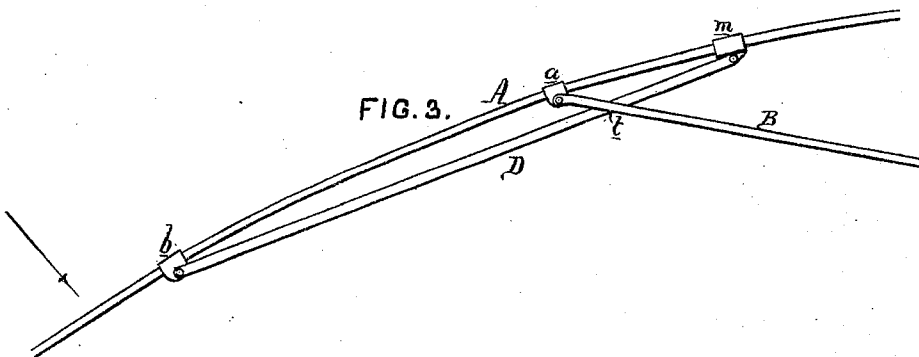
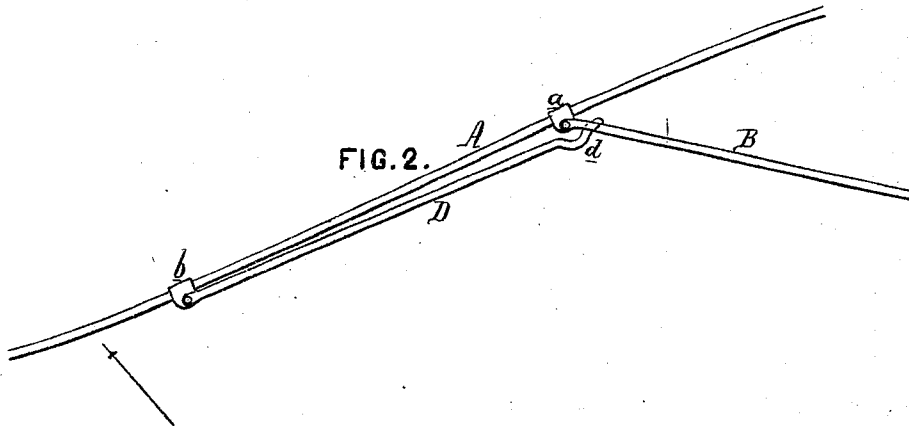
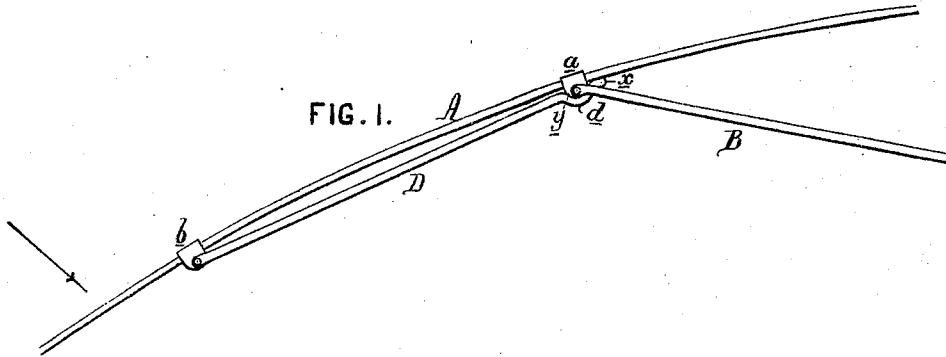


JOSIAH SHEPARD.

Improvement in Umbrellas.

No. 119,888.

Patented Oct. 10, 1871.



WITNESSES { *John Parker* Josiah Shepard
Jno. B. Harding by his Att^y
Stroza and Son

UNITED STATES PATENT OFFICE.

JOSIAH SHEPARD, OF NEW BRITAIN, CONNECTICUT.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. 119,888, dated October 10, 1871.

To all whom it may concern:

Be it known that I, JOSIAH SHEPARD, of New Britain, county of Hartford, State of Connecticut, have invented an Improved Umbrella-Frame, of which the following is a specification:

My invention consists of certain wires applied to the ribs and stretchers of umbrella-frames, and operating in a manner too fully explained hereafter to need preliminary description, with the view of so re-enforcing the ribs as to enable the latter to resist the strains to which they are subjected.

Figure 1 is a view of portions of the rib and stretcher of an umbrella with my improvement; Fig. 2, the same with the parts in a different position; and Fig. 3 illustrates a modification of my invention.

A represents a portion of the steel rib of an umbrella, and to this rib is secured the usual connection *a*, to which is hinged the forked end of the stretcher B. The weakest portion of an umbrella-rib is that which extends from the connection *a* to the tip; and in order to re-enforce this portion of the rib I secure to the same, at a point midway or thereabout between the tip and connection *a*, a second connection, *b*, and to this I hinge a wire, D, the bent end *d* of which projects through the fork of the stretcher B. When the umbrella is open the stretcher, rib, and re-enforcing-wire D will be in the relative positions illustrated in Fig. 1, the extreme end *x* of the said wire D bearing against the rib A and its bent portion *y* against the connection *a*, the fork of the stretcher confining the end of the wire and aiding to lock or retain it in the position shown in Fig. 1. The wire D thus serves as a truss to resist any strain exerted by the wind in the direction of the arrow. The wire D, in fact, so re-

enforces the rib A that the latter, when the umbrella is open, need not be bowed to the usual extent, but may approximate so much nearer to a straight line as to materially increase the diameter of the umbrella.

When the wind tends to turn an umbrella inside out the force is exerted on the ribs in the direction of the arrow, Fig. 2, and this force is resisted by the re-enforcing-wire D, the bent end of which is retained by the forked end of the stretcher B.

In the modification illustrated in Fig. 3 the forked end of the stretcher is somewhat elongated, and the wire D is jointed to a block, *m*, embracing and arranged to slide on the rib A. A force exerted on the rib in the direction of the arrow will be resisted by the wire D, which, bearing against the end of the fork of the stretcher at *t*, becomes locked. The wire will in this modification also re-enforce the rib and aid in resisting the action of the wind when it has a tendency to turn the umbrella inside out.

The above-described re-enforcing-wires in no way interfere with the proper closing of the umbrella.

I claim—

A re-enforcing-rib, connected at one end to a rib of an umbrella and at the opposite end free, but self-affixing to the rib and stretcher, all substantially as set forth.

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

JOSIAH SHEPARD.

Witnesses:

WM. A. STEEL,
JOHN K. RUPERTUS.

(165)