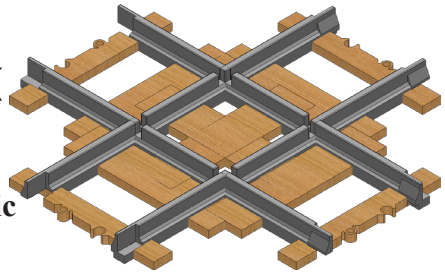
Chapter 39

Solar Train

Crossover Track



A. Insert Straight Track Assembly <1>.

Step 1. Click **New** on the Standard toolbar, click **Assembly Metric** and OK.

Step 2. Select your **STRAIGHT TRACK ASSEMBLY** file and click Open from Open dialog box.

Step 3. In the Begin Assembly Property Manager set:
under Options, **Fig. 1**
Fix/float component on insert: Fix
Click OK in the Property Manager. This will place Assembly origin at the assembly origin and fix the position so Assembly cannot move. This fixed component should have a **(f)** before its name in the Feature Manager (f) STRAIGHT TRACK ASSEMBLY<1>.

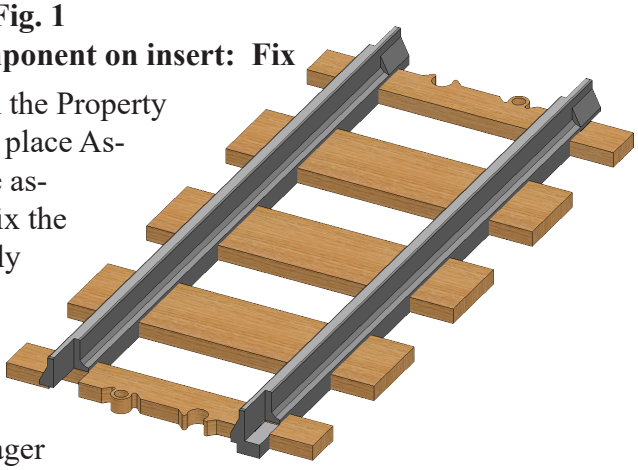


Fig. 2

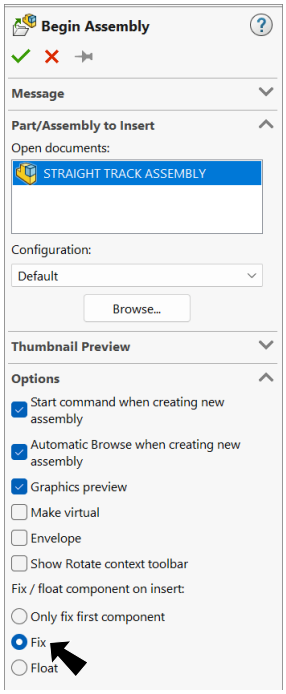


Fig. 1

B. Insert Straight Track Assembly <2> Rotate 90.

Step 1. Click **Insert Components** on the Assembly toolbar.

Step 2. Select your **STRAIGHT TRACK ASSEMBLY** file and click Open.

Step 3. Back in the Begin Assembly Property Manager:
under Options , **Fig. 3**
check **Show Rotate context toolbar**

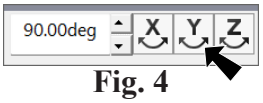


Fig. 4

Step 4. In the Rotate context toolbar click the **Y axis** to rotate **90°**, **Fig. 4**

Step 5. Click OK in the Property Manager.

