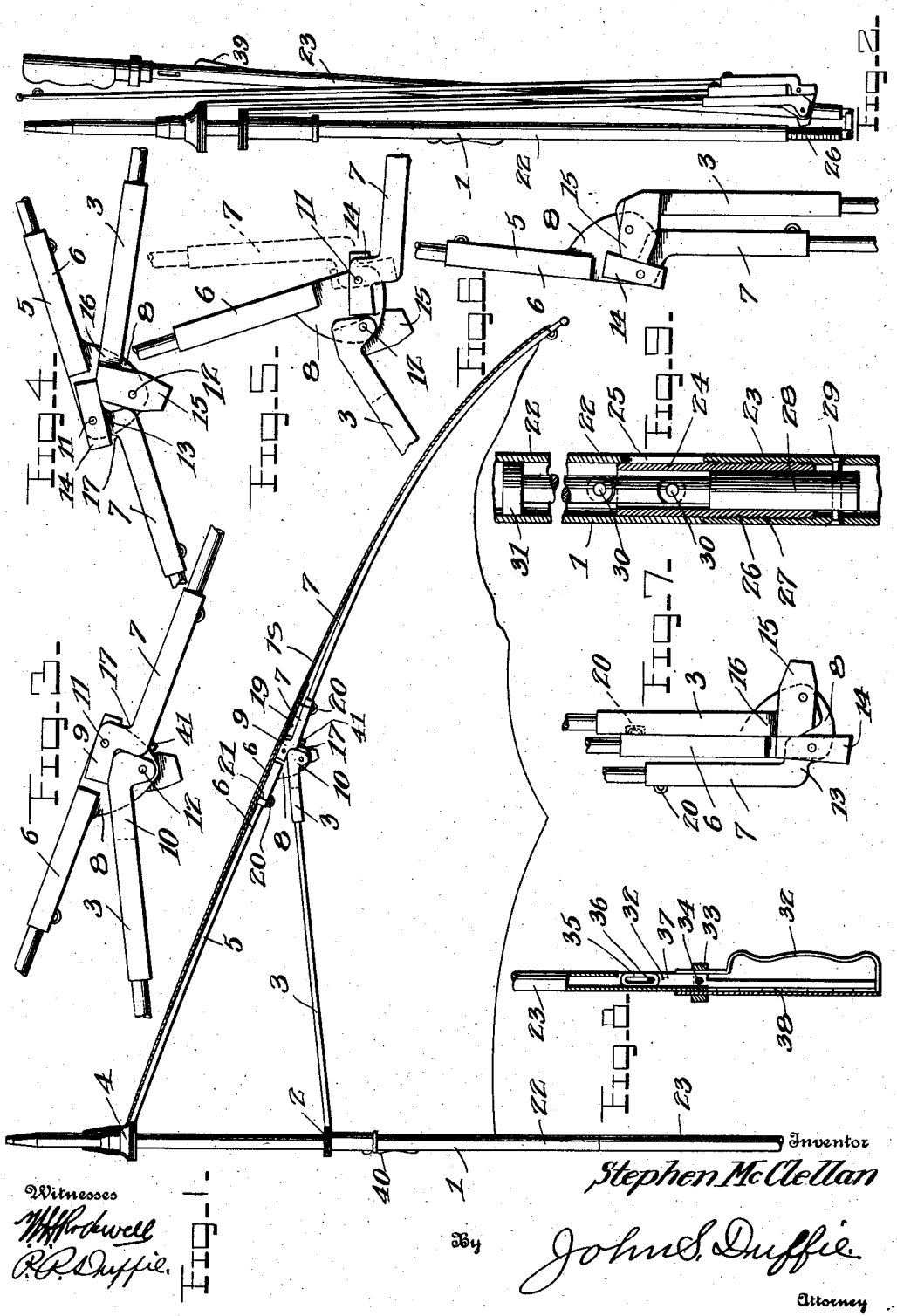
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FOLDABLE UMBRELLA.

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1,027,426. Patented May 28, 1912.



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FOLDABLE UMBRELLA.

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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, 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 locked in their different positions.

