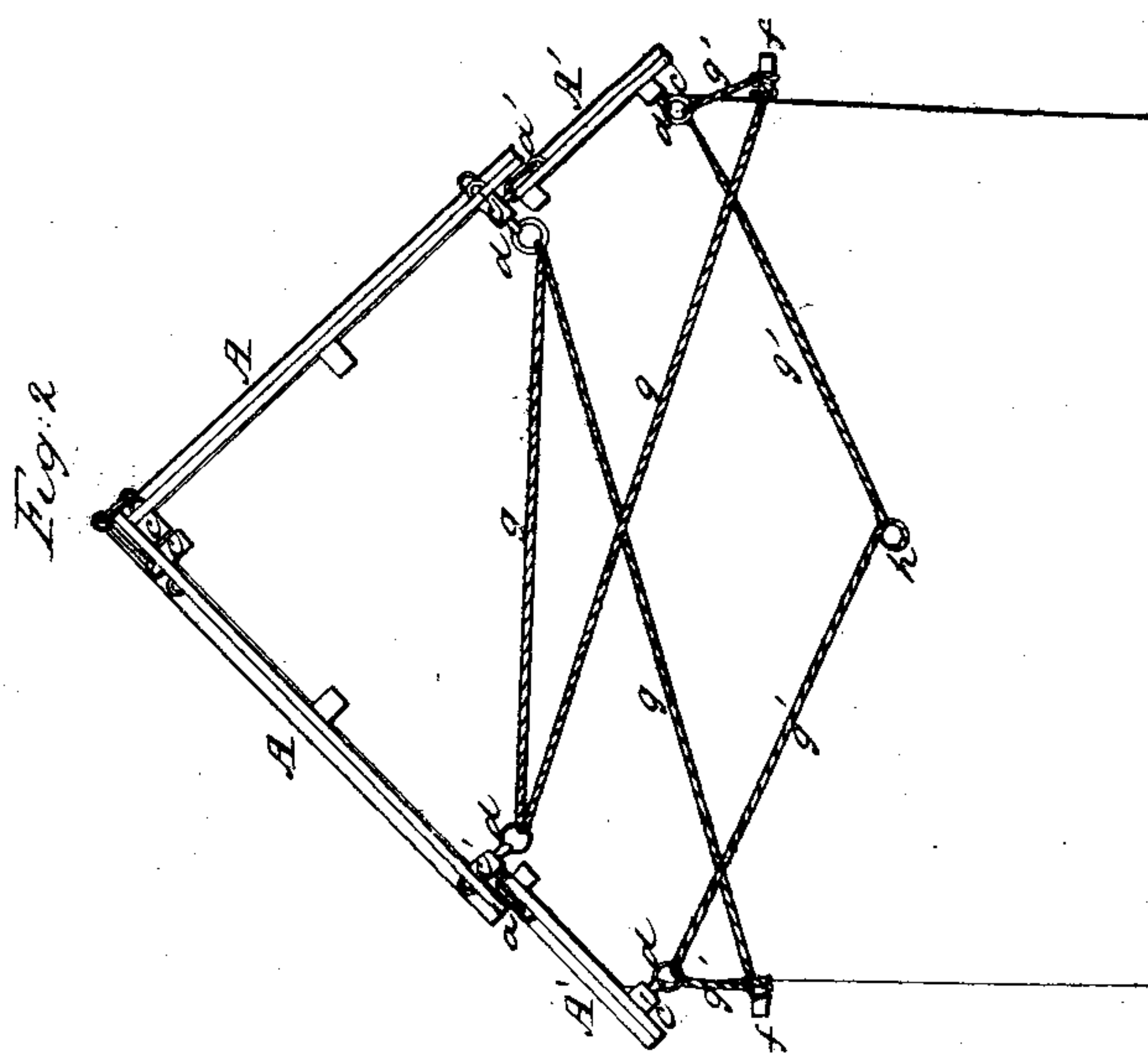
