

United States Patent

Wyss

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[54] **LATTICE GRID ASSEMBLY**

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[30] **Foreign Application Priority Data**

April 2, 1970 Switzerland.....4873/70

[52] U.S. Cl.52/665, 52/581, 52/669

[51] Int. Cl.E04c 2/42, F16s 3/08

[58] Field of Search.....52/581, 626, 664, 665, 669; 287/189.36 C; 29/160

[56] **References Cited**

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Primary Examiner—Alfred C. Perham

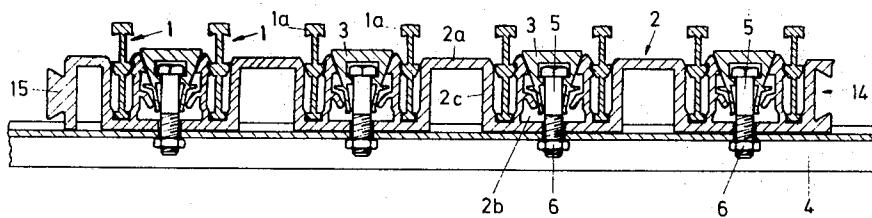
Attorney—Sughrue, Rothwell, Mion, Zinn & Macpeak

[57]

ABSTRACT

A lattice grid assembly comprising a plurality of spaced, parallel, longitudinal rods secured to lateral clamping bars. The bars have pockets formed by resilient gripping members adapted to engage bosses on the sides of the rods when they are inserted into the pockets. Pairs of adjacent gripping members are urged against the rods by a screw tightened wedge interposed between each pair.

6 Claims, 4 Drawing Figures



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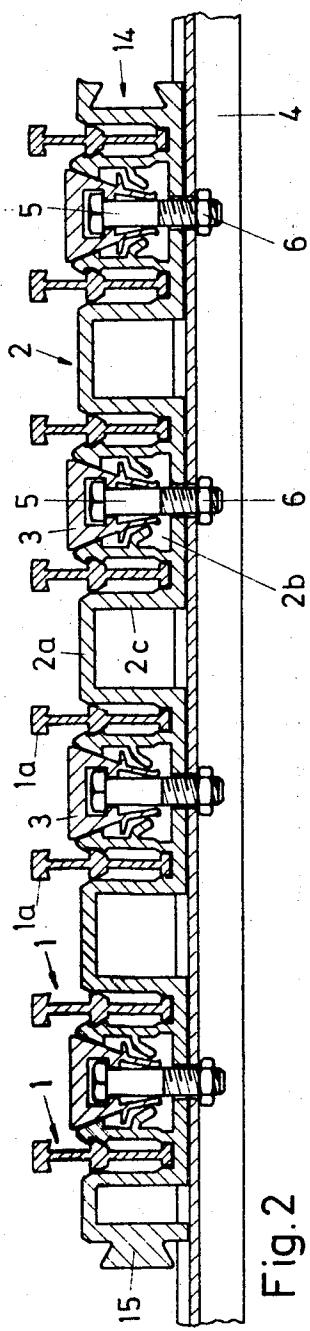


