internal threads 42, which threads engage the external threads 43 of the pin 44, when it is desired to use the pin 44, when 100 employing the umbrella as a tent or canopy. The pin 44 is provided with a removable point 45, rotatably held in the socket 46 by means of the thumb-screw 47. The upper portion 48 of the pin 44 may be turned at 105 any angle by releasing the thumb-nut 49 and turning the said portion 48 at the desired angle, upon the axis of the disk 50.

The umbrella being in open position and it is desired to fold the same into that position illustrated in Fig. 2, the runner 2 is re- 110 leased from the lower groove 24 and slid upward until the brace 3 has assumed that position which is necessary to put the locking members in that position illustrated in Fig. 5, when said lower section 7, of the rib 115 6, is swung back in the direction indicated by the arrow in Fig. 5, until it contacts the upper section 5 of the rib. The runner is then slid farther upward until it almost contacts said "notch" 4, when the umbrella, 120 proper, is in folded position. The thumb-screw 41 of the handle is released and the handle is slid upon the rod until it entirely overlaps the same when the handle is again 125 held in place by means of the tension of the thumb-screw. The rod is folded by unscrewing the sleeve 34 from engagement with the threads 29, when it is slipped back upon the reduced portion of the upper section of the umbrella a sufficient distance to 130

avoid interference with the parts 29 and 32. The reduced portion is made of sufficient length to accommodate the said sleeve. When the sleeve has been slid upon the reduced portion, as described, the rod is then folded as seen in Fig. 2. The entire umbrella is then in folded position.

My umbrella being in folded position and it is desired to cause the same to assume an open position, the rod 1 is first unfolded, the lower section thereof being placed in alinement with the upper section thereof as illustrated in Fig. 1. The handle is also caused to assume its normal position as also shown in Fig. 1. The runner 2 is then slid downward past the groove 23 until each of the locking members assume a position, in relation to each other, similar to that seen in Fig. 5, when the lower sections 7 of the ribs are swung outward into a position as illustrated in Fig. 1. Said runner 25 is then slid upward until it engages the groove 23. The umbrella is then in open position. My invention being in open position and it is desired to close the same, said runner 25 is released from the groove 23, slid downward until it is engaged by the groove 24. The lower sections 7 are locked by means of the tooth 15 and resilient tooth 20, when the umbrella is in closed position.

From the foregoing explanation of the operation of my device it will be obvious that the key to the different positions at which the lower sections 7 will be held in locking relation to the upper sections 5, is the runner 2, as, in order to cause the umbrella to assume one position from that of another, it is necessary to slide said runner to that position on the rod 1 which is necessary to bring the locking members in that relation to each other, known as the unlocked position, as illustrated in Fig. 5.

Having described my invention, what I claim as new, is:

1. A foldable umbrella comprising ribs formed in two sections, each of which ribs, in conjunction with its corresponding brace, forms a lock which locks the lower sections thereof positively against movement in relation to the upper section thereof, said locks each comprising a pair of similar plates secured to the outer end of each upper section of each rib, a locking member provided at the inner end of the

lower section of each rib, and a locking member at the outer end of each brace, each of said locking members pivotally held between said plates, the locking member of the lower section of each rib provided with a lug forming a shoulder, which shoulder, in conjunction with the main body of the member, forms a right-angle bend, the locking member of each brace terminating in a rectangular portion, which portion enters and binds against the right-angle bend of the first-mentioned locking member when the locking members are in locked relation to each other.

2. In a foldable umbrella comprising ribs and corresponding braces, said ribs each composed of two sections, the upper of which sections has secured to the outer end thereof two similar plates, a locking member held to the inner end of the lower of the sections, said member pivotally held between the said plates, a locking member held to the outer end of each corresponding brace, said member pivotally held between the said plates, the points in the plates where the locking members are pivotally held being almost in vertical alinement with each other, a tooth provided on one edge of the first-mentioned locking member, a shoulder provided on one edge of the second-mentioned locking member, a resilient tooth protruding from said shoulder, said tooth of the first-mentioned member binds against and interlocking with the resilient tooth of the second-mentioned locking member when the umbrella is in closed position.

3. In an umbrella as described comprising a rod and runner, said rod provided with two annular grooves therein, a runner slidably encircling the rod, said runner provided with a notch cut therein, a ring encircling the runner and coinciding with the notch, said ring for the purpose of engaging either of the annular grooves in the rod, a flat spring secured to the runner to the upper end of which is secured the ring.

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

STEPHEN McCLELLAN.

Witnesses:

C. M. FORREST,
R. R. DUFFIE.