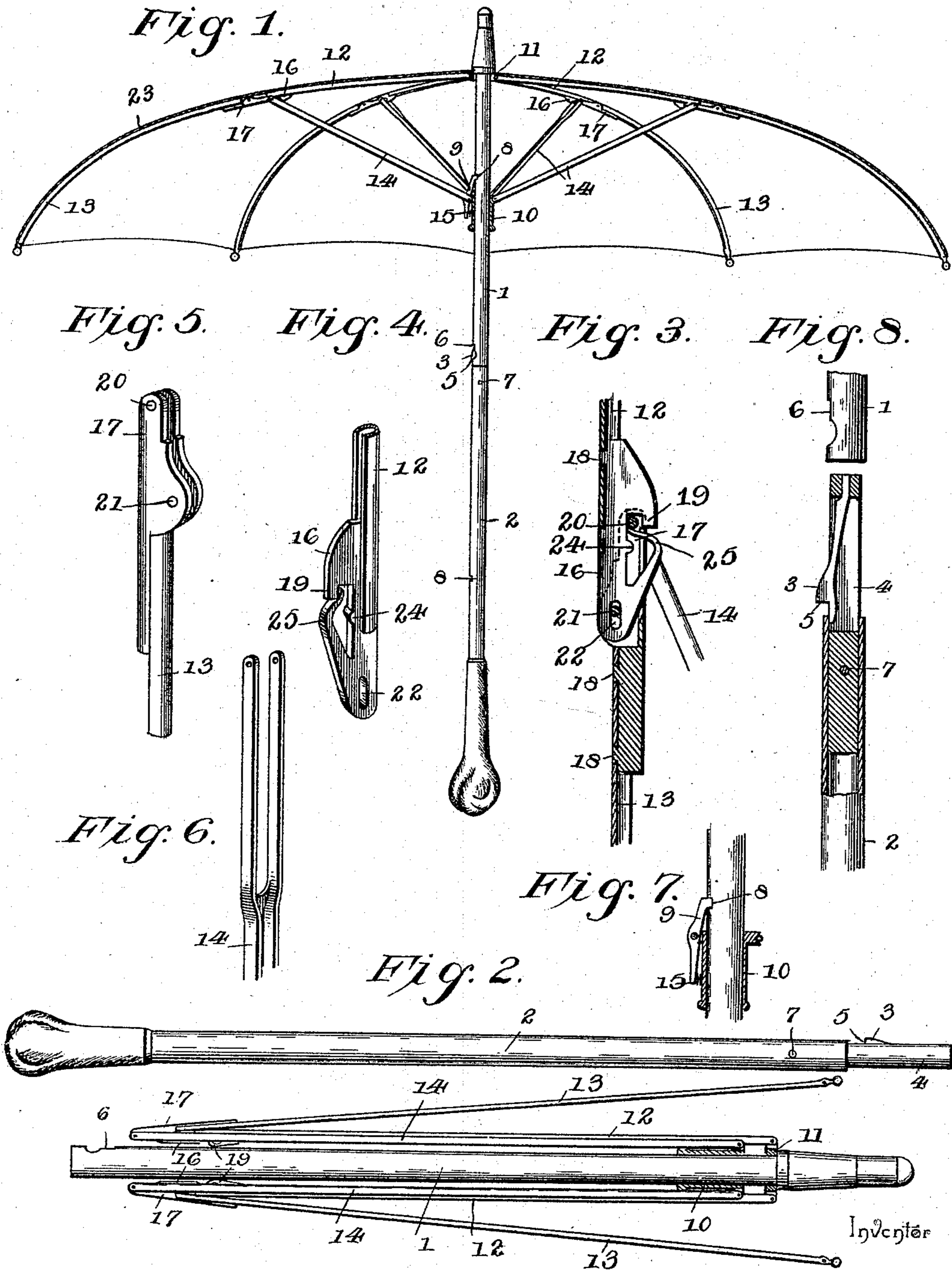


(No Model.)

W. O. WHITNEY.  
FOLDING UMBRELLA.

No. 573,375.

Patented Dec. 15, 1896.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM OSCAR WHITNEY, OF GLENS FALLS, NEW YORK.

## FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 573,375, dated December 15, 1896.

Application filed July 31, 1895. Serial No. 557,743. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM OSCAR WHITNEY, a citizen of the United States, residing at Glens Falls, in the county of Warren and State of New York, have invented a new and useful Folding Umbrella, of which the following is a specification.

This invention relates to umbrellas whose frames are adapted to fold so as to reduce the dimensions of this class of devices and enable the same to be packed into a small space either for storing or convenience of carrying.

The present invention relates to the improved means whereby the frame is rendered capable of folding or being extended when required for use, and the nature of the invention will be more particularly set forth hereinafter, pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a central vertical section of an umbrella constructed in accordance with the present invention, showing the same extended and as it will appear when in use. Fig. 2 is a view similar to Fig. 1, showing the relative disposition of the parts when the structure is folded, the covering being removed. Fig. 3 is a detail view of the connections between the rib-sections and the stretchers. Fig. 4 is detail view of the fastening member, which is attached to the lower end of the upper rib-section. Fig. 5 is a detail view of the fastening member applied to the upper end of the lower rib-section. Fig. 6 is a detail view of the forked end of a stretcher. Fig. 7 is a detail view showing the catch for securing the runner in either of its positions. Fig. 8 is a detail view of the means for securing the parts of the stick or handle together.