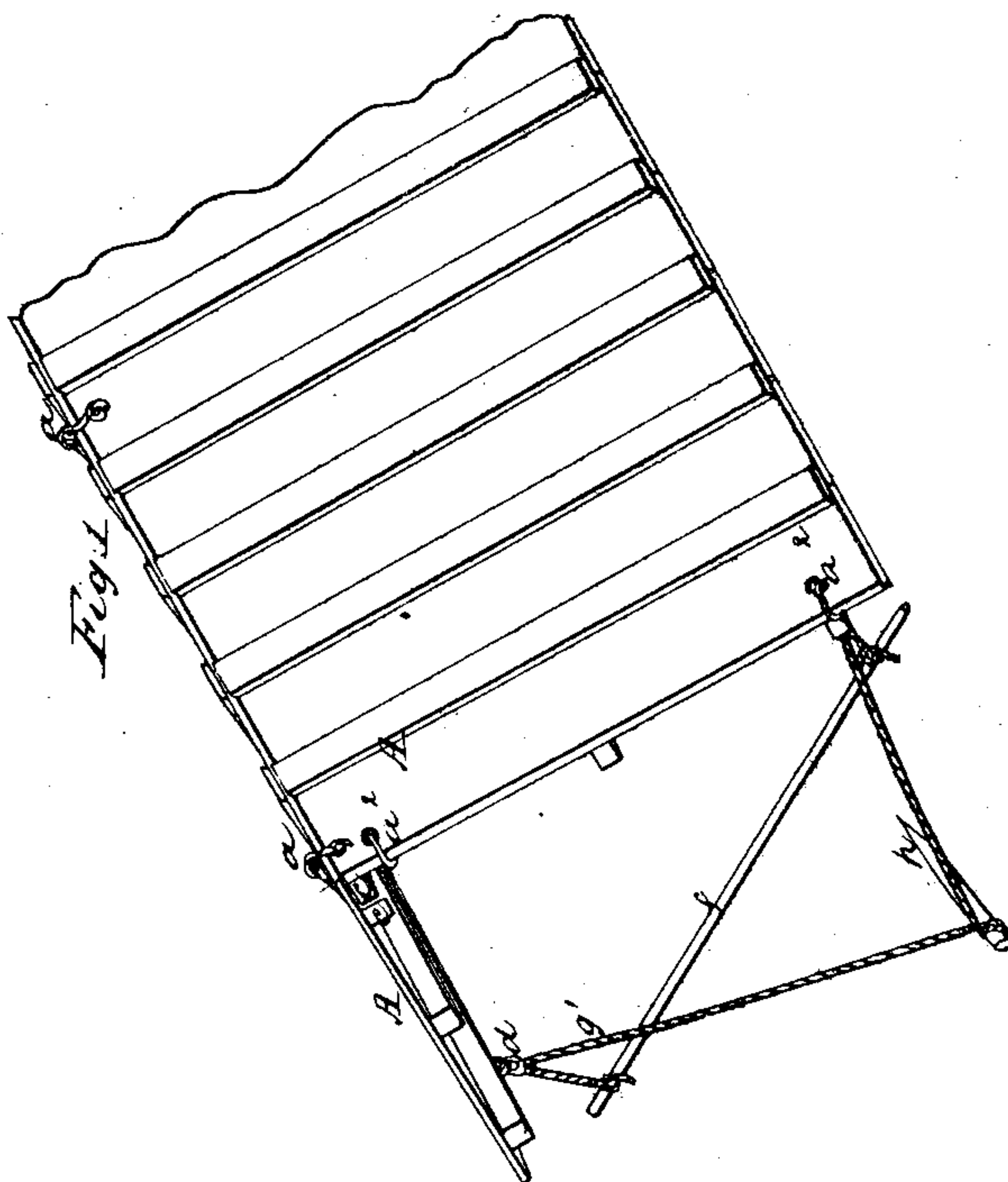


