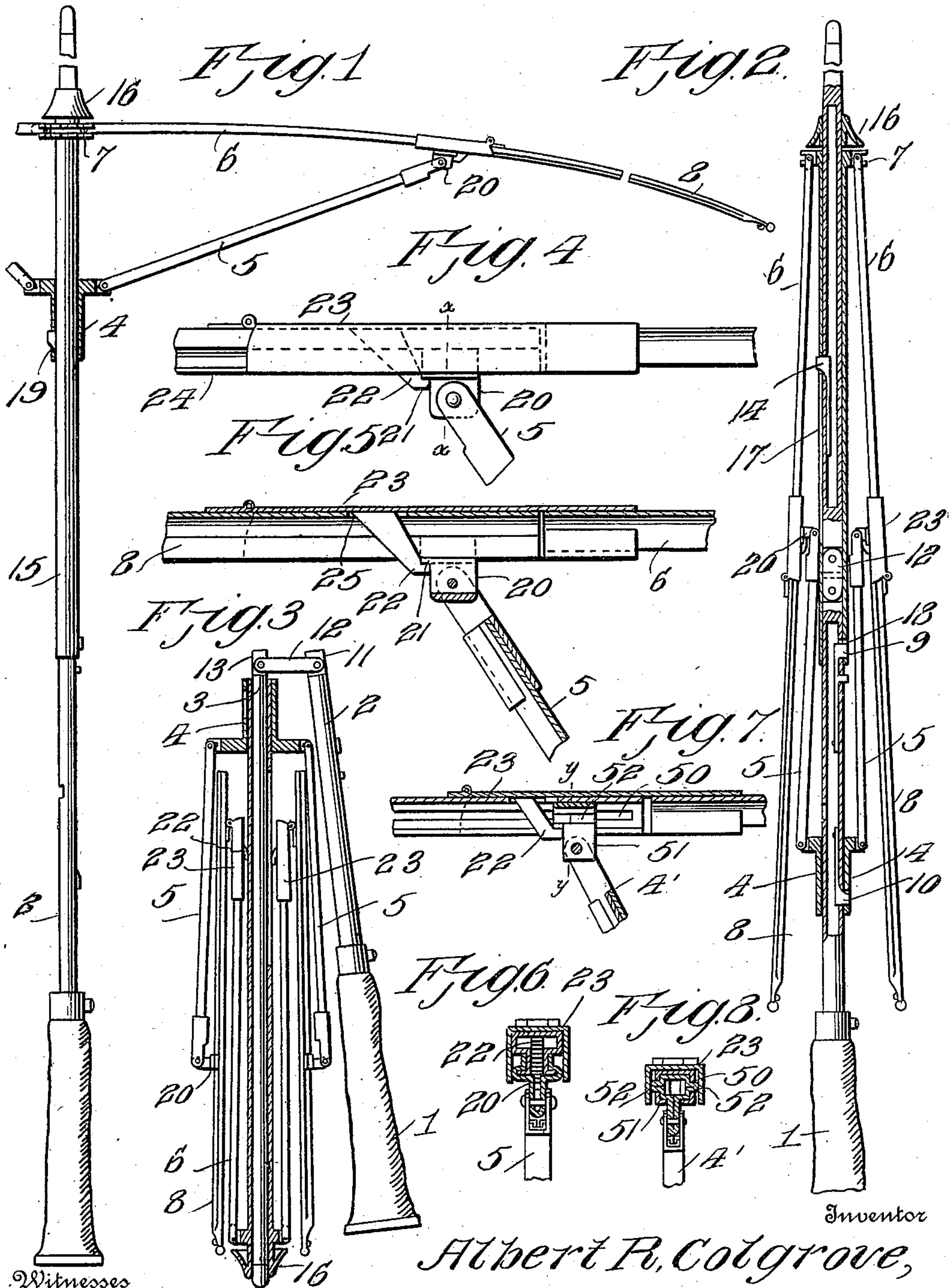


A. R. COLGROVE.
FOLDING UMBRELLA.
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975,211.

Patented Nov. 8, 1910.



