June 7, 1955 F. M. POWERS ET AL 2,710,012

TENT

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Fig. 1.

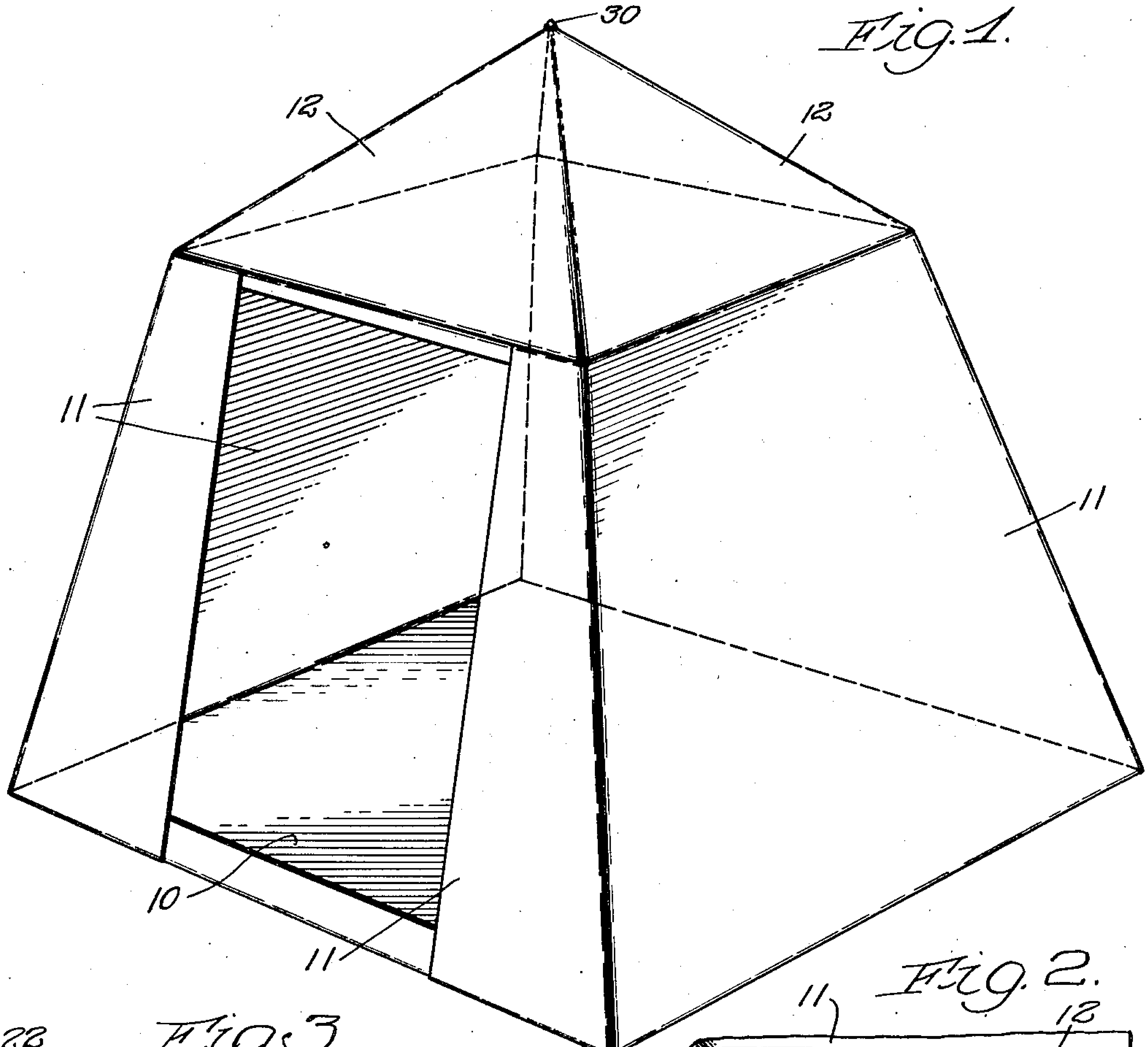

Fig. 2.

