

APPLICATION FILED APR. 27, 1909.

2 SHEETS—SHEET 1.



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FOLDING UMBRELLA.
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990,001.

Patented Apr. 18, 1911.

2 SHEETS—SHEET 2.

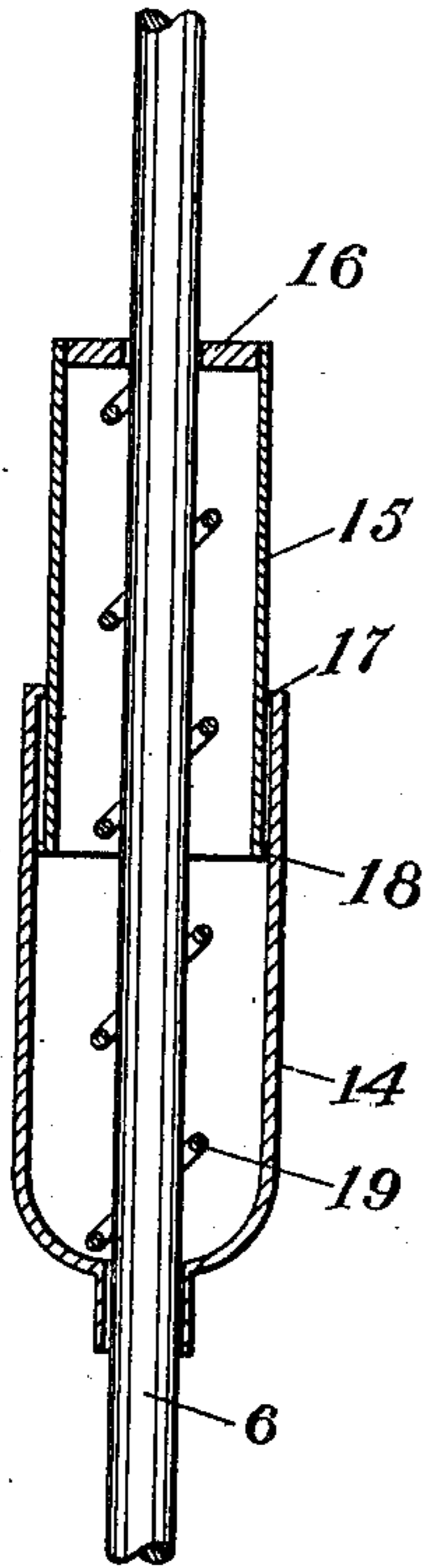


Fig. 4.