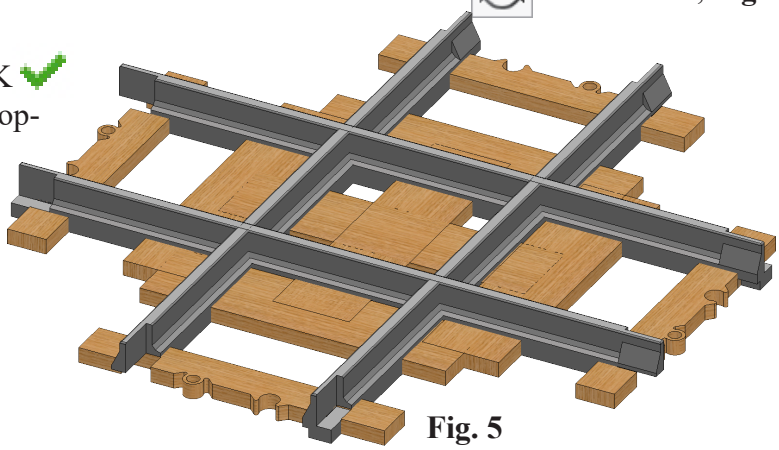


Fig. 5

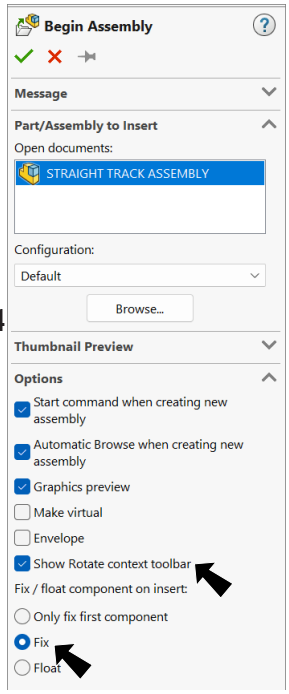


Fig. 3

http://www.cudacountry.net email:cudacountry@hotmail.com

C. Save as "CROSSTRACK ASSEMBLY".

Step 1. Click File Menu > Save As.

Step 2. Key-in **CROSSTRACK ASSEMBLY** for the filename and press ENTER.

D. Save As Crosstrack Part.

Step 1. Click File Menu > Save As.

Step 2. In the Save A dialog box, **Fig. 6**.
key-in **CROSSTRACK** for filename
Save as type: select **SOLIDWORKS Part**
under Geometry to save
select **All components**
click Save.

Step 3. Close ASSEMBLY file.

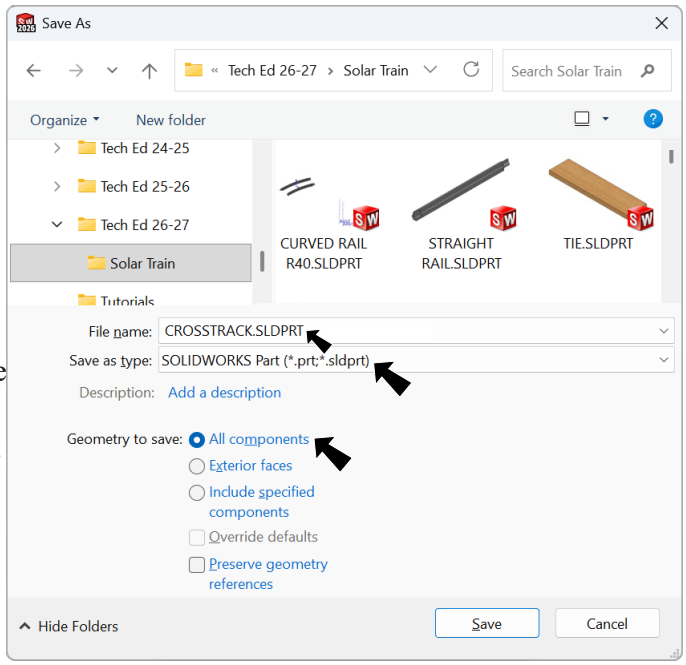


Fig. 6

E. Add to New Folder.

Step 1. Open the **CROSSTRACK part file**.

Step 2. **Shift click all the Solids** in the Feature Manger to select all and **right click, then click Add to New Folder**, **Fig. 7**.

