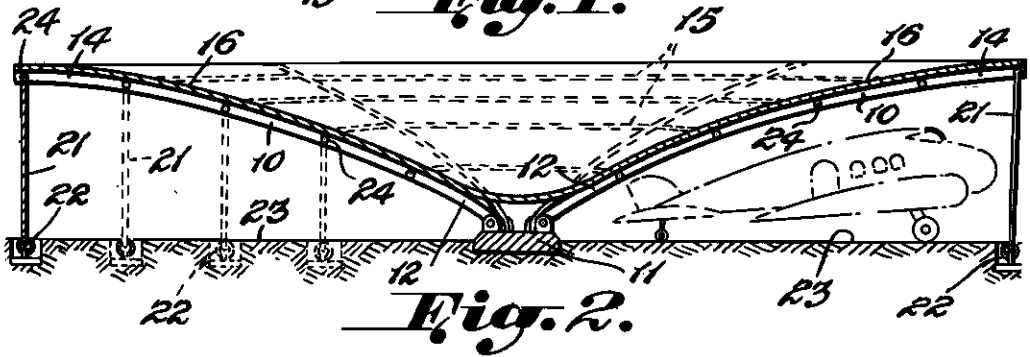
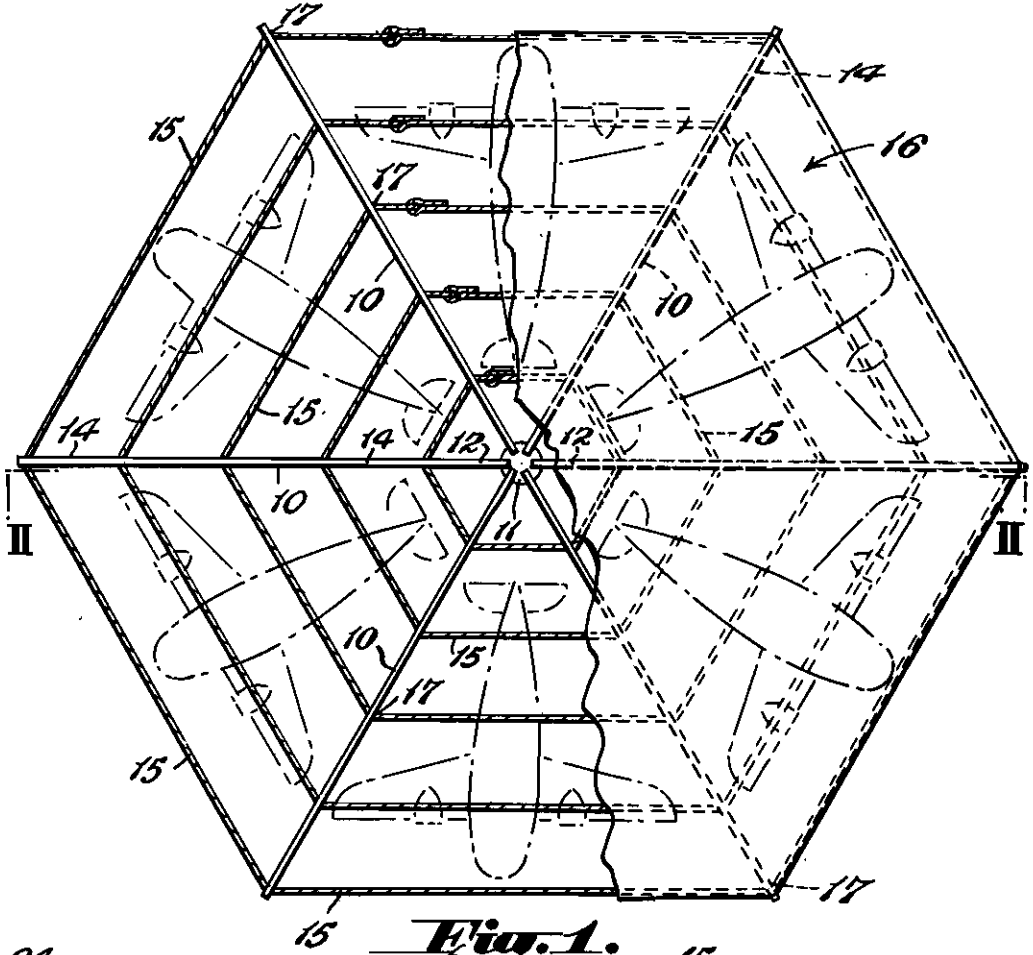


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BY A. P. C.

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2 Sheets-Sheet 1



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Fig. 3.

