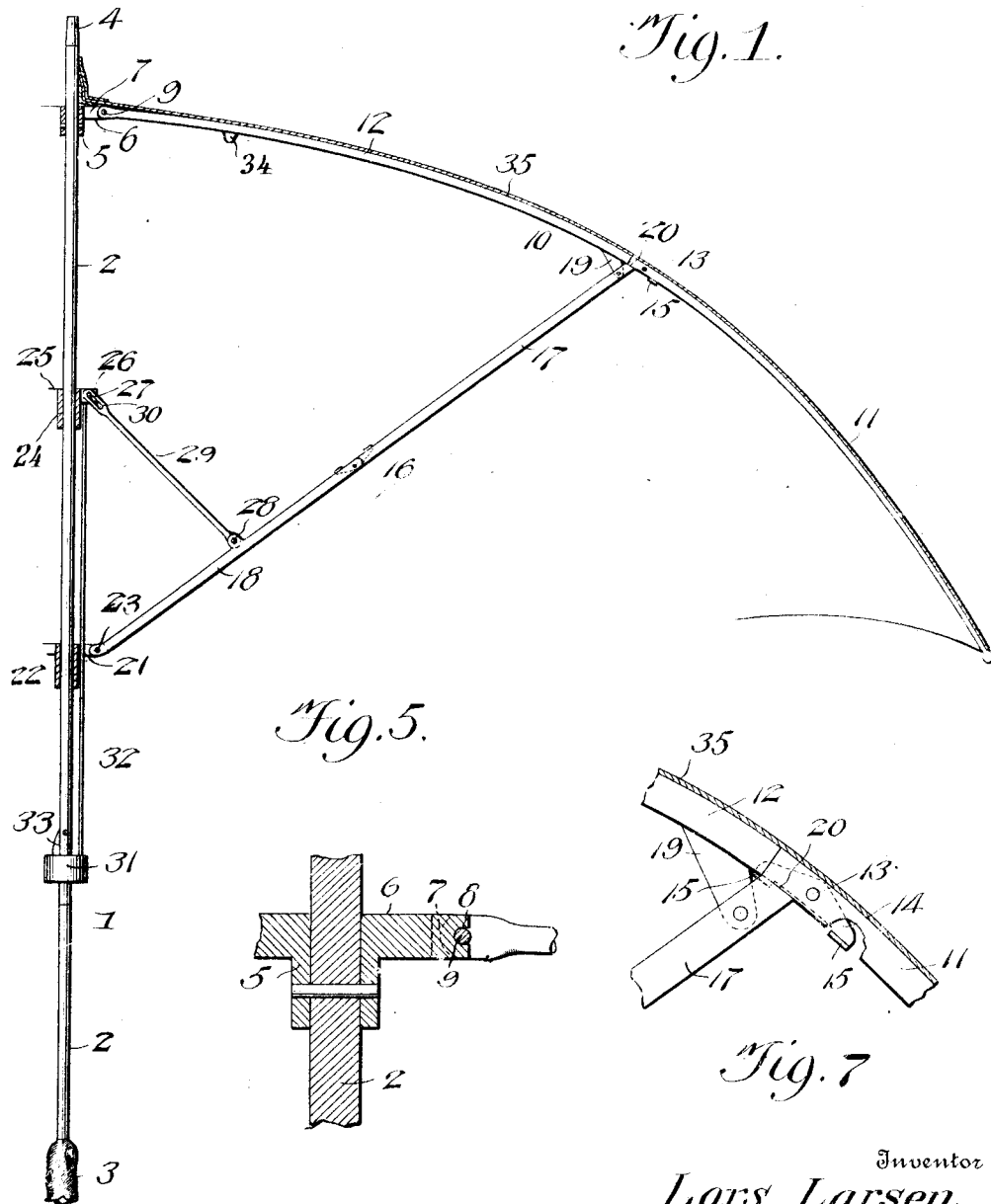


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FOLDING UMBRELLA.
APPLICATION FILED OCT. 15, 1912.

