

F. LILLER.
UMBRELLA.

No. 176,473.

Patented April 25, 1876.

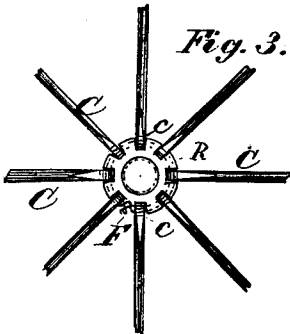
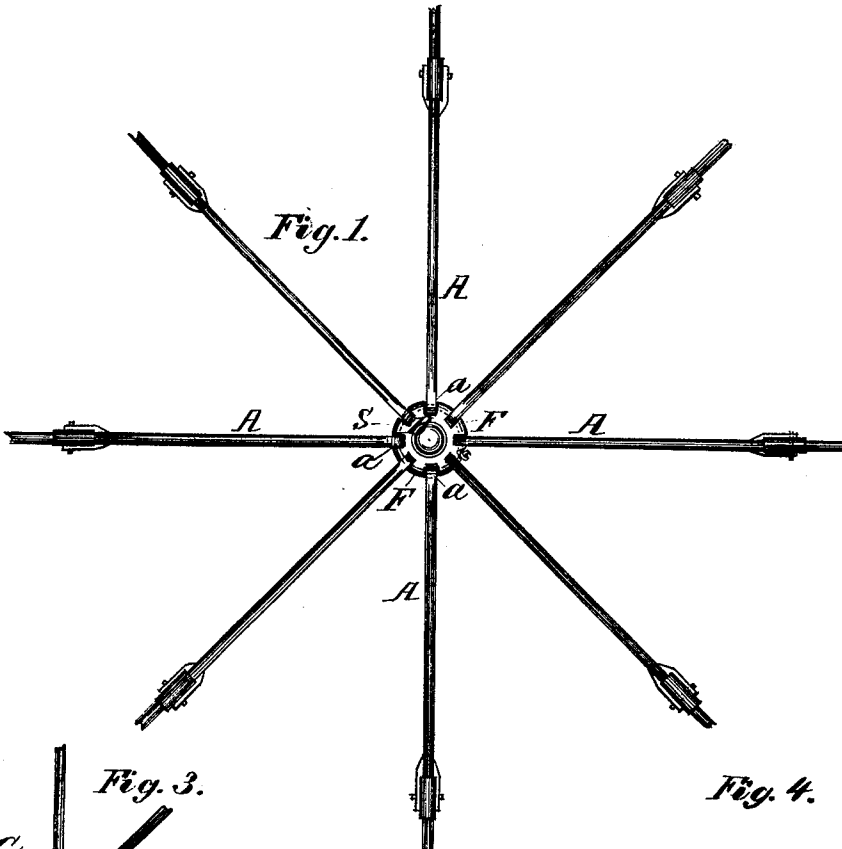


Fig. 4.

