W. H. IRVINE.

ADJUSTABLE SEAT OR THE LIKE.

APPLICATION FILED MAR. 17, 1911.

998,689.

Patented July 25, 1911.

2 SHEETS—SHEET 1.

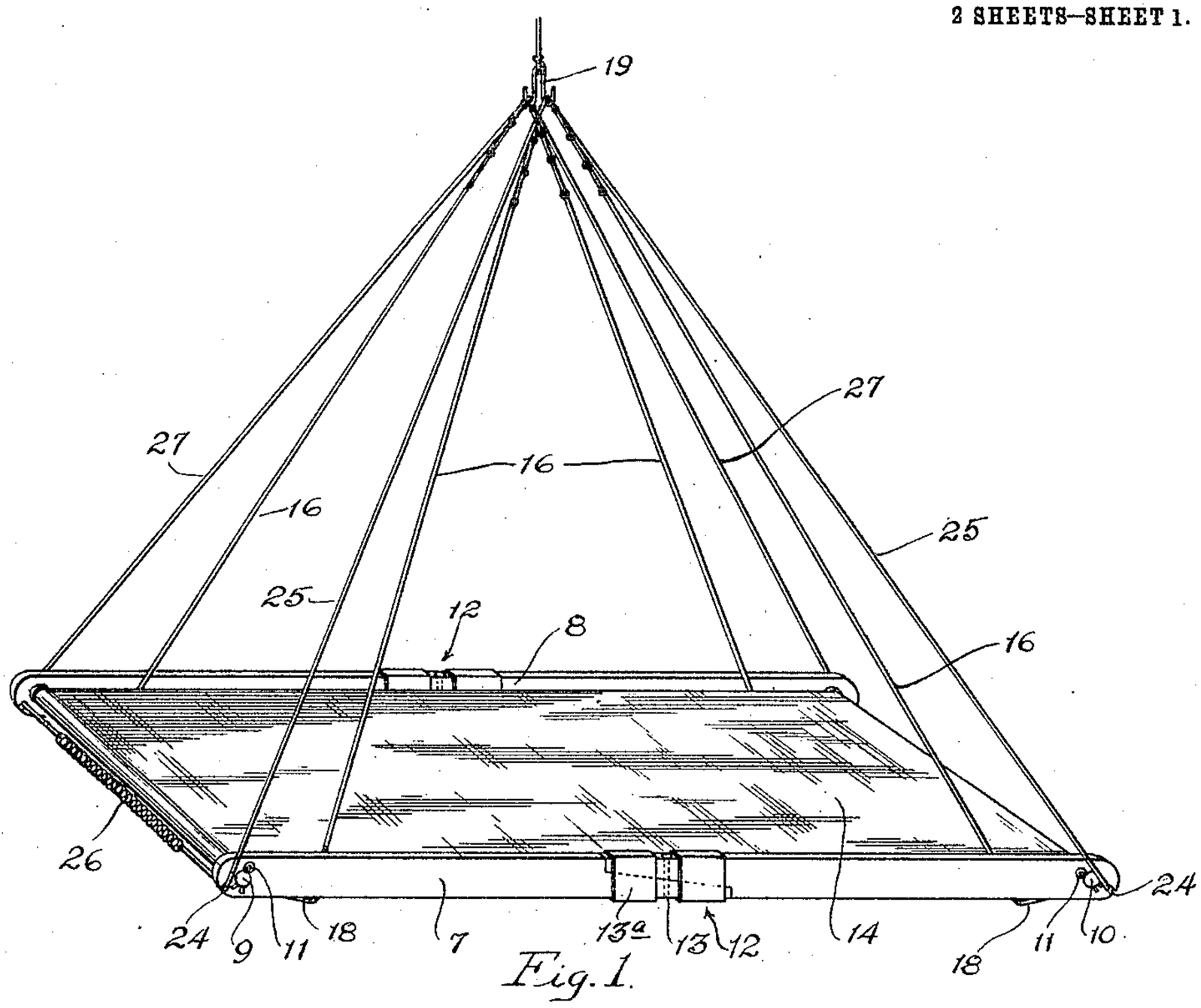

Fig. 1.

