



164164



G00001

Claims

5 The embodiments of the invention in which an exclusive property or privilege is claimed are described as follows:

1. A support structure for large reflectors formed by a plurality of smaller, rectangle-shaped reflective elements, which comprises of a plurality of essentially identical, relatively small, when compared to the size of said reflective elements, support members so made that they:
 - 10 - exhibit one working surface, which mechanically supports at least a portion of an individual reflecting element, and to which said portion of a reflecting element is affixed by way of integral retaining channels, snap-on brackets, adhesive, screws, bolt-and-nut assemblies or any other mechanical means;
 - 15 - exhibit protrusions designed to interconnect with same on the adjacent member in a manner so as to form a firm, hinge-like junction, allowing two adjacent members so interconnected to turn about each other within a limited range and generally only in the direction in front of the reflector, and
 - 20 - exhibit specially designed openings in their body in which a suitably chosen lengths of a profile can be inserted and installed in a manner so that said lengths of profile remain perpendicular to each other, with at least one of them having a tangent laying in a plane parallel to the member's working surface, and
 - 25 - are capable of distributing and transferring design loads from their working surface across the body and interconnectors without mechanical failure and without substantially deviating from their intended shape;
- 30 and said profile, suitably made to be of sufficient length and cross section such as to fit in said member openings in a manner that when so inserted through several such openings it substantially forces said members to assume and retain the general curve of the profile, which by virtue of the

members' design is replicated at the plurality of working surfaces, thus defining the curvature of at least a section of the reflector.

2. An apparatus of claim 1 wherein each reflective element is supported and
5 attached to at least one of said support members.

3. An apparatus of claim 1 wherein the working surface of each support
member may be essentially flat or curved to follow any predetermined
curvature, as required by the reflector design geometry.

10

4. An apparatus of claim 1 wherein the body of the support members may
also exhibit voids suitably designed to decrease the amount of material
used to manufacture the support member without compromising its
mechanical qualities.

15

5. An apparatus of claim 1 wherein all interconnected support members are
fixed in relative position by way of a profile inserted in at least one of their
specially designed openings.

20 6. An apparatus of claims 1 and 5 wherein banks of at least one support
member(s) are alternately interconnected by inserting the connecting
profile in different specially designed openings on any two adjacent support
members.

25 7. A method of shaping and assembling large reflectors by way of
interconnecting adjacent support members and inserting a contour profile
through their corresponding specially designed openings so as to lock
adjacent support members in a position defined by the shape of said
contour, forming at least one bank of fixed interconnected support
30 elements, and attaching and securing individual reflective elements to each
such bank of support members, to form a large composite reflector.