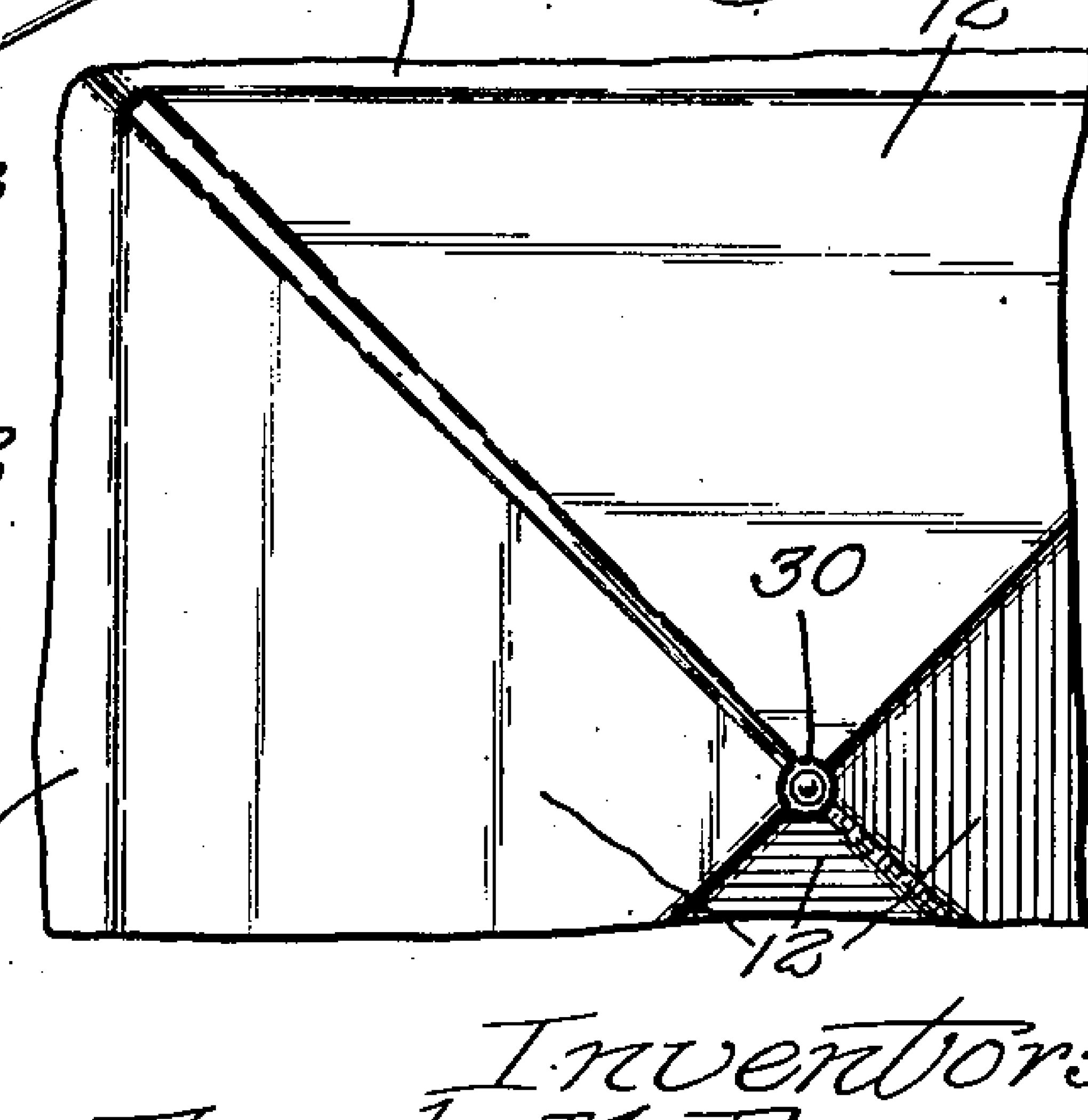

Fig. 3.