1,055,924.

Patented Mar. 11, 1913.
2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

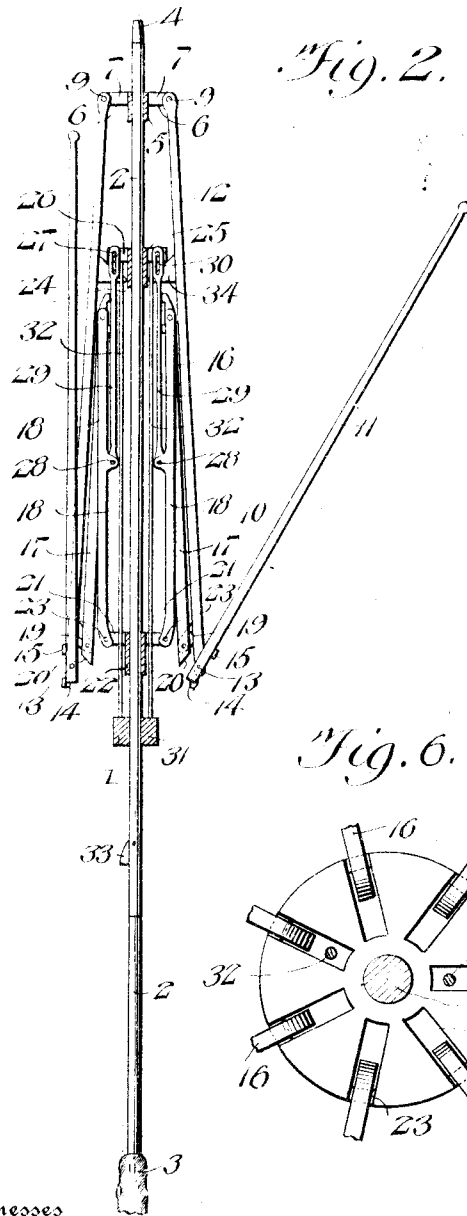


Fig. 2.

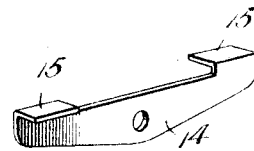


Fig. 4.

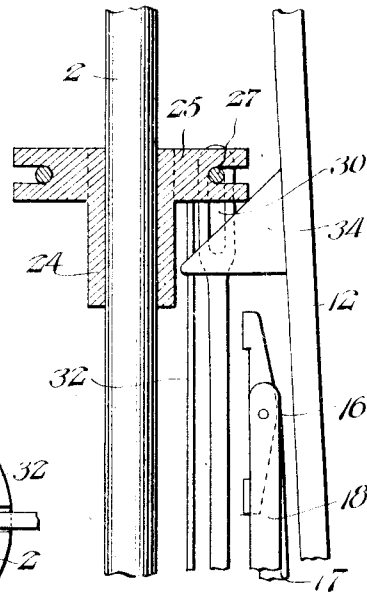
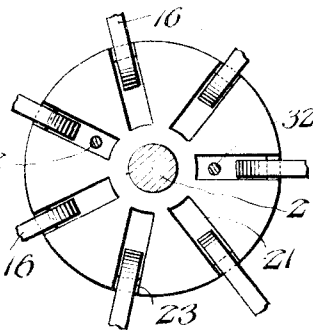


Fig. 3.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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FOLDING UMBRELLA.

1,055,924.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed October 15, 1912. Serial No. 725,882.

To all whom it may concern:

Be it known that I, LARS LARSEN, a citizen of the United States of America, residing at Goldfield, in the county of Esmeralda and State of Nevada, have invented new and useful Improvements in Folding Umbrellas, of which the following is a specification.

This invention relates to improvements in umbrellas and has particular application to folding umbrellas.

In carrying out the present invention, it is my purpose to provide a folding umbrella which will be constructed in such manner that in the movement of the runner to separate the ribs under the action of the separators, an initial movement will be imparted to the ribs so as to enable the umbrella to be opened readily and easily.

