No. 773,499. PATENTED OCT. 25, 1904.

D. HIRSCH & P. WORLIN.

UMBRELLA.

APPLICATION FILED APR. 21, 1904.

NO MODEL.

Fig. 1.

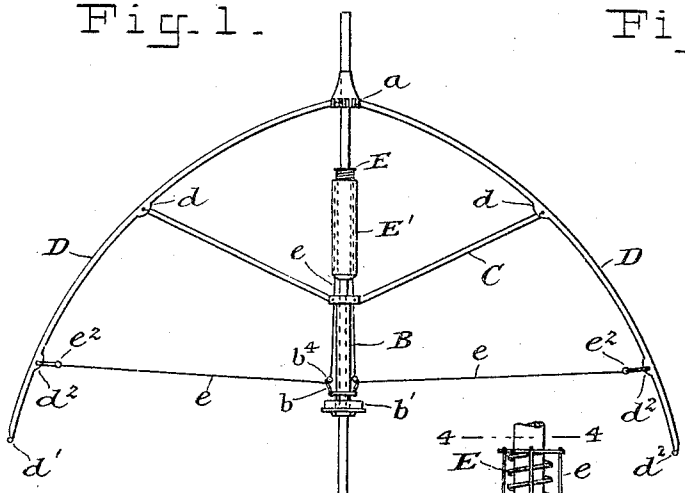
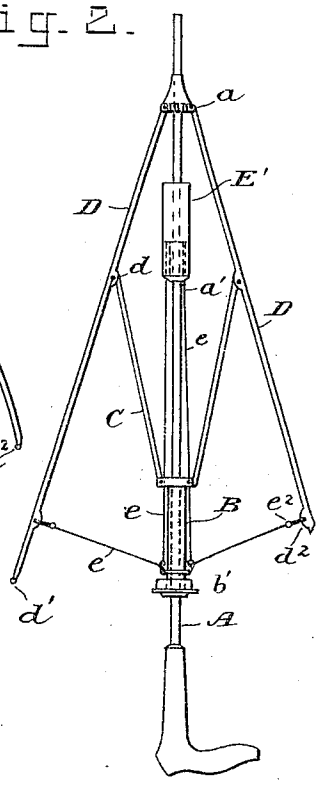


Fig. 2.



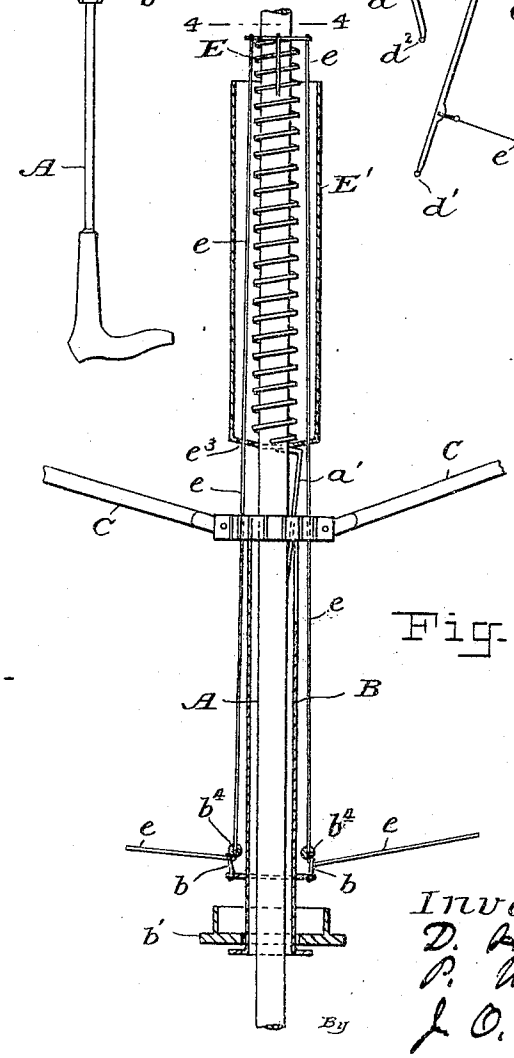


Fig. 3.

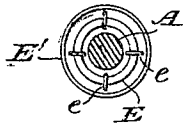


Fig. 4.

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By

No. 773,499. Patented October 25, 1904.

UNITED STATES PATENT OFFICE.

DANIEL HIRSCH AND PHILIP WORLIN, OF NEW YORK, N. Y.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 773,499, dated October 25, 1904.

Application filed April 21, 1904. Serial No. 204,217. (No model.)

To all whom it may concern:

Be it known that we, DANIEL HIRSCH, a citizen of the United States of America, and PHILIP WORLIN, a subject of the Emperor of Germany, both residents of New York, in the county and State of New York, have invented a certain new and useful Umbrella, of which the following is a specification, the same being 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.

Our invention relates to portable shades, screens, or canopies which open and fold and are carried in the hand for the purpose of sheltering the person from the rays of the sun or from rain, and in particular to means whereby the same may be held in proper shape and operative position when open and the ribs thereof strengthened by staying means and prevented from being forced outwardly by the action of the wind in stormy weather; and it has for its object the production of an umbrella provided with self-working means invisible when the umbrella is folded and neat in appearance when the same is in an open position, which means serve to strengthen the umbrella-top and to protect the ribs thereof against damage caused by high winds and which are so devised as to be simple in construction, inexpensive to manufacture, readily applicable to any umbrella, and efficient in practical use.

