

(No Model.)

S. J. WILSON.
FOLDING UMBRELLA.

No. 554,329.

Patented Feb. 11, 1896.

Fig. 1.

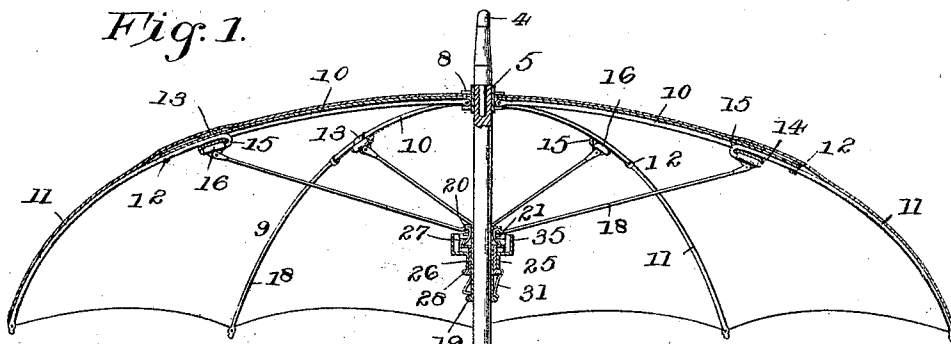


Fig. 7.

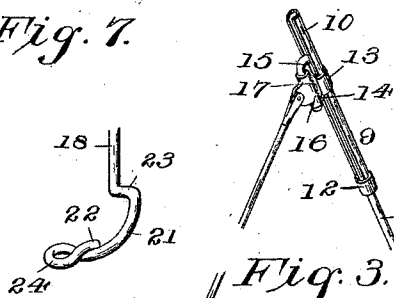


Fig. 8.

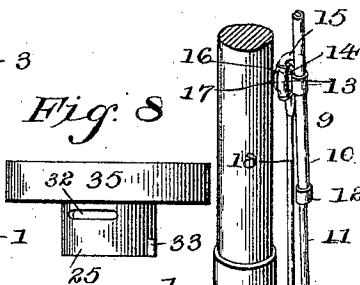


Fig. 3.

Fig. 4.

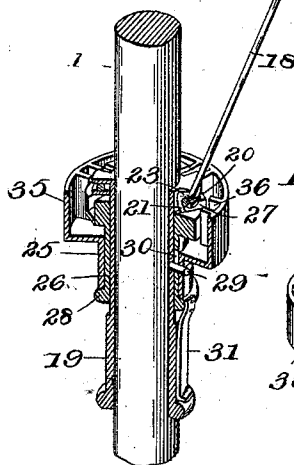


Fig. 6.

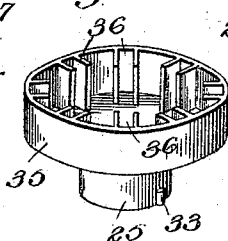


Fig. 5.

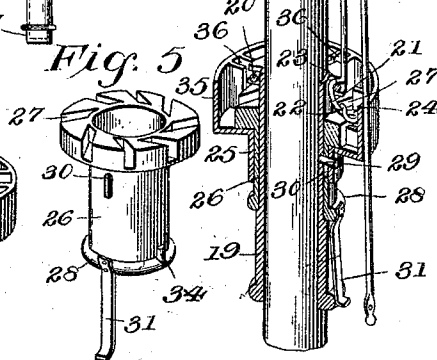
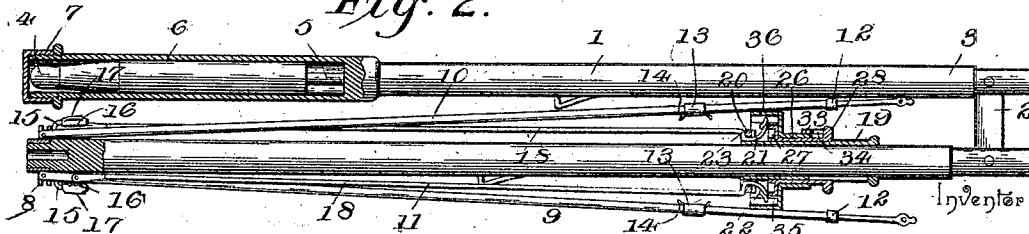


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL J. WILSON, OF MINNESOTA LAKE, MINNESOTA.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 554,329, dated February 11, 1896.

