

(No Model.)

2 Sheets—Sheet 1.

A. W. TOURGEE.

FRAME FOR PORTABLE STRUCTURES.

No. 359,749.

Patented Mar. 22, 1887.

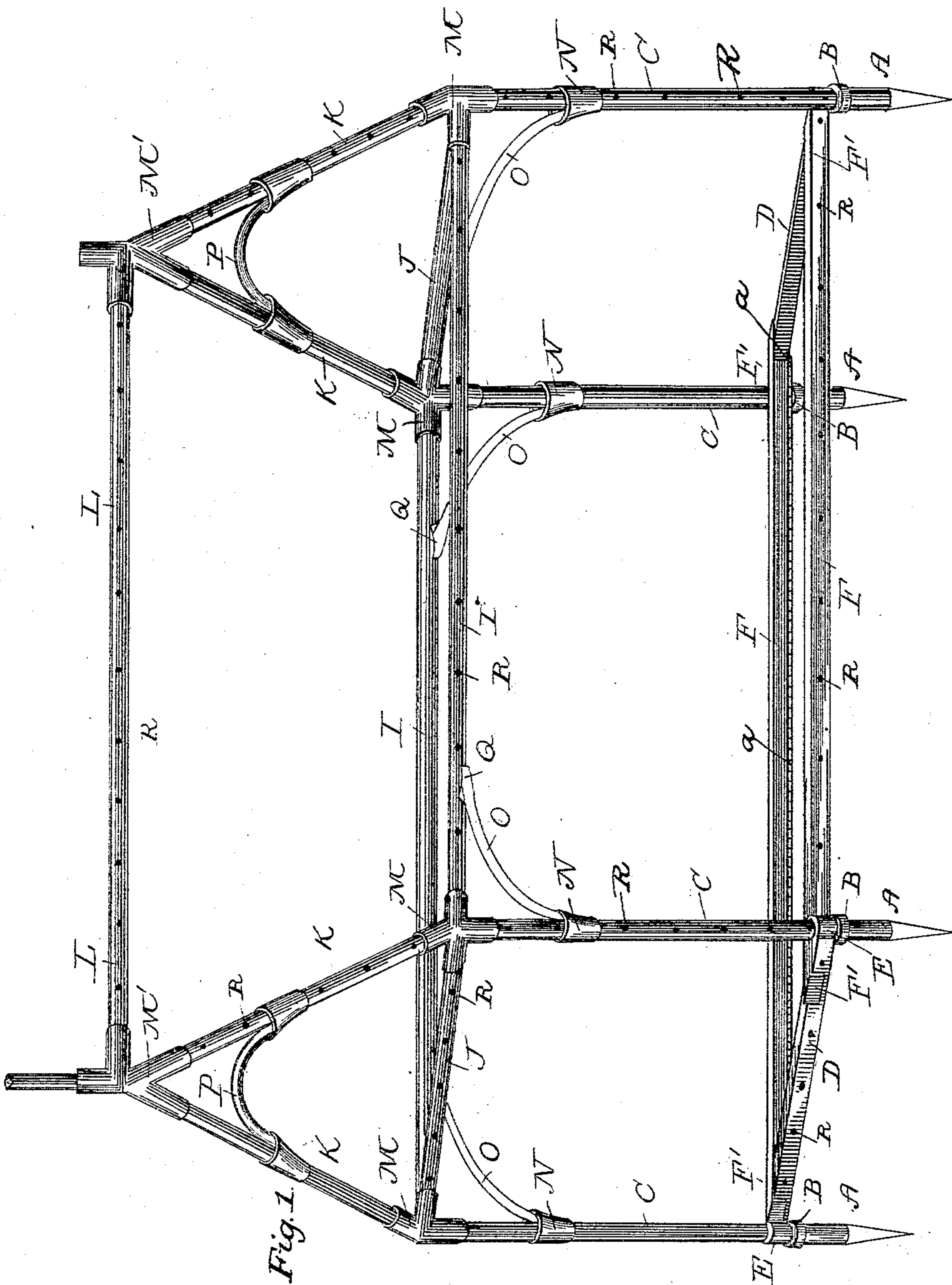


Fig. 1.

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*By Chas. J. Loach.*  
*his attorney.*

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2 Sheets—Sheet 2.

