

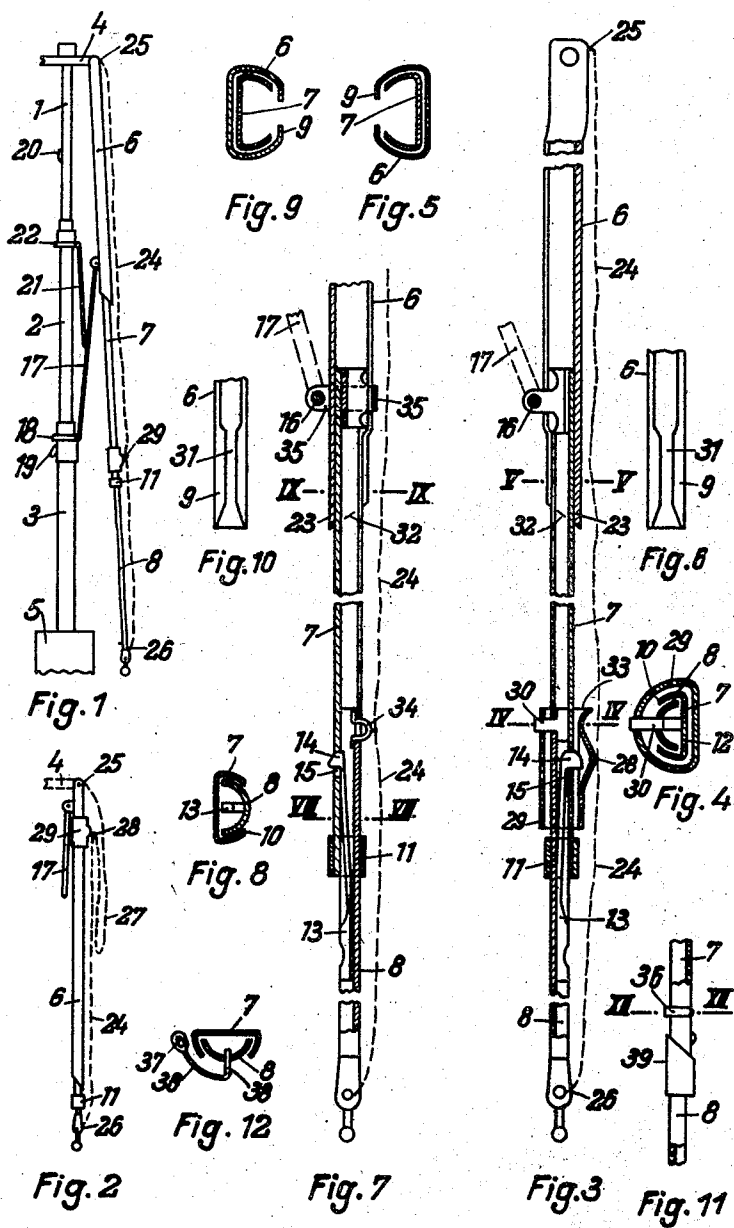
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FOLDING UMBRELLA

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FOLDING UMBRELLA

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The invention relates to a folding umbrella which is provided with roof rods consisting of three or more telescoping sections; the upper section having the largest diameter is connected with the umbrella crown.

A difficulty arises in the operation of this umbrella type in so far as the cover cannot be fastened to the inner end of the lower roof rod section, which are pushed during the collapsing of the umbrella into the upper roof rod section. Accordingly, that part of the cover which is located on top of the outer roof rod members will form folds during the closing of the umbrella; the folds hang over the end of the handle, are easily jammed, if pushed between the roof rods, and greatly impair the exterior view of the umbrella.

It is the object of the invention to eliminate this disadvantage and to enable a fastening of the cover to the umbrella supporting structure and particularly to the inner end of the outer roof rod section, whereby the cover is pulled along during the closing of the umbrella and the formation of folds is prevented.

With this object in view, the invention will now be described in detail and with reference to the accompanying drawing, illustrating several preferred embodiments thereof.

