Sept. 22, 1931. W. BOUMA 1,824,192

UMBRELLA

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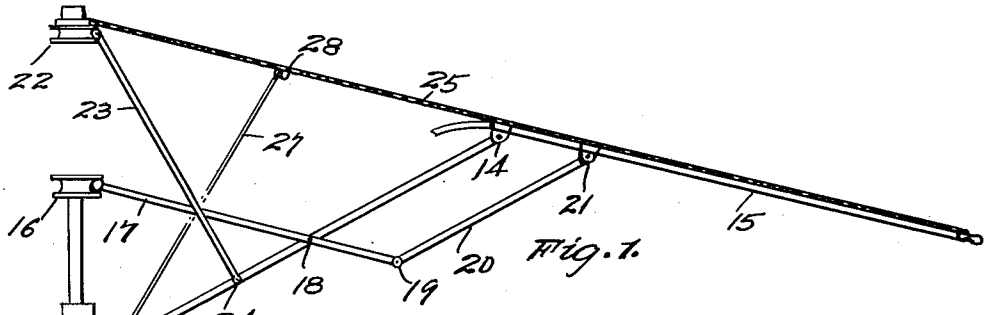
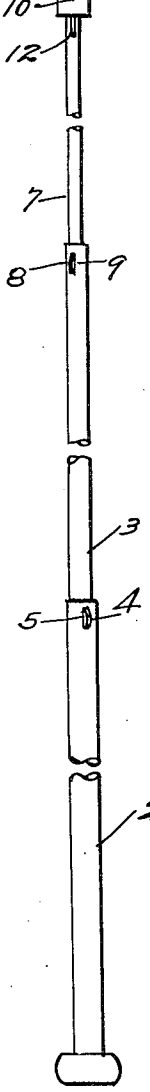


Fig. 1.



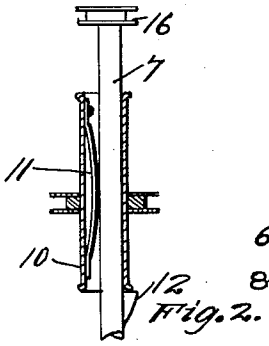


Fig. 2.

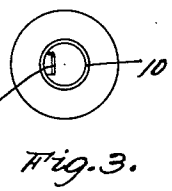


Fig. 3.

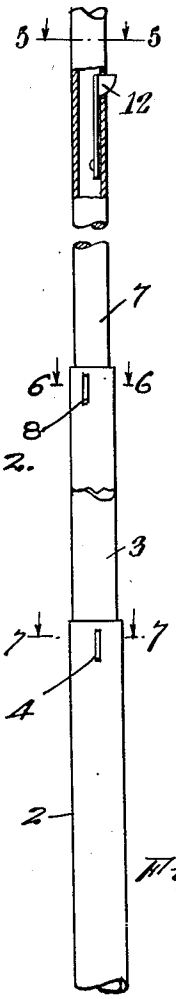


Fig. 4.

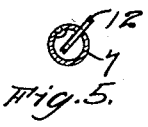


Fig. 5.

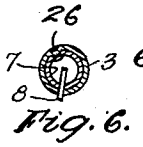


Fig. 6.



Fig. 7.

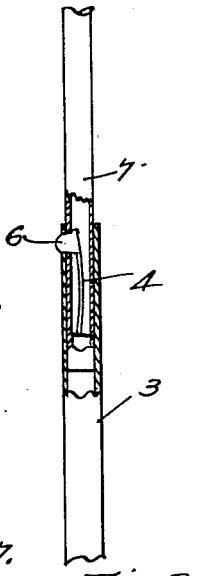


Fig. 8.

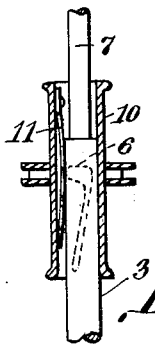


Fig. 12.

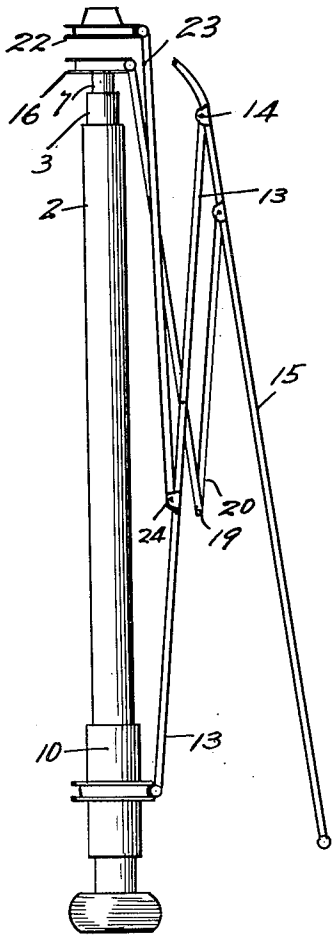
INVENTOR,
Wikke Bouma;
BY
F. E. Maynard,
ATTORNEY.