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Fig. 2.

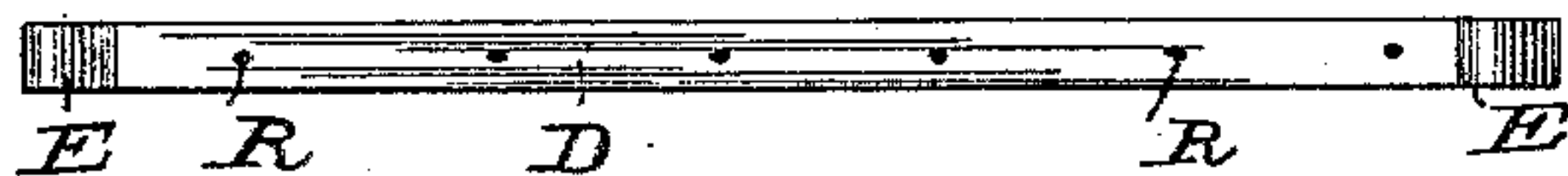


Fig. 3.

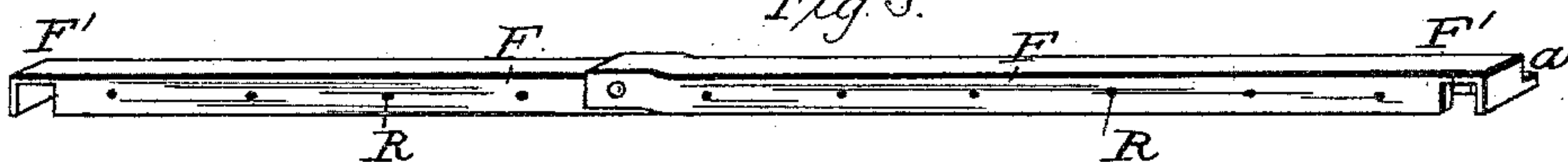


Fig. 4.

