

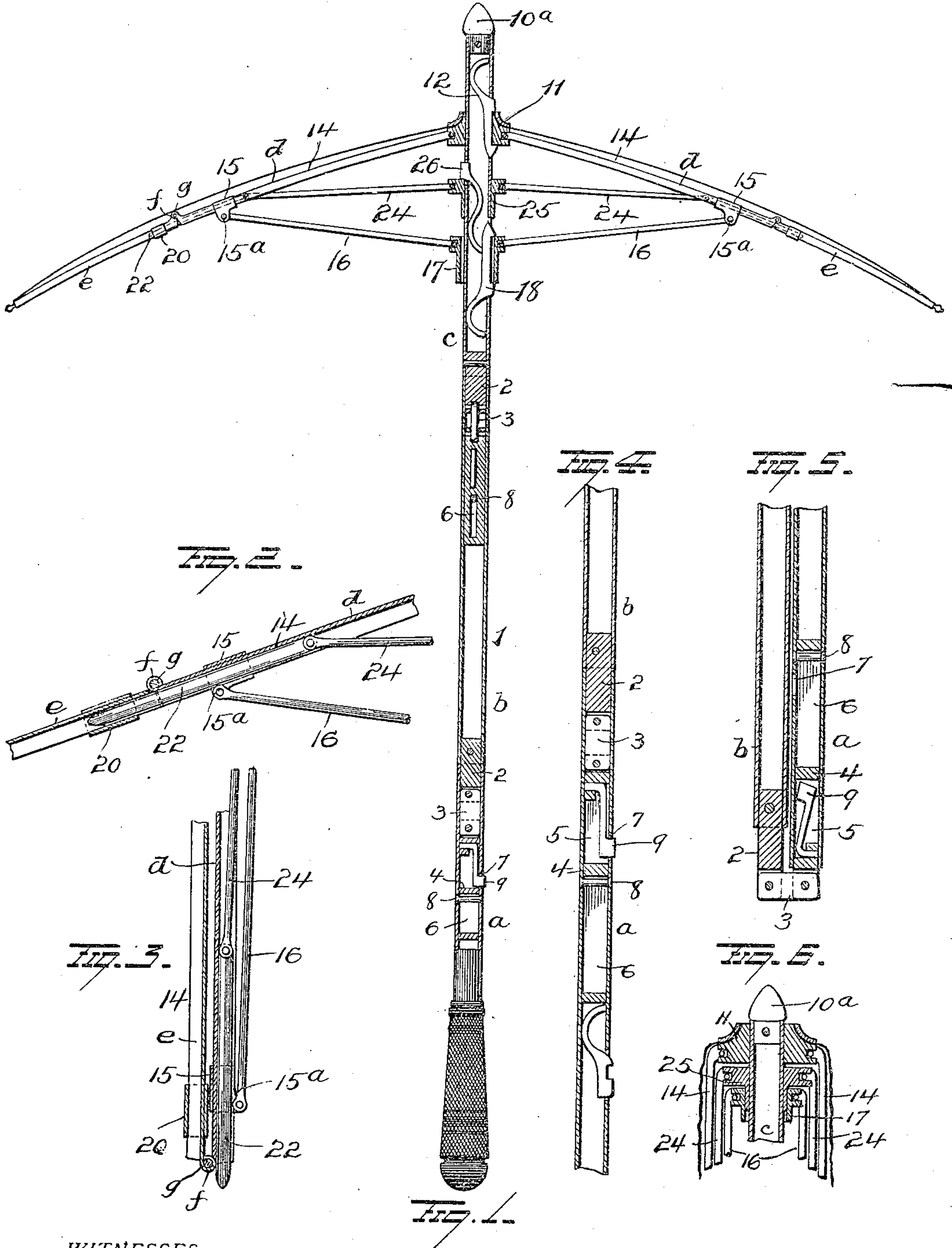
F. D. PHILP.

UMBRELLA.

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952,630.

Patented Mar. 22, 1910.



WITNESSES  
*E. Nottingham*  
*C. J. Downing*

INVENTOR  
*F. D. Philp*  
By *H. A. Seymour*  
Attorney



# UNITED STATES PATENT OFFICE.

FREDERICK D. PHILP, OF DETROIT, MICHIGAN.

## UMBRELLA.

952,630.

Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed October 3, 1908. Serial No. 455,981.

*To all whom it may concern:*

Be it known that I, FREDERICK D. PHILP, of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Umbrellas; and I 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 umbrellas and more particularly to that class capable of being folded into small compass,—the object of the invention being to provide simple and efficient means whereby the folding of the ribs can be easily effected and also to construct the staff in a manner to permit of its being easily folded.

