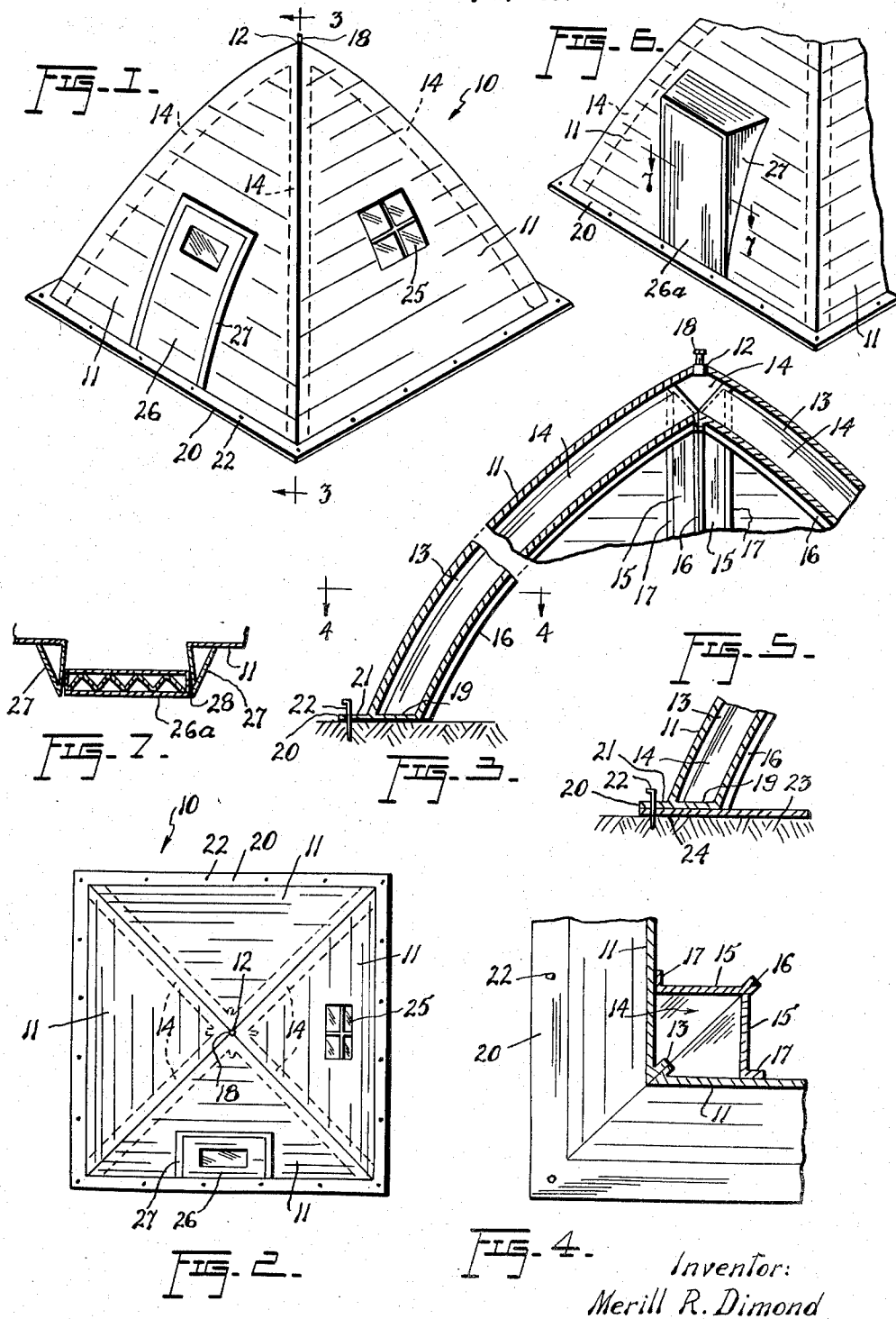


July 21, 1959

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INFLATABLE TENTS
Filed May 2, 1957

2,895,490



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INFLATABLE TENTS

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Application May 2, 1957, Serial No. 656,544

1 Claim. (Cl. 135—1)

This invention relates to new and useful improvements in tents, and the principal object of the invention is to provide an inflatable tent which may be quickly and easily erected by the use of compressed air and which may be readily deflated, when desired, into a compact form for convenient transportation or storage.

As such, an important feature of the invention resides in forming the walls of the tent from flexible sheets disposed in a suitable angular relation to provide the tent enclosure, and providing flexible air ducts at the angular junctions of such sheets, so that when air under pressure is delivered into the ducts, the same assume a substantially rigid form and maintain the tent in an erected position without the use of any poles, guides, cables, or other conventional supports.

Another important feature of the invention resides in a novel structural arrangement of the air ducts themselves, the same being so arranged that portions of the tent walls constitute components of the ducts.

Another feature of the invention resides in the provision of means at the lower edges of the walls for anchoring the tent to the ground or floor.

Another feature of the invention resides in the provision of an inflatable frame at a door opening of the tent, and an inflatable door mounted in such a frame.

Some of the advantages of the invention reside in its simplicity of construction, in its durability, and in its adaptability to economical manufacture.

With the above more important objects and features in view and such other objects and features as may become apparent as this specification proceeds, the invention will be understood from the following description taken in conjunction with the accompanying drawing, wherein like characters of reference are used to designate like parts, and wherein:

Figure 1 is a perspective view of the invention;

Figure 2 is a top plan view thereof;

Figure 3 is a fragmentary sectional view on an enlarged scale, taken substantially in the plane of the line 3—3 in Figure 1;

Figure 4 is a sectional detail on an enlarged scale, taken substantially in the plane of the line 4—4 in Figure 3;

Figure 5 is a fragmentary sectional detail of a modified form of the invention wherein the tent is provided with a floor;

Figure 6 is a fragmentary perspective view of a modified door arrangement embodied in the tent; and

Figure 7 is a fragmentary sectional detail, taken substantially in the plane of the line 7—7 in Figure 6.