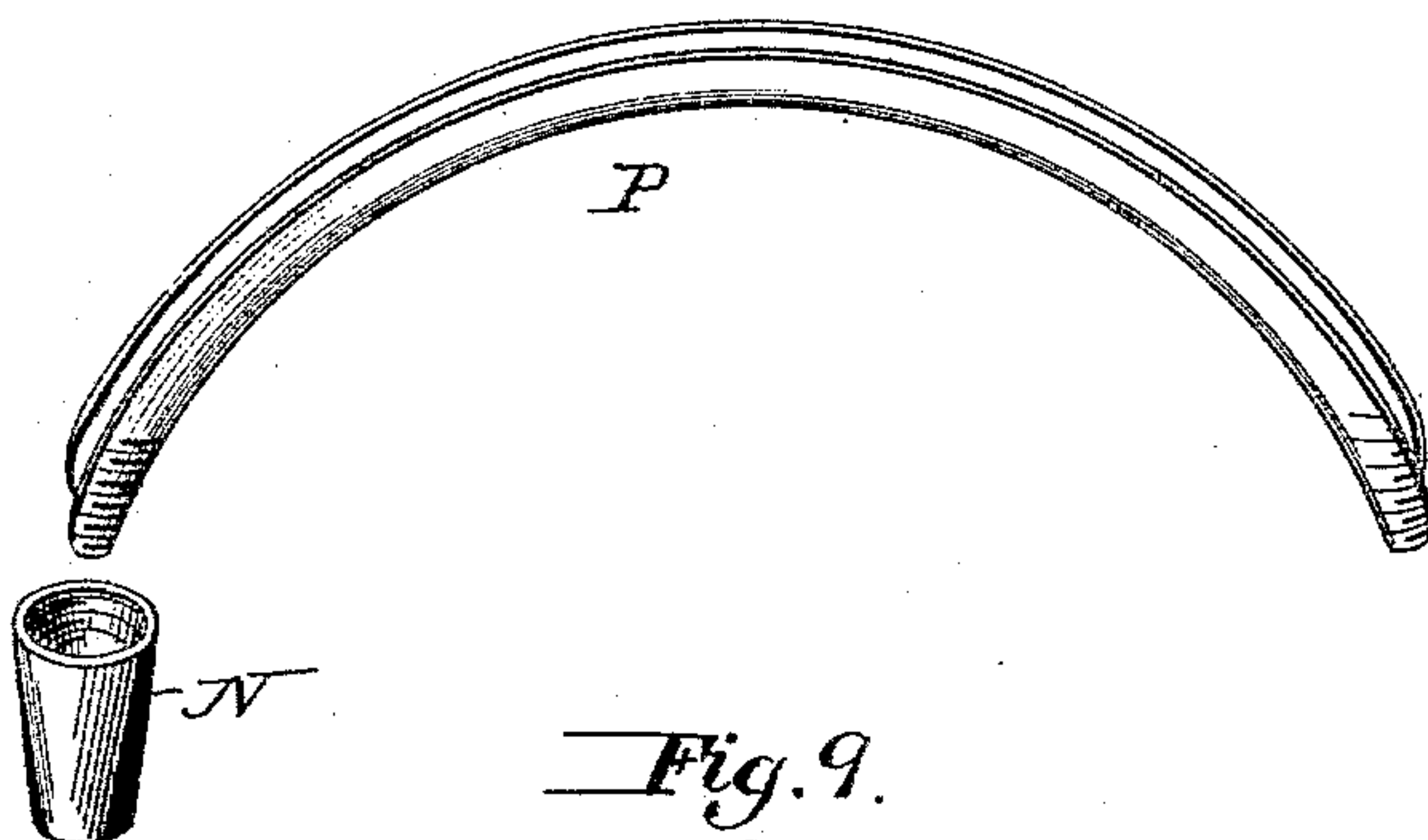


Fig. 9.

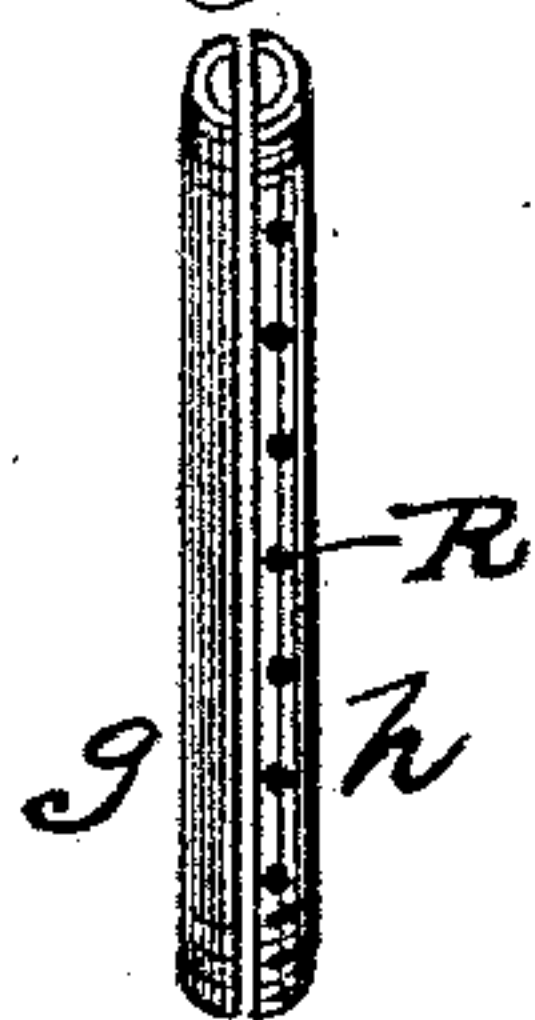


Fig. 6.

