(No Model.) 2 Sheets—Sheet 1.

T. R. & E. L. HEINTZ.

FOLDING FRAME FOR SUPPORTING CANOPIES.

No. 563,375. Patented July 7, 1896.

Fig. I

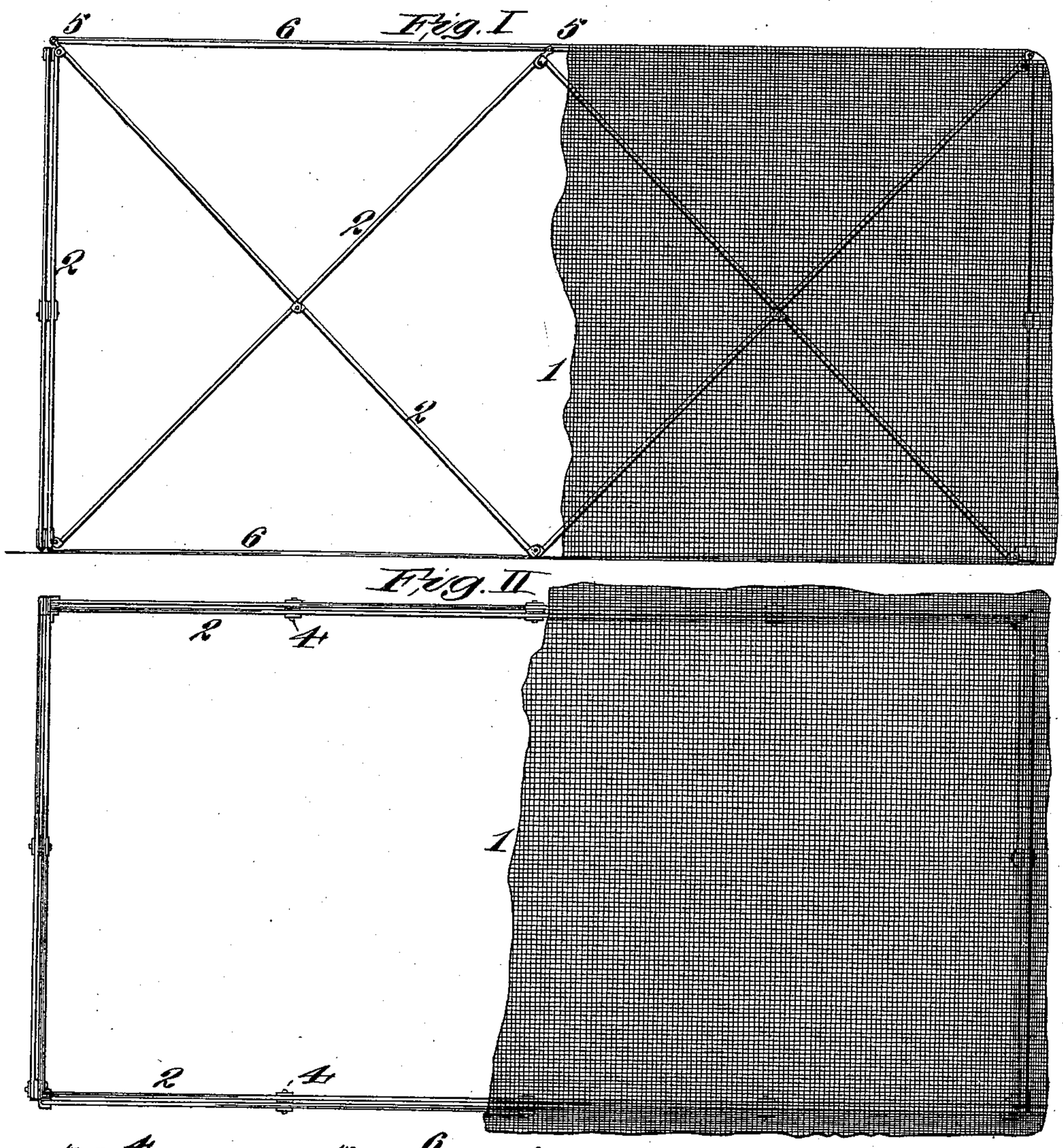


Fig. II

Fig. III

Fig. V

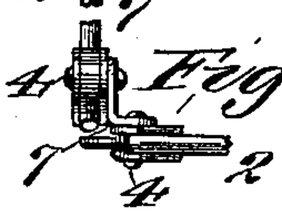


Fig. IV

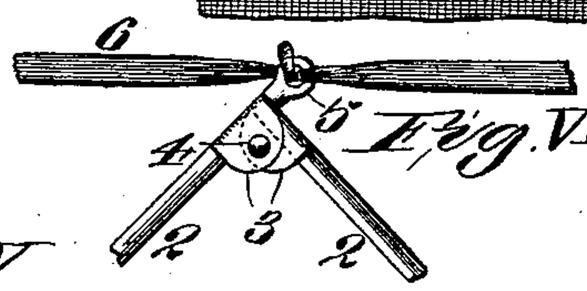


Fig. VI

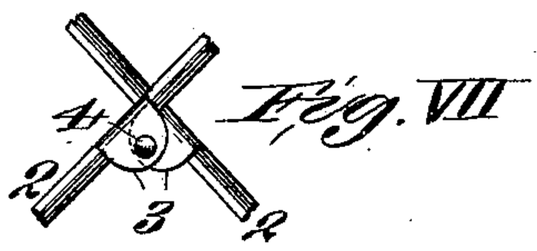


Fig. VII

Witnesses
E. L. Knight
H. Finley.