In the drawings

Fig. 1 is a side view of part of the umbrella supporting structure in the extended position of the umbrella the cover being indicated by a dotted line;

Fig. 2 is a side view of a collapsed roof supporting rod;

Fig. 3 is a vertical sectional fragmentary view of the extended roof rod on an enlarged scale;

Fig. 4 is a cross sectional view on line IV—IV of Fig. 3;

Fig. 5 is a cross sectional view on line V—V of Fig. 3;

Fig. 6 is a side view of a part of the outer end of an upper roof rod section;

Fig. 7 is a vertical sectional fragmentary view of a further embodiment of an extended roof rod;

Fig. 8 is a cross sectional view on lines VIII—VIII of Fig. 7;

Fig. 9 is a cross sectional view on line IX—IX of Fig. 7;

Fig. 10 is a partial side view of the outer end of an upper roof rod section of the embodiment shown in Figs. 7-9;

Fig. 11 is a part side and sectional view of a section of an extended roof rod in accordance with a further embodiment of the invention; and

Fig. 12 is a cross sectional view on line XII—XII of Fig. 11.

As apparent from Figs. 1 and 2, the umbrella stick consists of three collapsible members 1, 2, 3. The upper member 1 carries the crown 4 and the lower member 3 the handle 5.

A plurality of roof rods or ribs are jointed to the crown 4; they consist of three collapsible members or sections 6, 7, 8 having the shape of hollow rails. Member 6 has the largest diameter or cross section and is fastened to

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the crown 4. The lateral edges 9, Fig. 5, of the upper section 6 of the roof rods are inwardly bent and the lower end of the median part 7 carries a guide sleeve 11, as shown in Figs. 1 and 3. The hollow outer member 8 of the roof rods is open at one side and so located within the median member 7 that it extends with this open side towards closed side 12, Fig. 4, of the median member 7. The ends of both sections 7, 8 overlap each other on a part of their length. A spring 13, Figs. 3, 7, fastened to the outer member 8 may therefore directly enter with its catch 14 into an opening 15 of the rear wall of member 7.

A brace 17, Fig. 3, is jointed by means of pivot 16 to the inner end face of median roof rod member 7; brace 17 is connected at its one end with the main runner 18, Fig. 1. This main runner 18 is in the closed position of the umbrella secured to the umbrella stick through a spring catch 19 and in the opened position through a spring catch 20. An auxiliary brace 21 is jointed to the main brace 17 and the auxiliary braces 21 are connected with an auxiliary runner 22.

When the umbrella is opened, the auxiliary runner 22 effects the extension and the final positioning of the median roof rod member 7, the outer roof rod member 8 having been previously moved into its operative position by the opening of the umbrella. Therefore, a staying of the median roof rod section 7 by the brace 17 and the auxiliary brace 21 is not required during the opening of the umbrella. Consequently, the median roof rod member 7 may be directly pushed into the upper roof rod member 6, when the main runner 18, during the collapsing of the umbrella, is no longer supported by the lower catch 19. The outer end 23, Fig. 3, of the upper roof rod member 6 is hereby pushed over spring catch 14 and enables the sliding-in of the lower roof rod member 8.

The cover 24, shown in dotted lines is fastened to the two ends 25, 26 of the roof rods, Fig. 3, and in addition thereto to a sleeve 29 (Figs. 1 and 3) that is carried by the outer roof rod structure 8, at a point between these ends, whereby during the collapsing of the umbrella, folds 27, Fig. 2, are formed at the upper end of the collapsed umbrella cover 24.

In order to enable the pushing-in of member 8 into the upper member 6, during the collapse of the umbrella, the cover 24 is fastened to a bent-up portion 28 of the sleeve 29, Fig. 3; this sleeve may be pushed along the roof rod, by means of a projection 30 entering the outer roof rod member 8, during the collapsing of the roof rods. The sleeve 29 which is provided at the upper end with an expanded edge portion 33, may be pushed over the sloping end 32 of roof rod member 6, Fig. 3, whereas projection 30 slides into a slot 31 of the upper rod member 6, Fig. 6, the slot being formed by an inward bend of the sides of this hollow member.

The movement of the lower roof rod member 8 is limited by projection 30 which together with sleeve 29 strikes against sleeve 11, located on the lower end of median roof rod member 7.

As apparent from the above, the taking along of the cover 24 is effected by sleeve 29, which is provided at the upper end of the outer roof rod member 8 and displaced by projection 30; during the collapsing of the umbrella, the projection is simultaneously pushed into a slot 31 of the upper roof rod member 6; at the same time, sleeve 29 is moved over roof rod member 6.

A second embodiment of the invention is illustrated in Figs. 7-10.