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

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

Another object of my invention is to produce means whereby the lower sections of the ribs of an umbrella may be locked in place when said umbrella is in folded position.

Another object of my device is to produce a foldable rod and furthermore, a handle so constructed that the same may be folded back against the lower section of said rod.

With these and other objects in view my invention consists of the novel construction and arrangement of parts as are hereinafter more fully described in this specification, illustrated in the accompanying drawings forming a part thereof, and particularly pointed out in the claims hereunto attached.

Reference being had to the drawings: Figure 1 is an elevation of one rib, the rod and cover, said rib together with its corresponding brace being illustrated as it would appear when said umbrella is in open position. Fig. 2 is a view showing one rib as it would appear when in folded position, in conjunction with the rod as it would appear when in folded position. Fig. 3 is a view on an enlarged scale, of the locking means as it would appear when said umbrella is in open position. Fig. 4 is a corresponding view, illustrating however, the reverse side of said locking means. Fig. 5 is a view of one rib together with its corresponding brace, illustrating the position the several lugs of the locking means will assume when the lower section of said rib may be freely swung in any position desired. This is the only position at which said lower section of said rib is not locked in relation to the upper section thereof. Fig. 6 is a view illustrating the position assumed by the said rib and its corresponding brace, when the lower section thereof is locked while said umbrella is in closed position. This view is an illustration of the same side of the locking means disclosed in Figs. 4 and 7, while Figs. 1, 2, 3 and 5 illustrate the reverse side of said locking means. Fig. 7 is an enlarged view of the positions assumed by the said foldable rib and its corresponding brace together with the locking means, when said foldable rib is in folded position. Fig. 8 is a vertical longitudinal section of the foldable handle. Fig. 9 is a fragmentary, detail, vertical sectional view of the foldable rod.

Referring more particularly to the drawings my invention is described as follows: The rod 1 which is hollow, is encircled by the runner 2, whereto is pivotally secured the inner ends of each of the braces 3. Held securely at the upper end of said rod is a "notch" 4 whereto is pivotally held the inner end of the upper section 5 of each of the ribs 6. The lower section of each of said ribs 6 will be designated by the numeral 7. Securely held to the lower end of each of said upper sections 5 is a plate 8. Straddling said plate is the bifurcated inner end 9 of said lower section 7. The bifurcated outer end 10 of said brace 3 also straddles said plate. Said bifurcated portions are held in pivotal relation with said plate by means of pins 11 and 12 which pass through corresponding registering perforations in each of said bifurcated portions of said plate. Formed or secured to the prong 13 of said bifurcated portion 9 is a small lug 14, which travels with and assumes a different position whenever said lower section 7 is made to assume a different position. A large lug 15 is formed or secured to the prong 16 of the bifurcated portion 10. Said lug travels with and assumes every position assumed by the movement of said brace 3. It is obvious that these lugs may be secured to each prong of each bifurcated portion. It will be seen that there is a right-angle bend 17 in each of the forks of said bifurcated portion 9. This bend in conjunction with the enlargement of the prongs of said bifurcated portion 10 are the means

whereby said ribs are locked while said umbrella is in open position. In this, it will be seen, that I have departed from the usual method of forming a joint near the center, in which previous inventors have attempted to preserve the alinement. So that the cover 18 of said umbrella will lie smoothly I have suspended a piece of tape 19 across said joint, the ends of said tape being secured in place to the eyelets 20 by means of threads 21. This tape also acts as a protection to the cover when said umbrella is in folded position.

The rod 1 is made in two sections 22 and 23. Extending from the mouth of said upper section and held securely therein is a short tube 24; a vertical slot 25 is cut in said upper section of said rod near the lower end thereof, wherethrough is inserted solder, for the purpose of securing said small tube in place. The lower protruding portion 26 of said short tube is provided with threads which engage the threads 27 formed on the inner surface near the upper end of said lower section 23 of said rod. A plunger 28 is securely held in place in the lower section of said rod by means of a rivet 29. Said plunger is provided with two suitable hinges 30 the function of which will be clearly obvious. This plunger passes vertically through said small tube into the upper section of said rod. A head 31 is formed to the extreme upper end of said plunger. When said lower section of the rod 1 is unscrewed from the small tube 24 said head 31 travels downward and contacts the upper extreme end of said small tube 24, thus allowing said lower section to be folded back upon said upper section as illustrated in Fig. 2.