A further object is to so construct the hinged joints between the members of the ribs of an umbrella and also the hinged joints which connect the members of a sectional umbrella staff, that when the umbrella is raised, as when in use, the various hinged connections between the parts will become rigid and the stability of the umbrella, as a whole, will be insured.

With these objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view partly in section and partly in elevation showing a portion of the framework of an umbrella embodying my improvements. Fig. 2 is an enlarged sectional view illustrating the hinged connection between the members of a rib and showing the position of the parts when the rib is distended, as when the umbrella is raised. Fig. 3 is a view of the same parts showing the positions which they will assume when the rib is folded. Fig. 4 is a sectional view illustrating the hinged connection between the members of the staff and showing the positions of the parts when the staff is distended and the hinged connection locked. Fig. 5 is a view illustrating the hinged connection of the staff members when said staff is folded, and Fig. 6 is a detail sectional view showing the positions of ribs, spreaders, braces and runners when the umbrella is folded.

1 represents an umbrella staff which is made tubular in form and, in the present

instance, comprises three sections *a*, *b* and *c*, hinged together in a manner which will be presently explained. There being three sections, two hinged connections will of course be necessary and as each of these connections is identical with the other, a detailed description of one will suffice for both, and in describing this connection, reference will be made to the sections *a*, *b*, of the staff. A short rod or pin 2 (constituting the rigid part of the hinge) is secured in the lower end of the staff section *b* and projects below the same. To the free end of the pin 2, one end of a link 3 is pivotally attached. The other end of this link is pivoted to a rod 4 (constituting a movable part of the hinge) inserted in and (when the staff is folded) projecting slightly beyond the end of said section *a* of the staff, as shown in Fig. 5. The rod 4 is provided with two slots 5 and 6 and the section *a* is made in its wall with a hole 7. A pin 8 passes through the section *a* and also through the slot 6 of rod 4 so that the respective end walls of the slot 6 will cooperate with said pin 8 to form stops to limit the movements of the section *a* and rod 4 relatively to each other. A spring dog 9 is secured within the slot 5 of the rod 4 and is adapted to enter the hole 7 in section *a* of the staff when said section *a* shall have been brought into alinement with the section *b* and said section *a* shall have been moved up so that it will cover the pin 2 and link 3 and abut against the end of the section *b*, as shown in Fig. 4. The sections of the staff will now be rigidly connected together and it is apparent that by pressing the dog or latch inwardly the sections can be released from each other and brought to the folded position shown in Fig. 5.

A handle 10 of any suitable design will be secured to the lower end of the staff section *a*.

A retainer 11 is located near the upper end of the staff and is prevented from movement on the latter by means of a spring dog 12. The ribs 14 of the umbrella are pivotally attached to the retainer 11 and each rib comprises two members *d* and *e* connected together in a manner hereinafter explained. The member *d* of each rib is provided with a collar 15 having ears 15<sup>a</sup> to which one end of a spreader 16 is pivoted, the other end of each spreader being pivotally attached or wired to a runner 17 mounted on the staff 1. Movement of this



runner is limited by a spring dog 18 mounted in the staff and adapted to engage said runner at both ends thereof, when the umbrella is raised. The adjacent ends of the members *d*, *e*, of each rib are provided with upwardly projecting eyes *f* through which a pin *g* is passed and thus the two members *d*, *e*, are hinged together and can be folded and made to assume the positions relatively to each other as shown in Fig. 3. A sleeve 20 secured to the member *e* of the rib serves as a guide for a bolt 22 located in the member *d* of the rib and the collar 15 secured to the member *d* acts similarly as a guide for said bolt when the latter is projected to lock the members *d* and *e* together when they are in alinement, as shown in Fig. 2. The locking bolts 22 of the various ribs are connected, by means of rods or links 24 with a runner 25 mounted on the upper portion of the staff a short distance below the retainer 11. When the respective members *d*, *e*, of the various ribs are brought into alinement with each other, the bolts 22 can all be shot or projected simultaneously by a slight movement of the runner 25 and the latter will be held in the position to which it is thus moved by means of a spring dog 26, as shown in Fig. 1. In order to withdraw the bolts 22 when it is desired to fold the ribs, the runner 25 will be moved upwardly, depressing the dog 26 and becoming disposed above said dog.