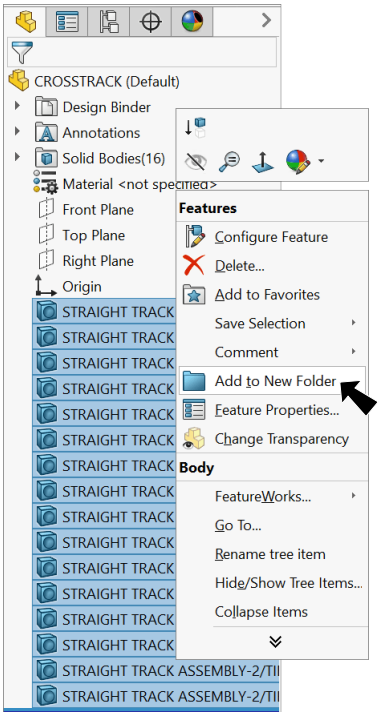


Fig. 7

F. Cut.

Step 1. Click the **top face of a Rail** and click **Sketch** on the context toolbar, **Fig. 8**.

Step 2. Click **Normal To** on the Standard Views toolbar. **(Ctrl-8)**

Step 3. Zoom in top left intersection of Rails, **Fig. 9**.

Step 4. Click **Line** **(L)** on the Sketch toolbar.

Step 5. Sketch **6 lines starting along edge of Rail**, **Fig. 10**.

Step 6. **Unselect Line tool**. To unselect, right click graphics area and click Select from menu.

Step 7. **Ctrl click the two line off the Rail** to select both. Release Ctrl key and click **Make Equal** on the context toolbar, **Fig. 11**.