Fig. 2

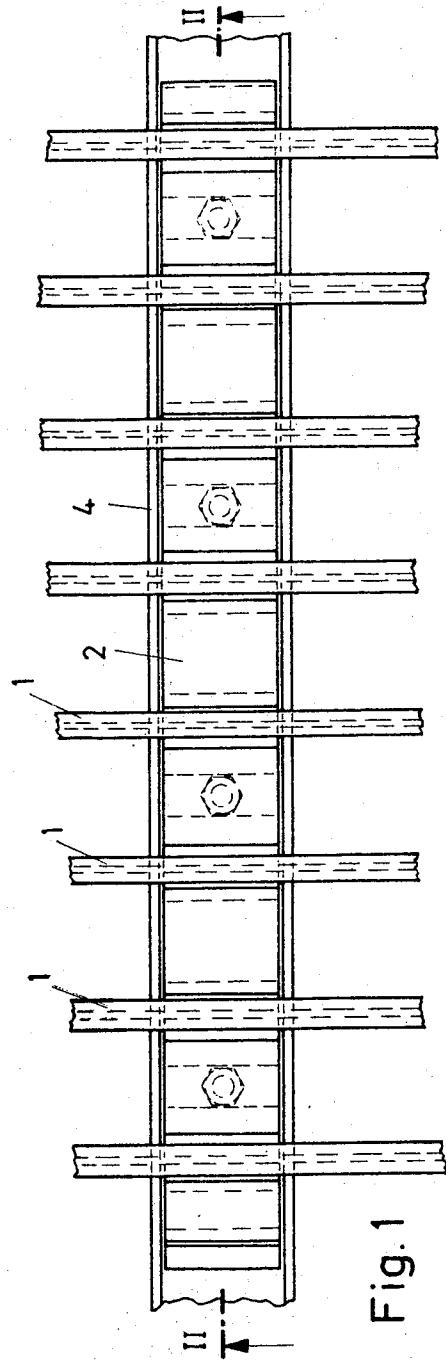


Fig. 1

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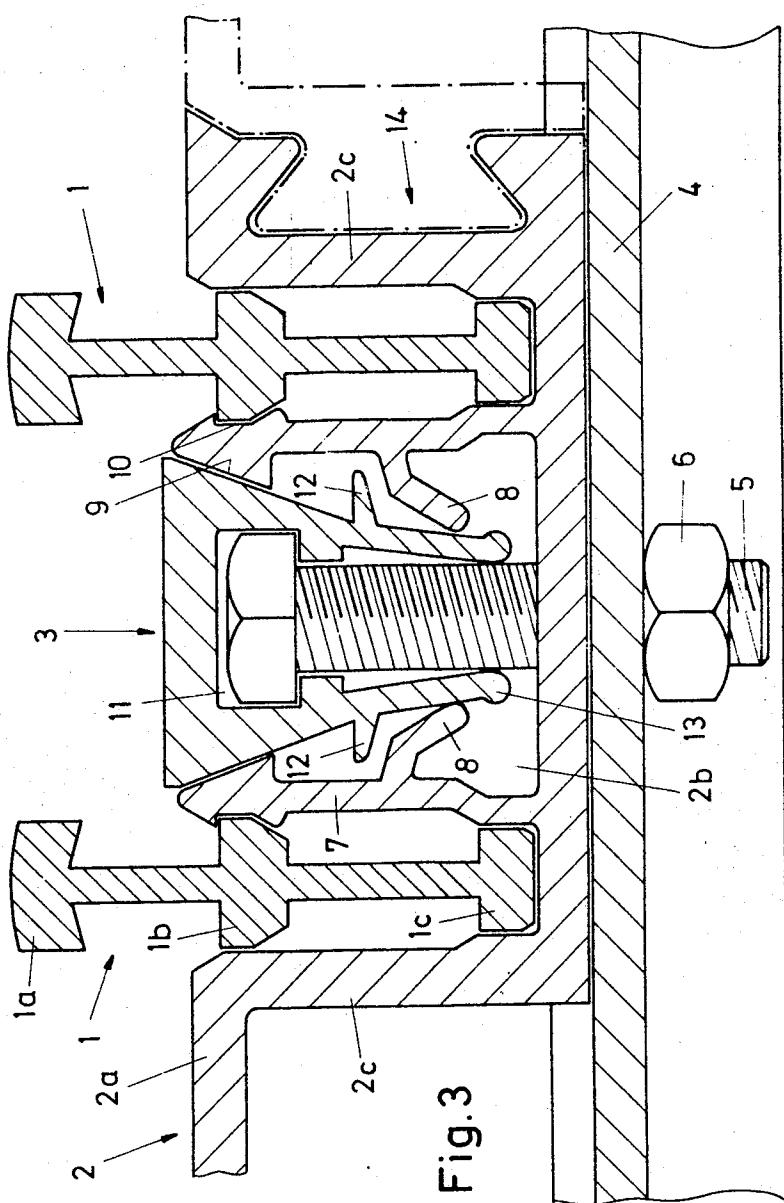
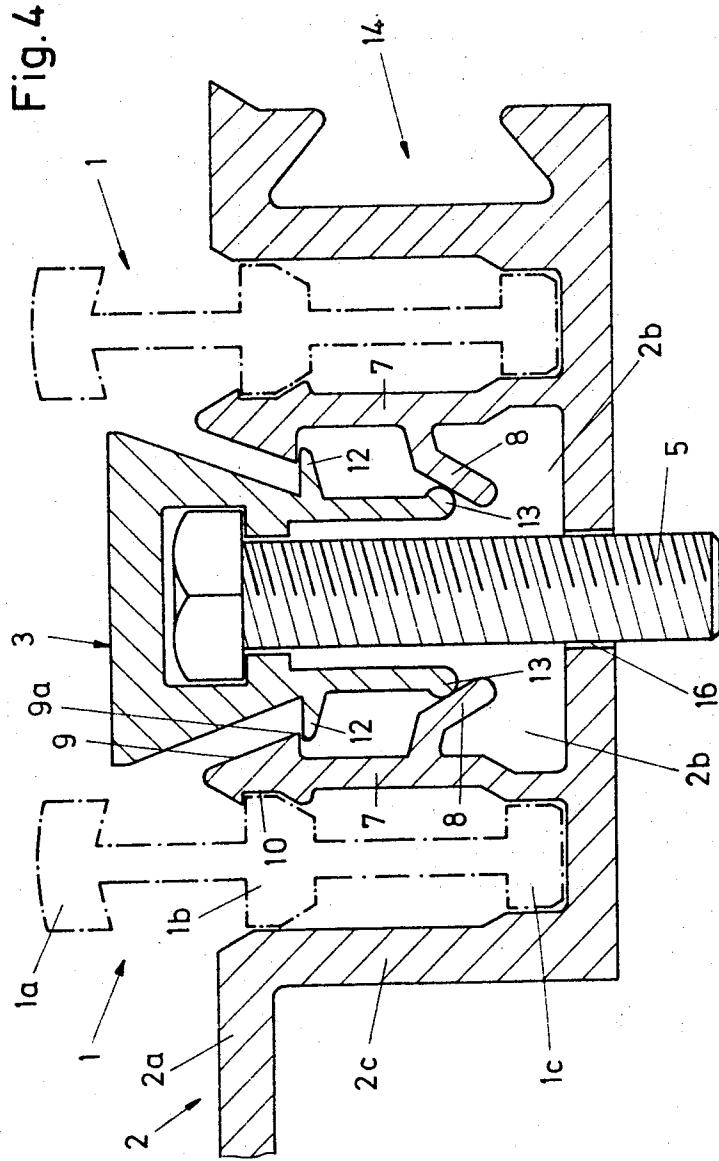