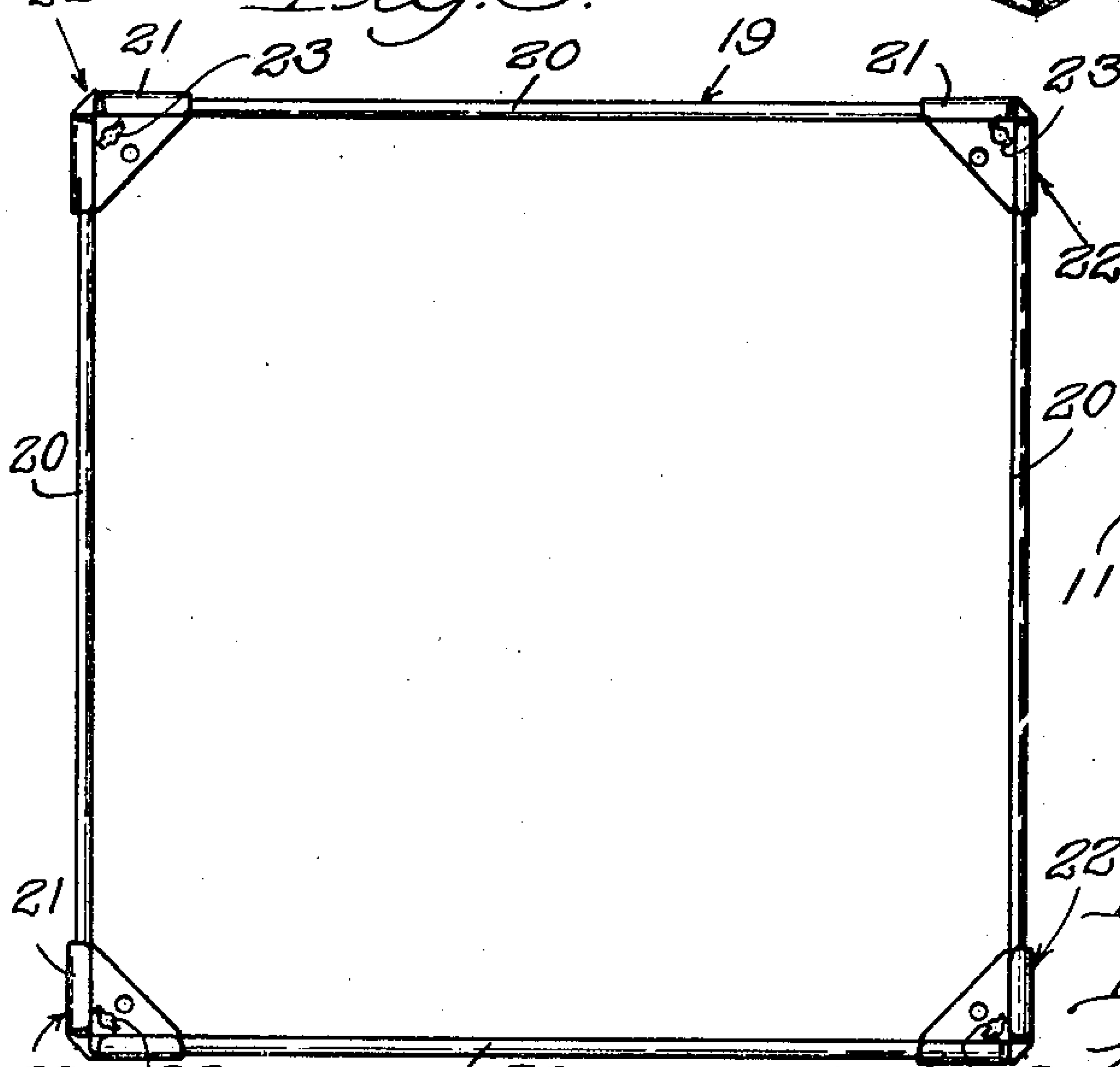

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Fig. 5.

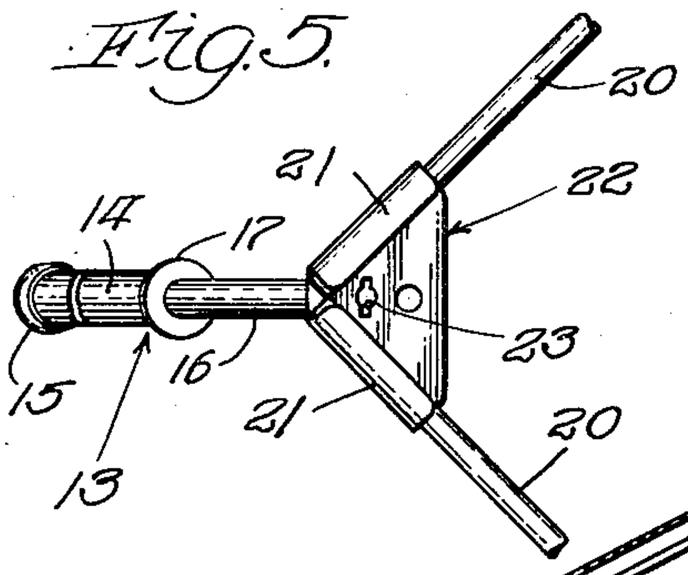

Fig. 4.

Fig. 7.

Fig. 6.

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TENT

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Application September 27, 1951, Serial No. 248,536

4 Claims. (Cl. 135—4)

This invention relates to an improved tent, and in particular, it relates to an improved collapsible supporting structure for a tent of the so-called umbrella type, by means of which a center pole for the tent is eliminated.

The conventional umbrella tent has four walls, arranged to form a frustum of a pyramid, and a pyramidal top surmounting the walls and extending upwardly therefrom. The length of the upwardly extending edges of the top is less than that of the walls, but nevertheless is a substantial fraction of that length.

