

"Cable track, in particular for ships, building constructions and the like"

The present invention relates to a cable track, in particular for ships, building constructions and the like, comprising essentially lattice girders for the cables, with connecting links for connecting together the various
5 lattice girders, and supports struts with holders to secure the struts to the girders.

Cable tracks are employed especially in shipbuilding, their main function being to convey large numbers of cables through the hull of the ship in such a manner that
10 they are arranged so as to be visible, are accessible at all times, and are protected from damage.

The known cable tracks of this kind have various drawbacks, in the case of which generally the cables may be slightly damaged during installation in the cable
15 tracks by sharp edges on the body of the track. This occurs as the cables are being pushed along the tracks to bring them into the correct position on the tracks, and also whilst the cables are being secured to the tracks by unsuitable, and especially sharp-edged securing means.

20 In accordance with the present invention, such drawbacks are obviated and, in particular, the problem is solved of providing a cable track in which the cables can be moved along these without risk of damage to the cable sheathing, and can be safely secured without the
25 securing means biting into the sheath of the cables.

According to the present invention there is provided a cable track, in particular for ships, building constructions and the like, comprising lattice girders for the cables, links interconnecting the lattice girders
30 and supports having holders for the lattice girders, the lattice girders comprising longitudinal rails interconnected by cross-pieces secured at equally spaced

intervals to the longitudinal rails, each cross-piece being of isosceles trapezoidal cross-sectional form, the narrower of the two parallel sides of the isosceles trapezoid being intended to face towards the cables to be placed there on and the corners between the said narrower of the two parallel sides and the adjacent sides of the isosceles trapezoid being rounded.

The cross-pieces may be provided with apertures, especially bores, and in particular slots, for the fitting of tensioning straps with fixing nuts for the cables. Apart from requiring a suitable form of construction of the tensioning straps which prevents the edges of the straps biting into the cable sheathing, the straps are provided with strips of cover or protective material enclosing the edges thereof, whereby each side of the strap preferably may have fitted to it a cover or protective strip of material which embraces in each case both sides of the tensioning strap, so that the edges have a double layer of cover material. As material for covering or protecting the tensioning straps, strips of very tough plastic material have been found to be eminently suitable.

The fixing nuts for the tensioning straps are in the form of U-shaped clamps in which bores are oppositely arranged in the limbs connected by the base of the U, at least one of which bores has a width equal to or larger than the inner diameter of the screw but smaller than the outer diameter of the screw, so that an ordinary self-tapping screw can be employed to secure it. One of the bores may, of course, be threaded to receive a steel screw.

The connecting links for the mass-produced lattice

girders are provided with a cap which fits over the edges of the longitudinal rails and also a fish plate contained therein which is secured by a locking screw.

According to a particularly advantageous method of securing the lattice girders to ceilings or the like, with the possibility of variations in use and also the fitting of a plurality of cable tracks one above the other, the supporting struts are flat steel strips having slots in them following their longitudinal axis. The holders for connecting the lattice girders to the supporting struts may assume the form of clamps with claws which engage over the longitudinal rails of the lattice girders and which are secured to said support by locking screws and nuts.

An embodiment of the invention will now be described by way of example, with reference to the accompanying drawings, in which:-

Fig. 1 shows a cable track, viewed from beneath;

Fig. 2 shows a straight lattice girder;

Fig. 3 shows a curved lattice girder;

Fig. 4 shows a cross-piece;

Fig. 5 is a section through a cross-piece;

Fig. 6 shows a tensioning strap and a section therethrough;

Fig. 7 shows a fixing nut and a section therethrough;

Fig. 8 shows a self-tapping screw for the nut;

Fig. 9 shows a connecting link for the lattice girders;

Fig. 10 is a section through the connecting link;

Fig. 11 is a section through a supporting strip, with a holder for the lattice girders; and

Fig. 12 shows the same supporting strip with holder, seen from the front.

Referring now to Fig. 1, supporting strips 19 are

secured by suitable means (not illustrated) to a ceiling. Lattice girders 10,11 which are connected to each other by connecting links 18 are attached to the supporting strips 19 by clamps 21. It will be seen that the lattice girders 10,11 on which cables 27 rest, consist of straight or curved longitudinal rails 28, for example of strip steel, interconnected by cross-pieces 12.