Fig. 3

Fig. 4



LATTICE GRID ASSEMBLY

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

This invention relates to a lattice grid made up of longitudinal rods and lateral clamping bars, and is adapted to be used for shaft covers, linings, and the like. Its purpose is to provide a lattice grid which is composed of parts which can be held individually and partially mounted on bearings and which can be assembled in a simple manner having any desired dimensions, whereby no welding or pressing work is necessary.

SUMMARY OF THE INVENTION

The invention consists in the fact that the lateral clamping bars have projections or bosses which are held in a force-locking manner and which are firmly clamped between elastically deformable partition walls of the lateral clamping bars, whereby the partition walls are secured by wedges attached by means of tensioning elements.

The lateral clamping bar is preferably arranged on a lateral cross bar and is attached to this cross bar by means of tension screws on the wedges.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a top view of a part of a lattice grid;

FIG. 2 is a cross-section taken along lines II-II in FIG. 1;

FIG. 3 is a cross-section through a portion of a lateral cross bar of an assembled lattice grid, on a larger scale; and

FIG. 4 is a cross-section as in FIG. 3, but during an intermediate assembly phase.

DESCRIPTION OF THE PREFERRED EMBODIMENT

As shown in FIGS. 1 and 2, the lattice grid consists of longitudinal rods 1, lateral clamping bar 2, wedges 3, lateral cross bar 4, and tension screws 5 with nuts 6. FIGS. 1 and 2 show a part of a lattice grid in the assembled state.

The longitudinal rods 1 have a head 1a, a central boss 1b, and a foot 1c (see also FIGS. 3 and 4).

The lateral clamping bar 2 has elevated channels 2a with vertical walls 2c, and in between, recesses 2b in each of which two longitudinal rods 1 are firmly clamped by means of a wedge 3. In every recess 2b there are two elastically flexible partition walls 7. These walls have noses 8 and slanting surfaces 9 at the sides that are opposite each other. Furthermore, the wall surface of every partition 7 which is opposite the slanted surface 9 is provided with a recess which is adapted to accommodate the middle boss 1b of a longitudinal rod 1.

Every wedge 3 has a recess 11 for the head of a tension screw 5. On the slanted side surfaces of wedge 3 there are bosses 12 and the lower ends have thickenings 13.

