Oct. 23, 1962 H. D. TURNER 3,059,657

AIR-SUPPORTED BUILDING

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FIG. 1

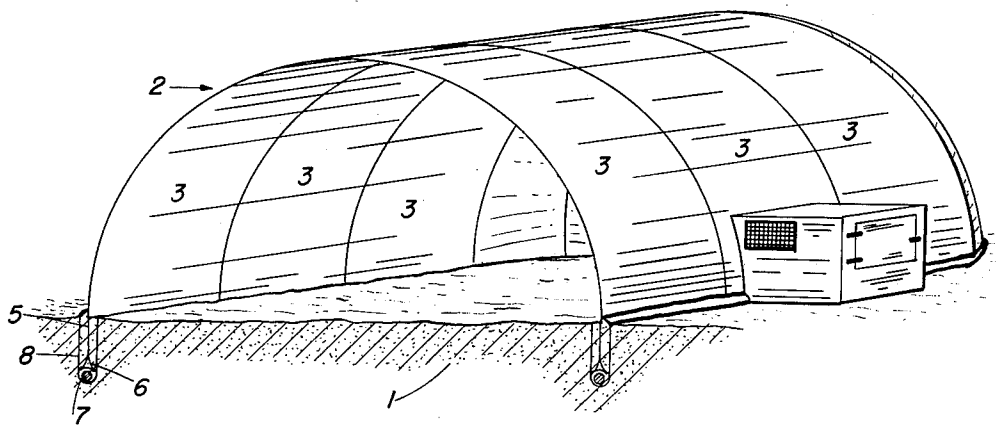

FIG. 2

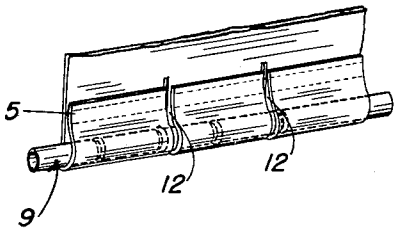

FIG. 3

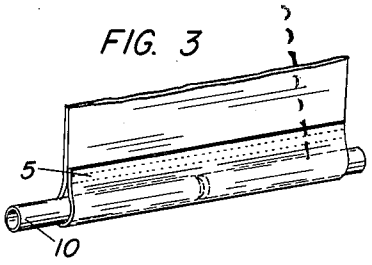

FIG. 4

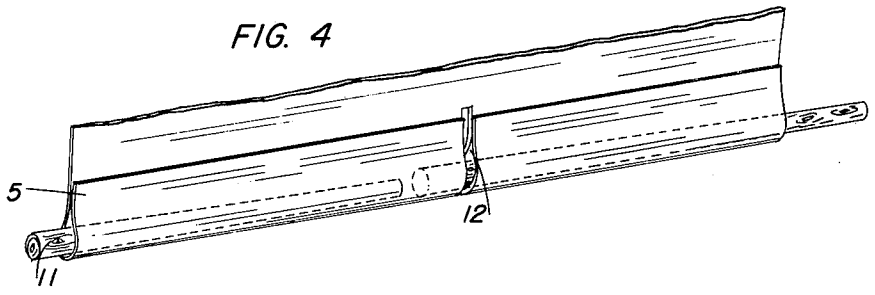

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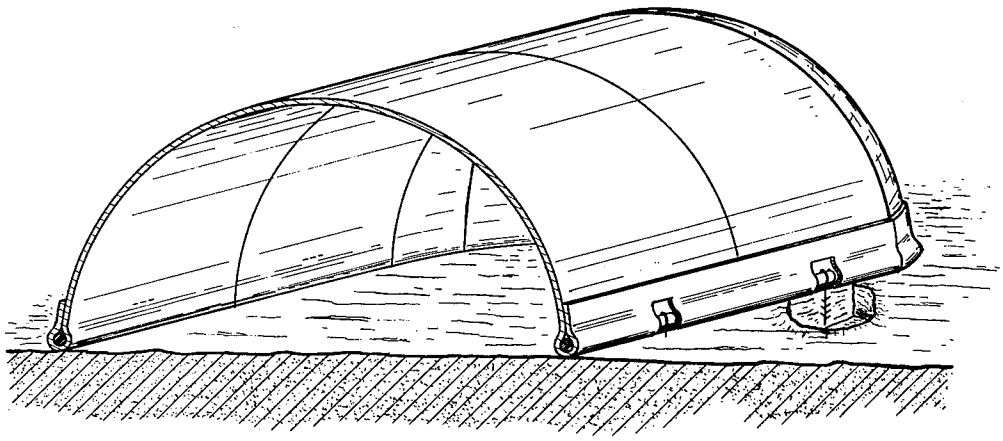
FIG. 5



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3,059,657
AIR-SUPPORTED BUILDING

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2 Claims. (Cl. 135—1)

This application relates to means for attaching an air-supported building to the ground or the earth.

This is a continuation-in-part of my copending application Serial No. 623,069, filed November 19, 1956 having the same title, now abandoned.

Air-supported buildings have been proposed heretofore, particularly for example, in Patent 1,302,182, and various means have been proposed or suggested for attaching such buildings to the ground, for example, by means of attachment to a concrete foundation, as illustrated in my co-pending application Serial No. 623,069, now abandoned, or by other suitable means such as by attachment to a wooden foundation or to wooden panels or wooden pegs set into the ground or the like.