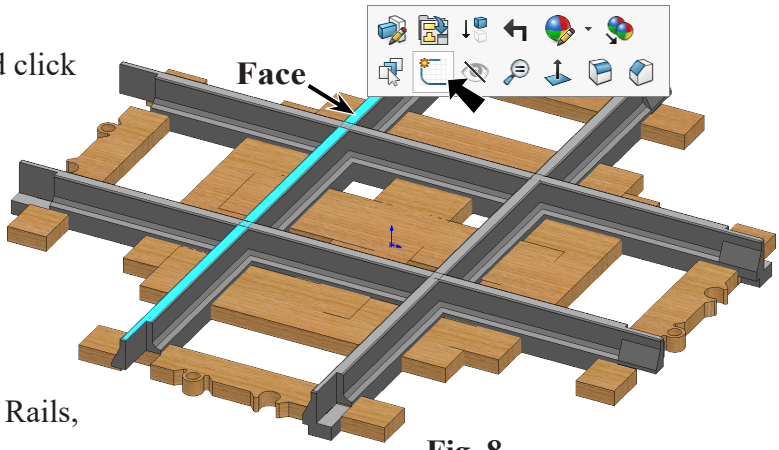


Fig. 8

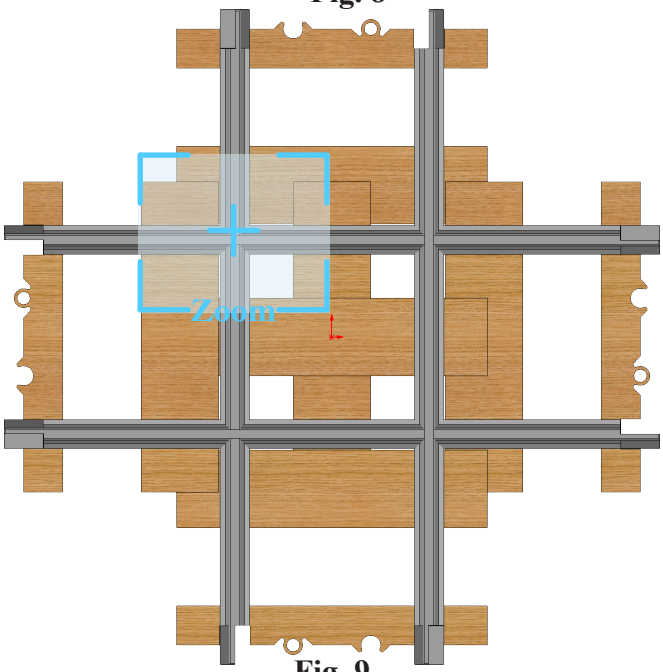


Fig. 9

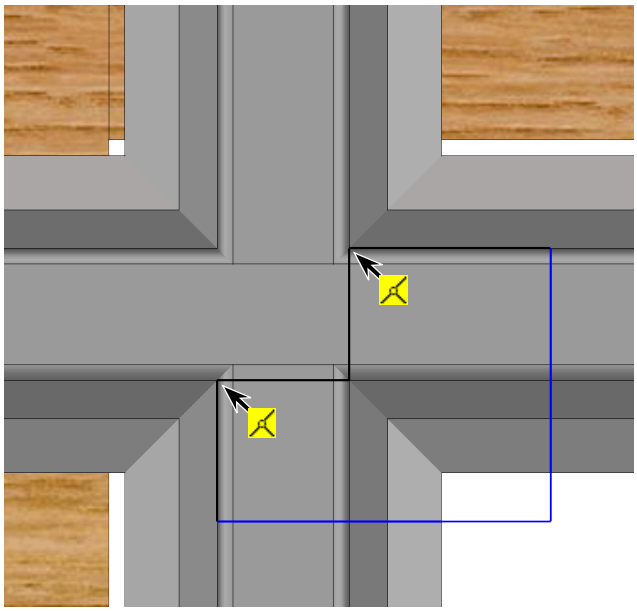


Fig. 10

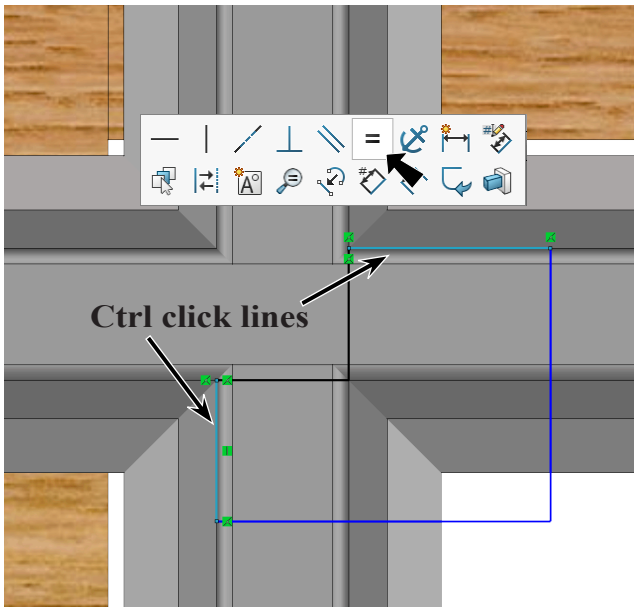


Fig. 11

Step 8. Click **Smart Dimension** 

(S) on the Sketch toolbar.

Step 9. Add **2.7** dimension, **Fig. 12**.

Step 10. **Unselect Smart Dimension**. To unselect, right click graphics area and click Select from menu.

Step 11. **Ctrl drag** a selection to **select all lines**, **Fig. 13**.

