

W. O'BRIEN.
FOLDING UMBRELLA.
APPLICATION FILED OCT. 23, 1911.

1,028,262.

Patented June 4, 1912.

FIG. 1

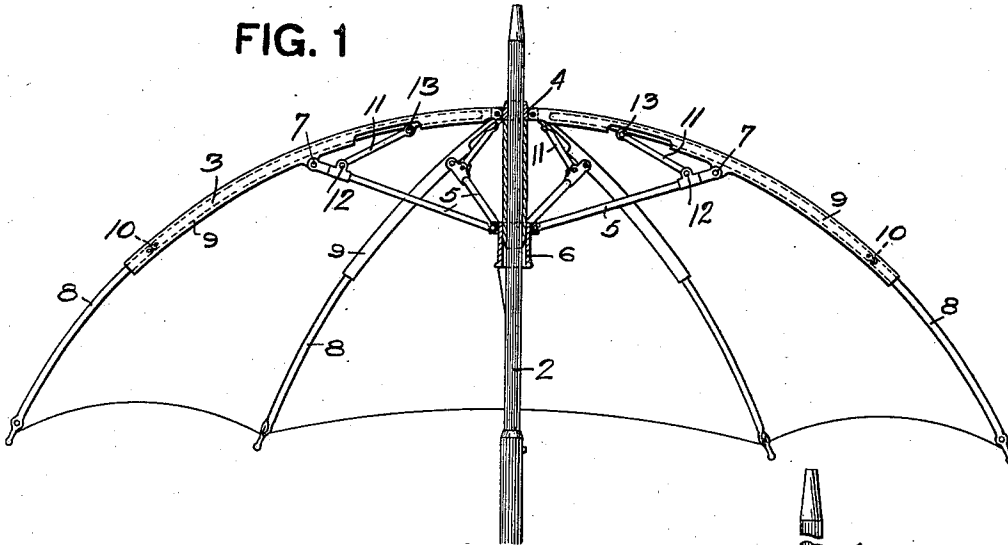


FIG. 2

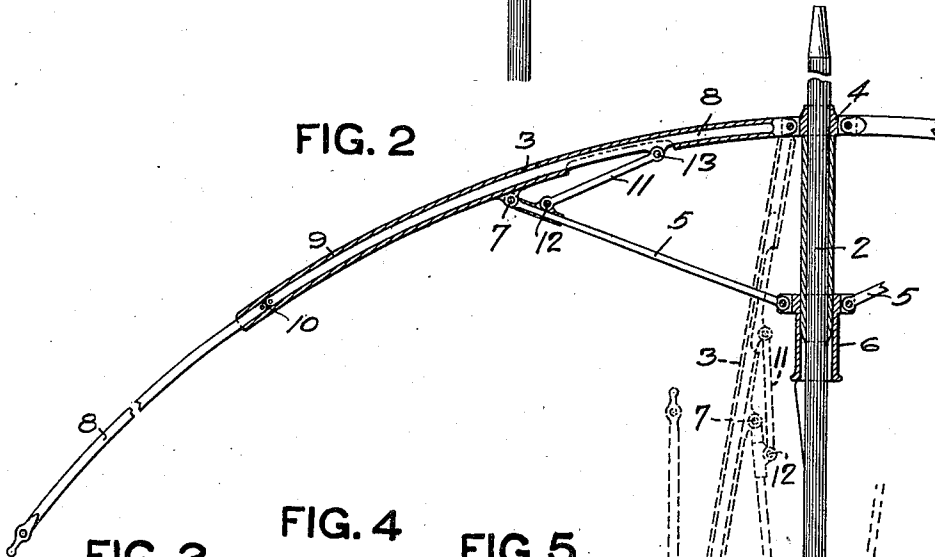


FIG. 3

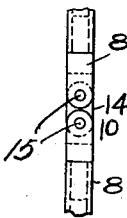


FIG. 4

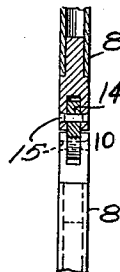
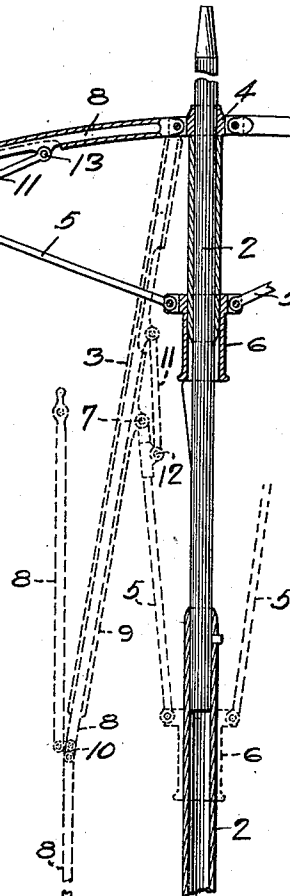
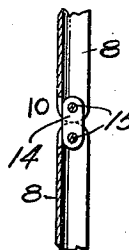


FIG. 5



WITNESSES.

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WILLIAM O.'BRIEN, OF CLAIRTON, PENNSYLVANIA.