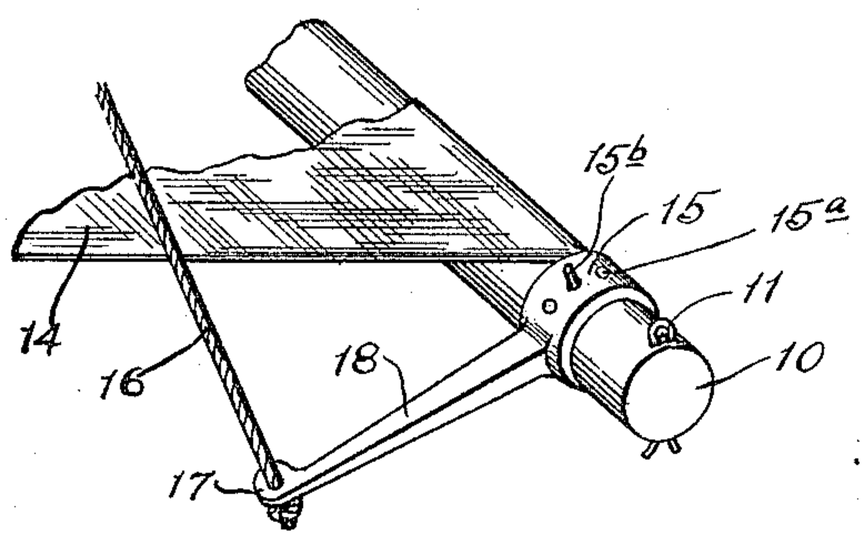

Fig. 3.

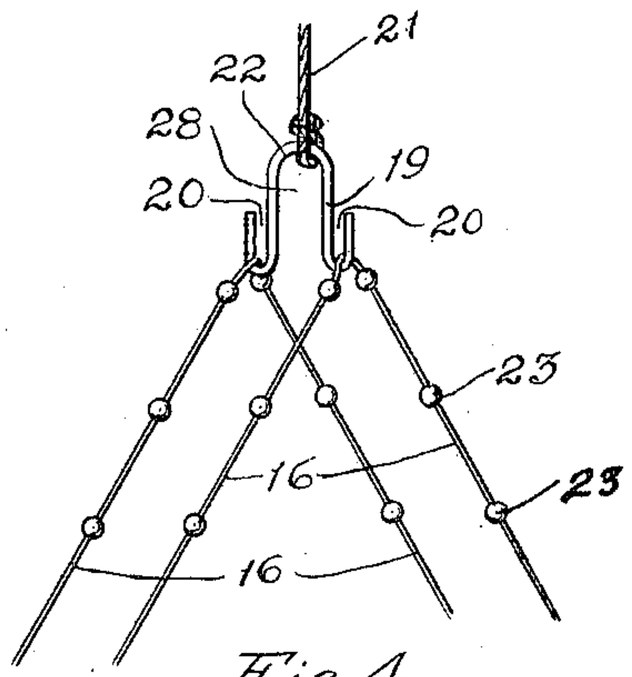

Fig. 4.

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2 SHEETS—SHEET 2.