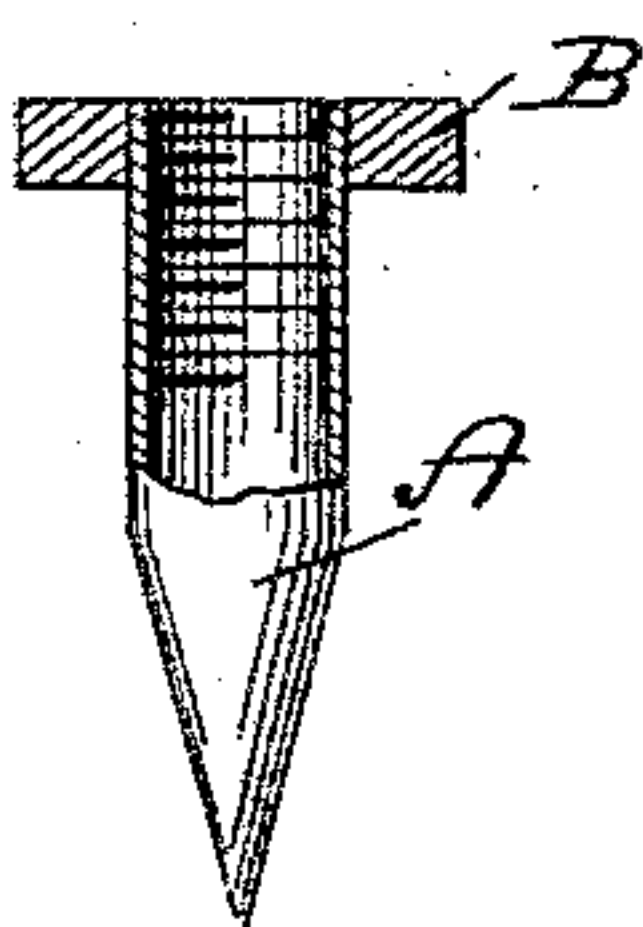


Fig. 5.

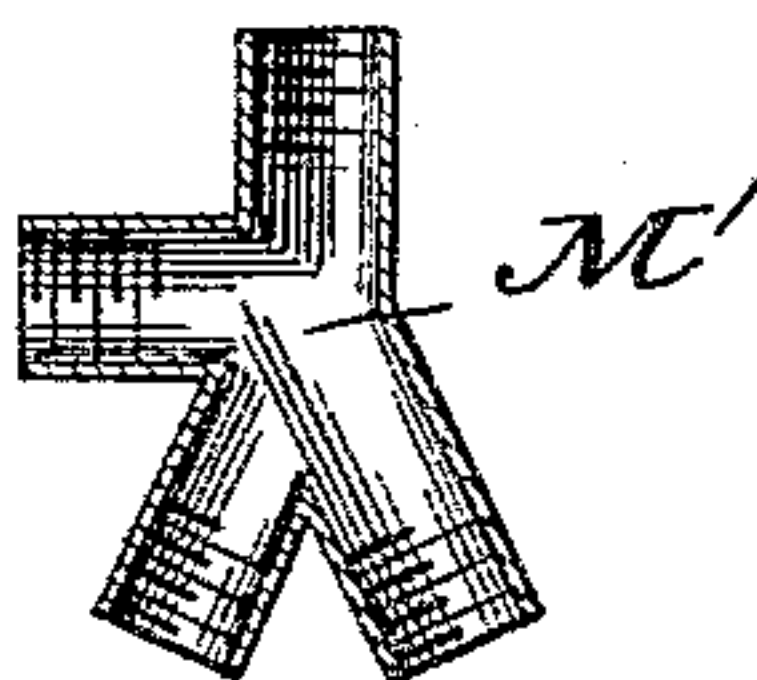


Fig. 7.



Fig. 8.