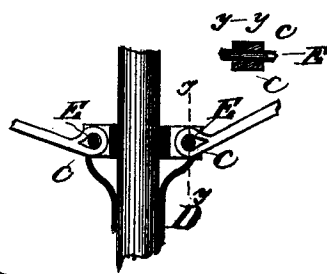
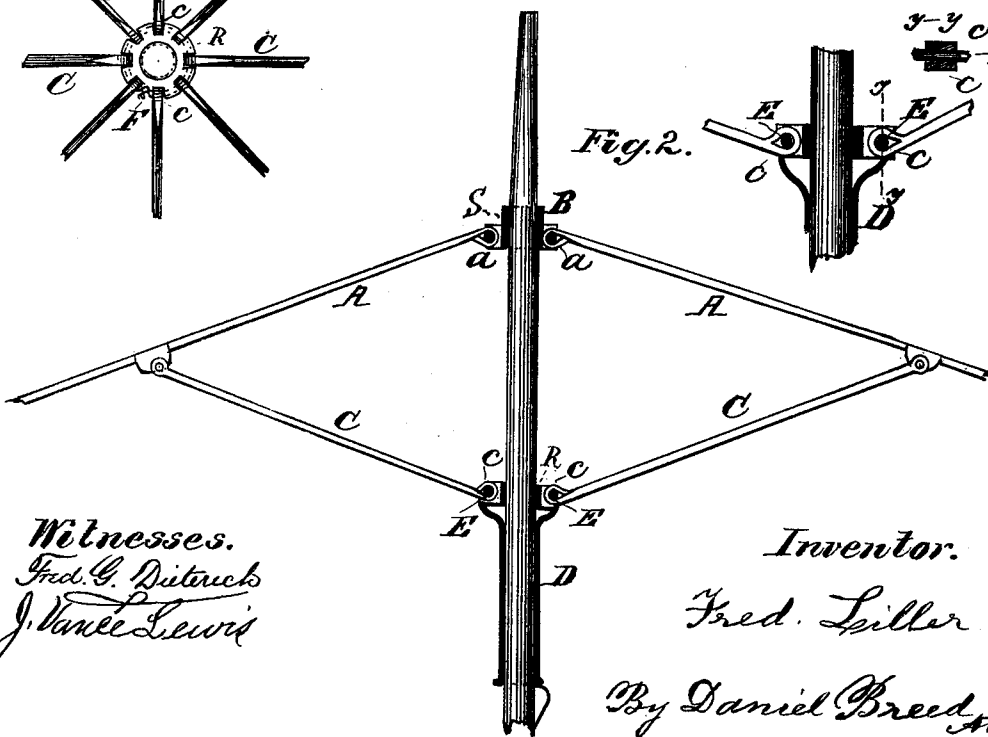


Fig. 2.



Witnesses.
Fred. G. Duttrick
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By Daniel Breed Atty.

UNITED STATES PATENT OFFICE.

FRED. LILLER, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF AND
HENRY H. GARRIGUES.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. **176,473**, dated April 25, 1876; application filed
March 8, 1876.

To all whom it may concern:

Be it known that I, FRED. LILLER, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful improvements in Umbrellas and Parasols; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists of a novel construction of joint or hinge for the ribs and stretchers of umbrellas and parasols; and it is chiefly applicable to the common wire used for the same.

In the accompanying drawings, Figure 1 is a top view of an umbrella or parasol frame, the ribs being cut away near their joints or connections with the stretchers. Fig. 2 is a partial vertical section. Figs. 3 and 4 are detached views, which will be referred to hereafter.

The object of my improvement is to give greater strength at the hinges of the ribs with the top notches, and of the stretchers with the runner, and also to prevent the ribs and stretchers from easily swinging sidewise in opening or stretching the frame.

To accomplish these objects I make the notches in the runner R, Fig. 2, and top notches *a*, Fig. 1, about twice the usual width, and then flatten the wire laterally, as shown in Figs. 1 and 2. This gives the ribs A a very broad bearing-surface for the wire F, Fig. 1, and the wire E, Fig. 3, which wires form the pivots on which the ribs A and stretchers C turn.

The form and action of my improved joints

will be better understood from Fig. 4, in which is shown a cross-section of the hinge, considerably enlarged, as seen at *yy*, where E is the wire or pivot, and C the stretcher.

I also use a very large wire, E or F, and make the loops in the ends of the ribs and stretchers larger than usual, so as to hold them closely and strongly between the shoulders of the top notches and runner.

It is common to make the ends of ribs and stretchers broad, and set them edgewise into narrow notches in the crown-piece and runner, and I make no claim to these devices; but I make the notches in both the crown-piece and the runner very broad from shoulder to shoulder, and then make the ends of the ribs and stretchers of the corresponding breadth to fill these notches and give stiffness to the ribs and stretchers, so that both, acting together, cannot be easily bent sidewise by being swung against said shoulders.

Having described my invention, what I claim is—

1. In an umbrella or parasol frame, the combination of the ribs A and stretchers C, having broad flat ends, with the broad notches in the crown-piece and runner, all constructed and arranged to operate substantially as and for the purposes set forth.

2. The stretchers C, provided with the broad lower ends, in combination with the runner, having broad notches and prominent shoulders, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

FRED. LILLER.

Witnesses:

DANIEL BREED,

FRED. G. DIETERICH.