Application filed May 2, 1895. Serial No. 547,942. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. WILSON, a citizen of the United States, residing at Minnesota Lake, in the county of Faribault and State of Minnesota, have invented a new and useful Folding Umbrella, of which the following is a specification.

This invention has relation to folding umbrellas, and aims to provide a device of this character which is capable of being folded into a compact form with the greatest facility, and which when extended for use can be locked securely against accidental movement or slipping of the folding parts.

The improvement consists primarily of a novel locking mechanism for securing the braces in a fixed relative position when the sections of the ribs are extended to their full length, and which will admit of the unlocking and the releasing of the braces and movable rib-sections at one and the same operation.

The improvement also consists of the peculiar formation of the locking devices between the braces and the rib-sections, whereby a turning of the braces on their longitudinal axes will effect a locking and unlocking of these parts when the component parts of the locking devices are in register.

The invention further consists of the novel means for rotating or turning the braces about their longitudinal axes and for securing them in the adjusted position.

The invention also further consists of the novel features and the peculiar construction and combination of the parts, which hereinafter will be more fully described and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a sectional view of a folding umbrella constructed in accordance with and embodying the vital features of the invention. Fig. 2 is a view similar to Fig. 1, showing the parts folded, the cover being removed. Fig. 3 is a detail perspective view, partly in section, showing the relative disposition of the parts when the braces and the rib-sections are locked. Fig. 4 is a view similar to Fig. 3, showing the relative disposition of the parts when released or unlocked. Fig. 5 is a perspective view of the locking device be-

tween the braces and the rib-sections. Fig. 6 is a perspective view of the operating-ring. Fig. 7 is a detail view of the lower end of a brace. Fig. 8 is a side elevation of the operating-ring.

The stick 1 is divided midway of its ends, and the two parts are connected together by a plate 2, having its end portions fitted into corresponding kerfs formed in the contiguous ends of the separated parts, said plate having pivotal connection at its ends with the respective parts and providing a hinge-joint which will readily admit of the parts being folded, said joint being strengthened by a sleeve 3, which is slipped thereover when the parts are in alignment. The tip 4 is detachably connected with the end of the stick in any desired manner, and, as shown, has a reduced portion 5 adapted to enter a corresponding opening in the end of the stick, and this tip when removed is placed in an opening 6 in the butt or handle portion of the stick, said opening being closed by a cap 7.

The notch 8 is of ordinary construction and secured to the stick in the usual way, and the ribs 9 are fastened thereto in any approved manner. The ribs comprise telescopic sections 10 and 11, the former being tubular and slotted in its lower side, and the latter or movable section 11 being preferably a solid wire. The end of each section 10 is strengthened and reinforced by a ring 12, which also provides a stop to prevent the movable section 11 from accidental disengagement therefrom. A stop 13 is located in proximate relation to the ends of the sections 10, and comprises a plate which has its end portions bent around and made fast to the sections, said plate having oppositely-extending projections 14 curving outwardly from and in line with the respective sections 10, to which the stops are attached. The movable sections 11 have their upper ends recurved to form hooks 15, which extend through the open sides of the sections 10 and which have their ends enlarged to provide stops to retain the couplings 16 in proper position thereon. The coupling 16 has an enlarged portion 17 to enter the space between the projections 14, so as to limit the relative movements of the sections 10 and 11 in either direction, and this coup-

ling is adapted to turn upon the hook or re-curved portion 15 to bring the enlarged part 17 in line with the projections 14, or out of the path of the same, according as it is required to lock the sections 10 and 11 in an extended position or release the same to admit of the section 11 sliding within the section 10.