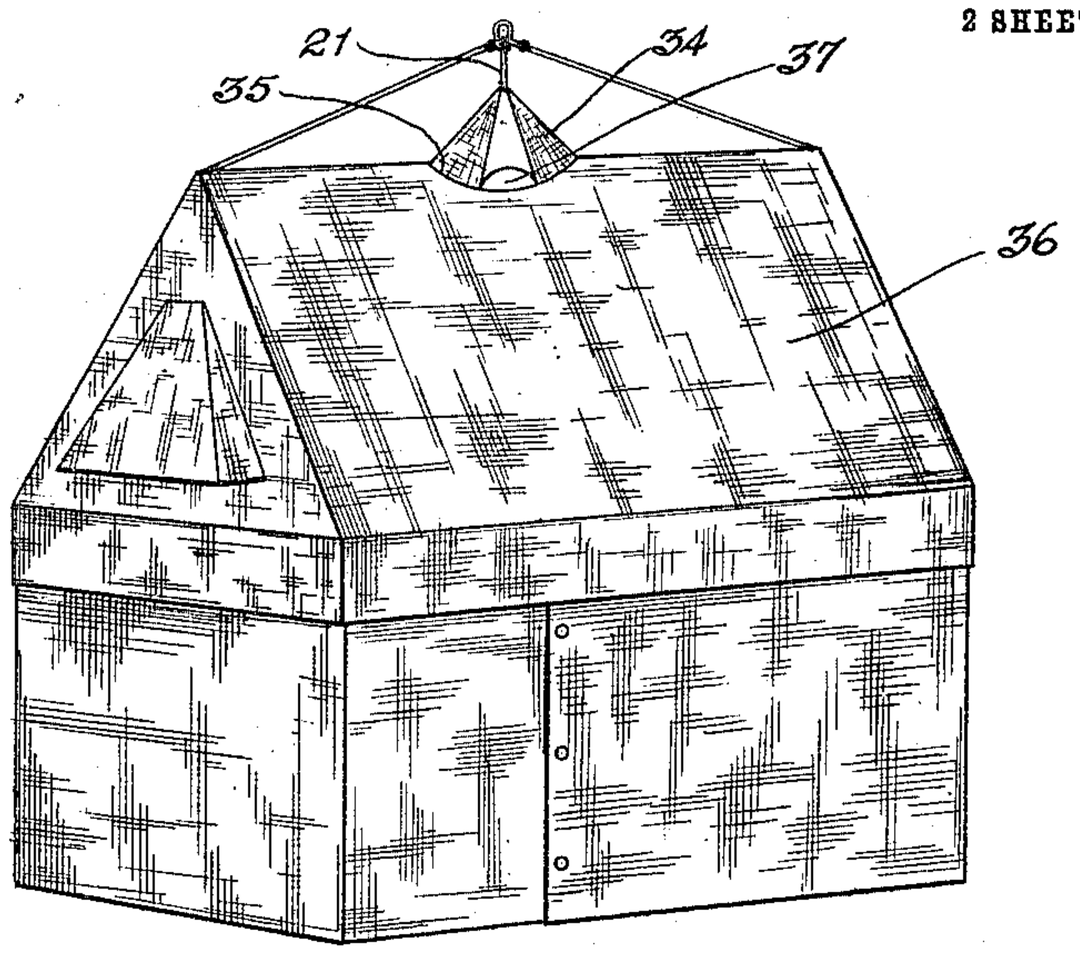

Fig. 6.

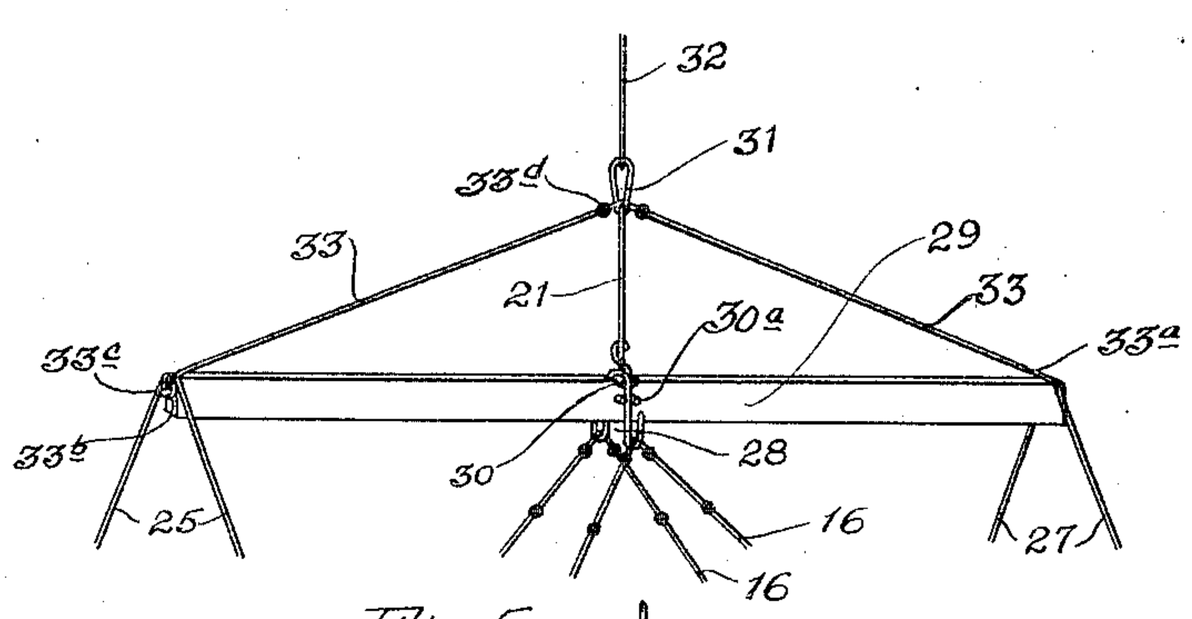

Fig. 5.