Referring now to the accompanying drawing in detail, the inflatable tent is designated generally by the reference numeral 10 and, as shown in Figures 1 and 2, is of a substantially pyramidal shape, including a set of side walls 11 terminating in an apex or vertex 12. Any number of such side walls may be provided, depending upon the geometrical pattern of the base of the tent which, of course, need not be square as illustrated, but may also be in the form of a triangle, a pentagon, hexagon, etc.

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The side walls 11 are preferably outwardly convexed as shown and are provided at their angular junctions with inturned edges 13 which are suitably secured together, as is best shown in Figure 4.

Air ducts 14 are provided at the angular junctions of the side walls 11, each of these ducts consisting of a pair of complementary strip-like members 15 having adjacent inner edges 16 thereof secured together, and outturned outer edges 17 secured to the side walls 11 at opposite sides of the secured edges 13, so that the members 15 coact with the adjacent portions of the walls 11 in forming the ducts, as will be clearly apparent from Figure 4. The side walls 11, of course, are in the form of sheets, and the provision of the members 15 facilitate formation of the ducts 14 without the necessity of embodying such ducts in the wall forming sheets themselves.

Both the wall forming sheets 11 and the duct members 15 are formed from suitable flexible material such as plastic, or the like, in which event the secured edges 13, 16, 17 may be heat sealed for simplicity of construction.

The ducts 14 extend from the lower edges of the walls 11 to the vertex 12 at which point the ducts are in communication with one another. Moreover, a suitable inflating valve 18 is provided at this point, whereby air under pressure may be delivered into the ducts for inflating the same.

When the ducts are inflated, they become substantially rigid and support the side walls 11 of the tent in an erected position without the use of any posts, guides, cables, or other conventional supporting means. On the other hand, by deflating the ducts, the tent may be quickly and easily folded into a compact form for convenient storage or transportation. By virtue of the aforementioned outward convexity of the side walls 11, the ducts 14 are of an arcuate form which effectively resists bending, so that only a small amount of air pressure is required in the ducts for supporting the tent.

The lower ends of the ducts are closed as indicated at 19 and means are provided for anchoring the tent to the ground or floor. These means comprise an outturned anchoring strip 20 provided at the lower edges of the side walls 11 and extending peripherally of the tent, the strip 20 being formed with apertures 21 to receive suitable fastening elements such as the stakes 22 for anchoring the tent.

The tent need not be provided with a floor, but if preferred, a floor panel 23 of flexible material may be used as shown in Figure 5. The marginal edge portion of this panel underlies the anchoring strip 20 and is formed with apertures 24 in register with the apertures 21, to accommodate the fastening elements 22.

As shown, the tent may be equipped with one or more windows 25 and with a simple door 26. On the other hand, as shown in Figures 6 and 7, an inflatable door frame 27 may be provided around a door opening in one of the side walls, to accommodate an inflatable door 26a which is mounted in the frame 27 by a piano-type hinge 28, of suitable flexible material. Both the outer edge of the door frame and the door 26a are disposed in a vertical plane, the door frame preferably assuming the form of a continuous duct of a triangular cross-section, while the door itself is formed from juxtaposed ducts 29 of a triangular or circular cross-section, so that when such ducts are inflated, they support the door frame and the door in a rigid form.

Suitable valve means are of course provided for inflating and deflating the door and its frame, simultaneously with or independently of the tent structure. It may be also noted that while the tent inflating valve 18 is shown as being disposed at the apex 12, it may be located at any suitable point, in communication with the ducts 14.

While in the foregoing there have been shown and described the preferred embodiments of the invention, vari-

ous modifications may become apparent to those skilled in the art to which the invention relates. Accordingly, it is not desired to limit the invention to this disclosure, and various modifications may be resorted to, such as may lie within the spirit and scope of the appended claim.

What is claimed as new is:

In an inflatable tent, the combination of a plurality of substantially triangular flexible wall forming sheets each having a base edge and a pair of convergent side edges and being curved in a plane transverse to the base edge thereof, said sheets being disposed in mutually adjacent relation wherein side edges of the adjacent sheets are contiguous and secured together and wherein the base edges of the sheets are in angular relation whereby the upper corners of the sheets unite in an apex at the top of the tent, an out-turned anchoring strip provided at the base edges of said sheets and formed with apertures to receive fastening elements for anchoring the tent to the ground, a plurality of strip-like members provided inside the tent in overlapping relation with the contiguous side edges of the adjacent sheets, side edges of said strip-like members being secured to the side edge portions of the adjacent sheets and coacting therewith to form air ducts extending from the base of the tent to the apex thereof,

said air ducts having closed lower ends and communicating with one another at the apex of the tent, valve means for delivering air under pressure to said ducts, a substantially rectangular inflatable door frame provided at the edges of a substantially rectangular door opening formed in one of said sheets, and a substantially rectangular door adapted for inflation mounted in said frame, said door frame and said door being curved in the plane of the associated door forming sheet.

References Cited in the file of this patent

UNITED STATES PATENTS

1,123,657	Bache	Jan. 5, 1915
1,964,818	Hood	July 3, 1934
2,070,244	Staab	Feb. 9, 1937
2,297,150	Hunter	Sept. 29, 1942
2,682,274	Miller	June 29, 1954
2,782,794	White	Feb. 26, 1957
2,830,606	Daughtery	Apr. 15, 1958
2,837,101	Bary	June 3, 1958

FOREIGN PATENTS

201,327	Australia	Dec. 15, 1955
992,086	France	July 4, 1951