

D. H. REDMOND & C. B. BALDWIN.
UMBRELLA FRAME.

Patented May 28, 1895.

WITNESSES:
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UNITED STATES PATENT OFFICE.

DANIEL H. REDMOND AND CHALKLEY B. BALDWIN, OF PHILADELPHIA,
PENNSYLVANIA; SAID BALDWIN ASSIGNOR TO SAID REDMOND.

UMBRELLA-FRAME.

SPECIFICATION forming part of Letters Patent No. 540,191, dated May 28, 1895.

Application filed December 1, 1894. Serial No. 530,542. (No model.)

To all whom it may concern:

Be it known that we, DANIEL H. REDMOND and CHALKLEY B. BALDWIN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Umbrella-Frame, of which the following is a full, clear, and exact description.

Our invention relates to improvements in umbrella frames and more particularly to the construction of the joints connecting the umbrella ribs with the stretchers or braces. In making a close folding umbrella frame, it is necessary to have the stretchers close into the ribs and it is desirable that both parts be made as light as possible, and where this is done and the rib is pierced at the joint in the usual manner, the rib is rendered weak at the joints and is likely to break.

The object of our invention is to provide a very simple and efficient connection between the ribs and stretchers, the device forming the joint being cheap and strong and constructed and arranged in such a way that the joints may be very easily formed.

To these ends our invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken perspective view of a rib and stretcher folded together and connected by our improved joint. Fig. 2 is a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the blank of the outer wrapper or clip of the joint. Fig. 4 shows the wrapper or clip bent in position to be applied to the rib, and Fig. 5 is a detail perspective view of the head which is pivoted to the stretcher and engaged by the wrapper or clip.

The rib 10 is of common construction, being nearly semi-cylindrical or U-shaped in cross section, and the stretcher 11 is also of the customary kind, being shaped like the rib 10 and adapted to fold longitudinally into it, as the drawings show. In forming the joint, the end portions 12 of the stretcher which connect with the rib are compressed or squeezed

together, as shown clearly in Fig. 1, and in order that the joint may be as substantial as possible a filler block 13 is placed between the opposite flattened members or ends of the rib, but this filler block may be omitted without affecting the principle of the invention.

An elongated U-shaped head 14 which is adapted to fit snugly in the rib 10, is pivoted to the flattened end of the stretcher, being connected thereto by a suitable rivet 15, and when the joint is to be made this head is placed in the rib at the desired point to form the joint, after which the clip 16 is applied to the outside of the rib to fasten the head in place. This clip is formed of a flat strip 17 of sheet metal, which is recessed at the ends, as shown at 18, thus forming end arms 19 which are adapted to be doubled inward so as to straddle the end of the stretcher and engage the head 14.

When the clip 16 is applied it is in the form shown in Fig. 4, and is therefore of a U-shape and is of a size to fit snugly on the outside of the rib 10. The stretcher 11 is extended at an angle to the rib, the head 14 being held in place as specified and then the ends of the clip are doubled inward and pressed firmly against the inner walls of the rib 10, a suitable tool being used for the purpose, and the end arms 19 of the clip are thus brought on opposite sides of the compressed end of the rib and, as the clip or wrapper is clamped firmly in place, it prevents the head and consequently the stretcher from slipping, while the rib 10 instead of being weakened by perforations, as is usually the case, is actually strengthened by the outside clip, thus enabling the rib to be made very light, as the chief strain comes on the point where the endwise pressure of the stretcher is applied.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of the recessed rib, the head in the recess thereof, the pivot likewise located in the recess and passing through the head but having its ends within the recess of the rib, a stretcher mounted on the said pivot, whereby the entire fastening of the stretcher to the head is located within the recess of the rib and means for retaining the head within

the recess of the rib, substantially as described.

2. The combination of the recessed rib, the forked head in the recess of the rib, the pivot
5 likewise located in the recess and secured to the head means for retaining the forked head within the recess of the rib, and the stretcher mounted on the pivot between the members of the forked head whereby the entire fasten-

ing of the stretcher to the forked head is located within the recess of the rib, substantially as described.

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Witnesses:

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