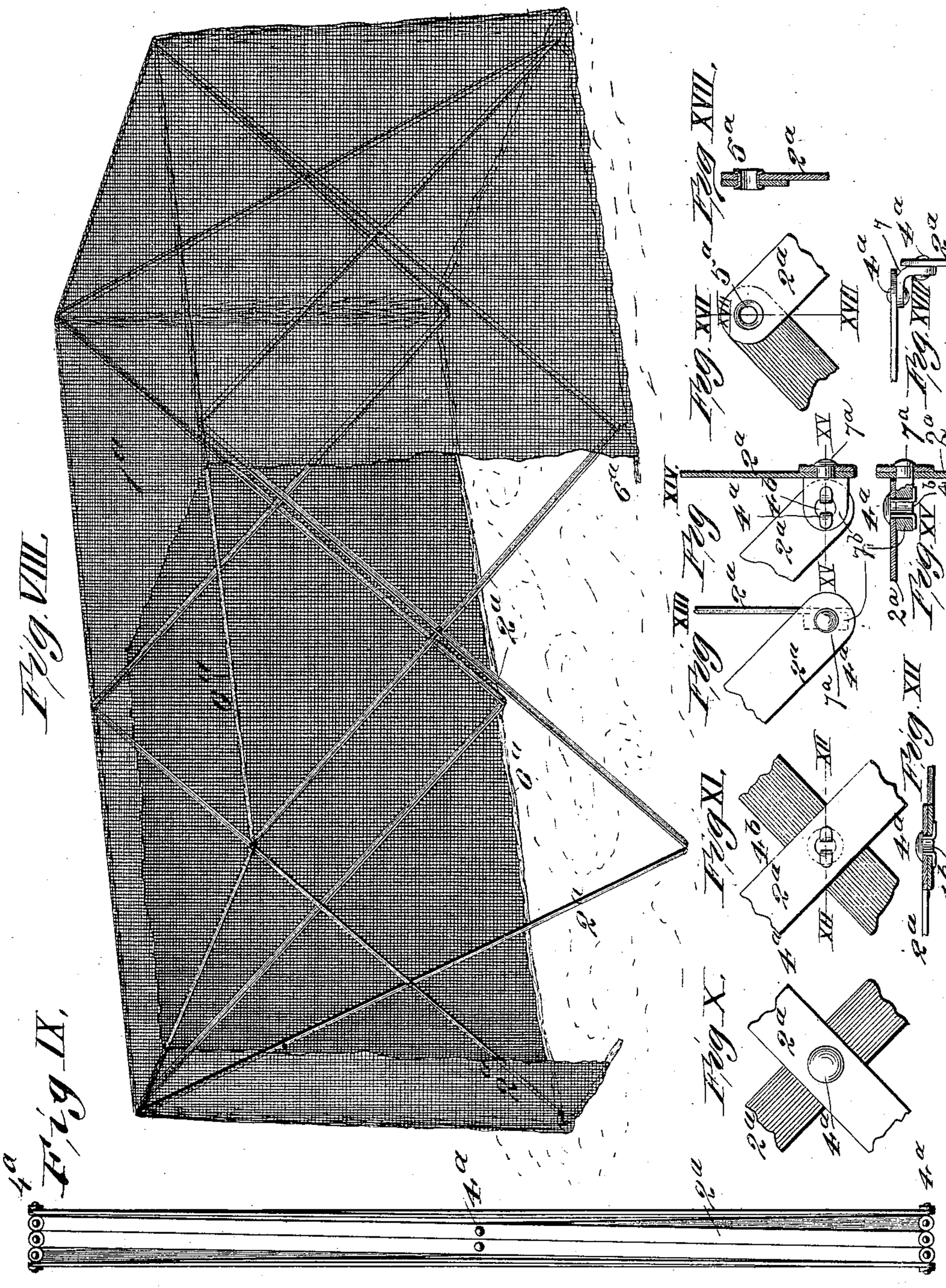
Inventors
Theodore R Heintz
Emma Louise Heintz
By their Attorneys
Knight Bros.

(No Model.) 2 Sheets—Sheet 2.

T. R. & E. L. HEINTZ.

FOLDING FRAME FOR SUPPORTING CANOPIES.

No. 563,375. Patented July 7, 1896.



Witnesses
E. C. Knight
N. Finley.

Inventors
Theodore R. Heintz
Emma Louise Heintz
By their Attorneys
Knight Bro.

UNITED STATES PATENT OFFICE.

THEODORE R. HEINTZ AND EMMA LOUISE HEINTZ, OF CLIFTON TERRACE, ILLINOIS.

