June 8, 1937. S. J. CHAPAS 2,083,051

AIRSHIP

Filed Sept. 26, 1936 2 Sheets-Sheet 1

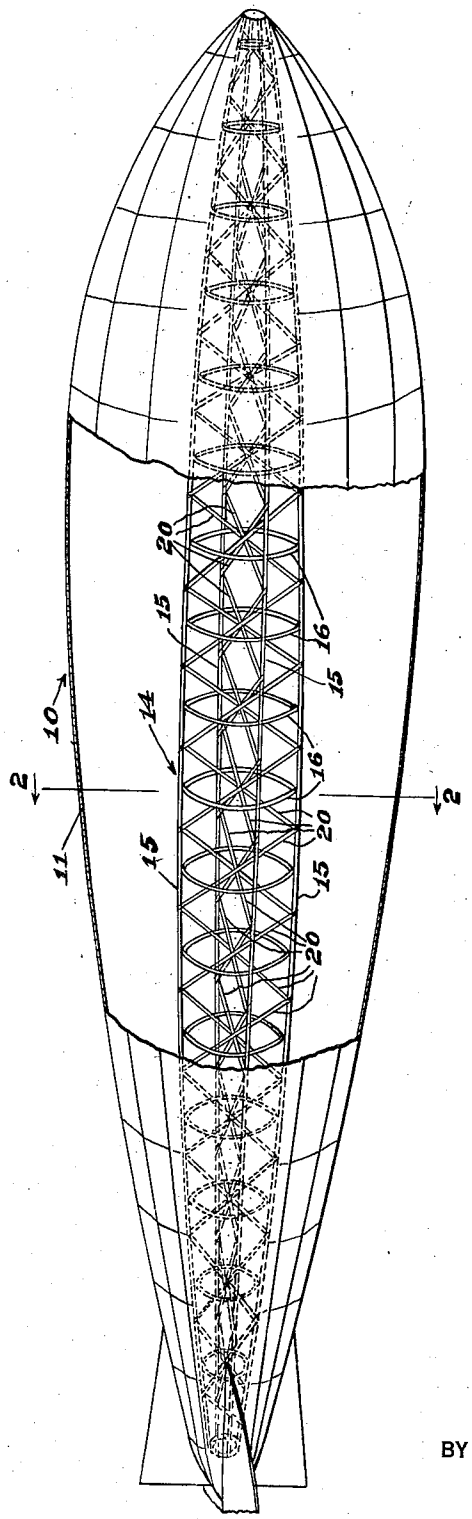


Fig. 1

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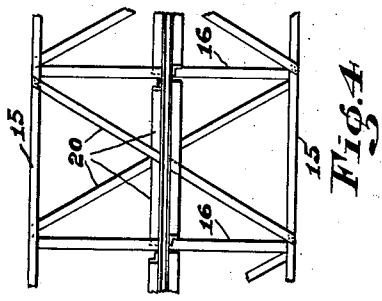


Fig. 4

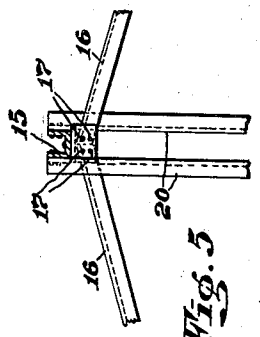


Fig. 5

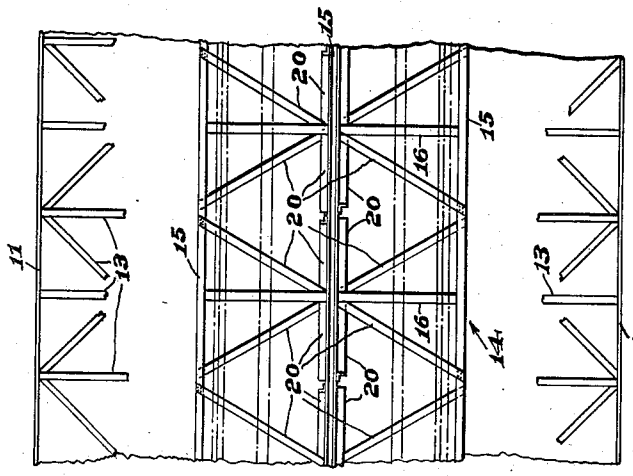


Fig. 3

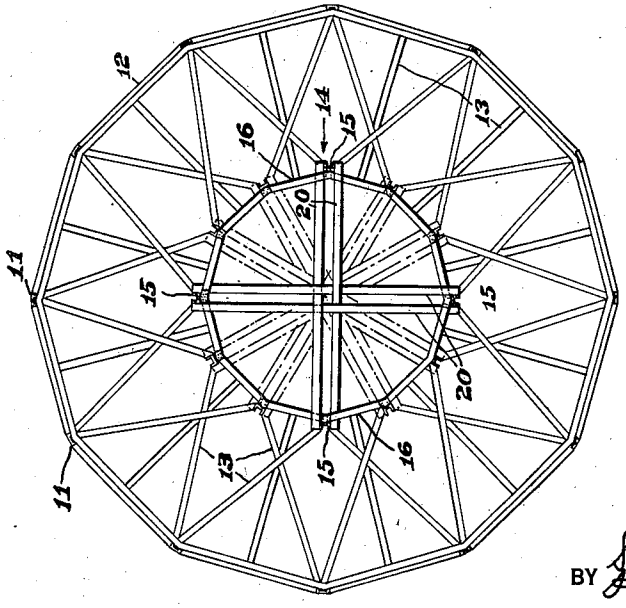


Fig. 2

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UNITED STATES PATENT OFFICE

2,083,051

AIRSHIP

Steven J. Chapas, Boston, Mass.