The lattice girders 10,11 with the cross-pieces 12 are shown enlarged in Figs. 2 to 5. Fig. 2 shows a straight lattice girder 10 and Fig. 3, a 90° arcuate lattice girder 11. The cross-pieces 12, which are here of trapezoidal construction, are provided with slots 13 for fitting tensioning straps for the cable harnesses.

The narrow side a of the trapezoid, on which the cables are placed, is connected to the adjoining side b by prominent shoulders R (most clearly shown in Fig. 5), so that, when the cables are placed on the track, or more so, when drawn or pushed along the track, these are in sliding contact with smooth shoulders and not sharp edges which might damage the cable sheathing.

Figs. 6 to 8 show the tensioning means for the cables, i.e. a tensioning strap 24, one end of which is passed through and interlocked with the slots in the cross-pieces 12, and also a U-shaped fixing nut 25 and a screw 26 which is inserted through a bore 30 in one limb of the nut 25 and is screwed into a smaller bore 31 in the other limb. The tensioning strap 24, which may be provided with edges bevelled flat pointing away from the cables, is encased in strips of protective material 29 which overlap at the edges of the tensioning strap 24, so that there is a double protective layer at the edges.

The connecting link 18, shown in Figs. 9 and 10, for connecting the lattice girders 10,11 to each other, comprises a cap 14 which fits over the edges of the

longitudinal rails 28, and a fish plate 15 contained in the cap and thus secured against rotation. The fish plate 15 is secured to the cap by a locking screw 16 with a nut 17 which is secured against rotation.

- 5 In Figs. 11 and 12 the lower part of a supporting strip 19 for the lattice girders 10,11 is shown. The strip is secured to the ceiling, for example, by welding. The longitudinal rails 28 of the lattice girders are then fitted at the desired height to the supporting
- 10 strips 19 by the clamps 21 with locking screws 22 inserted through slots 20 and nuts 23, the clamps 21 having claws 32 which engage over the edges of the rails 28, whereupon the installation of the cables in the cable track can be undertaken.



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CLAIMS

1. A cable track, in particular for ships, building constructions and the like, comprising lattice girders for the cables, links interconnecting the lattice girders and supports having holders for the lattice girders, the
5 lattice girders comprising longitudinal rails interconnected by cross-pieces secured at equally spaced intervals to the longitudinal rails, each cross-piece being of isosceles trapezoidal cross-sectional form, the narrower of the two parallel sides of the isosceles
10 trapezoid being intended to face towards the cables to be placed there on and the corners between the said narrower of the two parallel sides and the adjacent sides of the isosceles trapezoid being rounded.
2. A cable track according to claim 1, wherein the
15 cross-pieces are provided with bores or slots for the fitting of tensioning straps with fixing nuts for the cables.
3. A cable track according to claim 2 wherein the tensioning straps are provided with strips of cover or
20 protective material enclosing the edges thereof.
4. A cable track according to claim 3, wherein each side of the strap fitted to it a cover or protective strip which embraces in each case both edges of the tensioning strap.
- 25 5. A cable track according to claim 3 or 4, wherein said cover or protective strips are of plastics material.
6. A cable track according to claim 2, 3 or 4, wherein the fixing nuts for the tensioning straps are in the form
30 of U-shaped clamps in which bores are oppositely arranged in the limbs connected by the base of the U, at least one of which bores has a width equal to or larger than the inner diameter of a screw but smaller than the outer diameter of said screw.
- 35 7. A cable track according to any preceding claim, wherein the connecting links for the lattice girders are provided with a cap which fits over the edges of the

longitudinal rails, and also with a fish plate contained therein which is secured by a locking screw.

8. A cable track according to any preceding claim, wherein the supports are flat steel strips having slots
5 in them following their longitudinal axis.

9. A cable track according to any preceding claim, wherein the holders for connecting the lattice girders to the supports are in the form of clamps with claws which engage over the longitudinal rails of the lattice
10 girders and which are secured to said supports by locking screws and nuts.

10. A cable track substantially as hereinbefore described with reference to the accompanying drawings.