The customary arrangement for maintaining such a tent in its erected position is a center pole, thrusting against the peak of the tent; and either outside guy ropes extending from the upper corners of the walls, or an internal frame at the intersection between the walls and top, together with guy ropes from the peak to the frame.

It has also been known to employ a sort of stub center pole in conjunction with poles around the periphery of the tent, the stub pole extending downwardly from the peak for about two feet and serving the same function as the central shaft of an umbrella in stretching the tent peak.

Neither of the above arrangements is entirely satisfactory, because, in the first type, the center pole is in the way when the tent is in use; and in the second type, the stub center pole extends downwardly a sufficient distance that it is at head level for moderately tall people.

By means of the present invention, both the full center pole and the stub center pole are completely eliminated, and the entire supporting framework for the tent is disposed immediately inside the walls so as to leave full floor space and head clearance.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which Fig. 1 is a perspective of an umbrella tent of the conventional type; Fig. 2 is a fragmentary top plan view of such a tent; Fig. 3 is a plan view of the frame for the improved supporting structure; Fig. 4 is a fragmentary vertical section through a tent equipped with the improved supporting structure; Fig. 5 is a section taken as indicated at **5—5** of Fig. 4; Fig. 6 is a section taken as indicated at **6—6** of Fig. 4; and Fig. 7 is a fragmentary perspective view of one umbrella rib member.

Referring to the drawings in greater detail, a tent includes a floor cloth **10** and four walls **11** stitched to the floor cloth at their lower ends and having their upright edges joined together, one of said walls being provided with an opening forming an entrance to the tent. The top of the tent is composed of a plurality of triangular pieces of fabric **12**, the tops of the walls and their upwardly inclined edges being joined to form a pyramidal top structure of substantial height as compared with the height of the walls.

As is well understood in the art, the tent may also be be provided with a removable mosquito bar in the entrance, a window in one of the walls, a shelter-fly extending forwardly from the entrance to the tent, and

other such common additions to the ordinary umbrella tent.

The supporting structure for the tent includes a plurality of upstanding, supporting poles **13**, each such pole being disposed immediately inside the walls of the tent at the intersection of two adjoining walls. Since the supporting poles are identical, only one will be described in detail. Each pole preferably comprises a base member **14**, having a rubber base cap **15** so as to avoid damage to the canvas of the floor cloth. Telescopically mounted on the upper end of the base member is an extension member **16** which may be moved longitudinally of the base member **14** and locked in any desired extended position by means of the slidable collar **17** and set screw **18** or other locking device.

As best seen in Fig. 3, a frame **19** is carried upon the upper ends of the supporting poles **13**. The frame **19** includes four eave frame rods **20**, one adjacent the intersection between each side wall **11** and each face **12** of the top of the tent, the ends of the bars being retained in suitable sleeve portions **21** formed in the edges of right triangular corner members **22**.

As best seen in Fig. 5, each corner member **22** is a flat piece of metal which has its perpendicularly opposed edge portions rolled over to form the aforesaid sleeves **21**, and which has a keyhole aperture **23** formed at its apex between the sleeves **21**.

As best seen in Fig. 4, an umbrella rib member **24** extends upwardly from each supporting pole **13** toward the peak of the tent and is pivoted at its upper end at **25** to a rib top member **26**. Each umbrella rib member **24** has pivotally connected at its lower end by means of a pivot **27** a connecting stub **28** which is inserted through the keyhole slot **23** of the corner plate and into the open upper end of the extension member **16** of the supporting pole. The free end of each connecting stub **28** is flattened, as seen in **29**, so as to fit the keyhole aperture **23**. The purpose of this will be explained in detail hereafter.

The rib top plate **26** is centrally apertured to receive a bolt **30** which extends through an opening in the peak of the tent. The opening in the peak of the tent is furnished with a waterproof gasket **31**, and bolt **30** is retained in suitable position against the peak of the tent by means of a retaining nut **32** which bears against the lower surface of the gasket **31**. Preferably a rubber washer **33** is inserted between the gasket **31** and nut **32** to prevent damage to the fabric of the gasket. The rib top plate **26**, in turn, is retained upon the bolt **30** by a lower nut **34**, which screws onto the bolt to seat the rib top plate **26** against the retaining nut **32**.

It will be seen from the foregoing detailed description that the improved supporting structure furnishes the necessary support for an umbrella tent, but without the usual center pole. The supporting structure may be readily collapsed for carrying merely by disconnecting the umbrella ribs **24** and supporting poles **13**, disassembling the frame **19**, and removing the rib top plate **26** from the bolt **30**. The umbrella ribs **24** may then be pivoted into adjacency for convenience of handling and packing.