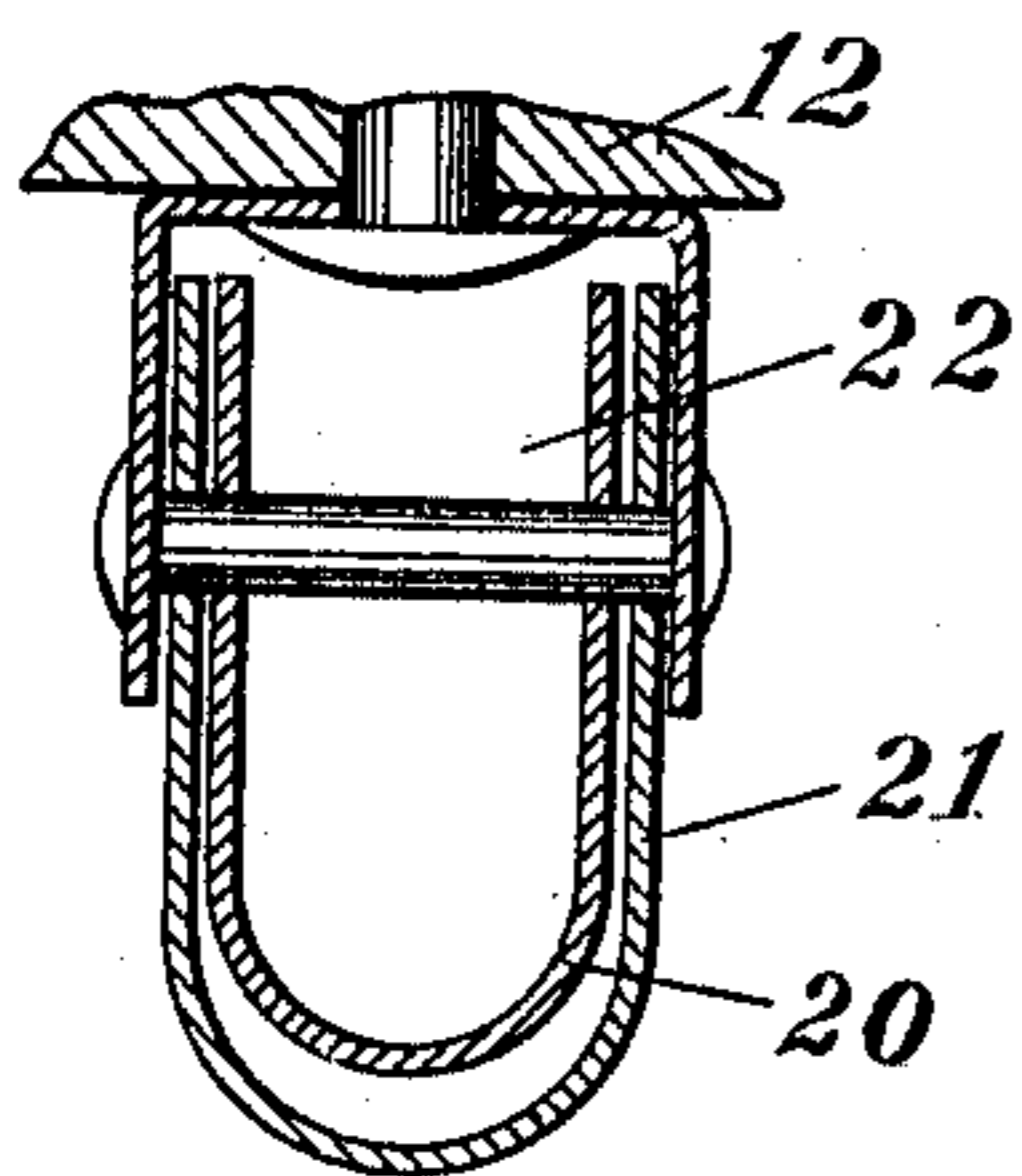


Fig. 6.

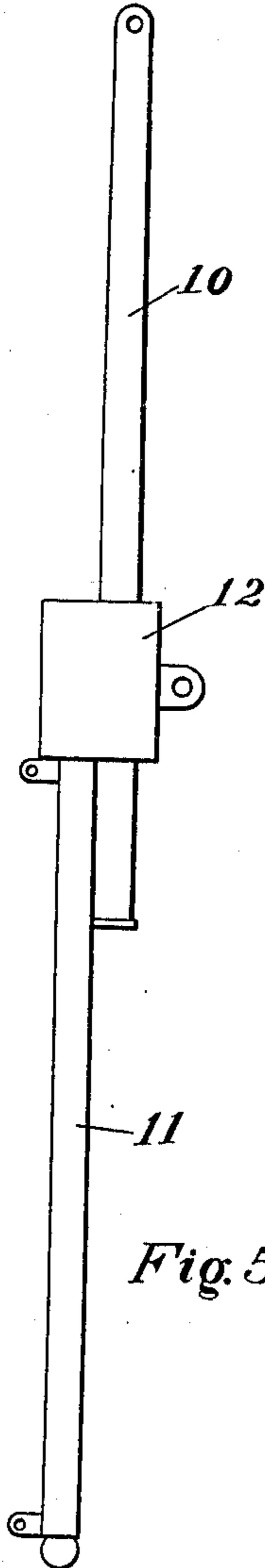


Fig. 5.

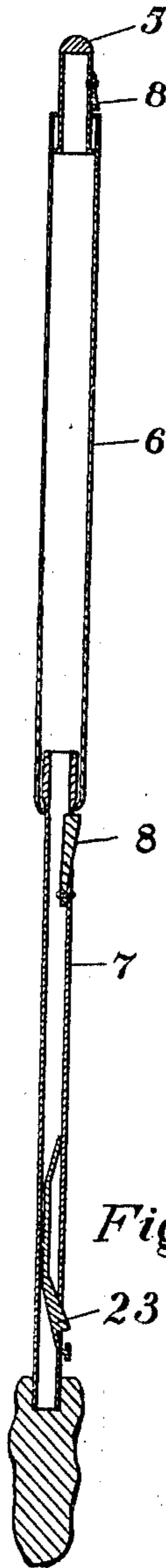


Fig. 7.

Witnesses.

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ARMAND CHARLES PFAFF AND PETER W. HANSEN, OF CHICAGO, ILLINOIS.

FOLDING UMBRELLA.

990,001.

Specification of Letters Patent.

Patented Apr. 18, 1911.

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To all whom it may concern:

Be it known that we, ARMAND C. PFAFF and PETER W. HANSEN, citizens of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Folding Umbrellas; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in folding umbrellas and has for its object the provision of a device of that kind which is adapted to be folded into a small compass when not in use.

Another object is the provision of means for automatically raising the cover when desired.

A further object is the provision of a novel form of raiser.

A still further object is the provision of a novel form of brace.

With these and other objects in view that will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claim, it being understood that various changes in the form, proportion, size and minor details of the device may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of the specification: Figure 1 is a side elevation of an umbrella frame embodying our invention and showing the cover in raised position. Fig. 2 is a similar view showing the parts in closed position. Fig. 3 is a detail of the brace. Fig. 4 is a detailed side elevation showing the improved runner or raiser in section. Fig. 5 is a detailed side elevation of the rib sections. Fig. 6 is a sectional end view of the same. Fig. 7 is a sectional view of the stick and handle.

Similar numerals of reference are employed to designate corresponding parts throughout.