The open sides of the median and of the upper roof rod sections 6 and 7 and the rear portion of the lower roof rod section 8 are directed towards cover 24. A loop shaped connecting member 34 projects from the rear portion of the rod section 8; the cover is fastened to the

loop member and the same may be pushed into slot 31 of the upper rod member 6 during the collapsing of the umbrella.

Also here the brace 17 is connected to a pivot 16; the pivot 16 is mounted on a tongue 35, which latter is attached to the inner side of the end portion of the median roof rod member 7. A spring 13 provided with a catch 14 is connected to the outer section 8 and is operable to enter an opening in the wall of section 7 in the same manner as described in connection with the first embodiment of this invention.

As mentioned before, the cover is connected to loop-shaped member 34, which projects from the rear side of roof rod section 8. The connecting member 34 embraces the roof rod on one side only; therefore, connecting members 34 will not collide during the displacement of the roof rod section with the connecting member of an adjacent roof rod section. Since the roof rod sections 6, 7 are open at the inside, the connecting member may slide into the same.

In connection with the embodiment of the invention illustrated in Figs. 11 and 12, the cover connected member consists of a bow 36 which is fastened to the outer portion of roof rod section 8; the bow projects from the rear portion of section 8, surrounds one side thereof and has at its end a loop 37 to be fastened to the umbrella cover. If the umbrella is collapsed, the end 38 of the bow slides in the longitudinal slot of the upper roof rod section 6. The movement of the lower roof rod section 8 is limited by bow 36 which impacts against the guide sleeve 39 of the median roof rod section 7, Fig. 11.

With this embodiment of the invention, the rear portion of the lower roof rod section 8, including the connecting member projecting therefrom is directed towards the cover; the other portions of the roof rod section are directed towards the cover with their recessed or open portions.

In the case of both of the last mentioned embodiments of the invention, the spring catch 20 for the upper roof rod section 6 enters a notch of the roof rod section 7; for safety reasons and to increase the stability of the roof rods, the connecting member for the cover is located on the inner end of the elongated outer roof rod section 8.

As mentioned above, the end of roof rod section 6 is inclined to facilitate the entrance of the connecting members 34 and 36 into slot 31, provided in the end of this roof rod section; this slot 31 is produced by the inward bending of the lateral edges of the roof rod sections 6, Figs. 6 and 10.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

Having thus described the invention, what we claim as new and desire to be secured by Letters Patent, is as follows:

1. A folding umbrella comprising a cover, a stick, a crown at the upper end of said stick and a handle at the lower end thereof, said stick consisting of an upper, a median and a lower section which are telescopically connected with each other, the upper section having the largest diameter and being attached to said crown with its upper end, a slot in said upper hollow roof rod section, a bow-shaped member directly connected with its one end to the inner end of the outer roof rod section being slidably insertable in said slotted upper roof rod section, the other end of said member projecting from the outer roof rod section surrounding the latter on one side only and being connected with the umbrella cover, the said combination of elements serving the purpose to take along the cover during the closing of the umbrella.

2. A folding umbrella comprising a cover, a stick, a crown at the upper end of said stick and a handle at the lower end thereof, said stick consisting of an upper, a

median and a lower section which are telescopically connected with each other, the upper section having the largest diameter and being attached to said crown with its upper end, a slot in the lower end portion of said upper roof rod section, said roof rod section being chamfered at its lower end, a bow-shaped member directly connected with its one end to the inner end of the outer roof rod section being slidably insertable in said slotted upper roof rod section, the other end of said member projecting from the outer roof rod section surrounding the latter on one side only and being connected with the umbrella cover, the said combination of elements serving the purpose to take along the cover during the closing of the umbrella.

3. A folding umbrella comprising a cover, a stick, a crown at the upper end of said stick and a handle at the lower end thereof, said stick consisting of an upper, median and lower section telescopically connected with each other, the upper section having the largest diameter and being attached to said crown with its upper end, one vertical slot in said upper roof rod section, said upper rod section consisting of a rail having its lateral edge portions inwardly bent to such an extent as to leave a longitudinal slot therebetween, a bow-shaped member directly connected with its one end to the inner end of said upper roof rod section and being slidably insertable in the same, the other end of said member projecting from said upper roof rod section surrounding the latter on one side only and being connected with the umbrella cover, the said combination of elements serving the purpose to take along the cover during the closing of the umbrella.

