

No. 607,711.

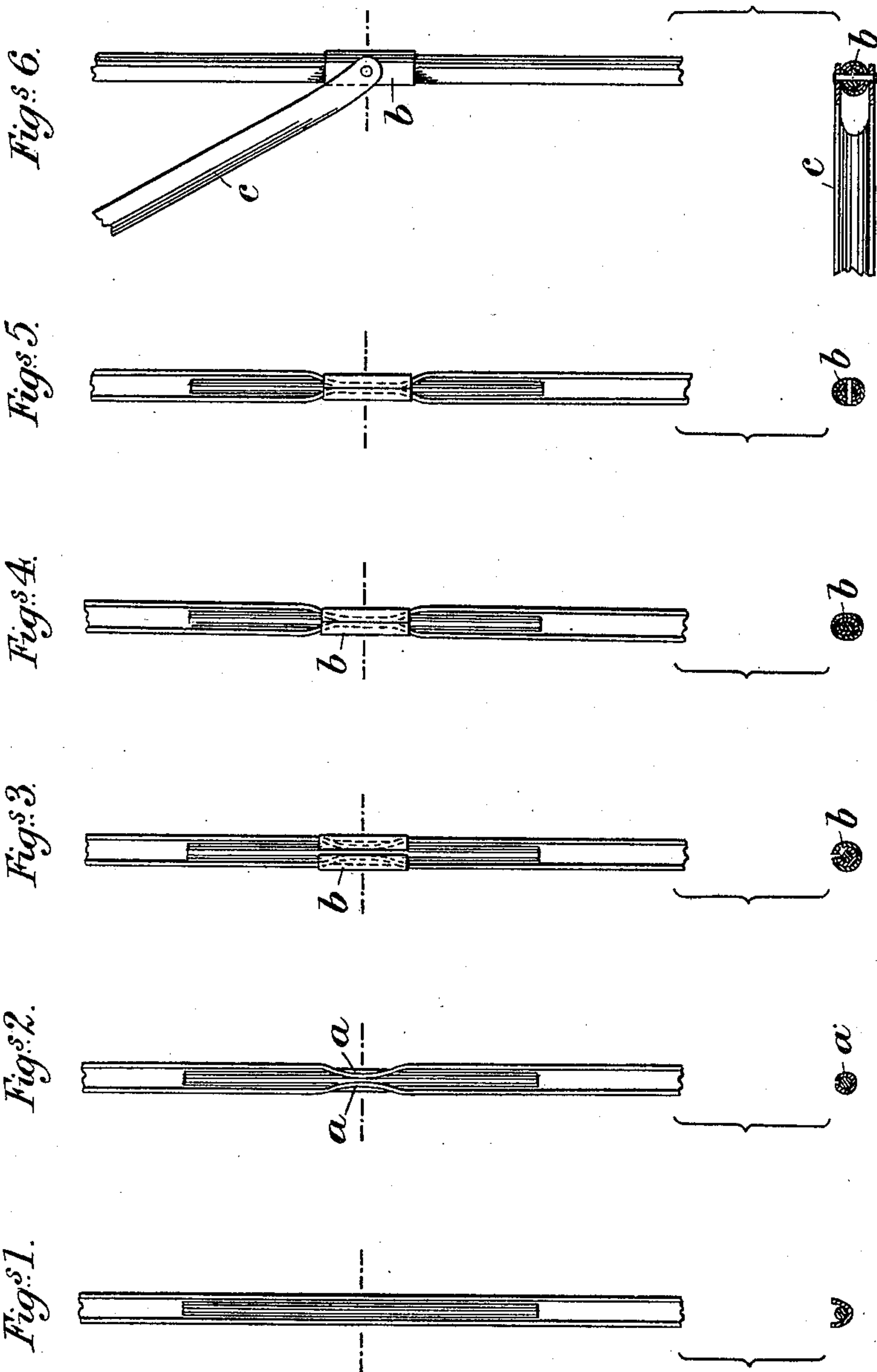
Patented July 19, 1898.

