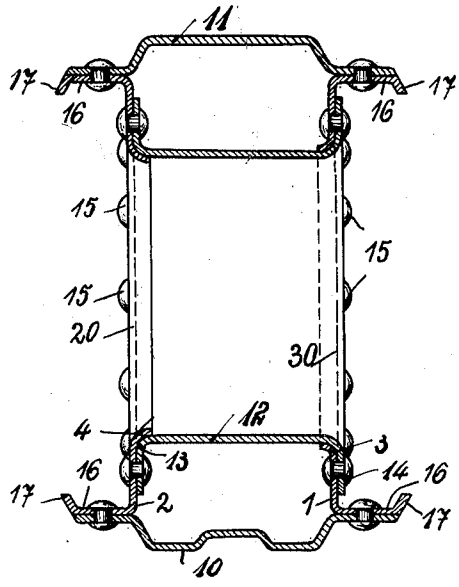
Feb. 2 , 1926. 1,571,240

C. DORNIER

METAL GIRDER

Original Filed Feb. 17, 1923



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Atty.

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UNITED STATES PATENT OFFICE.

CLAUDIUS DORNIER, OF FRIEDRICHSHAFEN-ON-THE-BODENSEE, GERMANY, ASSIGNOR OF ONE-HALF TO FIRM: DORNIER METALLBAUTEN GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, OF FRIEDRICHSHAFEN-ON-THE-BODENSEE, GERMANY.

METAL GIRDER.

Original application filed February 17, 1923, Serial No. 619,696. Divided and this application filed August 17, 1925. Serial No. 50,874.

To all whom it may concern:

Be it known that I, CLAUDIUS DORNIER, a citizen of Germany, residing at Friedrichshafen-on-the-Bodensee, Germany, have invented certain new and useful Improvements in Metal Girders, of which the following is a specification.

My invention relates to metal girders and more especially to a metal girder intended for air craft construction, where structural elements of high strength and low weight are required.

To this end I provide a box-shaped girder with oppositely located apertures having inwardly directed flanges which are connected with each other by means of tubular connecting pieces fixed to the flanges by riveting, welding or the like either at their inner or outer surface or at one end with the inner and at the other end with the outer surface of the flange.

The connection of the two side walls in the planes of their longitudinal edges may be effected in any desired manner, for instance by means of a panel. I prefer bending the marginal portions of the side walls so as to form outwardly directed flanges and to connect these latter with each other by a sheet-metal strip which may be grooved or channelled.

In the drawings affixed to this specification and forming part thereof, a girder embodying my invention is illustrated in cross-section by way of example.

Referring to the drawing, the girder consists of two side walls 1 and 2 provided with circular apertures 20 and 30, having inwardly directed flanges 3 and 4 which are connected with each other by a short tubular piece 12 flanged at its ends, one flange 13 abutting against flange 4 of one aperture from the inside, while the other flange 14 abuts against the flange 3 from the outside. The tubular piece 12 is fixed to the side walls by a circular row of rivets 15.

The marginal portions of the side walls 1 and 2 are bent outwards at right angles, as shown at 16, and the parts 17 near the free edges of these portions are bent at an obtuse angle. To the parts 16 are riveted metal strips 10 and 11, the lower metal strip having two longitudinal grooves formed therein while the top metal strip 11 has the form of an ordinary channel.

The girder described combines low weight with extraordinary strength and rigidity and can be manufactured at comparatively very low costs.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

I claim:—

1. A low weight sheet-metal girder for air craft construction comprising two juxtaposed apertured side walls, inwardly directed flanges adjoining the apertures of said walls and a tubular connecting piece rigidly fixed between the flanges of oppositely disposed apertures.

2. A low weight sheet-metal girder for air craft construction comprising two juxtaposed apertured side walls, inwardly directed flanges adjoining the apertures of said walls and a flanged tubular connecting piece rigidly fixed between the flanges of oppositely disposed apertures.

3. A low weight sheet-metal girder for air craft construction comprising two juxtaposed apertured side walls, inwardly directed flanges adjoining the apertures of said walls, a flanged tubular connecting piece rigidly fixed between the flanges of oppositely disposed apertures and grooved sheet metal strips fixed to and connecting adjoining longitudinal edges of said side walls.

In testimony whereof I affix my signature.

CLAUDIUS DORNIER.