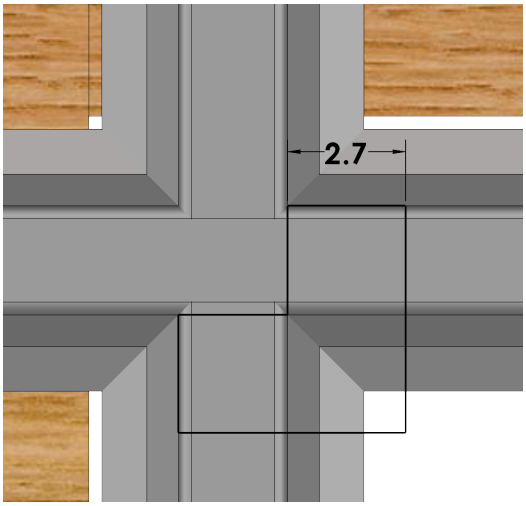


Fig. 12

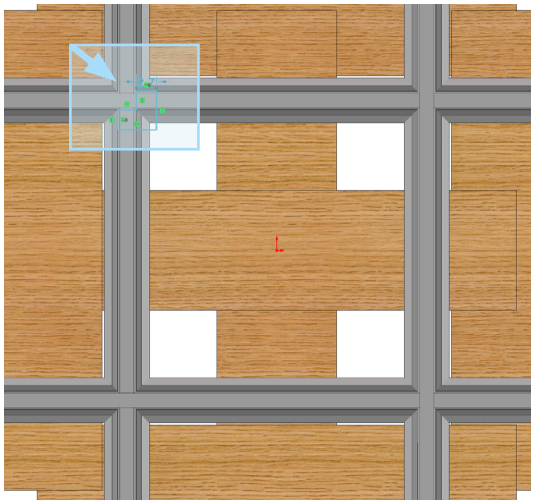
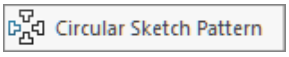


Fig. 13

Step 12. Click **Circular Sketch Pattern** 

in the **Linear Sketch Pattern flyout** 

on the Sketch toolbar.

Step 13. In the Circular Sketch Pattern Property Manager set:
under Parameters **Fig. 14**
Angle **360**
select **Equal spacing**
Number of Instances **4**
under Entities to Pattern
lines were preselected
click OK .

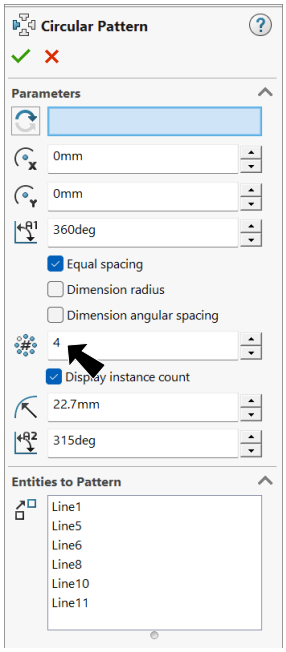


Fig. 14

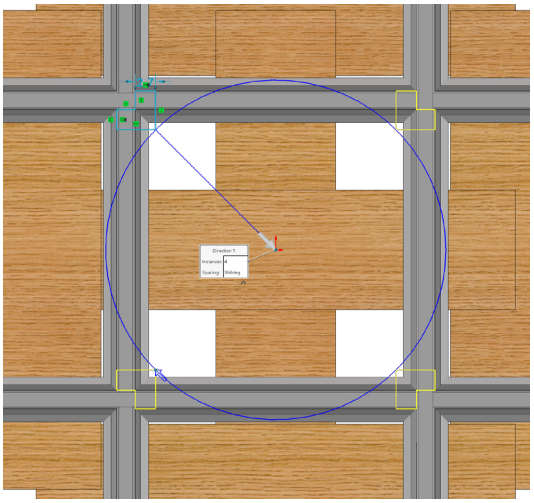


Fig. 15

Step 14. Click **Isometric** on the Standard Views toolbar. (**Ctrl-7**)

Step 15. Click **Features** Features on the Command Manager toolbar.

Step 16. Click **Extruded Cut** Extruded Cut on the Features toolbar.

Step 17. In the Cut-Extrude Property Manager set:
under Direction 1, **Fig. 16**

Depth D1 **4.4**

click OK .

Step 18. Save (**Ctrl-S**).