It will be understood that there will be a coupling for each section 11 and a stop 13 for each section 10, and the coupling, in connection with the stop, forms the locking device for the rib-sections to hold the latter in an extended position.

The braces 18 have their upper ends pivotally connected with the couplings 16 and their lower ends attached to the runner 19 by means of the fastening-wire 20, which latter is applied to the runner in the ordinary manner. The lower ends of the braces are bent to form outwardly-extending arms 21, and have their end portions recurved to form stops 22, said end portions having an offset to provide a stop 23 contiguous to the stop 22 and between which stops the wire 20 is located so as to prevent accidental disengagement of the lower ends of the braces from the fastening-wire 20. The fold or bight formed by recurving the end portion of the brace is expanded laterally to provide engaging-points 24 for the operating-ring 25 to make contact with when operating or turning the braces to lock or release the rib-sections.

A locking-sleeve 26 is mounted upon the upper portion of the runner 19, and has its upper enlarged end formed in its top side with a series of tangentially-formed recesses 27, which are adapted to receive the outwardly-extending ends 21 of the braces and secure the latter in a relatively-fixed position against turning, whereby the parts 17 and 13 are held in operative relation to maintain the telescopic sections of the ribs in an extended position. This locking-sleeve 26 is provided at its lower end with an annular enlargement 28 to be grasped by the hand when it is required to move the locking-sleeve upon the runner, and the sleeve is held from turning on the runner and guided in its longitudinal movements by a pin 29 projecting laterally from the runner 19 and passing through a longitudinal slot 30 in the side of the locking-sleeve 26, and this locking-sleeve is secured upon the runner in its upward movement thereon by means of a spring-catch 31 extending from its lower end and adapted to engage with the lower flanged end of the runner 19.

The operating-ring 25 is mounted upon the locking-sleeve 26, and is limited in its turning thereon by having a transverse slot 32, through which extends the pin 29, and its lower end has a stop 33 to engage with a corresponding stop 34 on the locking-sleeve 26, whereby the operating-ring is held at the limit of its movement in either direction. The upper portion of the operating-ring is enlarged, as shown at 35, and this enlarged por-

tion encircles the upper portion of the runner and the outwardly-extending arms 21 formed at the lower ends of the braces 18, and a series of vertically-disposed grooves 36 are formed on the inner side of the enlarged portion 35 to receive the said arms 21, and by this means the braces are turned on their longitudinal axes to bring the enlarged portions 17 of the couplings into or out of line with the projections 14 of the stops 13. When it is required to release the rib-sections, the operating-ring 25 is turned so as to throw the enlarged portions 17 out of line with the projections 14, and by moving the runner 19 upon the stick the sections 11 will slide within the tubular sections 10, thereby reducing the length of the ribs nearly one-half. By moving the sleeve 3 the hinge-joint between the parts of the stick can be broken and the parts folded, as shown most clearly in Fig. 2, and to further reduce the length of the umbrella the tip is removed and placed within the opening 6 in the butt or handle.

When it is required to unfold or open the umbrella, the parts of the stick are caused to align and the hinge-joint stiffened by moving the sleeve 3 thereover, and the runner 19 is moved down upon the stick until the rib-sections are properly extended. This will occur when the enlarged portions 17 of the couplings are brought opposite the stops 13. The locking-sleeve is moved upon the runner to release the operating-ring, and the latter is turned to bring the enlarged portions 17 in register with and between the projections 14, thereby locking the rib-sections in their extended position, and the locking-sleeve is again moved to cause the outwardly-extending arms 21 to enter the tangential recesses 27, thereby securing the parts 17 and 14 in locked relation, as the engagement of the arms 21 with the recesses 27 secures the braces from any longitudinal rotation. It will be seen that the locking-sleeve serves both to lock the operating-ring 25 and the braces 18.