Application September 26, 1936, Serial No. 102,720

3 Claims. (Cl. 244—125)

This invention relates to airship construction.

One object of my invention is to strengthen an airship where the stress and strain is great in such a manner that should one part or element break or buckle, the other parts or elements will not be materially affected, and will still provide the construction strength required of this type of airship. Another object is to provide continuous, reinforcing framework extending from end to end in the interior of an airship, thereby providing uniform strength throughout. A further object is to provide the continuous, aforementioned strength and still keep the framework of the airship relatively light.

The foregoing and other objects which will appear as the nature of the invention is better understood, may be accomplished by a construction, combination and arrangement of parts such as is disclosed by the drawings and specification. The nature of the invention is such as to render it susceptible to various changes and modifications, and, therefore, I am not to be limited to said disclosure; but am entitled to all such changes therefrom as fall within the scope of my claims.

In the drawings.

Figure 1 is a perspective view of an airship, partly broken away to show the interior central structure, the outer frame bracing rods being omitted, and also the transverse girders.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1, illustrating details of the interior structure.

Figure 3 is a side elevation view of the interior structure.

Figure 4 is a side elevation view of a modified form of the interior structure.

Figure 5 is an enlarged fragmentary view, illustrating a portion of the interior structure.

As illustrated, the airship, which is of the standard dirigible balloon shape, has the usual outer frame 10 consisting of longitudinal girders 11 and transverse girders 12. Bracing rods 13 extend from the outer frame to the interior structure 14, which is centrally disposed within the hull of the airship and extends from one end to the other, tapering in width at its two ends, as illustrated in Figure 1 of the drawings, so that the airship is reinforced its entire length by this interior structure 14. Said structure is continuous, and is so formed and reinforced that should one part break or buckle, the rest of it will be unaffected and will still provide more than the necessary reinforcement for the airship. Said bracing rods 13 may be increased in number to whatever extent is necessary.

Said interior structure 14 consists of longitudinal girders 15, preferably made of channel iron, which extend the length of the airship, and transverse girders 16 in the form of polygonal frames which extend around said longitudinal girders 15, and which are preferably made in sections and riveted together as at 17. Cross braces 20 are made fast by riveting or otherwise attached to said longitudinal girders 15, extending completely across said interior structure 14. As illustrated in Figures 2 and 3 of the drawings, said cross braces 20 extend diagonally between a pair of oppositely located longitudinal girders 15. For instance, a said cross brace 20 runs from a top longitudinal girder 15 to a bottom longitudinal girder 15, extending in a diagonal direction, so that one end of a said cross brace 20 starts at one side of and at a point spaced from a transverse girder 16 and ends at the other side of and spaced from the same transverse girder 16, passing crosswise through and beyond the space enclosed by said transverse girder 16, as best illustrated in Figures 1 and 3 of the drawings. This is the preferred form of construction; but in Figure 4 I show a modification where in said cross girders 20 extend diagonally from a point adjacent the bottom of one transverse girder 16 to a point adjacent the top of the one next to it. Likewise other cross braces 20 extend from one longitudinal girder 15 to another which are located at different points around said interior structure 14.

The number of longitudinal girders 15 making up the interior structure 14 is shown as four in Figure 1 of the drawings; but this number may be increased at will, depending upon the size of the interior structure 14, and I have indicated by dot and dash lines in Figure 2 of the drawings a construction arrangement where more than four are used, in which event the bracing rods 13 are increased proportionately as shown.

What I claim is:

1. An interior structure for an airship comprising a plurality of longitudinal girders spaced apart, a plurality of transverse girders spaced apart and attached to said longitudinal girders, and a plurality of braces, each said brace extending from one said longitudinal girder at a point spaced from the nearest said transverse girders across said interior structure to another said longitudinal girder, being attached to said latter-mentioned longitudinal girder at a point spaced from the nearest said transverse girders.

2. An interior structure for an airship comprising a plurality of longitudinal girders spaced

apart, a plurality of transverse girders spaced apart and attached to said longitudinal girders, and a plurality of braces, each said brace extending from one said longitudinal girder at a point between and spaced from the nearest two said transverse girders diagonally across said interior structure to another said longitudinal girder, opposite the first-mentioned longitudinal girder, being attached to said latter-mentioned longitudinal girder at a point spaced from and between one of said two transverse girders and a third transverse girder.

3. An interior structure for an airship comprising a plurality of longitudinal girders spaced apart, a plurality of transverse girders spaced apart and connected to said longitudinal girders and transversely and continuously bounding said interior structure, and a plurality of braces, each said brace attached to and extending from one said longitudinal girder diagonally all the way across said interior structure to another said longitudinal girder and crossing the space directly opposite a transverse girder, there being a proportion of two said braces to each said transverse girder.

STEVEN J. CHAPAS.