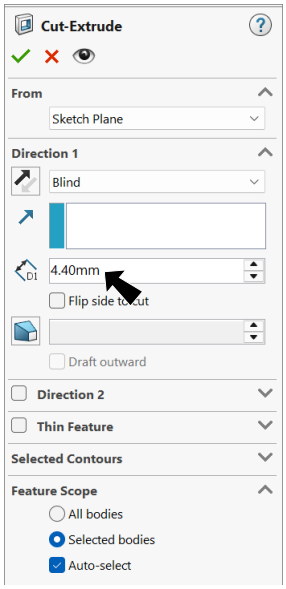


Fig. 16

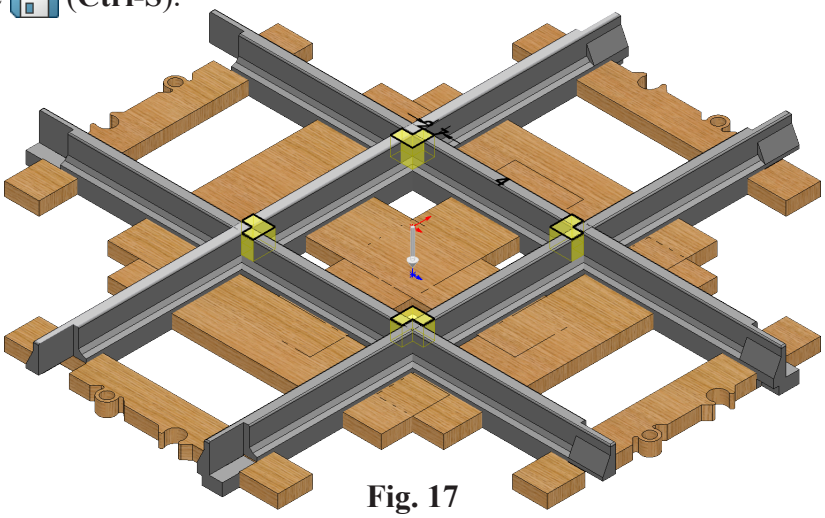


Fig. 17

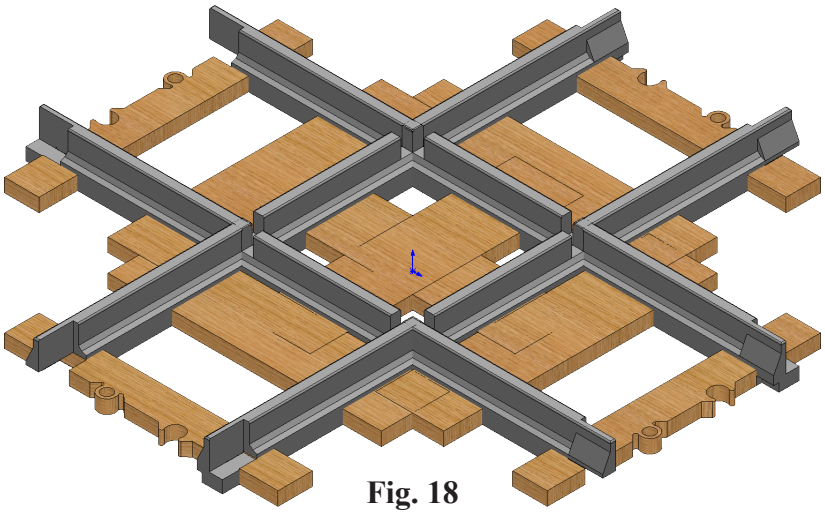


Fig. 18

G. Fillets 1-4.

Step 1. Click **Fillet** 

on the Features toolbar.

Step 2. In the Fillet Property Manager set:
select **FilletXpert**, **Fig. 19**

① **Radius** .3
click **inside edge of cut in one Rail**, **Fig. 20**
click **Apply**
② **Repeat at cut on the other 3 Rails**, **Fig. 21** and **Fig. 22**.
click **Apply**
click OK .

Step 3. Save (**Ctrl-S**).

Tip: Can only apply fillets on the same body. Four Rail bodies so have to apply four times. One could combine bodies, but lose appearances.