A handle 32 is adapted to be folded back upon the lower section 23, in the following manner. A ring 33 which encircles the upper end of said handle and the lower end of said lower section 23 is adapted to be slipped upward when the pin 34 or its equivalent is removed, allowing said handle to be pulled downward until the inner surface of the upper portion of a link 35 engages a pin 36 secured in said lower section 23. The upper portion of the handle 32 is then allowed to swing through a slot 37 cut in said lower section 23. The upper portion of said handle is very thin and is adapted to pass through said slot. Said handle is provided with a vertical hinge or a plurality of hinges 38 making said handle capable of being opened and closed at will. By this construction I am enabled to use said handle as a receptacle for holding the cover of the foldable umbrella, when it is desired to remove said cover therefrom. This also enables the user of my device to make a more compact package when said umbrella is folded by opening said handle and allowing the same to remain in open position and cause it to lie flat against the other contacting parts of said foldable umbrella.

The umbrella being in open position and it being desired to fold the same into that position which is illustrated in Fig. 2, the runner 2 is released from the lower clasp 39 and slid downward until the brace 3 has assumed that position which is illustrated in Fig. 5, when said lower section 7 is swung backward as indicated by the dotted lines (Fig. 5) against said upper section 5. The runner 2 is then slid upward until it almost contacts said "notch" 4, when it will be found that each of said lower sections 7 of said umbrella are held locked in place.

My umbrella being in a 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. 9. The handle is also caused to assume its normal position as shown in Fig. 8. The runner 2 is then slid downward past the clasp 40 until each of said braces 3 assume a position as shown in Fig. 5, when the lower sections 7 are swung outward into a position as shown in Fig. 1. Said runner 2 is then slid upward until it engages the clasp 40. The umbrella is then said to be in open position. My umbrella being in open position and it is desired to close the same, said runner 2 is released from the clasp 40, slid downward until it is engaged by the clasp 39. The lower sections 7 are then in locked position as shown by Fig. 6.

From the foregoing explanation of the operation of my device it will be obvious that the key of the different positions at which the lower section 7 will be held in locked relation to the upper sections 5, is said 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 will cause said braces 3 to assume the position illustrated in Fig. 5. The arrangement shown in Fig. 3 and Fig. 4, it may be further stated, is such that it forms a positive lock against the movement of said lower sections 7 in either a backward or downward movement while said runner 2 is engaged by clasp 40. The downward motion is also halted by reason of the lug 41, which is formed to the plate 8, coming into contact with the bifurcated portion 9. It will be seen that this relieves the tension on the pin 11 to a large extent.

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 section thereof positively against movement in rela-

tion to the upper section thereof, said lock consisting of a plate, a bifurcated portion formed at the outer end of said brace, a bifurcated portion formed at the inner end of the lower section of said rib, each of said bifurcated portions straddling said plate and held in pivotal relation therewith, each prong of the second-mentioned bifurcated portion provided with similar right-angle bends, the ends of each of the prongs of the first-mentioned bifurcated portion being enlarged and adapted to be received by their corresponding right-angle bend in said first-mentioned prongs.

2. A foldable umbrella comprising ribs formed in two sections, braces, means to lock the lower section of each rib in place when said umbrella is in folded or open position, said means consisting of a plate, a bifurcated portion formed at the outer end of each brace, a bifurcated portion formed at the upper end of the lower section of each rib, each of said bifurcated portions straddling said plate and held in pivotal relation therewith, a small lug formed on one prong of said second-mentioned bifurcated portion, a large lug formed on the corresponding prong of the first-mentioned bifurcated portion, said lugs coöperating to lock said lower section in place when said umbrella is in closed position, said lugs co-acting in a reverse manner to lock said lower section in place when said umbrella is in folded position.

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

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."