FOLDING FRAME FOR SUPPORTING CANOPIES.

SPECIFICATION forming part of Letters Patent No. 563,375, dated July 7, 1896.

Application filed August 17, 1895. Serial No. 559,636. (No model.)

To all whom it may concern:

Be it known that we, THEODORE R. HEINTZ and EMMA LOUISE HEINTZ, citizens of the United States, and residents of Clifton Terrace, Madison county, State of Illinois, have invented a certain new and useful Improvement in Folding Frames for Supporting Canopies, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to a frame designed to support canopies of various kinds, and which is capable of being folded into small compass when not in use and when packed for transportation; and our invention consists in features of novelty hereinafter fully described, and pointed out in claims.

Figure I is a side elevation of our improved frame partly covered with a canopy. Fig. II is a top view. Fig. III is a detail side view of one of the corner-joints. Fig. IV is a detail top view of the joint shown in Fig. III. Fig. V is a detail front view of the joint shown in Fig. III. Fig. VI is a detail side view of one of the intermediate top or bottom joints. Fig. VII is a detail side view of one of the intermediate central joints. Fig. VIII is a perspective view of a modified form of frame. Fig. IX is a side view of the modified form of frame folded. Fig. X is a detail outside view of one of the intermediate joints of the frame shown in Fig. VIII. Fig. XI is a detail view of the opposite side of the joint shown in Fig. X. Fig. XII illustrates a cross-section taken on line XII XII, Fig. XI. Fig. XIII is a detail outside view of one of the corner-joints of the frame shown in Fig. VIII. Fig. XIV is a detail inside view of the joint shown in Fig. XIII. Fig. XV illustrates a cross-section taken on line XV XV, Fig. XIV. Fig. XVI is a detail side view of one of the intermediate top or bottom joints of the frame shown in Fig. VIII. Fig. XVII illustrates a cross-section taken on line XVII XVII, Fig. XVI. Fig. XVIII is a detail top view of one of the corner-joints of the frame shown in Fig. VIII, showing the employment of the connecting-strap shown in joining the corners of the preferred form.

Referring to the drawings, 1 designates a canopy of any nature which it may be desired to support. The canopy shown in the drawings is gauze-cloth, such as is employed as a barrier against mosquitoes and other troublsome insects.

The frame is composed of bars pivoted together on the principle of the lazy-tongs, so that the entire frame may be contracted or expanded to respectively fold it or place it in position to form a support for the canopy.

2 designates the bars, which are provided at each end and at the central portion with lugs 3. The bars cross each other and are connected together by rivets 4, passed through the lugs 3, and at their ends are connected in the same manner.

At each top and bottom joint of the bars, one of the bars preferably extends above the other, and has formed in it an eye 5 for the reception of tapes 6, by means of which the expansion of the frame is limited. The tape may, however, be attached to the bars in any other suitable manner.

To attach the bars to each other at the corners of the frame, we employ a right-angle strap 7, which we connect to the lugs 3 by means of the rivets 4, allowing sufficient play in the joint that it will operate easily, and thus by this arrangement the bars are permitted to move freely at all parts of the frame, and the entire frame can readily be expanded to the position illustrated in Figs. I and II, or contracted into the folded condition illustrated in Fig. IX.

In the modified form of frame illustrated in Figs. VIII to XVII, the bars 2^a are connected at their central crossing by fasteners or rivets 4^a, inserted through openings 4^b in the bodies of the bars, as shown in Figs. X, XI, and XII, and the corner-joints are formed by means of straps 7 at one end, through one end of which rivets 4^a are inserted, as shown in Fig. XVIII, and which at the opposite ends are connected to the right-angularly-disposed bars by means of eye-blocks 7^a, having studs 7^b, which studs are riveted to the bars, as is clearly illustrated in Figs. XIII to XV.

The rivets at the top and bottom joints of the modified form of frame are provided with

central openings in the form of eyelets, thereby forming eyes 5^a, that permit the connection of the tapes 6^a.

We claim as our invention—

1. A canopy-frame comprising vertical side bars, crossed in pairs and riveted together at their crossings, and at their upper ends intermediate of the corners, and right-angle straps to which the ends of the side bars are riveted at the corners; substantially as described.

2. A canopy-frame comprising vertical side bars, crossed in pairs, and having lugs riveted together at their crossings, and at their upper ends intermediate of the corners, and lugs at the corners, and right-angle straps to which the corner-lugs are riveted; substantially as described.

3. A canopy-frame comprising vertical side bars formed with projecting eyes at their upper ends, and crossed in pairs and riveted together at their crossings and at their upper ends intermediate of the corners, and right-angle straps to which the ends of the side bars are riveted at the corners, substantially as described.

4. A canopy-frame comprising vertical side bars formed with projecting eyes at their upper ends, crossed in pairs and having lugs riveted together at their crossings and at their upper ends intermediate of the corners, and lugs at the corners, and right-angle straps to which the corner-lugs are riveted; substantially as described.

THEODORE R. HEINTZ.
EMMA LOUISE HEINTZ.

In presence of—
E. S. KNIGHT,
N. FINLEY.