In order to economically provide an air-supported building it is desirable to provide a simple means for securing the edges of such a building to the ground and which can be installed relatively quickly, simply and economically by inexperienced and untrained personnel who generally cannot be counted upon to be either gentle or careful in their handling of the installation.

It is therefore an object of this invention to provide an improved apparatus and method for securing the edges of an air-supported building to the ground in a manner which will substantially prevent the leakage of air at said edges and which will anchor the building to the earth, and at the same time can be installed with a relatively high degree of ease and speed.

Further objects will become apparent from the drawings and the following detailed description in which it is my intention to illustrate the applicability of the invention without thereby limiting its scope to less than that of all those equivalents which will be apparent to one skilled in the art.

In the drawings, like reference numerals refer to like parts and:

FIGURE 1 is a partially cut away perspective view of an air-supported building attached to the ground in accordance with the invention;

FIGURES 2, 3 and 4 are partially cut away perspective views of a portion of the lower edge of a building according to FIGURE 1, prepared for attachment to the ground in the manner shown in FIGURE 1;

FIGURE 5 is a partially cut away perspective view of an air-supported building secured to the ground in accordance with the invention.

Referring now to FIGURE 1 there is shown an air-supported building indicated generally as **2** comprising panels **3**, of flexible material. Although air-supported buildings generally may be constructed of any suitable relatively gas impervious flexible material such as rubber impregnated canvas, plastic impregnated canvas, plastic impregnated woven fabric, plastic impregnated glass fabric, and impregnated or tightly woven fabrics of other types, and any such material may be utilized for the purpose of this invention and are suitable for relatively temporary installations such as tents, it is preferable, in order to obtain the greatest benefit of the invention and to make possible its utilization in relatively permanent installations, that the material of which panels **3** is made be of a rot, mold and moisture resistant type such as a nylon fabric impregnated with polyvinylchloride or a co-polymer of vinylchloride and vinylidene chloride, for example such as that sold commercially as "Saran" or a co-polymer of vinylchloride and vinylacetate. Many other synthetic resins will provide suitable mold resistance. A cotton fabric impregnated with chlorine-containing vinyl polymer is substantially impervious to rats and the rot and mold resistance of nylon make it an excellent fabric material for use with such impregnation. Other synthetic resins which may be used if desired include polyethylene, polyethylene terephthalate, co-opolymers of butadiene and styrene, butadiene and acrylonitrile, and acrylonitrile and styrene. Polyethylene, which has relatively poor weather resistance, and many other flexible of rubbery synthetic or natural plastics may also be used. Laminates of films and woven or non-woven reinforcing strands may be utilized. Panels **3** may be attached to one another by any suitable means adapted to prevent for the most part any escape of air at the joint. They may be stitched together, adhered to one another, laced together, stapled together or the like. Portions adjacent the bottom edge of panel **3** are turned upward to form a bight **6** and the edge of the upwardly turned portion is fastened to the standing part at **5** by any suitable method as shown. Attachment may be as before described by adhesive, stitching, stapling, tacking or the like. As shown in FIGURE 1, a cylindrical or tubular object **7** is inserted into bight **6**. The bottom edge of the panels thus consist of bight **6** containing tubular or cylindrical object **7**. The bottom edges of panels **3** may then be introduced into the bottom of trench **8** as shown in FIGURE 1 and dirt may be introduced on top thereof by any suitable means such as by shoveling or bulldozing to securely and permanently secure said edges in the earth. The bottom edges of panels **3** may also be positioned on top of the ground as shown in FIGURE 5, by fastening the elongated members to the ground by means of suitable ground anchors. The latter method is more economical and quicker to assemble since no trench is required. Suitable elongated objects for introducing and maintaining a suitable bulbous cross-section at the bottom of panels **3** include, as illustrated in FIGURES 2 to 4, vitreous drain tiles **9**, molded asbestos sewer pipe **10** and fence posts or telegraph posts **11**. As shown in FIGURE 3, the hollow space formed at the bottom edges of panels **3** by the bight **6** may be substantially continuous in length or may be made discontinuous as shown in FIGURES 2 and 4, by introduction of slots or slits **12**. The hollow space formed by bight **6** may thus be made discontinuous and there may thus be provided means for the more ready introduction of members **7**. By the use of hollow members, such as drain tiles **9** or sewer pipe **10**, drainage for the building is provided at the same time that its edges are anchored down and a double purpose is served. If the embodiment of FIGURE 1 is utilized i.e., a trench, by tamping earth down after its introduction in the trench, even by light tamping, a desirable and effective substantially hermetic seal is obtained and building **2** is attached to the earth or ground

with sufficient firmness to prevent its destruction by escape of air therefrom, by wind gusts or by the introduction of air under wind-pressure into its interior.

Having thus disclosed my invention, I claim:

1. An air-supported building of flexible material supported by air pressure within the building, said building having an outer edge and having a hem at said outer edge and said pressure causing a strong upward force to be exerted on said hem substantially uniformly along its length, said building being secured to the ground at said outer edge by elongated members inserted in said hem formed at said edge of said building, said members being attached to the ground in the desired position in a trench with back-filling thereabove so as to resist said upward force.

2. The building of claim 1 wherein said members are drain tiles.

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