It is also my purpose to provide a folding umbrella which will embrace the desired features of simplicity, efficiency and durability coupled with cheapness of cost in manufacture and marketing and which may be quickly and easily folded into a small compact package, thereby enabling the umbrella to be stored in a small space when not in use.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the claims.

In the accompanying drawings; Figure 1 is a vertical sectional view through an umbrella constructed in accordance with the present invention, parts being shown in elevation. Fig. 2 is a fragmentary sectional view showing the umbrella in folded position, parts being shown in elevation. Fig. 3 is an enlarged vertical sectional view through one of the runners showing the connections between the same and the braces. Fig. 4 is a perspective view of a detail of the invention. Fig. 5 is a fragmentary sectional view through the umbrella stick and the notch secured thereon. Fig. 6 is a cross sectional view through the stick showing the slidable notch in top plan. Fig. 7 is a fragmentary plan view of one of the ribs showing the connection between the sections thereof and the spreader.

Referring now to the accompanying drawings in detail, the numeral 1 indicates the stick of the umbrella which is preferably composed of two detachably connected sections 2, 2, the stick 1 being equipped at

one end with a suitable form of handle 3, while the opposite end is provided with a wear cap 4 as usual. Rigidly secured to the stick 1 an appropriate distance from the free end thereof is a notch 5 formed, in the present instance, of a disk 6 provided with a number of peripheral slots 7 suitably spaced apart, the disk being provided with a peripheral groove 8 to receive the retaining wire 9.

The ribs of the umbrella are indicated at 10 and each, in the present instance is composed of two sections 11, 12 having their meeting ends overlapped and pivotally connected to each other as by bolts or pivot pins 13. Interposed between the overlapping ends of the sections 11, 12 of each rib is a sustaining plate 14 formed, in the present instance, of a single sheet of metal having the opposite ends thereof extended downwardly and bent laterally in relatively opposite directions to provide lugs 15, as clearly shown in Fig. 4 of the drawings. These lugs 15 are designed to engage the lower edges of the respective sections 11, 12 when the umbrella is in open position, thus collapsing of the sections is avoided. The free end of the section 12 of each rib is disposed within one of the slots 7 of the notch and is provided with an aperture through which is passed a retaining wire 9. Thus, a pivotal connection is established between the ribs and the notch.

The spreaders of the umbrella are indicated at 16 and each, in the present instance, comprises two sections 17, 18 having their meeting ends overlapped and pivotally connected to each other, while a sustaining plate similar in construction to the plate 14 hereinbefore described in connection with the ribs, is interposed between the overlapping ends of the sections of the spreaders to prevent undue relative movement of such sections in the opening of the umbrella. One of the sections of each spreader 16, as the section 17, has the free end thereof pivotally connected to the section 12 of the respective rib through the medium of a pivot plate 19 suitably secured to the respective rib section at the rear of the pivotal connection between the sections of such rib, the free extremity of the section 17 of each spreader being beveled as at 20 to engage the section 11 of the respective rib, so as to prevent the sections 11 of the ribs from folding onto the sections 12 thereof in the open posi-

tion of the umbrella. The free ends of the sections 18 of the spreaders are each disposed within a slot 21 of a second notch 22 suitably secured to the umbrella stick and spaced apart from the first notch, a retaining wire 23 encircling the second notch and is passed through the free ends of the respective sections of the spreaders to establish a pivotal connection between said sections and the notch.

Slidably disposed upon the stick 1 between the notches thereon is a runner 24 composed in the present instance of a disk 25 having slots 26 formed in the periphery thereof and suitably spaced apart, a retaining wire 27 encircling the disk 25 of the said runner and overlying the peripheral slots therein. Pivotally connected to one of the sections of each spreader, as the section 18, by means of a pivot pin or the like 28 is one end of a brace 29 and each brace has the opposite end thereof formed with an elongated slot 30 and disposed within one of the peripheral slots 26 in the disk 25 of the runner 24, the slots 30 in the said braces receiving the retaining wire 27 whereby a loose connection is established between said runner and braces, for a purpose which will presently appear. A second runner 31 is also slidably disposed upon the stick 1 of the umbrella beyond the notch 22 thereon and is connected in any suitable manner, as by rods 32, 32 with the first-mentioned runner, whereby in the movement of the runner 21, motion may be imparted to the runner 24. Any suitable form of catch 33 may be employed to hold the second runner against accidental movement when the parts of the umbrella are in open position.