The stick is composed of two parts 1 and 2, which are adapted to be secured at their inner ends by means of a spring-latch 3, placed within a splice or coupling 4, and which has its shouldered end 5 adapted to engage with a slot 6 in one part of the stick. The splice 4 has one end fitted in a bore of the part 2, and is held therein by means of a pin 7, and its projecting portion, which carries the latch 3, is adapted to enter a bore in the part 1. The parts 1 and 2 are formed of metallic tubing such as is commonly used in the manufacture of umbrellas. The slot 6 is formed in the part 1, and its lower end is widened so

as to enable the finger to reach the shouldered portion 5 of the latch when it is required to disengage the latter from the slot 6 by pressing inward upon the shouldered end of the said latch. Notches 8 are formed in the stick and are engaged by the active end of the catch 9, which is pivoted between its ends to the runner 10. The free end of the latch 3 projects beyond the shoulder 5 a short distance to engage with the inner side of the part 2, so as to limit the outward movement of the latch at its free end.

The ribs are attached to the notch 11 in the usual manner, and are composed of two sections 12 and 13, which have pivotal connection, so as to admit of the lower sections 13 folding upon the upper sections 12 when it is required to reduce the length of the umbrella. The stretchers 14 have pivotal connection with the runner 10 in the usual manner, and the catch 9 is secured to the runner 10 between two of the stretchers and by means of the same wire employed for attaching the stretchers to the runner. The upper portion of the catch 9 projects above the upper end of the runner 10, and is provided with a projection which is adapted to engage with the notches 8 for securing the runner in the located position. A spring 15, of suitable construction, is interposed between the catch 9 and the runner 10 and serves normally to cause the catch to engage with the notch when its active end comes in register therewith.

The fastening or coupling between the sections of a rib comprises a member 16 and a complementary member 17, and these members are secured to the respective rib-sections in any desired manner, preferably by having portions 18 thereof extending through corresponding openings in the rib-sections and having their projecting ends upset or riveted in the usual manner. It is to be understood that the rib-sections are channeled or grooved in the usual manner, and that the members are fitted between the side portions forming the channel or groove of the rib-sections. The members 16 and 17 have pivotal connection and have a limited play, so as to admit of the ready engagement and disengagement of the hook 19 of the member 16 from the pin 20 of the member 17, and as shown the pivot

or pin 21 is secured to the member 17 and operates in a slot or elongated opening 22 of the member 16. The member 17 is grooved or channeled, and the pivotal end of the member 16 operates in the said groove or channel and is braced laterally by the side portions thereof embracing the sides of the said member 16. The outer end of the hook 19 is beveled so as to ride upon the pin 20 when the sections 12 and 13 are brought into alinement, and in order to prevent the accidental disengagement of the members 16 and 17 the hook 19 is undercut slightly, so that its free end will project beyond the pin 20. To admit of the stretchers 14 folding close against the ribs in either of their two positions, the upper or outer ends of the said stretchers are forked and embrace the sides of the members 17, to which they are pivotally attached by means of the pins 20. The covering 23 is secured to the notch 11 in the usual manner and to the outer ends of the ribs. A spring 25 extends into the space between the hook 19 and the main portion of the member 16, and its upper end is curved so as to retain the pin 20 and hook 19 in locked relation. This spring exerts an upward pressure upon the pin 20, and its free end is prevented from bending back too far by engaging with a shoulder or stop 24, and it is preferably an integral part of the member 16.

When it is required to extend the umbrella, the lower rib-sections 13 are turned and brought into alinement with the upper rib-sections 12, and are opened against the tension of the springs 25 until the pins 20 are engaged with the hooks 19, after which the umbrella can be manipulated in the ordinary way. When the umbrella is closed, the lower portion of the stick can be detached in the manner set forth and can be placed alongside of the structure and attached thereto in any convenient manner.

The invention with slight modifications can be adapted to the various makes of umbrellas placed upon the market, and in embodying the invention to adapt the same to the various styles it is to be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. In a folding umbrella, the combination with the ribs composed of pivoted sections, one each of which has a longitudinal slot at

the pivotal joint, of pins applied to each of the other sections and pivotally connecting them with the sections having the longitudinal slots and operating in the latter, whereby the sections of each rib are adapted to have a limited longitudinal movement, hooks on one set of sections, and cross-pins on the opposite sections to be engaged by the said hooks to secure the sections in locked relation, substantially as set forth.

2. In a folding umbrella, the combination of a rib composed of two sections, one of the sections having a longitudinal slot at its end, a hook a short distance from the slot, and a spring to extend across the open end of the hook, a pin applied to the terminal of the other section to engage with the said hook, and a pin pivotally connecting the two sections and passing through the aforesaid slot so as to admit of a limited movement of the sections, whereby the said hook can be disengaged from the end of the section in engagement therewith, substantially as set forth.

3. In a folding umbrella, the combination of a rib formed of sections, one section having a slot, and a pin applied to the other section and operating in the said slot for pivotally connecting the sections and allowing them to have a limited sliding movement the one upon the other, a stretcher, a pin pivotally connecting the extremity of the lower rib-section with the stretcher, and a hook a short distance from the pivotal end of the upper rib-section to engage with the pin pivotally connecting the stretcher and lower rib-section, substantially as set forth for the purpose described.

4. In a folding umbrella, the combination of ribs formed in sections which have pivotal connection and a limited play at the pivots, stretchers connected by pins with the upper ends of the lower rib-sections, hooks near the pivotal ends of the upper rib-sections to engage with the pins between the stretchers and the lower rib-sections, and springs 25 arranged so that they will maintain the parts or sections of the ribs in locked relation, substantially in the manner set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM OSCAR WHITNEY.

Witnesses:

H. PRIOR KING,  
C. C. LAPOINT.