In carrying out the invention we provide an umbrella stick formed of three or more telescoping sections designated respectively by the numerals 5, 6 and 7. These sections

are hollow, the top section 5 telescoping into the intermediate section 6, which also receives the handle section 7. The sections 5 and 7 are provided adjacent their inner ends with spring catches 8 which bear on the end edges of the intermediate section 6 to prevent the sections from telescoping after the same have been extended. The usual ferrule is fixedly secured adjacent the outer end of the section 5 and is channeled in the usual manner to receive the inner ends of the inner rib sections 10. The outer rib sections are designated by the numeral 11 and their inner ends are provided laterally with collars 12 which receive the outer ends of the inner rib sections 10. The collars 12 are disposed on the upper or outer sides of the outer sections 11 and loosely engage the inner rib sections 10 so that by pushing inwardly on the outer sections brings the collars 12 to the ferrule 9, whereby the rib may be folded to the length of the section 10, or approximately so. The cover is designated by the numeral 13 and its central portion is secured to the ferrule 9 in any preferred manner and its edge to the ends of the outer rib sections 11. The intermediate portion of the cover is secured to the outer ends of the collars 12 so that when the sections are folded as shown in Fig. 2 the intermediate portion of the cover will fold upon itself and be disposed between the rib sections as shown in Fig. 2.

The runner in the present instance is shown to consist of two telescoping sections designated by the numerals 14 and 15. These sections are tubular and the outer section 14 is reduced at one end to a size to snugly fit on the intermediate stick section 6. The inner section 15 is likewise tubular and at its outer end is provided with a cap 16 provided with a central opening of a diameter sufficient to slidably fit on the intermediate stick section 6. The outer section 14 may be interiorly provided adjacent one end with an annular flange 17 which is designed to engage the lateral flange 18 on the inner edge of the inner section, whereby the sections are prevented from separating. The sections are normally held extended by means of a helical spring 19 which surrounds the stick section 6 and having its terminals bearing against the cap 16 and lower end of the outer section 14. The spring is of sufficient length to extend the sections sufficiently far that their flanges 17

and 18 will meet, or when the flanges are not employed the outward movement of the inner section 15 will be limited by the length of the spring, to a point adjacent the outer end of the outer section 14.

Connection between the runner sections and outer rib sections is established by means of the braces. Each of these members consists of two sections 20 and 21 and are formed of pieces of channeled iron substantially U shaped in cross section. The sections are of unequal lengths, the shorter section 21 receiving at its outer end the outer end of the longer or lower section 20. The folded or outer ends are pivoted to the lower or inner faces of the collars 12 and adjacent the intermediate portion of the latter as shown in Fig. 1. The periphery of the cap 16 is channeled similarly to the ferrule 9 so also is the intermediate portion of the outer section 14. The inner end of the upper or shorter brace section 21 is pivoted within the channel of the cap 16, so also is the corresponding end of the longer or lower section 20 pivoted within the channel 22 of the outer section 14 of the runner.

With this construction it can be seen that the inner ends of the braces are separated while the outer ends converge. By referring now to Fig. 1 it will be seen that the umbrella is in raised position and when in this position the sections 14 and 15 of the runner are fully extended; when it is desired to lower the cover the runner sections are pulled toward the handle section 7. During this movement the sections 14 and 15 are folded and the spring 19 compressed until the rib sections and braces have been brought parallel with the stick and the runner secured by the catch 23 adjacent the outer end of the intermediate section 6. When it is desired to raise the cover the catch 23 is depressed, whereby the sections 14 and 16 will be extended forcing the braces 20 and 21 apart and the ribs outwardly to the position shown in Fig. 1. It is to be understood that the lengths of the brace sections 21 will be sufficient to depress the inner section 16 to its full extent during the operation of closing the frame.

In order to fold the umbrella to facilitate packing in a small space, the cover of the

umbrella is lowered as above described, in this position of the parts, the ribs lying along the umbrella stick and the runner being engaged with the catch 23. The operator now grasps the inner sections 10 of the ribs and holds the same loosely in engagement with the umbrella stick. Then the catch 23 is depressed and the runner slid along the stick in direction of the tip, this movement of the runner through the instrumentality of the brace sections 20 and 21 causing the outer sections of the ribs to be slid upon the inner sections of the ribs until they assume the position shown in Fig. 2. The stick sections are now telescoped, when the umbrella will be in folded position.

From the foregoing it can be seen that we have provided a structure which is comparatively simple and inexpensive to manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

Having thus described our invention, what is claimed as new, is:—

A combined self-opening and collapsible umbrella consisting of a stick having a spring catch adjacent its grip end, telescoping ribs each composed of an inner section pivotally connected to the stick and an outer section slidable lengthwise upon the inner section, a runner comprising a pair of hollow interfitting sections loosely fitting the stick, both sections being movable longitudinally thereon, a helical spring arranged between said runner sections, and braces arranged in pairs, the outer ends of both braces of each pair being pivotally connected to one of the outer rib sections, the inner end of one of the braces of each pair being pivotally connected to one of the runner sections and the inner end of the mating brace being pivotally connected to the other runner section.

In testimony whereof, we affix our signatures, in presence of two witnesses.

ARMAND CHARLES PFAFF.
PETER W. HANSEN.

Witnesses:

J. B. RUMBOLD,
FRANK K. CARLSON.