J. SIMPSON.  
UMBRELLA, PARASOL, &c.

(Application filed Jan. 3, 1898.)

(No Model.)

Fig. 7.  
b c d



Witnesses  
A. M. Perkins  
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Inventor.  
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# UNITED STATES PATENT OFFICE.

JOHN SIMPSON, OF SHEFFIELD, ENGLAND.

## UMBRELLA, PARASOL, &c.

SPECIFICATION forming part of Letters Patent No. 607,711, dated July 19, 1898.

Application filed January 3, 1898. Serial No. 665,446. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN SIMPSON, foreman, a subject of the Queen of Great Britain, residing at Stocksbridge Works, Sheffield, in the county of York, England, have invented certain new and useful Improvements in Umbrellas, Parasols, and the Like, of which the following is a specification.

My invention relates to the formation of the stretcher-joints for jointing trough-ribs to their stretchers.

According to this invention I first place a short length of wire within the rib at the point where the joint is to be formed and by suitable dies close over the sides of the rib around the central portion of this wire to secure it in place. Afterward by other dies I lap around the exterior of the portion of the rib which has had its sides so bent around the wire a geat-piece, of sheet iron or steel or other metal, and then by dies flatten the sides of this geat-piece, so as to make it of the same or slightly less width than the remainder of the rib, and through the solid geat so formed I pierce the hole for the joint-pin. This may be done at one process by one set of dies. The trough-stretcher within which the rib is to lie I make two-forked, so that the arms of the fork may lie against the flattened sides of the solid geat. This method of manufacturing the stretcher-joints is illustrated in the drawings annexed.

Figures 1 show a face view and cross-section of part of a trough-wire rib with a length of wire placed into the trough at the point where the joint is to be formed. Figs. 2 are similar views showing the sides of the rib at a closed over the central portion of the wire. Figs. 3 are similar views showing a geat-piece *b*, of thin sheet metal, wrapped around the exterior of the portion of the rib which has had its sides so bent around the wire. Figs. 4 are similar views showing the geat-piece and the parts it surrounds all flattened together. Figs. 5 are similar views showing the solid portion of the rib which has been formed in the above manner pierced with a hole for the joint-pin.

These two latter processes may either be effected separately or simultaneously by one set of dies. Figs. 6 are similar views to the above, showing the end of a trough-stretcher *c* jointed to the portion of the rib which has been made solid in the above manner. Fig. 7 shows in cross-section a modified way of making a trough-rib solid at the point where a stretcher is to be jointed to it.

In place of the sheet iron or steel geat-piece *b* being lapped around the exterior of the portion of the rib which has had its sides bent over around the wire the bending over of the sides of the rib around the central part of the wire might be omitted and the geat-piece be not only wrapped around the rib, but also have its ends turned down over the sides of the rib, so that they come inside it in the manner shown in cross-section at Fig. 7, and then the geat-piece *b*, rib *c*, and central portion of the wire *d*, placed within it, may all be flattened together and virtually make the rib solid at this point and approximately of the same shape and width as the remainder of the rib, as in the construction first described.

What I claim is—

1. A trough-rib having inclosed within it at the point where its stretcher is to be jointed to it a short length of wire and having a hole for the joint-pin pierced through the center of this portion of the rib and through the wire.

2. A trough-rib having within it at the point where its stretcher is to be jointed to it a short length of wire and having the sides of the trough squeezed together against the central portion of the length of the wire and turned over so as to inclose it and also having a strip of thin sheet metal around such narrowed portion to make this part of the rib of the same width as the remainder of the rib and also having a hole for the joint-pin pierced through the center of the portion of the rib so made solid.

JOHN SIMPSON.

Witnesses:

C. B. HOBBS,  
W. H. CHAPMAN.