The construction herein shown admits of the umbrella being folded into a small compass, and when in use prevents accidental slipping of the parts, because the latter are held in locked relation and are secured from accidental displacement by positive means. The covering will be applied and secured to the ribs in the ordinary manner, and the parts can be differently related to meet the different makes of this class of devices. Hence it must 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 an umbrella, the combination of the ribs, composed of telescopic sections, the braces operatively connected with the mov-

able sections of the ribs, locking devices for positively securing the telescopic sections against longitudinal movement when properly extended, said locking devices being
5 thrown into and out of operative relation by turning the braces on their longitudinal axes, and means for turning the said braces to attain the desired result, substantially as set forth.

10 2. In an umbrella, the combination of the ribs, composed of telescopic sections, stops attached to the upper sections, corresponding parts carried by the lower sections and adapted to interlock with the stops of the upper
15 sections, the braces operatively connected with the said interlocking parts, and means for turning the braces on their longitudinal axes for throwing the aforesaid interlocking parts into or out of operative relation, substantially as set forth.

20 3. In an umbrella, the combination of the ribs, comprising telescopic sections, braces operatively connected with the movable rib-sections, interlocking devices between the
25 telescopic sections controlled by turning the braces on their longitudinal axes, and an operating-ring mounted upon the runner and adapted to engage with outwardly-extending arms provided at the lower ends of the said
30 braces, whereby the latter are turned to throw the locking devices into and out of operative relation, substantially as set forth.

35 4. In an umbrella, the combination with the ribs, comprising telescopic sections, braces operatively connected with the movable sections and having their lower ends bent to provide outwardly-extending arms, interlocking
40 devices between the rib-sections, an operating-ring mounted upon the runner and adapted to engage with the outwardly-extending arms of the braces to turn the latter upon their longitudinal axes to throw the said locking
45 devices into and out of operative relation, and a locking-sleeve to secure the braces against any turning movement, substantially as set forth for the purpose described.

50 5. In an umbrella, the combination of the ribs, comprising telescopic sections, braces operatively connected with the movable sections and having their lower ends bent to form outwardly-extending arms, locking devices
55 between the telescopic sections and controlled by turning the braces, a locking-sleeve mounted upon the runner and adapted to engage with the outwardly-extending arms of the braces to secure the latter against turning movements, and means for turning the said

braces to throw the locking devices into and out of operative relation, substantially as set forth.

60 6. In an umbrella, the combination with the ribs, comprising telescopic sections, interlocking devices for the said sections, and braces having their lower ends bent to provide outwardly-extending arms and con-
65 structed to throw the said locking devices into and out of operative relation by a turning movement upon their longitudinal axes, of an operating-ring mounted upon the runner and adapted to engage with the said outwardly-
70 extending arms to turn the braces, a locking-sleeve constructed to secure the braces and the operating-ring in locked relation, and means for holding the locking-sleeve against
75 accidental displacement, substantially as set forth.

7. In an umbrella, the combination of the ribs, comprising telescopic sections, stops secured to the relatively upper sections and having oppositely-disposed projections, and
80 couplings mounted upon the recurved ends of the lower sections and having enlarged portions, said couplings being adapted to be turned upon the recurved ends of the lower
85 braces to bring their enlarged portions between the projections of the stops to secure the said sections against longitudinal movement, substantially as set forth.

8. In an umbrella, the combination with the ribs comprising telescopic sections, inter-
90 locking devices for the said sections, and a runner, of braces having their lower portions bent outwardly to provide arms and recurved to form stops, and formed with an offset portion to provide a second set of stops, connections
95 between the braces and the said interlocking devices whereby upon the axial rotation of the braces the interlocking devices will be actuated, a wire for securing the said
100 braces to the runner and adapted to engage with the stops of the braces, an operating-ring mounted upon the runner and constructed to engage with the outwardly-bent ends of
105 the braces, and means for securing the operating-ring in the located position, substantially as set forth.

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

SAMUEL J. WILSON.

Witnesses:

WILLIAM CORPRON,
CHARLES W. APLEY.