

United States Patent Office.

HORACE T. ROBBINS, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 66,632, dated July 9, 1867.

IMPROVEMENT IN UMBRELLAS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, HORACE T. ROBBINS, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Improvement in Umbrella-Frames; and I do hereby declare that the same is fully described in the following specification and accompanying drawings, letters, figures, and references thereof. Of the said drawings—

Figure 1 represents a side view of an umbrella-frame having my improvement applied to it.

Figure 2 is an inside view of the same, with the handle cut off on the line A B.

Similar letters refer to like parts in the different drawings. C is the handle; D, the ribs; E, the rib joint-plate; F, the stretchers; G, the stretcher joint-slide.

The nature of my invention consists in constructing umbrella-frames in such a manner as to give them sufficient strength to withstand the pressure of the wind either from the outside or inside. Many times, when an umbrella is the most needed, it is impossible to carry it open, on account of the liability of the wind to get under and turn it; or if carried against a strong wind, the ribs are so much bent in by the pressure as to make it of little service.

To prevent these difficulties, I use braces A, figs. 1, 2, to support the ribs D. One end of each of these braces is attached to the joint-plate *b* by a wire, which forms the joint *c*.

Figure 3 is a top view of the joint-plate *b*, detached from the handle C. *d* is a hole to admit the handle. *e* are notches to receive the ends of the braces *a*, which make the joint *c*.

Figure 4 is a section of fig. 3 on the line H I. This joint-plate is like the joint-plate E, except it is so much smaller as to let the ribs D shut down over without coming in contact with it when the frame is closed. The joint-plate *b* is fastened to the handle C by passing a rivet through the plate and handle. The opposite end of each of the braces *a* is connected to the ribs D by joints *e*, and they are arranged so as to bring the ribs straight with the handle when closed; also, so as to give the proper form to the ribs outside of the stretchers when open. This arrangement relieves the cloth of the greater part of the strain which is caused by the pressure of the ribs against it in ordinary umbrellas when open, consequently the cloth will last longer than when cut small enough on the edge to give form to the ribs outside of the stretchers. Again, in ordinary umbrellas, the ribs become bent by usage, rendering the cloth too loose, which at first was too tight. But by the use of these braces it is always kept of a proper tension, and the wind can neither turn nor bend in the ribs whichever way they may be carried. The ribs may also be made lighter than those in ordinary umbrellas, so that those made with the braces are not any heavier than those without them, but are much stronger and more durable. These braces may be applied with great advantage to old umbrellas, whose ribs have lost their elasticity, as well as to new ones.

In constructing my improved umbrella-frames, I arrange all the parts in the usual way, except the stretchers F. These I split open at the outer end or joint *f*, as far up as the shoulder *g*, forming the slot *h*, fig. 6, to allow the braces *a* to pass through.

Figure 5 is a side view of one of the stretchers detached from the frame. *i* is a hole, through which a rivet is put to make the joint *f*. *j* is a hole, through which passes the wire *k* to connect it to the stretcher-slide G, figs. 1, 2.

Figure 6 is a bottom view of fig. 5, showing the slot *h*, through which swing the braces *a*, figs. 1, 2, as the frame is opened and closed.

Figure 7 is a side view of one of the braces *a* detached from the frame. *l* is a hole, through which a rivet is put to form the joint *e*, figs. 1, 2. *m* is a hole through the opposite end, through which a wire passes to connect it to the joint-plate *b* to make the joint *c*, figs. 1, 3, 4.

Figure 8 is a bottom view of fig. 7. *n* is a slot, to connect it to the rib D, and forms the joint *e*, figs. 1, 2. The bottom side of these braces rests on the shoulder *g* in the slot *h*, figs. 1, 2, 6, when the frames are open. These shoulders act as counter-braces, and render the braces *a* much more firm to resist a pressure on the outside of the ribs D than they would be if there were nothing to support them between the two ends. The circular form which I give to the braces *a* insures the inclination of the braces against the shoulder *g* in case of a pressure on the outside of the ribs D.

1. I claim providing umbrellas with auxiliary braces, as and for the purpose specified.
2. The combination of the runner *b*, braces *a*, and ribs D, substantially as described.
3. The arrangement of the stretchers F, having slots *h*, with the braces *a*, substantially as described.

HORACE T. ROBBINS.

Witnesses:

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WILLIAM EASON.