Witnesses

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FOLDING UMBRELLA.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT R. COLGROVE, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented new and useful Improvements in Folding Umbrellas, of which the following is a specification.

This invention relates to folding umbrellas and the object of the invention is to provide an umbrella frame which may be easily and quickly folded in order that the same may be easily packed in a trunk or satchel when desired.

With the above and other objects in view which will appear as the description progresses the invention resides in the novel construction and arrangement of parts hereinafter fully described and claimed.

In the accompanying drawings there has been illustrated a simple and preferred embodiment of the invention and in which,

Figure 1 is a side elevation of an umbrella frame constructed in accordance with my invention and showing the same in its raised position. Fig. 2 is a similar view parts being shown in section and illustrating the device in its lowered or non-collapsed position. Fig. 3 is a similar view parts being also shown in section showing the frame in its folded or collapsed position. Fig. 4 is an enlarged side elevation of the foldable ribs illustrating the same in locked position. Fig. 5 is a longitudinal sectional view of the same. Fig. 6 is a sectional view on a plane with the line X—X of Fig. 4. Fig. 7 is a longitudinal sectional view illustrating the slightly modified form of securing the hinged ribs. Fig. 8 is a sectional view on a plane with the line Y—Y of Fig. 7.

It will be understood that the cover is attached to the frame in the same manner as to any ordinary umbrella frame and being of flexible material does not interfere with the operation of any of the parts. It is omitted from the drawings in order that the frame work, to which the invention relates, may be more clearly illustrated.

In the accompanying drawings the numeral 1 designates the handle of the device, which is preferably hollow and which may be provided with means whereby the stem may be collapsed therein.

The numerals 2 and 3 designate the upper and lower members of the stem, 4 the slide, and 5 the braces, 6 the inner rib member se-

cured to the notch 7, and 8 the outer rib member.

The lower staff member 2 is of a hollow, preferably cross sectional cylindrical formation, and is provided with spaced openings which are adapted for the reception of the headed portions of spring catch members 9 and 10. It will be noted by reference to Fig. 2 of the drawings that the heads of the said catch members 9 and 10 are adapted to project a suitable distance beyond the face of the stem 2 while the bodies of the said members are attached to the interior of the staff. The upper portion of the stem or staff 2 is provided with a tongue or extension 11 which is adapted to be pivotally connected with a bifurcated link 12. This link 12 is also pivotally connected to a tongue or extension 13 provided upon the lower end of the upper stem or staff member 3. The staff member 3 is also of a hollow formation and has one of its sides provided with a suitable opening adapted to serve as a guideway whereby the offset head of a spring catch member 14 is projected.

The numeral 15 designates a sleeve positioned upon the staff 3 and this sleeve has its upper portion provided with an integrally formed cap piece 16 beneath which is positioned the integrally formed notch 7 carried by the staff 3, said notch being pivotally connected with the rib sections or members 6. The sleeve 15 is provided upon one of its faces with an elongated slot 17 and upon its opposite face adjacent its lower portion with a second slot 18. When the stem or staff 2 is extended the head of the catch 9 is adapted to engage the slot 18 of the sleeve 15, and the offset portion of the catch 14 is adapted to contact the upper wall of the elongated slot 17, thus extending the staff in a perfectly rigid and upright position.