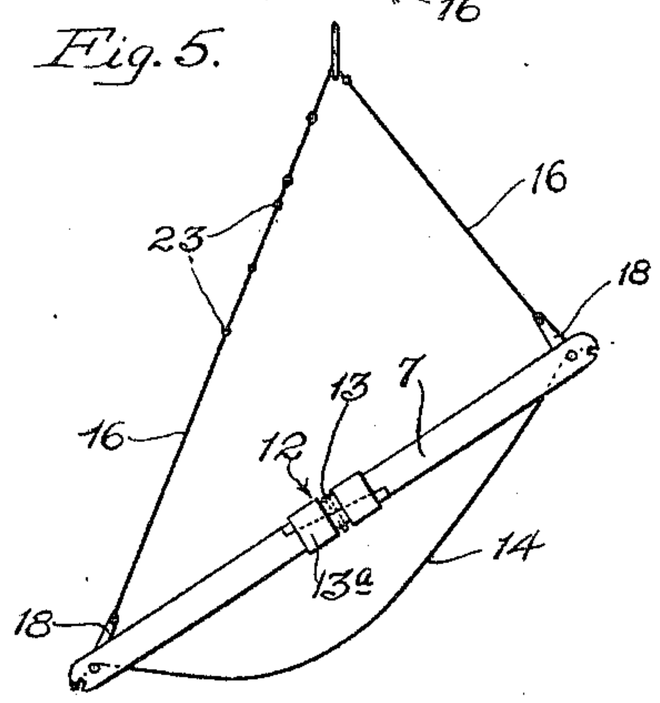

Fig. 2.

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE SEAT OR THE LIKE.

998,689. Specification of Letters Patent. **Patented July 25, 1911.**

Application filed March 17, 1911. Serial No. 615,105.

To all whom it may concern:

Be it known that I, WILSON H. IRVINE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Adjustable Seats or the Like, of which the following is a specification.

This invention relates particularly to an outing seat which is provided with a bottom of canvas or other similar material so mounted that the amount of slack in the same may be adjusted, or may be entirely removed, in which case it is well adapted for use as a cot or bed, when properly suspended.

The invention further relates to the manner of suspending the device, so that when the same is used as a seat, the angle of support may be instantly and perfectly adjusted, and so that when the device has once been adjusted to a given angle, it will retain the same until again adjusted.

The invention further relates to a construction of device, which may be used in combination with a tent cover, such a combination being particularly desirable when the device is to be used as an out-door bed.

Objects of the invention are to provide a seat or the like having a cloth bottom, the slack of which may be adjusted; to provide means for suspending the device when it is used as a seat in such manner that it will always maintain the proper angle; to provide a device of such construction that when used as a suspended cot, the slack may be entirely removed from the bottom by placing the same under tension; to so form the device that the amount of tension in the bottom will automatically or naturally increase with an increase of weight on the same; to provide a form of suspending hook peculiarly adapted to the present use; to form said hook in such a way that it will also be peculiarly adapted to the reception of a ridge pole when the tent is to be placed over the device; to provide ropes or the like adapted to constitute the corners of the tent when the same is used, and to so support these ropes that they will maintain a substantially constant tension, regardless of slight vertical adjustments which occur from throwing a weight onto the device; and in other ways and manners to provide a device of this character peculiarly adapted to meet all of the foregoing as well as other conditions.

Other objects and uses will appear from a detailed description of the invention which consists in the features of construction and combination of parts hereinafter described and claimed.

Referring now to the drawings, in Figure 1, I show the device as it would be supported for use as a suspended cot, the ropes adapted to constitute the corners of a tent being in place, but no tent cover being provided; in Fig. 2, I show the device as it would be suspended for use as a seat, the necessary slack being provided in the bottom; in Fig. 3, I show a detail of the end portion of one of the rollers and associated parts, showing how the tension in the canvas bottom is naturally increased by an increase of weight on the same; in Fig. 4, I show a detail of the supporting hook and the upper portions of the suspending ropes, showing the manner in which the latter may be exactly positioned in the hook by means of knots; in Fig. 5, I show a detail of the hook and the ridge pole inserted in the same, the latter adapted to constitute the ridge pole of the tent; and in Fig. 6, I show an exterior view of the device, when used as a tent.