In the assembled state, the foots 1c of the longitudinal rods 1 engage suitably designed recesses between the vertical walls 2c and the partitions 7. The middle bosses 1b bear against the walls 2c on one side, and on the other side, grip the recesses 10 of the partitions 7

from underneath. The wedges 3, which are under tension from the screws 5, press the elastically flexible partitions 7 against the middle bosses 1b through the force of their wedge surfaces against the slanted surfaces 9.

5 The longitudinal rods 1 are thus firmly clamped in a force-locking manner between the walls 2c and the recesses 10.

On one end the lateral clamping bar 2 has a trapezoidal groove 14 and on the opposite end a corresponding trapezoidal boss 15. Any required number of clamping bars 2 may thus be interconnected to form a lattice grid of desired dimensions.

The lattice grids are assembled in two steps. First of all, tension screws 5 are inserted in four wedges 3 at a time.

15 The four wedges are then inserted in the four recesses 2b of a lateral clamping bar 2 so that they will assume the position shown in FIG. 4 so that the screws 5 will extend through the holes 16. During insertion the bosses 12, while resting against the slanted surfaces 9, force the elastic partitions 7 somewhat apart. The partitions 7 once again elastically return to their starting position as soon as the bosses 12 have been moved past the edges 9a. In the intermediate phase, illustrated in

20 FIG. 4, the thickenings 13 of the wedges rest against the noses 8 of the partitions 7 and the wedges 3 are held firmly by means of the edges 9a of the slanted surfaces 9. In this assembly state, the lateral clamping bars are placed on bearings.

25 30 When a lattice grid of certain dimensions is to be made, the required number of longitudinal rods 1 are cut to the desired length. Likewise, lateral cross bars 4 are cut to the desired length and are provided with holes for the tension screws 5. The longitudinal rods are then inserted in the recesses provided for this purpose between walls 2c and 7, whereby the partitions 7 are somewhat elastically deformed against the wedges until the middle bosses 1b come to rest in the recesses 10.

35 40 In these terminal positions, the longitudinal rods are provisionally firmly clamped by the rebounding partitions 7. The cross bar 4 are now placed over the protruding screws 5 on the underside of the lateral bars 2 and are attached by means of nuts 6. In tightening the nuts 6, the wedges 3 are drawn into the terminal position shown in FIG. 3, in which they firmly press the partitions 7 against the middle bosses of the longitudinal rods.

45 50 The finished lattice grids can then be surrounded in the usual manner by a sash frame, not shown here.

The heads 1a of the longitudinal rods 1 can of course have any desired form, and for example, can be designed considerably wider than shown in the drawings.

55 60 The longitudinal rods 1, the lateral clamping bars 2, and the cross bars 4 are preferably made of light metal and the wedges 3 are preferably made of plastic. But all parts can be made of other raw materials, for example brass, or they can be made entirely of plastic.

What is claimed is:

1. A lattice grid assembly, comprising:

- a plurality of longitudinal rods each having bosses thereon,
- a plurality of lateral clamping bars extending transversely across the rods for holding them in a spaced relationship to thereby form a grid pattern, each clamping bar including a plurality of elasti-

cally deformable gripping members adapted to engage the bosses on the rods, and
c. a plurality of tensioned wedge members for urging the gripping members against the rods.

2. A lattice grid assembly as claimed in claim 1, wherein the gripping members are arranged in pairs and a single wedge member is interposed between each pair.

3. A lattice grid assembly is claimed in claim 2 wherein each clamping bar has a plurality of channel recesses and a pair of gripping members are positioned in each recess to thereby form two pockets between the gripping members and the side walls of the recess for receiving the longitudinal rods.

4. A lattice grid assembly as claimed in claim 3 wherein each gripping member has a slanted face for engagement by a wedge member, a nose projection on

the same side as the slanted face and a shoulder on the opposite side for retainingly engaging the boss on a longitudinal rod, and each wedge member has lateral projections for catching under the slanted faces of the gripping members during an intermediate assembly stage and enlarged end pieces for resting against the nose projections during said stage.

5. A lattice grid assembly as claimed in claim 2, further comprising a cross bar on which at least one of the clamping bars is mounted by bolt means secured to the wedge members and extending through the clamping bar and the cross bar.

6. A lattice grid assembly as claimed in claim 5 further comprising means for securing two clamping bars together end-to-end.

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