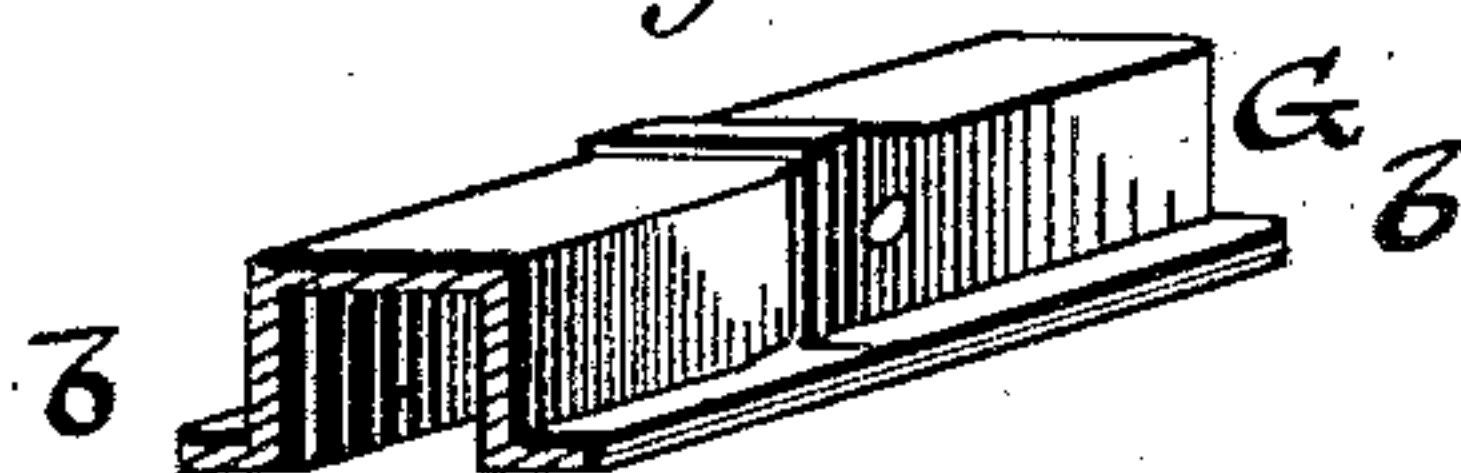
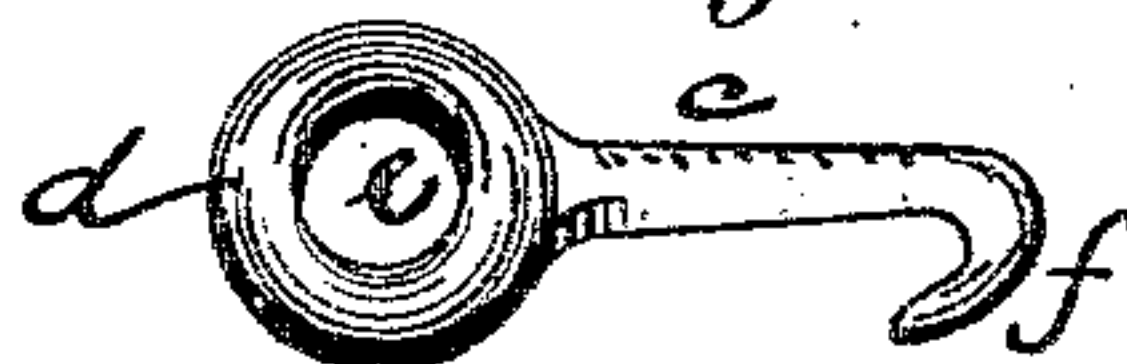


Fig. 10.



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# UNITED STATES PATENT OFFICE.

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## FRAME FOR PORTABLE STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 359,749, dated March 22, 1887.

Application filed April 13, 1886. Serial No. 198,748. (No model.)

*To all whom it may concern:*

Be it known that I, ALBION W. TOURGEE, a citizen of the United States of America, residing at Mayville, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Frames for Portable Structures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to metallic frames for portable houses, tents, barns, and other similar structures.

The frame, according to my invention, is constructed of a series of tubular or semi-tubular rods or bars having screw-threaded or tapering ends, and coupled together at their points of juncture by interiorly-screw-threaded or tapering unions, and braced at suitable portions of the structure by curved braces of semi-circular form in cross-section, and provided with screw-threaded ends, which, when in position, engage thimbles or cups upon the tubular rods or bars, the lower ends of the vertical rods or uprights forming the body of the structure being screwed within screw-threaded sockets in tent-pins, each having at its upper end a circumferential flange or collar, the ends of the structure being braced together by transversely-extending beams of angular shape in cross-section, and having at their respective ends a curved hook-shaped portion, which rests upon the collar or flange on the top of the tent-pins and engages with the adjacent vertical bars or rods, while the sides of the body portion of the structure are braced by similarly-shaped angle beams or bars having curved or hook-shaped ends which engage with the end bracing-beams, all as hereinafter described.

In the accompanying drawings, Figure 1 represents a perspective view of a complete frame constructed according to my invention. Fig. 2 represents a portion of one of the end bracing beams or bars. Fig. 3 represents a similar view of one of the side bracing-beams.

Fig. 4 represents a perspective view of one of the curved braces with connecting-thimbles. Fig. 5 is a vertical section of one of the couplings; Fig. 6, a vertical section of one of the tent-pins. Fig. 7 represents a sectional end view of one of the sills or side beams; Fig. 8, a sectional side view of one of the sleepers; Fig. 9, an elevation of a sectional tubular rod or bar. Fig. 10 represents a preferred form of canvas-attaching hook.