4. A folding umbrella comprising a cover, a stick, a crown at the upper end of said stick and a handle at the lower end thereof, telescoping roof rods shaped as hollow rails and consisting of at least three sections of which one is an upper section, one is a median section and one is an outer section, the upper section having the largest diameter and being attached to said crown at its upper end, one longitudinal slot in said upper hollow roof rod section, a loop-shaped member connected to the inner end of the outer roof rod section and to said cover and projecting from said section, the upper and the median roof rod section being slotted at the outside, said loop-shaped projecting member being slidably insertable in said slotted upper and median roof rod sections, whereby the cover is taken along by said loop-shaped projecting members during the closing of the umbrella.

5. In a folding umbrella according to claim 4, a rear wall in the outer roof rod section from which the loop-shaped cover connected member projects said rear wall being directed towards said cover.

6. In a foldable umbrella according to claim 4, a spring located in the outer roof rod section, a catch at the end of said spring, an opening provided portion for cooperation with said catch in the median roof rod section, the loop-shaped member connected with the cover being attached to inner end of the outer roof rod section, said inner end being extended beyond the opening provided portion of said median roof rod section.

7. In a collapsible umbrella having a telescoping stick, a crown at the upper end of said stick, a runner slidably on said stick, and a flexible cover, in combination, a plurality of ribs pivotally connected to said crown, each rib comprising a hollow inner section pivoted near its inner end to said crown and including at its outer end a terminal edge having a slot extending inwardly therefrom, a hollow median section telescopically slidable in said inner section and being slotted in the same plane as said first named slot, and an outer section telescopically slidable in said median section, a member connected to the inner end of said outer section and extending to the exterior of said median section and slidable therein when said outer section is moved relative to said median section and operable to enter into and to slide in said slot of said inner section when said median section is pushed thereinto for umbrella collapse, a plurality of connecting

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rods each pivoted to said runner and to a section of a rib, said cover being connected at a first place to the inner end of each inner section, at a second place to the outer end of each outer section, and at a third place to said member of each outer section whereby said cover will upon umbrella collapse be folded between said first and said third places to restrain projection of said folded cover beyond said second place.

8. In a collapsible umbrella, as claimed in claim 7, said terminal edge of said inner section being chamfered, said member including a sleeve surrounding said median section and being spaced from the external surface thereof throughout for a distance sufficient to clear said terminal edge for surrounding said inner section upon umbrella collapse, said cover at said third place being connected to the exterior of said sleeve.

9. In a collapsible umbrella, as claimed as in claim 8, said sleeve including an inner section having an outwardly turned lip to facilitate sliding of said sleeve over said chamfered terminal edge.

10. In a collapsible umbrella, as claimed in claim 8, an element including a projection secured to said outer section and extending radially through the wall of said outer section traversing said slot of said median section and into said sleeve and connected thereto.

11. In a collapsible umbrella having a telescoping stick, a crown at the upper end of said stick, a runner slidable on said stick, and a flexible cover, in combination, a plurality of ribs pivotally connected to said crown, each rib being composed of a plurality of telescopically slidable sections of substantially U-shaped cross-section having a base and side walls, comprising an inner section pivoted to said crown, a median section sliding with the external surface of its base on the internal surface of the base of said inner section and being open at one side opposite its base in the same direction as said inner section, said inner section near its outer end forming in its

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open side with its sidewalls a narrowed passage, and an outer section having its base oppositely disposed relative to the base of said median section and including near its inner end a member projecting to the exterior of said median section and including an element extending through said open side of said median section and operable to enter, upon umbrella collapsing, said passage to position said member on the exterior of said inner section, a plurality of connecting rods each pivoted to said runner and to the median section of a rib, means inwardly of said narrowed passage on said inner section and cooperating therewith to restrain removal of said median section off said inner section, and means operable to restrain removal of said outer section off said median section, said cover being connected at a first place to the inner end of each inner section, at a second place to the outer end of each outer section, and at a third place to said member of each outer section whereby said cover will, upon umbrella collapse, be folded between said first and said third places to restrain projection of said folded cover beyond said second place.

12. In a collapsible umbrella, as claimed in claim 11, said member including a sleeve surrounding said median section and spaced therefrom sufficiently to clear the inner section when said median section is pushed into said inner section during umbrella collapse, said element radially projecting from the interior of said outer section through the base thereof traversing the open side of said median section and operable to enter into said passage.

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