*T. Munson.*

## Portable Roof

*N<sup>o</sup> 80,301.*

*Patented Jul 28, 1868.*



Witnesses  
J. Davis  
H. L. Loomis

Invento  
Hadden Munson  
By J. Fraser & Co  
Attys

United States Patent Office.

THADDEUS MUNSON, OF CANANDAIGUA, NEW YORK.

Letters Patent No. 80,301, dated July 28, 1868.

IMPROVEMENT IN PORTABLE ROOFS FOR HAY-STACKS, &c.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THADDEUS MUNSON, of Canandaigua, in the county of Ontario, and State of New York, have invented a certain new and useful Improvement in Portable Roofs for Hay-Stacks, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a perspective view of my improved roof, and  
Figure 2 an end elevation.

Like letters of reference indicate corresponding parts in both figures.

My invention consists in combining with the sections of the roof, cross-cleats or ties at the top, which brace together, and an arrangement of cords and stakes at the bottom, which bind the roof to the stack, the said sections being connected by hooks, as hereinafter set forth.

In the drawings, A A represent two sections of the roof, connected together by double-jointed hooks,  $a a$ , so as to stride a hay-stack, and A' A' represent extension-sections, connected by hooks  $a' a'$ . The roof may be extended laterally by adding other similar sections by side-hooks  $a^2 a^2$ .

The upper sections, near the top, are provided with cross-cleats, or ties,  $c c$ , projecting inward at right angles, as shown in fig. 2, and resting one against the other, in such a manner that when the angles of the section are brought to the proper pitch, said cleats will brace properly to stiffen the roof.

Other cleats,  $c' c'$ , are employed for strengthening the roof and to the lower ones of each section, A A', at opposite ends, are attached rings  $d d$ .

Bars  $f f$  are also built in, or driven through the stack below the roof, with the ends projecting, as shown in fig. 2.

With the projecting ends of each bar are connected lengths,  $g g'$ , of rope, the length  $g$  crossing upward angularly from each end, and passing loosely through the upper rings, and across, and the length  $g'$  passing from each end, directly upward, through the lower rings, and thence downward, and connecting with a separate stake,  $h$ , which, when the rope is properly strained, is driven into the side of the stack.

By connecting the sections together by hooks, as described, I am enabled to extend or contract the roof to the degree desired.

A special feature of novelty consists in the combination of the angular bracing-cleats  $c c$  at the top, with the arrangement of the binding-ropes at the bottom. These parts have a mutual action upon each other. If wind or other force is applied upward, the tendency of the ropes is to close or contract the sections of the roof by the toggle-action of the said ropes, and the cleats  $c c$  are thus brought together in a bracing position, which renders the roof stiff and rigid throughout. Were it not for this the roof would be loose and irregular in its action, and the wind would disengage the hooks, and the parts would easily become detached.

The arrangement and connection of the ropes with the double sections A A' also present some features of advantage.

The length  $g'$ , with stake  $h$ , allows the lower sections to be drawn down firmly, and when wind is applied, not only do these lengths bind closer by the toggle-action, but also the lengths  $g$  draw the central portion of the roofing down in the same manner. By these means the roofing is made to rest closely to the stack in all portions, which, combined with the stiffeners produced by cleats  $c c$ , is effective in retaining it in place.

I am aware that various forms of portable roof, made in sections attached together, have been before used. Such I do not claim broadly.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with the sections A A', connected by hooks  $a a' a^2$ , of the bracing-cleats  $c c$ , at the top, and the cords  $g g'$  at the bottom, passing loosely through the rings  $d d$ , and attached to the bars  $f f$  and stakes  $h$ , the whole arranged as described, and operating in the manner and for the purpose set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

THADDEUS MUNSON.

Witnesses:

R. F. OSGOOD,

J. A. DAVIS.