FOLDING UMBRELLA.

1,028,262.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed October 23, 1911. Serial No. 656,164.

To all whom it may concern:

Be it known that I, WILLIAM O.'BRIEN, a citizen of the United States of America, and residing at Clairton, in the county of Allegheny and State of Pennsylvania; have invented a new and useful Improvement in Folding Umbrellas, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification.

My invention, subject of this application, is an improvement in umbrellas and parasols of the collapsing or folding type and is particularly concerned with that portion of the device known as the ribs or stretchers constituting the main frame-work for the covering. I aim, therefore, to provide an umbrella or similar structure which may be readily and easily folded compactly and symmetrically for storage in limited space, as in a suit-case or trunk, and which may be extended or opened into a strong, rigid article in which liability to accidental buckling is absent.

I will now describe my invention so that others skilled in the art to which it appertains may understand and construct the same, it being premised, however, that changes may be made in the particular construction shown without departing from my invention.

Figure 1 is a vertical sectional view of an umbrella embodying my invention and showing the ribs or stretchers in an extended or open position; Fig. 2 is a similar enlarged sectional view showing in dotted lines the frame-work in a closed or collapsed position, and Figs. 3, 4 and 5 are enlarged fragmentary detail views showing joint connections in the ribs or stretchers, and to be hereinafter more fully described.

The stick or handle 2 of the umbrella or parasol may be of any suitable construction, such as a telescoping arrangement or one comprising a plurality of separable sections, such as sections having screw-threaded connections with one another. The main stays or ribs are indicated by the numeral 3 and I will hereinafter refer to them as stays. These stays are pivotally associated with the handle 2 by means of the notched member or sleeve 4.

The numeral 5 indicates the connecting stays or braces leading from the runner or sliding sleeve 6 to the stays 3 and pivotal point 7.

The stays 3, as shown, are made in two parts 8 and 9 which are assembled in a telescopic relationship, the section 9 being shown as tubular and receiving the section 8 in such manner that the section 8 may be reciprocated therein for the purpose of bringing a joint 10 of the section 8 into and out of locking position with the end of the section 9. This reciprocation is effected by means of the braces 5 through the intermediary of the links 11 which are pivotally connected at 12 to the braces 5 and at 13 to the upper end of the member 8. The member 9 preferably has an interruption in its tubular effect at this point where the link 11 associates with the sliding portion 8 of the stay 3. Of course, I do not desire to limit myself to the employment of a member 9 which is tubular for substantially its whole length, as this tubular effect is merely for the purpose of guiding the section 8 in its sliding action upon the section 9 and therefore the tubular construction may be cut away at any desirable point so long as it does not impair this guiding function as just described.

The joint 10 of the section 8 is preferably such as will permit of the section being folded only in a plane lying substantially radially with the handle or stick 2 so that when the frame-work is opened up, the several stays may all be extended in a symmetrical and uniform manner from the center of the structure. The joint 10, to bring about this radial folding, preferably has a block or link 14 to which different portions of the member 8 may be pivoted as at 15. This forms, substantially, a hinged joint.

In opening the umbrella, the section 8 is caused to be partially withdrawn within the section 9 by means of the links 11 moving toward the center of the device or handle 2 due to the upward movement or substantially horizontal positioning of the braces 5 as the operating sleeve or runner 6 is forced upwardly. The inward movement of the section 8 causes the joint 10 to be drawn within the end of the tubular or sleeve-like portion 9 and thereby held against buckling or folding. The joint 10 being of such construction as causes the portion 9 to fold in a plane substantially radial with respect to the handle 2, enables the frame-work to be readily extended without liability of binding or uneven or irregular engagement of the joint 10 with the end of

the portion 9. When the umbrella is folded, as shown by the dotted lines in Fig. 2, the links 11 set up a reverse action on the stay portions 8, causing the joints 10 to pass or be ejected from the tubular portion of the section 9, whereby the portions 8 may be folded upon their respective portions 9 to reduce the length of the structure. The joint 10, as shown in Figs. 3, 4, and 5, also has another feature besides maintaining a hinge action in one plane, that is, the block 14 enables such hinge action as overcomes binding of the folded section 8 on the section 9 at points adjacent the said hinge joint 10. The section 8 may take any desired cross-sectional shape. It may be solid, or it may be tubular as shown in Fig. 4, or semi-tubular or channel-shaped as shown in Fig. 5.

My invention will be readily appreciated by those skilled in the art, since I provide a structure having a minimum number of parts, and light in weight, and which maintains a rigid, durable frame-work not liable to casual closing or collapsing when in use.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In an umbrella, a handle or stem, stays hinged thereto and comprising fixed and slidable portions, the latter having hinge joints, braces leading from the stem and pivoted to the stays, and pivoted links connecting the slidable portions with the braces.

2. In an umbrella, a handle or stem, stays hinged thereto and comprising a slidable jointed portion and a fixed substantially tubular portion, and means for reciprocating the slidable portion to bring the joint thereof into and out of the tubular portion.

In testimony whereof, I have hereunto set my hand.

WILLIAM O'BRIEN.

Witnesses:

SUE B. FRITZ,
M. A. KELLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."