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Fig. 9.



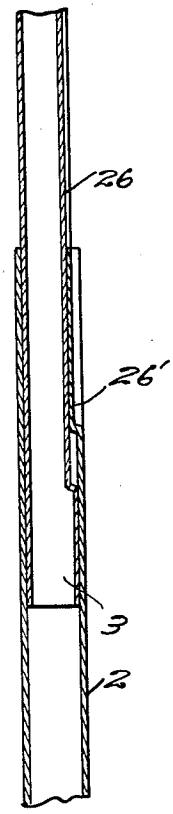
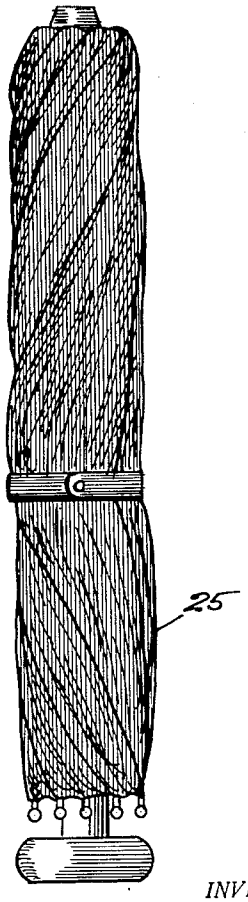


Fig. 11.

Fig. 10.



INVENTOR,
Wikke Bouma;
BY
F. E. Maynard,
ATTORNEY.

Patented Sept. 22, 1931 1,824,192

UNITED STATES PATENT OFFICE

WIKKE BOUMA, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-FOURTH TO JOHN VAN NULAND, OF LOS ANGELES, CALIFORNIA

UMBRELLA

Application filed September 3, 1929. Serial No. 390,105.

This invention relates to umbrellas and more especially to collapsible umbrellas of the type wherein a handle is provided with a plurality of sections adapted to telescope, one into the other.

It is an object of the present invention to provide a telescopic umbrella including a top-most post and an independent crown thereabove with a collapsible rib or skeleton structure whereby the finial crown may be elevated above the post-cap whereby to effect the opening or spreading of the umbrella fabric.

A further object is to provide a collapsible handle whose sections are automatically latched in extended relation and to provide a runner operative to spread or expand the rib-structure when the runner is moved in outward direction and which runner is operative to automatically release the several retaining latches to permit collapse of the umbrella.

A further object is to provide a collapsible umbrella of extremely simple, practical construction and reliable action and of comparatively low cost.

Other objects, advantages, and details of means and operation will be made manifest in the ensuing description of the herewith illustrative embodiment; it being understood that modifications, adaptations, and variations may be resorted to within the spirit, scope, and principle of the invention as it is more directly claimed hereinafter, and which consists of the disclosure and the substantial equivalent thereof.

Figure 1 is a vertical section and elevation of the umbrella structure.

Figure 2 is a sectional detail of the runner in outer position.

Figure 3 is a bottom plan of the runner.

Figure 4 is a side-elevation of handle parts.

Figure 5 is a cross-section on line 5—5 on Figure 4, through the post.

Figure 6 is a cross-section on line 6—6 at the post-latch, Figure 4.

Figure 7 is a cross-section on line 7—7 of Figure 4 at the tube-latch.

Figure 8 is a detail sectional view of handle sections and their latch.

Figure 9 is an elevation showing the skeleton structure and handle in collapsed position.

Figure 10 is an elevation of the completely collapsed and furled umbrella.

Figure 11 is a longitudinal section of handle sections, with stop beads.

Fig. 12 is a section showing repressive action of the runner.

The umbrella staff, as here shown, includes a main or lower handle tube 2, in which is snugly slidable, an intermediate tube 3 having a spring latch 4 adapted to snap out into a slot 5 near the upper end of the handle 2; the latch having an outer rounded nose 6.

The tube 3 telescopically receives a post or outer section 7 in which is mounted a spring latch 8 similar to latch 4 and operative to snap into a slot 9 near the upper end of the tube 3, the latches serving to hold the handle parts in extended relation.