In order that an initial movement may be imparted to the ribs of the umbrella, when it is desired to open the same, so that such umbrella may be opened quickly and easily, I mount upon one edge of the sections 12 of each rib, an inwardly extending lug 34, which, when in the closed position of the umbrella, lies in the path of movement of the runner 24. From this construction, it will be seen that, in the initial movement of the runner 24, under the action of the second or manipulating runner 31, the lugs 34 will be acted upon by the first-mentioned runner and so impart an initial movement to the ribs previous to the latter being acted upon by the braces and spreaders.

A suitable form of cover 35 is carried by the ribs of the umbrella, as usual.

From the foregoing description taken in connection with the accompanying drawings, the construction and mode of operation of my improved umbrella will be readily understood. Assuming the parts to be in closed position as shown in Fig. 2, and it is desired to open the same as shown in Fig. 1, the sections 11 of the ribs are swung about

their pivotal connections with the sections 12 so as to unfold the umbrella cover and give the ribs their maximum length. The manipulating runner 31 is now grasped in one hand and moved downwardly along the stick 1, thereby imparting a similar sliding movement to the runner 24, through the medium of the connecting rods 32, 32. In the downward movement of the runner 24, the retaining wire 27 carried by such runner passes from one end of the slots 30 in the respective ends of the braces 29 to the opposite ends of such slots, while the runner proper engages the lugs 34 on the ribs to move the latter outwardly. In the continued movement of the runner 24, the braces 29 are acted upon, incident to the retaining wire reaching the end of the slot 30 in each brace, and the braces, being pivotally connected to the sections 18 of the spreaders 16 act upon the latter to swing the sections of the spreaders to open position, thereby swinging the ribs to a position to open the umbrella.

It will be seen that I have provided a folding umbrella wherein the sections of the spreaders and ribs may be folded one against the other in the folded position of the umbrella, and in which the ribs and spreaders are securely held in operative relation when the umbrella is open.

While I have herein shown and described one preferred form of my invention by way of illustration, I wish it to be understood that I do not limit or confine myself to the precise details of construction herein described and delineated, as modification and variation may be made within the scope of the claims and without departing from the spirit of the invention.

I claim:

1. A folding umbrella including a stick, sectional ribs and spreaders, a runner on said stick, connections between said runner and spreaders, and lugs carried by said ribs and disposed in the path of movement of said runner whereby an initial movement may be imparted to the ribs previous to the operation of the spreaders.

2. A folding umbrella including a stick, sectional ribs and spreaders, a runner on said stick, loose connections between said runner and spreaders, and means carried by each rib and disposed in the path of movement of said runner whereby an initial movement may be imparted to the ribs previous to the operation of the spreaders.

3. In a folding umbrella, a stick, a notch secured to said stick adjacent to one end thereof, ribs each connected at one end to said notch and comprising a number of sections, a second notch on said stick spaced apart from the first-mentioned notch, spreaders each pivoted at one end to said second notch and at the opposite end to one of said

ribs and composed of a number of sections,
a runner on said stick between the notches
thereon, braces each pivotally connected to
one of said spreaders, a loose connection be-
5 tween the free end of each brace and said
runner, means carried by said ribs and dis-
posed in the path of movement of said run-
ner whereby an initial opening movement
may be imparted to the ribs, a second run-

ner on said stick, and connections between 10
said second runner and the first runner.

In testimony whereof I affix my signature
in presence of two witnesses.

LARS LARSEN.

Witnesses:

G. W. BROWN,

ROBERT D. HOLIDAY.