In the embodiment of my invention, I provide a frame, having at its ends a pair of rollers, to which are attached the ends of a canvas or other similar seat. The amount of slack in the seat or bottom can be adjusted by rotating the rollers in the proper direction. To each roller, I attach an arm or arms, which may act as levers for rotating the rollers, and to the ends of these arms, I attach the supporting ropes. When the parts are so related, that the bottom is taut, while the arms are out of line from the supporting ropes, then the tension on the ropes tends to rotate the rollers, thereby increasing the tension on the bottom. When, however, the arms occupy a position in line with the suspending ropes, then there exists no tendency to rotate the rollers, and the slack in the bottom remains unchanged. Each of the suspending ropes is hooked onto a peculiar shaped hook, and is provided with a plurality of knots so ar-

ranged that the ropes are prevented from slipping back and forth in the hook to any material extent, thus holding the frame at the proper angle at all times. The aforementioned suspending hook is so formed that it is peculiarly adapted to the reception of a ridge pole which may be used when a tent cover is to be placed over the device. Ropes are then provided which extend upwardly from the corners of the frame to the ridge pole, and spring tension means are provided for maintaining a substantially constant tension on said ropes, regardless of vertical movement which may take place in the frame. These ropes, under spring tension, are adapted to constitute the corners of a tent structure, when the same is used, and they serve to draw the walls of the tent under sufficient tension to keep them smooth and tight at all times.

Referring now to the drawings, the frame of my device comprises a pair of side rails 7 and 8 with a pair of end rollers 9 and 10. The latter are suitably pivoted in the side rails, and are normally held in place by means of split pins 11. By drawing these pins, the frame may be completely disassembled, or by drawing the pins of one roller only, the latter may be adjusted as will hereinafter appear. When desired, each of the rails 7 and 8 may be jointed near its central portion by a fish joint 12, provided with a pin 13. By drawing the pin, the separate portions of the rail may be pulled out from the bands 13[a] for purposes of packing or shipment.

The ends of a canvas or other similar bottom 14 are secured to the rollers, so that by rotating the latter, the amount of slack in the bottom can be adjusted. To each end of each roller, I secure a sleeve 15, which is provided with a number of holes 15[a] and which carries an arm 18. A pin 15[b] may be passed through one of the holes 15[a] and registered with a suitable hole in the roller, thus permitting me to adjust the armed sleeve in any angular position desired on the roller. Supporting ropes 16 are then secured to the outer ends 17 of the arms 18 of these sleeves. The sleeves 15 also serve to prevent end-wise movement of the rails with respect to the rollers. That is, the positions of the rails on the rollers are determined by the sleeves and the split pins.

The suspending ropes 16 pass up and through the loops of a hook 19, the preferred construction of which will be presently described. By properly positioning the sleeves on the rollers, it is seen that the arms will occupy a position substantially at right angles to the line of tension in the ropes when the bottom is tightly stretched, as shown in Fig. 1. This being the case, any weight thrown on the seat will tend to rotate the rollers, which, in turn, will tend to tighten the bottom 14; thus the amount of tension in said bottom is automatically and entirely adjusted according to requirements.

Referring to Fig. 4, I show in detail the form of the hook, which is illustrated in Fig. 1. It is W-shaped, and the suspending ropes 16 pass through loops 20 of the hook. The entire device may be supported by means of a rope 21, connected to the middle portion 22 of the hook, in which case, the parts will be evenly balanced.

In order to permit the angle at which the device is supported to be adjusted, I provide a series of knots 23, on each of the suspending ropes 16, which knots prevent the ropes from slipping back and forth after they have been once adjusted in the hook.

Referring now to Fig. 2, I will describe the device as it may be used for a chair. In this case, it is desired to provide a certain amount of slack in the bottom 14. This may be done by withdrawing the pins 11, first from one roller, sliding the rails off from the ends of the roller, and then rotating the latter backward a sufficient amount to provide some of the slack desired in the bottom of the chair. After the rails have been replaced, the operation may be repeated on the other roller if desired, so that eventually a sufficient amount of slack will be provided in the bottom, and when the chair is suspended, the arms 18 will occupy positions in line with the suspending ropes 16.

I will now describe the device as it may be used for a sleeping cot, provided with a tent cover. The end portion of each rail is provided with a notch 24, adapted to receive a rope 25, which will serve to brace the corners of the tent. One end of this rope is attached to one end of a spring 26, the rope then passing through the notch at one end of the rail, up through one of the loops 20 of the hook, down through the notch at the other end of the rail, and its end is then attached to one end of another spring similar to the spring 26. A corresponding rope 27 is similarly attached to the other ends of the springs, and serves to reinforce the other corners of the tent. It will be observed that, as the weight on the device changes, there will be a certain amount of up and down movement with respect to the hook 19. Of course, this will be compensated for by the springs 26, so that the ropes which reinforce the corners of the tent will always be kept under proper tension. Obviously, a tent for use with the device, as illustrated in Fig. 1, would be a pyramidal tent, and no ridge pole would be necessary.

