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AUSTRALIA  
PATENTS ACT 1990

COMPLETE SPECIFICATION  
STANDARD PATENT

**A MARQUEE**

The following statement is a full description of this invention including the best method of performing it known to me:

**A MARQUEE****TECHNICAL FIELD**

5 The present invention relates to a marquee. The present invention also relates to a human shelter including, for example, the marquee.

**BACKGROUND**

10 The reference to any prior art in this specification is not, and should not be taken as an acknowledgement or any form of suggestion that the prior art forms part of the common general knowledge.

15 A marquee is a large shelter with open sides for temporary use in outdoor entertainment such as receptions and the like. Inflatable marquees are known.

A first type of inflatable marquee includes an inflatable frame formed by stitching polyvinyl chloride (PVC) material together. In practice, a blower is continually required to provide air to the inflatable frame as air leaks through the stitching. In the event that the blower is inoperable, the frame will undesirably deflate within minutes.

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A second type of inflatable marquee includes an inflatable frame formed by either gluing or thermal welding polyvinyl chloride (PVC) material together. Applicant has noticed that in practice, over-inflating the frame can undesirably result in rupturing of the frame. In addition, Applicant has noticed that locating the marquee in the hot sun can cause the frame to burst.

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Embodiments of the present invention to provide an improved marquee resistant to rupturing or bursting.

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## SUMMARY OF THE INVENTION

According to one aspect of the present invention, there is provided a marquee including:

- 5 a frame including an inflatable portion; and  
overpressure relief means for relieving excess pressure from the inflatable portion.

10 The relief means may relieve pressure in the inflatable portion so as to resist rupturing of the frame owing to over-inflating of the frame, or bursting of the frame in the hot sun.

15 The relief means may include an overpressure relief valve for relieving pressure from the inflatable portion when the pressure exceeds a predetermined threshold. The predetermined threshold may be in the range of 0.6 to 4.3 psi (i.e. 4 to 30kPa). Preferably, the predetermined threshold is about 1.75 psi (i.e. 12 kPa). The overpressure valve may be glued to the inflatable portion. The frame may further include a port through which the inflatable portion can be inflated and deflated. The port may be located  
20 separately to the relief means.

25 The overpressure relief valve may include a tubular mount for mounting to the inflatable portion, a tubular body for being received within the mount and including an internal annular shelf, a piston for extending through the shelf, and biasing means for biasing the piston against the body. The biasing means may include a compression spring which compresses to separate the piston from the body when the pressure exceeds the predetermined threshold. The overpressure relief valve may include a stopper (or cap with a lanyard) for engaging with the body to conceal the piston.

30 The inflatable portion may include a number of radially extending arcuate legs. Each leg may define a storage compartment for storing an anchor (e.g. sandbag). The foot of each leg may define a looped tag for receiving a peg.

The marquee may further include a cover for covering the frame. The cover may include a tarpaulin including a plurality of tapered panels for locating between respective pairs of frame legs. Each tapered panel may define an arch beneath an apex.

- 5 The marquee may further include fastening means for fastening the cover to the frame. The fastening means may include carabiners of the frame for engaging with respective eyelets of the cover.

10 The inflatable portion may include fluidic impervious material which is either thermal welded or glued together. The impervious material may be polyvinyl chloride (PVC) material.

According to another aspect of the present invention, there is provided a human shelter including:

- 15 a frame including an inflatable portion; and  
overpressure relief means for relieving excess pressure from the inflatable portion.