In order to fold the umbrella short, the operator will press spring dog 18 and push up the runner 17 over the runner 25, and after depressing the dog 26, the runner 25 can be moved upwardly and by them moving the retainer 11 and the runners 17 and 25 to the upper end of the staff, the bolts 22 will be withdrawn from the sleeves 20. The umbrella will now be tipped upside down, when the members *e* of the ribs will fall and can be gathered by the hand of the operator. The umbrella top may now be folded and the cover rolled in the usual way and held by a suitable strap. The operator will now press the dog 12, pull the staff through retainer 11 to the tip 10<sup>a</sup>, press spring dog 9, pull joint in staff apart, and fold over sections *a b* of the staff. Another strap may now be buttoned around the staff and cover.

To open the umbrella, the strap will first be unbuttoned, and after tipping the umbrella upside down, and extending the staff sections, the runner 17 will be pulled down. The members *e* of the ribs may be moved so that they will aline with the members *d*, after which the runner 17 will rise up sufficiently to be locked by the dog 18. The runner 25 will now be pulled down over dog 26 and this will cause the bolts 22 to lock the hinged members of the ribs.

Various slight changes might be made in

the details of construction of my invention without departing from the spirit thereof or limiting its scope and hence I do not desire to restrict myself to the precise details herein set forth.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. In an umbrella, the combination with a staff, a retainer movable thereon toward and away from the upper end of the staff, means for limiting the upward movement of said retainer, and ribs connected with said retainer, each of said ribs comprising two members hinged together, of locking bolts for securing said members in alinement with each other, a runner movable on the staff toward and away from said retainer, rods connecting said runner with the several locking bolts, means for holding said runner in the position to which it may be moved when the bolts are projected, a second runner on the staff movable toward and away from the first-mentioned runner, and spreaders connecting said second runner with the upper members of the several ribs.

2. In an umbrella, the combination with a staff, and a retainer movable on the upper portion thereof, and means for limiting the upward movement of said retainer, of a plurality of ribs connected with said retainer, each rib comprising two members hinged together, a locking bolt mounted in one member of each rib and adapted to be projected into the other member to lock the two members in alinement, a runner movable on the staff toward and away from the movable retainer, rods connecting said runner with the locking bolts, a second runner movable on the staff, and spreaders connecting said last-mentioned runner with the ribs independently of said locking bolts and their operating means.

3. In an umbrella, the combination with a staff and a retainer thereon, of a plurality of ribs connected with said retainer, each of said ribs comprising two members hinged together, a sliding bolt mounted in one member and adapted to be projected into the other member to lock said members in alinement with each other, two runners movable on the staff, spreaders connecting one of said runners with the ribs, and rods or links connecting the other runner with the bolts, both of said runners and the retainer being movable to the upper end of the staff when the umbrella is closed.

4. In an umbrella, the combination with a staff, a retainer movable on the upper portion of the staff, means for limiting the upward movement of the retainer, and means for locking said movable retainer, of a series of ribs attached to the retainer and each comprising hinged sections, sliding bolts for



locking said hinged sections in alinement, a runner movable on the staff toward and away from the movable retainer, and rods connecting said runner with the sliding bolts.

5 5. In an umbrella, the combination with a staff, of a retainer movable on the upper portion of the staff, means for limiting the upward movement of the retainer, means  
10 for locking said retainer, a plurality of ribs attached to the retainer, each of said ribs comprising two members hinged together, sleeves on the respective members of the  
15 ribs adjacent to the meeting ends of said members, bolts to move through said sleeves and adapted to lock the two rib members in alinement with each other, a runner movable on the staff toward and away from the  
20 retainer, rods connecting said runner with the locking bolts of the several ribs, another runner movable on the staff, and spreaders connecting the last-mentioned runner with the ribs, and one of said runners being adapted to telescope over the other.

25 6. In an umbrella, the combination of a staff, a retainer movable on the upper portion of the staff, means for limiting the upward movement of the retainer, means for

locking said movable retainer, a series of ribs attached to the retainer and each comprising hinged sections, sliding bolts for  
30 locking said hinged sections in alinement, a runner movable on the staff toward and away from the retainer, rods connecting said runner with the sliding bolts, said staff  
35 comprising tubular members foldable against each other, a pin secured to one member of the staff and projecting below one end thereof, a rod loosely mounted in the adjacent staff member, means for limiting  
40 the movement of said last-mentioned member and rod relatively to each other, said rod having a slot therein, a spring dog located within said slot and adapted to engage the wall of the member in which said  
45 rod is located, and a link pivotally connected at its ends respectively to said pin and slotted rod.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

FREDERICK D. PHILP.

Witnesses:

OGLE T. WARREN,  
CHAS. HENDERSON.