In erecting the tent, the four corners are first staked to the ground, after which the rib top plate **26** is fastened onto the bolt **30** by means of the lower nut **34**. The tent may be then temporarily supported by placing one of the supporting poles **13** with its open upper end beneath the bolt **30**, and raising its extension member **16** to any desired extent. Each triangular corner plate **22** is then hung on a connecting stub **28** by sliding the flattened end **29** of the connecting stub through the keyhole slot **23** and turning the plate **90** degrees to keep it on the connecting stub. Next, the three remaining adjustable

supporting poles 13 are slid onto the lower ends of the connecting stubs 28 and brought to a suitable adjusted position perpendicularly beneath the corner plates. The eave frame rods 20 may then be inserted into the corner plates 22 to spread out the peak of the tent and form the edges. At this stage the temporary center supporting pole may be removed, permitting the tent to hang on the three perpendicular supporting poles 13, and the fourth supporting pole 13 placed in its final position, thrusting against the lower end of the one remaining umbrella rib. Finally, the supporting poles 13 may be readjusted so that their lower ends are in the corners of the tent, leaving a clear floor space.

The structure of the supporting frame is such that the four supporting poles 13 thrust the rectangular frame 19 into the eaves of the tent—that is, the juncture between the walls and the tent cap. The rib members 24 thrust the peak of the tent upwardly from the four corners of the frame, so that the entire structure is held in its erected position by the thrust members which extend from the ground up, along the upright intersections between the tent walls, and along the junctures between the wall faces. There is no sagging, and the tent is held rigidly in the desired shape.

The foregoing detailed description is given for clearness of understanding only, and no unnecesary limitations should be understood therefrom, as modifications will be obvious to those skilled in the art.

I claim:

1. A collapsible supporting structure for use with an umbrella tent having a plurality of walls and a top of substantial height having a plurality of faces surmounting the walls and disposed at an angle thereto to form a closed cap with a peak, comprising: a plurality of supporting poles, each adapted to stand upright immediately inside the intersection of two adjacent walls of an umbrella tent and each being substantially as tall as said walls; a top supporting structure comprising a plurality of umbrella rib members, there being one such rib member adapted to extend from the upper end of each of said supporting poles upwardly to the peak of the tent top, and a rib top member joined to the upper ends of said rib members; a right triangular corner member provided with an aperture through which a portion of an umbrella rib member extends to secure said corner members at the upper ends of said supporting poles, each of said corner members being a plate the perpendicularly opposed edges of which are rolled to form sleeves extending along said edges; and a frame member extending between each adjacent pair of said corner members and extending into said sleeves.

2. A collapsible supporting structure for use with an umbrella tent having a plurality of walls and a top of substantial height having a plurality of faces surmounting the walls and disposed at an angle thereto to form a closed cap with a peak, comprising: a plurality of supporting poles, each adapted to stand upright immediately inside the intersection of two adjacent walls of an umbrella tent and each having its upper end constructed to directly engage the lower end of a member which is part of a top supporting structure; a top supporting structure comprising a plurality of umbrella rib members, each of said umbrella rib members having a pivoted assembly stub to engage the upper end of a supporting pole, said assembly stubs having flattened end portions, and said rib members being adapted to extend upwardly to the peak of the tent top; a rib top member pivotally joined to the upper ends of all said rib members; a plurality of plate-like frame receiving members each of which has a keyhole shaped hole to receive the flattened end portion of one of said assembly stubs so that said plate-like members are loosely secured adjacent the junction of each supporting pole and associated rib; and horizontal frame members extending between and secured to said plate-like frame receiving members.

3. A collapsible supporting structure for use with an umbrella tent having a plurality of walls and a plurality of converging faces surmounting the walls to form a closed cap with a peak, comprising: a plurality of straight supporting poles each of which is adapted to stand upright immediately inside the intersection of two adjacent walls of an umbrella tent, and having its upper end constructed to directly engage the lower end of a rib member which is part of a top supporting structure, each of said poles being substantially as tall as said walls; a top supporting structure including a rib top member to fit in the peak of the tent and a plurality of umbrella rib members pivotally secured thereto, there being a rib member associated with each pole, each rib member having a stub at its lower end directly engaging the upper end of the associated supporting pole; a plurality of frame receiving members each having an aperture loosely embracing the stub on a rib member whereby one of said frame receiving members is loosely secured adjacent the juncture of each supporting pole and associated rib member; and horizontal frame members extending between and secured to said frame receiving members.

4. The device of claim 3 in which the upper end of each pole is hollow to directly receive the stub on the associated rib member.

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