Slidably fitting over the handle-tube is a tubular runner 10 and in this is a spring 11 so positioned as to run over and depress the latches 4—8 as the runner is retracted so as to release the sections for telescope. When the runner is in outer-most position, it is retained by a spring-latch 12 in the top post 7. Preferably the several latches are out of line so that as the sections telescope the latches can snap out into their respective slots 5—9 only.

The runner 10 is provided with an annular series of main rods or spreaders 13 whose outer ends are pivoted at 14 to main umbrella ribs 15 of suitable length, more or less equal to the length of the handle 2. On the top of the post 7, is a cap or notch 16 from which pivotally radiate a series of arms 17, each pivoted at 18 intermediately of and on the spreaders 13 and the outer ends of the arms 17 are pivotally connected at 19 to the lower or inner ends of links 20 which are parallel to the spreaders 13 and are pivotally connected at 21 to the main ribs 15 at points outwardly beyond the pivots 14.

Axially beyond the cap 16 of the post 7 is a crown notch 22 to which is pivotally connected an annular series of strut links 23 whose lower ends are mounted pivotally at 24 on the main spreaders 13 at a point between the pivots 18 and the inner pivoted ends of the spreaders on the runner 10.

The umbrella covering or fabric 25 extends from the outer end of the ribs 15 up to the finial crown 22 to which it is properly attached, the crown 22 being steadied both by the covering and the strut links 2.

The several tubes or handle parts are longitudinally keyed together as by nested corrugations 26 whereby they are prevented from relative rotation by torque stresses.

In operation, after the runner 10 is forcibly pushed outwardly along the handle 2 it thrusts the set of spreaders and the struts 23 bodily outward with the post 7 and the collapsed arms 17 until the tube 3 is drawn from the handle 2 and until the runner 10 passes onto the post 7, whereupon the resistance of outward movement by the latch 8 causes the runner 10 to slide along the post 7 with the result that the spreaders 13 and the struts 23 are opened or expanded to spread the ribs 15 on their pivots 14 while the parallel links 20 actuated by their arms 17 opening above the cap 16. As the runner passes over the latch 12 it completely opens the skeleton and the reactive tension of the cover 25 thrusts the runner to holding position against its latch 12.

The fabric 25 extends unsupported from the pivoted ends of the ribs 15 to the crown 22 and tension cords 27 connect at 28 to the fabric at the unsupported portion and to the inner or lower ends of the spreaders 13.

When it is desired to collapse the umbrella, it is only necessary to pull the slide 10 to overcome its sustaining latch 12 and thereby draw it in so that its spring 11 will successively depress the handle latches 8—4 enabling the section to collapse to the portion shown in Figure 9 and thereby allowing the fabric 25 to be furled about the collapsed skeleton as in Figure 10. During the collapsing movement the cords 27 pull in the fabric under the inner ends of the ribs 15 to take up the fullness of the material around the crown 22.

As seen in Fig. 11, the sections are limited in outward stroke by stop beads 26′ at the ends of sections 2 and 3 engaging in the lower ends of key corrugations 26. This forms a safety stop to limit stroke.

It will be seen that the runner in one stroke outward will open up the ribs and cover and extend the handle at the same time, and on reverse stroke will collapse the handle and cover.

It is understood that the word umbrella as herein used is intended also to include parasol structures.

What is claimed is:

1. A collapsible umbrella having in combination a tubular handle, a staff tube telescoping in the handle, a staff post telescoping in the tube, means to hold the post and the tube extended, a crown co-axial with and spaced from the post, a tubular runner slidable along and from the handle onto the post, a latch to hold the runner on the post, a set of ribs, a link system connected in lazy tong fashion with the inner ends thereof attached to said runner and to said post and operative to spread the ribs, struts connecting said crown and the runner links of said system, and a covering extending from the crown to the outer ends of the ribs; said runner operative in one outward action to extend the handle parts and spread ribs and cover.

2. In a collapsible umbrella, a sectional, telescopic handle having respective latches to hold the sections extended, a rib system carrying a cover and operative to spread it, a runner, sliding on each section on the handle, to actuate the system, the runner being operative to release the retained sections by repression of respective latches as it passes onto the relative section.

3. In a collapsible umbrella, a sectional, telescopic handle, a rib system carrying a cover and operative to spread it, a runner sliding along each section of the handle to actuate the system, and a series of section latches operative in succession by the runner to release the retained parts, said runner operative to extend the handle sections and spread the cover by outward movement of the runner and to collapse the cover and handle on inward movement.

4. In an umbrella, a set of ribs, a handle, a runner sliding on the handle, a floating crown unattached to the end of the handle, a set of main cover spreaders attached to the runner, and a set of actuating struts connecting the spreaders and said crown.

WIKKE BOUMA.