With this object in view the invention consists in certain novel features of construction and combination and arrangement of parts, all of which will be hereinafter described, and specifically pointed out in the drawings which accompany and form a part of this specification, in which—

Figure 1 represents our umbrella in an open position. Fig. 2 is a view of the same partly closed. Fig. 3 is a view in detail of our stay or rib holding means; and Fig. 4 is a view in section, taken on the line 4 4, Fig. 3.

Like letters of reference indicate like parts in all the views.

Our umbrella is made in the ordinary manner and consists of the usual preferably light canopy of silk, cotton, or other cloth extended on a folding frame composed of bars or strips of steel, cane, &c., as the ribs D, which are actuated by a runner which slides on an ordinarily metal rod or wooden stick A. The ribs are attached to the rod or stick at the notch *a* in the usual manner, and the runner B, preferably provided with the tip-cup *b'*, carries the stretchers C, attached in a movable relation to the ribs D at the stretcher-joint *d*. To the umbrella thus formed in the ordinary manner we attach our stay and rib-holding means consisting of the following mechanism: We locate near the end of the rod or stick A and intermediate the notch *a* and the spring-catch *a'* a coiled spring E or other expansible and contractable means, to the upper portion of which is attached our flexible holding means, as the cords *e*, whereby the slack of the said cords may be taken up in order to remain taut no matter whether the umbrella is in an open or closed relation. We prefer, in order that our device may present a more ornamental appearance, to cover the said coil E with or inclose the same in a tube E', although manifestly the latter may be dispensed with, if desired.

The cords *e* are preferably attached, as stated, to the top of the coil E, which is ordinarily shorter in length than the distance between the spring-catch *a'* and the notch *a*, and are passed down the rod or stick A parallel with the same and preferably running within the tube E', and are passed through the orifices e^3, formed in the inwardly-flanged edge or rim located at the bottom of the same. The said cords *e* are then run through the guides *b*, which may be provided with an anti-friction device, as the beads b^4, and the extremities thereof, preferably provided with hooks e^2, are afterward attached to the rib-eyes d^2, located at a point between the stretcher-joint *d* and the tips *d'* of the ribs D.

In operation as the umbrella is opened in the ordinary manner the flexible cords or wires will pass outwardly, together with the diverging ribs, until the upwardly-moving runner is caught and held in an open position by the spring-catch *a'*, the coil being compressed and forced up contiguous to the notch *a* and the tension of the cords being now such

as to resist any ordinary effort to force the ribs in an outward direction, as occurs when the top of the umbrella is in popular phraseology turned "inside out" and the top of the umbrella assumes a convex relation relative to the user instead of its normal concave position. When the umbrella is closed, the flexible cords or stays pass back again to their normal position and the coil E rests once more against the spring-catch a', the resilience of the spring-coil being sufficient to take up the slack of the cords and to hold the same taut again, and as the said cords are folded up within the umbrella-top our device is now entirely invisible.

Obviously as many of our flexible cords may be used in an umbrella as may be desired, although we prefer to attach our device to every alternate rib, sufficient resistance being thereby given to the umbrella-frame to withstand any injury that would otherwise be caused by the ribs being bent or broken by wind-storms, and as our device occupies no appreciable room within the umbrella-frame the said umbrella may be rolled up as tightly as if our invention was not in use in connection therewith.

As it is evident that many changes in the form, construction, proportion, and relative arrangement of parts might be resorted to without departing from the spirit and scope of our invention, we would have it understood that we do not restrict ourselves to the particular construction and arrangement of parts shown and described, but that such changes and equivalents may be substituted therefor, and that

What we claim as our invention is—

1. An umbrella-frame comprising a stick or rod, a runner, ribs, and stretchers intermediate of the runner and the ribs to hold the opened ribs in an outward position, and means, extending from the said rod or stick to the runner and from thence to a point intermediate of the stretcher-joint and the tip of the rib, to hold the said opened rib from being forced in an abnormal outward direction.

2. An umbrella-frame comprising a stick or rod, a runner, ribs, and stretchers intermediate of the runner and the ribs to hold the opened ribs in an outward position, and flexible means held in a movable relation to the stick or rod and extending from the said stick to the runner and from thence to a point intermediate of the stretcher-joint and the tip of the rib to hold the said opened rib from being forced in an abnormal outward direction.

3. An umbrella-frame comprising a stick or rod, a runner, ribs, and stretchers intermediate of the runner and the ribs to hold the opened ribs in an outward position, and means, consisting of a spring and a flexible part running from the stick or rod to the runner and from thence to a point intermediate of the stretcher-joint and the tip of the rib, to hold the said opened rib from being forced in an abnormal outward direction and constructed and arranged to become folded up within the umbrella when closed.

4. In an umbrella, a frame, comprising a stick or rod, ribs, and stretchers intermediate of the runners and the ribs, and spring-controlled flexible means running from the said spring to a point intermediate of the stretcher-joint and the tip of the rib to prevent the said rib from being forced in an outward direction, and a casing or tube to inclose and contain the said spring-controlled flexible means.

5. In an umbrella, a frame, comprising a stick or rod, ribs, and stretchers intermediate of the runners and the ribs, a spring-coil mounted around the rod, and a series of flexible cords extending from the said spring to points intermediate of the stretcher-joint and the tips of the ribs.

In testimony of the foregoing specification we do hereby sign the same, in the city of New York, county and State of New York, this 2d day of April, 1904.

DANIEL HIRSCH.
PHILIP WORLIN.

Witnesses:
G. A. TAYLOR,
ALFRED E. SMITH.