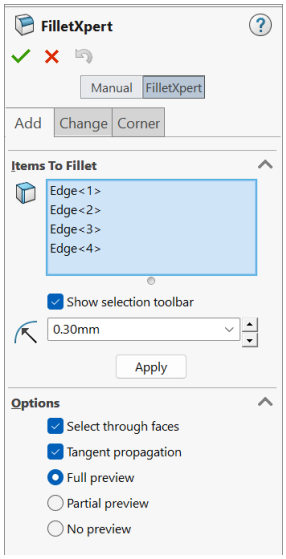


Fig. 19

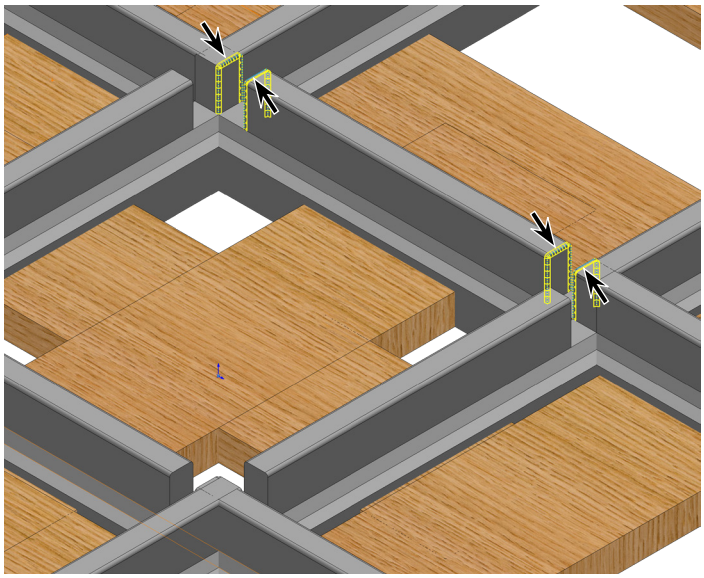


Fig. 20

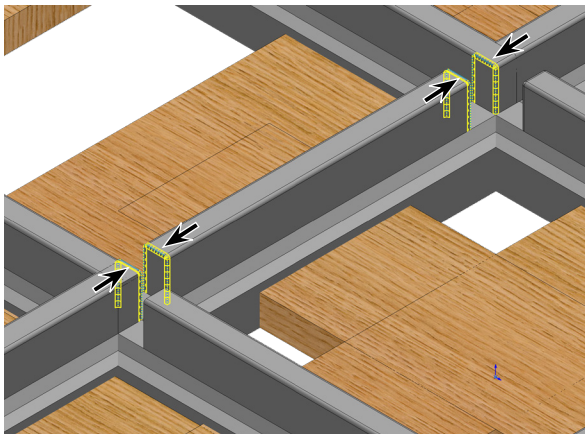


Fig. 21

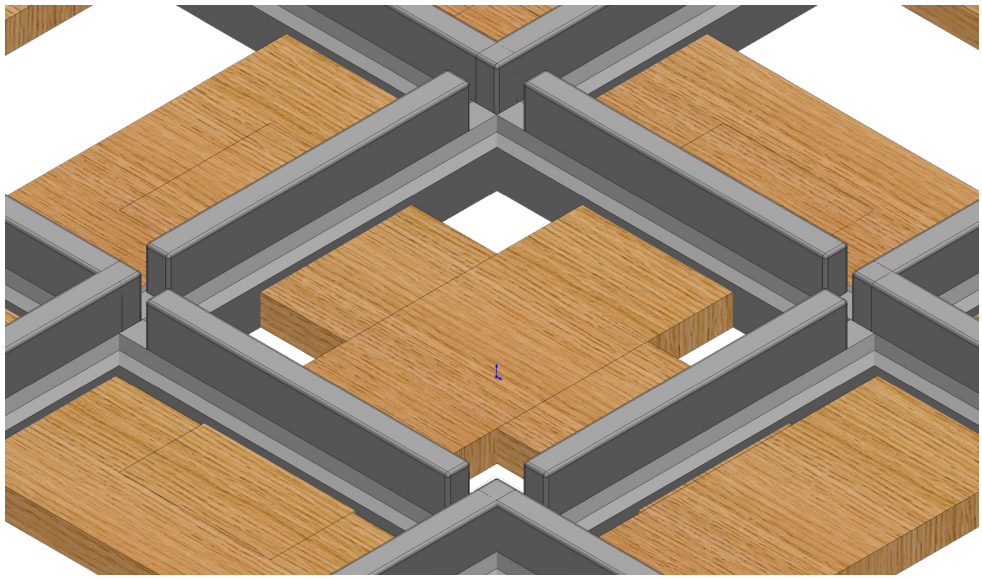


Fig. 22