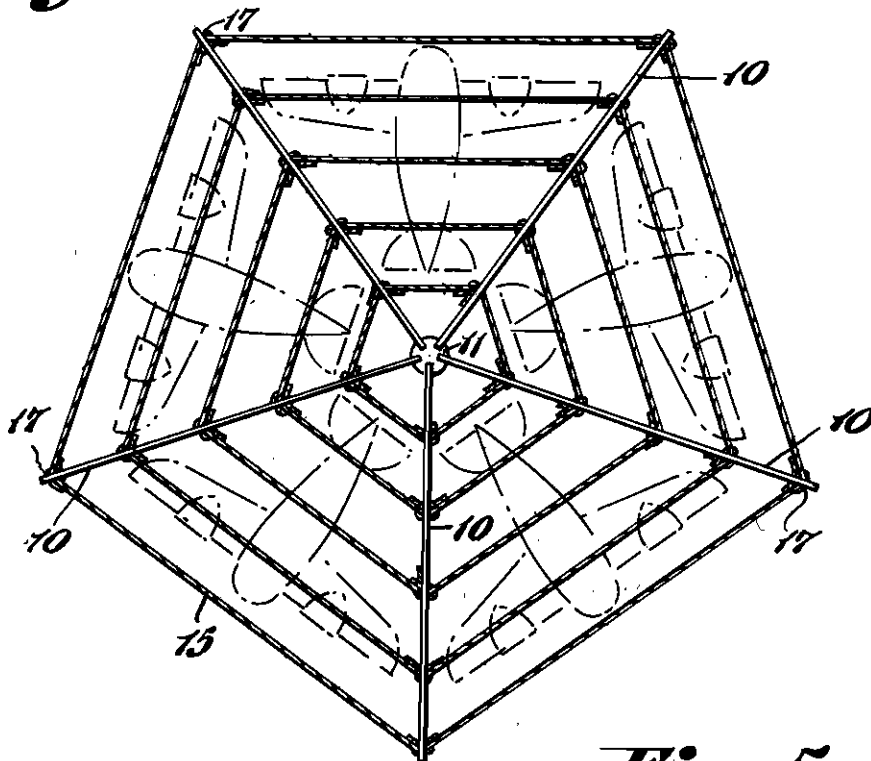


Fig. 4.

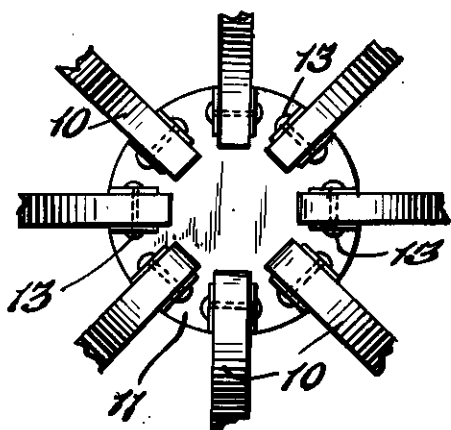
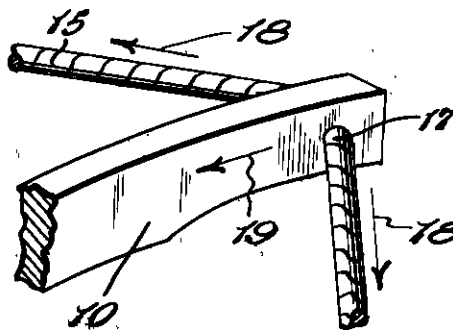


Fig. 5.



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ALIEN PROPERTY CUSTODIAN

BUILDINGS

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Application filed August 20, 1941

The present invention relates to buildings and more particularly pertains to structural features of buildings wherein relatively large unobstructed spaces are provided. The invention more specifically concerns the architectural features of buildings adapted to provide suitable hangars for aeroplanes.

An object of the invention resides in providing a building wherein a plurality of arched beams extend upwardly and outwardly from a common support with the outer ends of the arched beams maintained above the ground or floor of the building by suitable tension means so as to provide relatively large unobstructed spaces under the arched beams.

Another object of the invention includes the provision of a plurality of radially arranged arched beams in a building extending upwardly and outwardly from a supporting member including circumferentially extending tension means connecting the arched beams so as to support the outer ends of the beams above the floor of the building.

A still further object of the invention resides in providing an aeroplane hangar wherein arched beams extend radially from supporting means with the outer ends thereof positioned above the floor of the building to provide relatively large unobstructed spaces thereunder including circumferentially extending tension means connecting the arched beams and maintaining the outer ends of the arched beams above the floor of the building with the tension means supporting the roof.

