June 2, 1931. U. TERZOLI 1,808,693

TENT

Filed April 16, 1929

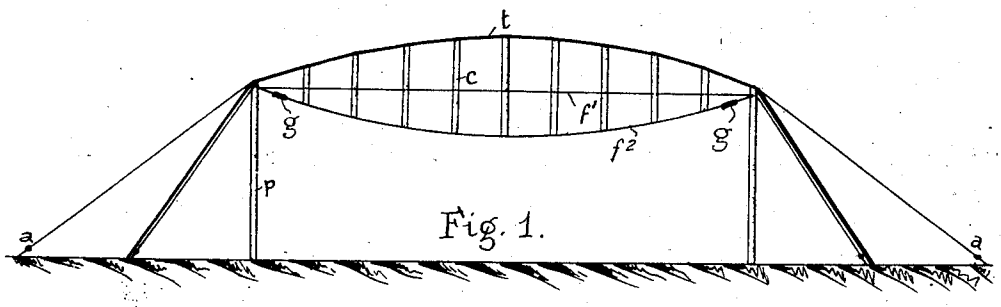


Fig. 1.

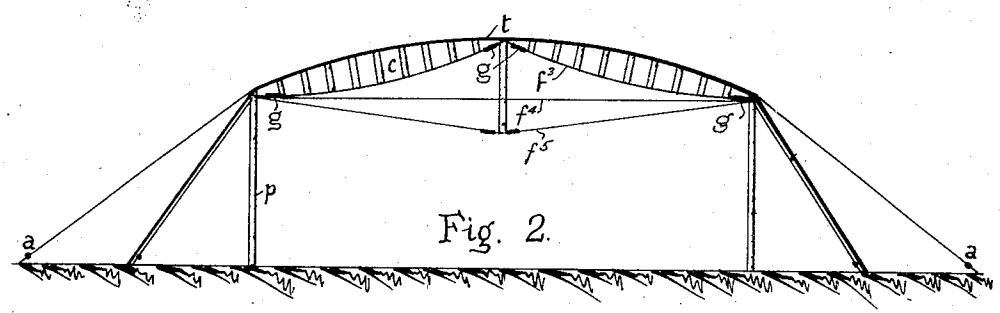


Fig. 2.

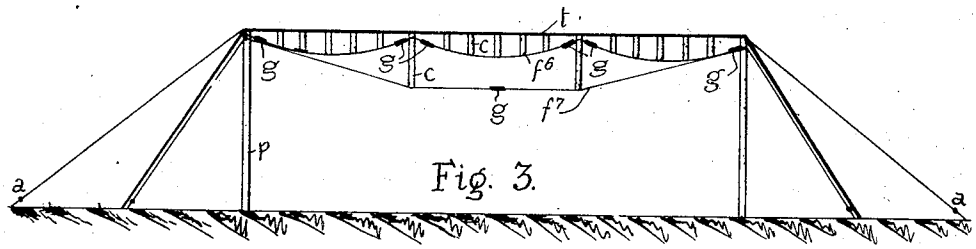


Fig. 3.

INVENTOR
U. Terzoli
BY Langner, Parry, Card & Langner

ATTYS.

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UNITED STATES PATENT OFFICE

UMBERTO TERZOLI, OF ROME, ITALY

TENT

Application filed April 16, 1929, Serial No. 355,556, and in Italy April 25, 1928.

The invention relates to a funicular girder structure for supporting large surfaces of flexible coverings and especially tent-cloth.

The structure according to the invention consists in a flexible part (rope, chain, or the like) conveniently supported at its ends and the overall length of which may be modified by means of inserted stretchers, tackles or the like, and in rigid struts having one of their ends hinged to said flexible part in points thereof which are the points of a funicular polygon or of a catenary, while the other end may be fastened to the covering to be supported and which has the struts bearing against it.

The invention will be more clearly understood by reference to the following description and to the accompanying drawings in which:

Figure 1 shows a constructional form with a simple funicular girder and with a slightly curved covering;

Figures 2 and 3 show an application of the invention to compound funicular girders for a slightly curved and a plain covering respectively.

In the drawings, —*a*— is the anchorage, —*t*— is the covering, for example of tent-cloth, which is prolonged to the ground, —*p*— are the supporting posts or walls, —*c*— are the rigid struts and —*f*— the flexible ropes or chains.

In the case of a simple funicular girder (Figure 1) the structure is made up of two ropes f^1, f^2, of which the lower one is adapted to have its length modified by means of stretchers or the like. In Fig. 2 the guy ropes are shown at f^3, f^4, and f^5, while in Fig. 3 the series of upper guy ropes are indicated at f^6 and the lower guy ropes at f^7. Suitable turn buckles such as *g* are provided for at least some of the said guy ropes. These ropes are secured to the posts —*p*— in a point which is somewhat below the supporting point of the covering, for the purpose of assisting the girder to remain in the vertical plane. Rigid struts —*e*— in a suitable number are hinged with one of their ends to the lower rope —*f*—, while at the upper end they are fastened to the surface to be supported, so that the struts are fixed at their ends in the plane of the funicular girder.

A variation of the length of the tension member (for instance of the lower rope —*f*—) results in a larger or smaller push of the struts on the surface of the cloth to be supported, which is thus caused to stretch. The weight of this surface and its reaction to the distension establishes the equilibrium respecting the push of the struts and the tension of the flexible member.

The above described simple funicular girder may also be a compound girder (Figures 2 and 3), viz. the interval between two successive struts of a first compound girder may be reinforced by another smaller funicular elementary girder, which bears on the struts of the compound girder. This elementary girder has its flexible part and its own struts different from those of the funicular compound girder, while the fastening of the upper ends of the struts is the same as that of the compound girder, this fastening being represented by the surface to be supported.

Of course the invention is not limited to the constructional forms above described and shown in the drawings, but it embraces on the contrary all possible variations.

What I claim is:

1. A supporting structure for flexible coverings, comprising an elongated flexible member, a covering arranged above said member, and rigid struts arranged between said member and said covering for transferring substantially the entire load of the covering to the member.

2. A supporting structure for flexible coverings, comprising an elongated flexible member, a covering to be supported arranged above said member, and rigid compression struts arranged between said member and said covering for transferring substantially the entire load of the covering to the member.

3. A supporting structure for flexible coverings, comprising an elongated flexible member, a covering to be supported arranged above said member, and compression members arranged between said member and said

covering and transferring substantially the entire load of the covering to the member.

4. A supporting structure for flexible coverings, comprising a plurality of elongated flexible members, arranged in substantially end-to-end relation, a covering arranged above said members and extending thereover, a plurality of rigid struts arranged between each of said members and said covering, an elongated flexible member extending in the general direction of the first-mentioned members, and having a length substantially equal to their combined length, and at least one strut between said last-mentioned member and said covering, for transferring the load of said covering, which has been shaped by the first-mentioned struts and members, to said last-mentioned member.

5. A supporting structure for flexible coverings, comprising an elongated flexible member assuming a catenary curve, posts substantially at each end thereof, for supporting the same, a second flexible member extending taut between said posts, and joined thereto at substantially the same points as the first-mentioned member, for preventing spreading of the posts, a covering to be supported mounted on said posts above said members, and rigid struts extending between a member and said covering.

In testimony whereof I have affixed my signature.

UMBERTO TERZOLI.