

PATENT SPECIFICATION

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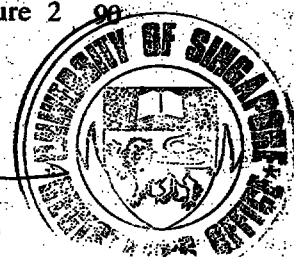
(54) DEVICE FOR LOCATING ELONGATED MEMBERS TO EXTEND IN ANGULARLY RELATED PLANES

- (71) I, SAI KHEONG KWAN, a citizen of the Republic of Singapore, of 34-N High Point, Mount Elizabeth, Singapore 9, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:-
- This invention relates to a device for locating elongated members so that their axis are non-parallel and has for its principal object the provision of a cheap and simple device whereby rods, tubes or the like can be assembled in a desired configuration without great labour or skill. On a large scale the device can be used for scaffolding and on a smaller scale, for example, in display constructions or for supporting laboratory apparatus.
- According to the invention there is provided a device for locating a plurality of elongated members so that their axes are non-parallel, the device comprises a three-dimensional block penetrated by through bores to receive the respective members, the bores having non-parallel axes and the block being cut into two parts through a plane which intersects each of the bores intermediate the ends thereof, means being provided to fasten the parts together again when the members are in the respective bores.
- Preferably the arrangement is such that the fastening means causes each of the members to be clamped between the parts in the respective bore by moving the parts toward one another in a direction non-parallel to the axis of each bore.
- The bores may be three in number, the axis of each being perpendicularly related to the axes of the other two, and the plane through which the two parts are separated is perpendicular to screw-threaded fastening means penetrating the block, the axis of the fastening means being non-parallel to the axis of each bore.
- The block may be a right, six-sided figure such as a cube with diametrically opposite corners cut away to provide mutually parallel flat surfaces to which the fastening means is perpendicular and the block may be divided in a plane between and parallel with said flat surfaces, each of the bores penetrating the block to be perpendicular to a respective pair of parallel faces of the cube.
- A preferred embodiment of the invention will now be described with reference to the accompanying drawings, in which:-
- Figure 1 is a perspective view of a device in accordance with the invention.
- Figures 2 and 3 are respectively a plan view and an underplan view of one half of the device of Figure 1, and
- Figure 4 is a perspective view of the device when assembled with three perpendicularly related rods.
- In Figure 1 AB indicates a $1\frac{1}{2}$ " solid metal cube. X,Y,Z are the mid-points of edges AP, AQ, AR respectively. The pyramid AXYZ has been cut away. At the diagonally opposite corner of the cube a similar pyramid with B as the apex is removed. At the centre of the triangle XYZ and perpendicular to the plane XYZ a hole is bored to receive a screw of $\frac{3}{16}$ " diameter. The plane XYZ and the plane parallel to it at the other end are recessed to accommodate the head of the screw and a nut respectively. Holes of $\frac{25}{64}$ " diameter are drilled on three adjacent surfaces of the cube in positions shown in Figure 1. Each of these holes is perpendicular to the surface in which it is drilled and goes right through the cube AB to the opposite parallel surface. The cube is cut into two equal and identical halves along a plane parallel to and midway between the two triangular planes. The two identical halves of the block, together with the screw and nut, constitute the device. Figure 2

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shows a bird's eye view of one half of the device. Figure 3 shows the plane surface on the reverse side. Figure 4 shows the device used as a joint for 3 rods or tubes meeting at right angles. The rods are securely locked in place by tightening the screw and released by loosening the screw, because metal of a thickness of about 3/64" has been removed from the block in separating the two halves.

The dimensions can, of course, be varied for rods or tubes of different sizes. In general the size of the cube is 3 times the diameter of the rod.

WHAT I CLAIM IS:-

1. A device for locating a plurality of elongated members so that their axes are non-parallel, the device comprising a three-dimensional block penetrated by through bores to receive the respective members, the bores having non-parallel axes and the block being cut into two parts through a plane which intersects each of the bores intermediate the ends thereof, means being provided to fasten the parts together again when the members are in the respective bores.

2. A device as claimed in claim 1, wherein the fastening means is adapted to cause each of the members to be clamped between the parts in the respective bore by moving the parts toward one another in a direction non-parallel to the axis of each

bore.

3. A device as claimed in either preceding claim, wherein the bores are three in number, the axis of each being perpendicularly related to the axes of the other two, and the plane through which the two parts are separated is perpendicular to screw-threaded fastening means penetrating the block, the axis of the fastening means being non-parallel to the axis of each bore.

4. A device as claimed in any preceding claim, wherein the block is a right, six-sided figure such as a cube with diametrically opposite corners cut away to provide mutually parallel flat surfaces to which the fastening means is perpendicular and the block is divided in a plane between and parallel with said flat surfaces, each of the bores penetrating the block to be perpendicular to a respective pair of parallel faces of the cube.

5. A device for locating a plurality of elongated members so that their axes extend in respective, angularly related planes constructed and arranged substantially as herein described and as shown in the accompanying drawings.

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