A further object of the invention resides in providing a plurality of arched beams having circumferentially extending tension means for maintaining the outer ends of the beams in position above the floor of the building wherein the outer thrust of the arched beams is substantially neutralized by the tension means.

Another object of the invention resides in providing a building wherein the structural elements may be prefabricated and readily erected at the building site and dismantled for transportation to a new location for the building.

Other and further objects and features of the invention will be apparent from a consideration of the accompanying drawings and the following description wherein several exemplary embodiments of the invention are disclosed.

In the drawings:

Fig. 1 is a plan view of one type of building embodying the invention with part of the roof

removed so as to illustrate the structural features of the building.

Fig. 2 is a sectional view of the building taken on the line II—II of Fig. 1.

Fig. 3 is a plan view of a modified building embodying the features of the invention with the roof removed.

Fig. 4 is a plan view of the supporting means for the arched beams.

Fig. 5 is a partial perspective view of one of the arched beams illustrating the manner in which the forces generated by the structural elements are substantially neutralized.

In carrying out the invention a plurality of arched beams 10 are arranged to extend upwardly and outwardly from a common base member or supporting means 11. The inner ends 12 of the arched beams 10 may rest on the supporting means 11 or the inner ends of the arched beams may be pivotally connected to the supporting base as illustrated at 13 in Fig. 4.

The arched beams 10 extend in radial directions from the supporting means 11 as shown in Fig. 1. Any number of arched beams may be provided in the building for any plan shape but it is preferable to provide a regular polygonal-shaped building by means of the radial arrangement of the arched beams 10. In Fig. 1 for example six radially arranged arched beams 10 are provided which extend upwardly and outwardly from the supporting means 11. The outer ends 14 of the arched beams 10 are maintained above the ground or floor by circumferentially extending tension means. The tension means may consist of cables, chains or ropes 15 having a general ring-shape and suitably connected to the various arched beams 10. The tension means, however, may be formed of individual cables as shown in Fig. 3. The tension means 15 thus supports the outer ends of the arched beams 10 so as to provide a relatively large unobstructed space under the beams.

The roof of the building is adapted to be supported on the arched beams 10 and on the tension means 15 circumferentially intermediate the arched beams. The roofing of the building is indicated at 16 and may be formed of any suitable roofing material. Thus the roof load is discharged on the tension means or cables 15 which perform the duty of purlins between the arched beams. The weight of the roof thus generates a pull at the points 17 where the cables 15 are attached to the arched beams 10. The forces generated by a particular cable or cables are illustrated in Fig. 5 by the arrows 18. These

forces provide a resultant force as represented by the arrow 19 which is substantially in alignment with an arched beam 10. Thus the resultant forces 19 substantially neutralize the outward thrust of the arched beams 10.

The outer perimeter of the building formed of the arched beams and tension means as hereinabove described may be suitably anchored so as to prevent tilting of the assembly by means of removable straps 21. These straps may be connected to suitable anchoring means 22 located preferably below the surface of the floor 23. The removable straps 21 may be positioned at any point along the arched beams 10. For this purpose the beams 10 are provided with openings 24 for receiving the upper ends of the straps 21. Thus the straps may be arranged in positions indicated in dotted lines in Fig. 2. The straps 21 may be even removed from some of the arched beams 10 so as to alter the dimensions of the unobstructed spaces under the roof and beams of the building.

The architectural features of the building as provided by the arched beams 10 and the tension means 15 form a building which is particularly suitable for use as an airplane hangar. For example aeroplanes may be stored in the building

in a manner as indicated in Fig. 1. The downwardly sloping inner ends of the arched beams 10 permit the tail assembly of the aeroplanes to be housed thereunder with a minimum loss of utilizable space in the building.

In carrying out the invention any number of radially arranged arched beams 10 may be included in the building. Thus for example five radially arranged arched beams may be provided as shown in Fig. 3. The five radially arched beams will thus provide a pentagonal-shaped building when the roof is supported on the tension means 15 which connect the arched beams. In Fig. 3 the arched beams 10 extend upwardly and outwardly from a common supporting base 11 in a manner similar to that shown in Figs. 1 and 2. The cables or tension means 15 extending circumferentially of the building may be connected to the arched beams 10 at the points 17 in any suitable manner. Thus for example the ends of the cables may be tied to each beam as shown in Fig. 3.

While the invention has been described with reference to specific structural features the invention is susceptible to various modifications and various types of materials may be employed in the roof, arched beams and tension means.

PAUL C. CHELAZZI.

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