In Fig. 1 of the drawings I have represented a frame suitable either for a tent, small house, barn, or similar structure.

A represents the tent-pins, which are hollow their whole length, or have a socket formed therein, and which at their lower ends may be of taper, pointed, or other suitable form to facilitate their insertion in the ground, and have around their upper portion a circumferential ring or flange, B. These pins are screw-threaded interiorly at their upper portions to receive the screw-threaded lower ends of the tubular metallic rods or bars C, forming the corners or ends of the structure.

D represents metallic beams of angular shape in cross-section, and having at each end a hook-shaped portion, E, which, when said beams are placed in position, rest upon the upper faces of the flanges or rings B and embrace or partly embrace the adjacent tubular end bars, and thus brace the same together.

F represents angularly-shaped side beams or sills, also of metal, and having at their respective ends a hook-shaped portion, F', which hooks are of angular shape, corresponding with and hook over the end bracing-beams, D, thus locking said beams D and F together and effectually bracing the body portion of the structure. These sills have a flange or ledge, a, extending inwardly from their inner faces, on which the sleepers G rest and are supported, the sleepers being provided with outwardly-extending flanges b b, which rest upon the flanges a of the sills. Upon the sleepers G the flooring is laid, said flooring being formed in sections to rest and snugly fit between the sleepers.

The top portion or roof of the frame is composed of tubular horizontal side and end bars, I and J, angularly-extending end bars K, and



ridge-bar L, each of which is screw-threaded at its respective end. The adjacent screw-threaded ends of the bars C, I, J, K, and L are connected together by interiorly-screw-threaded unions or couplings M M', into which the screw-threaded ends of said bars are screwed.

N represents tubular or curved and conically-shaped cups or thimbles, which either slide or are screwed along the bars C and K, and form sockets to receive the lower ends of the curved braces O, bracing the upright bars C and the top side bars, I, together, and the two ends of the curved or arched braces P, bracing the adjacent angularly-extending end bars K. The braces O and P are of semi-cylindrical or U shape in cross-section, of equal width from end to end, and at their respective ends, when in position, embrace and grip the bars with which they are in contact. Screw-threads are formed on the respective ends of these braces O and P, by which, and by forming the thimbles N with interior screw-threads, said thimbles can be adjusted to any desired position upon the tubular bars, and thereby not only permit of braces of different lengths being employed, but insure said braces being held securely in position or readily removed when desired, as the screwing of them up will tighten the braces and hold them firmly in bracing contact with the adjacent bars, while when it is desired to remove said braces such can readily be accomplished by simply unscrewing the thimbles.

R represents holes formed in the tubular bars, within which hooks or buttons attached to the canvas or other frame covering may be inserted for the purpose of securing the proper stretching of the cover upon such frame and its retention in position. At *c* I have represented a preferred form of hook for securing the frame-covering to the frame-bars. This hook is struck up out of sheet metal, preferably with a curved face, *d*, and with a rear eyelet portion, *e*, by which the combined eyelet-hook is sewed or otherwise connected to the frame-covering, and with a front hook-shaped portion, *f*, which engages with the holes in the side bars of the frame. The advantage of using such a construction of combined eyelet and hook is that after the hook *f* has been clasped into a pole or bar another hook, attached by the eyelet *e* to another piece of canvas or frame-covering, may be caught into or engaged with the eyelet of the first-named hook, so as to unite the two sheets of frame-covering.

In the lighter structures—such as ordinary tents—instead of forming the ends of the rods or bars, braces, unions, tent-pins, &c., with screw-threads, those portions may simply be made tapering, so as to fit together by friction, or a portion of such parts may be formed with connecting screw-threads and a portion with tapering connecting portions, as may be desired.

The metallic bars forming the frame of the structure may be either made each of a single

tubular piece of metal or each or any number of said bars may be formed of two semi-cylindrical portions, as represented in Fig. 9, in which case, when the structure is to be built up, the two parts *g h* are placed together edge to edge and inserted into the swaged or threaded unions, thereby being held firmly together and constituting a cylindrical bar. The object of thus constructing the bars of two semi-cylindrical parts is to permit of the two halves being readily packed within each other, so as to economize space and facilitate their transportation.