20 The human shelter may be a marquee, tent, gazebo or other like shade product.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

25 Preferred features, embodiments and variations of the invention may be discerned from the following Detailed Description which provides sufficient information for those skilled in the art to perform the invention. The Detailed Description is not to be regarded as limiting the scope of the preceding Summary of the Invention in any way. The Detailed Description will make reference to a number of drawings as follows:

- 30 Figure 1a is a side view of a marquee cover in accordance with an embodiment of the present invention;

Figure 1b is a side view of a marquee frame in accordance with an embodiment of the present invention;

5 Figure 1c is a side view of an inflatable marquee in accordance with an embodiment of the present invention, the marquee including the marquee cover of Figure 1a covering the marquee frame of Figure 1b; and

10 Figure 2 is a side sectional view of an overpressure relief valve of the marquee of Figure 1.

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

15 According to an embodiment of the present invention, there is provided a marquee 2 as shown in Figure 1c. As shown in Figure 1b, the marquee 2 includes a frame 4, in turn, including an inflatable portion 6. The marquee 2 also includes a cover 8 shown in Figure 1a for covering the frame 4. As can best be shown in Figure 2, the marquee 2 further includes an overpressure relief valve 10 (relief means) for relieving excess pressure from the inflatable portion 6 when the internal pressure exceeds a predetermined threshold. The relief valve 10 can relieve pressure in the inflatable portion 6 so as to resist rupturing of the frame 4 owing to over-inflating of the frame 4, or bursting of the frame 4 in the hot sun. A detailed description of the marquee 2 is provided below.

25 Turning to Figure 1b, the inflatable portion 6 includes a number of radially extending arcuate legs 12. Each leg 12 defines a storage compartment at its base for storing an anchor (e.g. sandbag). The foot of each leg 12 also defines a looped tag for receiving a peg. Turning to Figure 1a, the cover 8 includes a tarpaulin, in turn, including a plurality of tapered panels 14 for locating between respective pairs of frame legs 12. Each tapered panel 14 defines an arch 16 beneath an apex 18.

30 The marquee 2 further includes fastening means (not shown) for fastening the cover 8 to the frame 4. The fastening means includes carabiners coupled to

the inflatable portion 6 of the frame 4. The carabiners can engage with respective eyelets of the cover 8. The inflatable portion 6 includes fluidic impervious material which is either thermal welded or glued together. Typically, the impervious material is polyvinyl chloride (PVC) material.

5 The frame 4 further includes a port through which the inflatable portion 6 can be inflated and deflated as required. The port is located separately to the overpressure relief valve 10. The overpressure relief valve 10 may be similar to the type provided by Scoprega SPA or Ningbo Bravo under the part number VA50 - art.285 whereby the predetermined threshold at which pressure is  
10 relieved from the inflatable portion 6 is in the range of 0.6 to 4.3 psi (i.e. 4 to 30kPa). The predetermined threshold of about 1.75 psi (i.e. 12 kPa) is particularly suitable.

As shown in Figure 2, the overpressure relief valve 10 is glued to the inflatable  
15 portion 6 of the frame 4. The valve 10 includes a tubular mount 20 for gluing to the inflatable portion 6. A tubular body 22 threadingly engages within the mount 20 and includes an internal annular shelf 24 in its throat. A T-shaped piston 26 extends through the shelf 24 and terminates in a rubber stopper 28. The relief valve 10 further includes a compression spring 30 (biasing means)  
20 through which the piston 26 passes and for biasing the piston 26 against the body 22. In use, the compression spring 30 compresses to separate the piston 26 from the body 22 when the internal frame pressure exceeds the predetermined threshold. The relief valve 10 also includes a rubber cap 32 (or stopper) with a lanyard 34 for engaging with the body 22 to conceal the piston  
25 26.

A person skilled in the art will appreciate that many embodiments and variations can be made without departing from the ambit of the present invention.

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The preferred embodiment related to a marquee 2. In an alternative embodiment, the invention may relate to an alternative type of human shelter such as a tent, a gazebo or another like shade product. According to this

alternative embodiment, the human shelter also includes: a frame including an inflatable portion; and relief means for relieving pressure from the inflatable portion.

- 5 The dimensions shown in Figure 1 are by way of example only and can be readily altered.

10 In compliance with the statute, the invention has been described in language more or less specific to structural or methodical features. It is to be understood that the invention is not limited to specific features shown or described since the means herein described comprises preferred forms of putting the invention into effect. The invention is, therefore, claimed in any of its forms or modifications within the proper scope of the appended claims appropriately interpreted by those skilled in the art.