In Figs. 5 and 6, I illustrate the device as it may be used in conjunction with a triangular tent, in which case a ridge pole is necessary. The central loop 28 of the hook

19 is of proper width to receive a ridge pole 29. The latter is of length substantially equal to that of the rails 7 and 8, and is notched in its upper face at the point 30, so that it will remain properly centered at all times. Pins 30[a] on the ridge pole at each side of the hook also serve to prevent endwise displacement of the ridge pole. An oval-shaped ring 31 is directly suspended from the supporting rope 32, and the rope 21 in this case extends from the ring 31 down to the middle portion of the W-shaped hook. A reinforcing rope 33 has its end 33[a] fastened to one end of the ridge pole, its other end being provided with a ring 33[b], which may be hooked over a pin 33[c] on the other end of the ridge pole. The ring 31 is of sufficient depth to permit the ring 33[c] to be passed through it for the purpose of removing the ridge pole. Knots 33[d] serve to prevent the rope 33 from slipping back and forth in the ring 31 to any material extent.

As illustrated in Fig. 6, the tent may be provided with a cone-shaped protector 34 at the point where the rope 21 passes through the roof. This protector may be reinforced in its lower portion 35 by a wire having sufficient stiffness to hold the lower edge of the protector in proper shape and in close engagement with the roof 36 of the tent. By reinforcing the lower edge of the protector, it may be shaped to provide a ventilating opening 37 adjacent the tent roof.

Where in the specification and claims, I use the term knots, it will be understood that I in no wise limit myself to knots in the literal sense of the word, but that I include also any form of equivalent device for preventing the rope from slipping back and forth either in the hook 19 or the ring 31. It will also be noted that by forming the ring 31 of oval-shape and supporting it with its narrow end downward, the knots 33[d] are prevented from slipping back and forth, while, at the same time, sufficient width is provided in the upper portion of the ring to permit the ring 33[b] and the knot of the rope 33 tied into the same to pass through the ring 31.

I claim:

1. In a device of the class described, the combination of a frame work, end rollers in the same, a flexible bottom having its ends secured to the rollers, and supporting means secured to the rollers and of such formation that the rollers are rotated to place the flexible bottom under tension, substantially as described.

2. In a device of the class described, the combination of a frame work, a pair of end rollers in the same, a flexible bottom having its ends secured to the rollers, lever arms on the rollers, and supporting means secured to the lever arms, substantially as described.

3. In a device of the class described, the combination of a framework, end rollers in the same, a flexible bottom having its ends secured to the rollers, lever arms secured to the rollers, and supporting means secured to the lever arms, the lever arms being so disposed on the rollers as to occupy positions out of line from the forces in the supporting means when the flexible bottom is under tension, substantially as described.

4. In a device of the class described, the combination of a frame work, end rollers in the same, a flexible bottom having its ends secured to the rollers, sleeves on the rollers, arms on the sleeves, means for angularly positioning sleeves on the rollers, and supporting means secured to the arms on the sleeves, substantially as described.

5. In a device of the class described, the combination of a pair of side rails, transverse rollers passing through the ends of the rails, sleeves on the rollers adjacent the inner faces of the rails, outwardly projecting arms on the sleeves, means for maintaining the rails against endwise movement on the transverse rollers, a flexible bottom having its ends secured to the rollers, and suitable supporting means secured to the outwardly extending arms, substantially as described.

6. In a device of the class described, the combination of a framework provided with a pair of transverse end rollers, a flexible bottom having the ends thereof secured to the rollers, means for adjusting the amount of slack in said flexible bottom, a supporting hook and supporting ropes secured to the corners of the framework and passing through loops of the hook, and means on the ropes for maintaining the same substantially in fixed position in the loops of the hook to maintain the framework in substantially fixed angular position, substantially as described.

7. In a device of the class described, the combination of a frame work, a flexible bottom in the same, a W-shaped supporting hook having its side loops of width substantially equal to that of the supporting ropes, supporting ropes secured to the frame work and passed through the side loops of the W-shaped hook, and knots on said ropes for maintaining the same against end-wise movement through the loops of the hook, substantially as described.

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