A frame constructed according to my invention can be very readily and expeditiously built up and disconnected by unskilled workmen, as all that is necessary to build the frame is to first drive the tent-pins A into the ground, then screw within the screw-threaded sockets of said pins the lower ends of the upright bars C, then hook the end bracing bars or beams D upon said upright bars with the hooked ends resting upon the rings or flanges B on the top of the tent-pins, and hook the side bracing-beams, F', upon the end beams D, then connect the unions or couplings M to the upper ends of the uprights C, and screw into said couplings the bars I, J, and K, and apply the couplings M' to the upper ends of the bars K, and then screw the ridge-bar L in the upper arms of said couplings M', and finally apply the braces O and P. When it is desired to take down the frame, the cover is removed, the thimbles and the braces disengaged, the bars I, K, and L removed from the couplings M M', and the couplings M removed from the uprights C, the beams D and E removed from said uprights, which are then unscrewed from the tent-pins and the pins withdrawn from the ground. When so disjointed, the several parts constituting the frame can be assembled and packed into a comparatively small space, rendering its transportation easy and inexpensive. By constructing the bars of metal and in tubular form, and the beams, braces, and thimbles of sheet metal, I am enabled to secure a strong frame of minimum weight and cost.

The several parts, except the tent-pins, which may be malleable castings, may be made of any sheet or other metal, steel being preferred. Instead of forming the bars C I J K L tubular throughout, they may have tubular screw-threaded ends and be of semicircular form in cross-section.

Having thus described my invention, what I claim is—

1. A frame for tents, portable houses, and other structures, composed of a series of hollow metallic bars having screw-threaded ends, tent-pins having screw-threaded sockets, screw-threaded unions adapted to receive and connect the adjacent screw-threaded ends of the frame-bars, horizontal beams adapted to brace the lower portion of the frame, and curved braces adapted to grip the hollow bars, and cups or thimbles connected to said



hollow bars for the purpose of securing said braces in position, substantially as and for the purpose set forth.

2. In a frame for tents, portable houses, and other structures, the combination, with tubular upright bars forming the body portion and having screw-threaded lower ends, of a tent-pin having at its upper portion a screw-threaded socket and a circumferential ring or flange, end bracing-beams having hook-shaped ends to permit of their engaging the uprights, and side bracing-bars or beams having hook-shaped ends adapted to hook over the end bracing-beams, substantially as set forth.

3. A frame for portable structures, having tubular bars provided with perforations or holes to receive the cover-securing devices and threaded ends, threaded couplings for securing said bars together, a series of braces adapted to grip said bars, and thimbles adapted to hold said braces in position, substantially as set forth.

4. In a frame for portable structures, the combination of a series of round bars, unions for coupling the same together, and curved flanged braces adapted to grip and brace said bars in position, substantially as set forth.

5. A frame for portable structures, composed of a series of hollow metallic bars or rods, tent-pins adapted to receive the lower ends of said bars, unions adapted to receive and connect the adjacent ends of the bars constituting the upper portion of the frame, semi-cylindrical curved bracing-bars to engage and partly embrace the frame-bars, thimbles adapted to slide along said frame-bars and clamp the braces in position, and suitable side and end bracing-bars connecting with and

bracing the lower portion of the structure, substantially as set forth.

6. A frame for portable structures, constructed substantially as described, and having flanged sills and flanged sleepers to support the flooring, substantially as set forth.

7. A frame for portable structures, having a series of semi-cylindrical bars, unions or couplings for coupling the ends of the respective sections and securing the same together, a series of braces adapted to grip said bars, and thimbles adapted to hold said braces in position, substantially as set forth.

8. In a frame for portable structures, the semi-tubular bars herein described, in combination with suitable irons or couplings for coupling the respective sections of said bars together, substantially as set forth.

9. In a frame for portable structures, the combination, with the tubular or semi-tubular bars having holes formed therein to permit of the securing of the frame-covering thereto, as herein described, of a suitable covering and a series of eyelet-hooks, each composed of a rear eyelet-shaped portion adapted to be attached to the frame-covering and a front hook-shaped portion adapted to engage either with the holes in the frame-bars or with the eyelet-shaped portion of an adjacent eyelet-hook, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBION W. TOURGEE.

Witnesses:

E. K. TOURGÉE,  
S. E. KILBOURNE.