The slide 4 has its body portion provided with a slot 19 and a notched offset portion adapted for pivotal connection with one end of each of the braces 5. When the frame is raised as illustrated in Fig. 1 of the drawing, the slot 19 of the slide 4 is engaged by the offset headed portion of the spring catch 14, thus effectively supporting the ribs and retaining the frame in its upright or raised position. The free ends of the braces 5 are each pivotally connected with a sliding member 20 which is provided with an offset

portion 21. The member 20 is adapted to engage the hook 22 provided upon a hinged cap 23. The cap 23 is substantially U-shaped in cross section and is hinged to the rib 8, as clearly illustrated in the several figures of the drawing, and when the cap is swung to its engaging position it overlaps both the sections 6 and 8 of the ribs. The rib section 6 is substantially U-shaped in cross section, while the rib section 8 is provided upon its sides with longitudinally extending channels or depressed portions, so as to form its lower ends with suitable offsets 24 and the upper portion of the member 20 has its inner faces provided with suitable channels whereby the same is free to slide upon the said rib section 8. The tongue 22, provided upon the cap 23 is adapted to extend through a suitable slot 25 provided in the section 8, as clearly illustrated in Fig. 5 of the drawings.

The operation of the device is as follows:—When the frame is in its raised position, as illustrated in Fig. 1 of the drawings, and it is desired to fold the umbrella to the position illustrated in Fig. 2 of the drawings, it is merely necessary to force the projection of the catch 14 within the slot 19 of the slide 4, thus allowing the said slide to be slid downwardly carrying with it the rib members 6 and 8, through the medium of the brace members 5. The slide may be locked in its position by having its slot 19 engaged by the offset head of the catch 10, thus effectively sustaining the frame in its closed position.

When it is desired to collapse the frame the member 20 is slid a slight distance away from the catch 22 so as to allow the rib 8 to be folded upon the rib 6, this movement causing the curved sides of the member 20 to travel within the offsets or ways of the member 8 as the slide 4 is drawn downwardly upon the sleeve 15. The staff 2 may be now descended within the handle 1 and the said staff withdrawn from the sleeve 15 so that the staff members 2 and 3 may be folded upon the link 12, as clearly illustrated in Fig. 3 of the drawings.

In Figs. 7 and 8 there has been illustrated a slight modification of the connection between the rib sections. In this instance the rib sections have their sides provided for a suitable distance with longitudinally extending slots 50 and the offset lip engaging member 51 connected with the braces 4' is provided with oppositely disposed centrally arranged offsets 52 adapted to engage within the slots 50.

Having thus fully described the invention what is claimed as new is:

1. In a folding umbrella, the combination

with rib sections, a cap secured to one of the sections and hingedly connected with the adjacent section, a finger provided with an offset upon the cap, and a sliding member having a lip connected with one of the rib sections and adapted to engage the offset of the finger to lock the sections.

2. In a folding umbrella, the combination with rib sections, a substantially U-shaped cap having one of its ends secured to and overlapping the opposite section, said cap being provided with a downwardly projecting offset finger, and a sliding member provided with a lip adapted to engage the offset finger to lock the rib sections.

3. In a folding umbrella, the combination with adjacent rib sections, a cross sectional U-shaped cap secured to one of the rib sections and hingedly connected with the adjacent rib sections having its top portion provided with an opening, a finger having an offset secured upon the cap and projecting through the opening, and a sliding member positioned upon one of the sections and adapted to engage the offset finger to lock the rib sections.

4. In a folding umbrella, the combination with sectional ribs, one of said ribs having longitudinally extending guide ways, a cross sectional U-shaped cap secured to one of the rib sections and hingedly connected with the opposite rib section, this second rib section having its head provided with an opening, an offset finger upon the cap extending through this opening, a sliding member engaging the guide ways of one of the sections adapted to contact the offset finger to lock the rib sections and means for retaining the sliding member in engagement with the offset finger.

5. In a collapsible umbrella, the combination with a pair of rib sections, a cap rigidly secured to one of the rib sections and being hingedly connected with the adjacent rib section, said second rib section having its head provided with an opening and having its sides provided with inturned portions having upstanding edges, an inclined offset finger upon the cap extending through the opening of this section, a sliding member having oppositely disposed offset fingers engaging the unturned portions of the rib section, and means for forcing and retaining the sliding member in engagement with the offset finger to lock the rib sections together.

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

ALBERT R. COLGROVE.

Witnesses:

HENRY J. WEBB,
INGA HOWARD.