


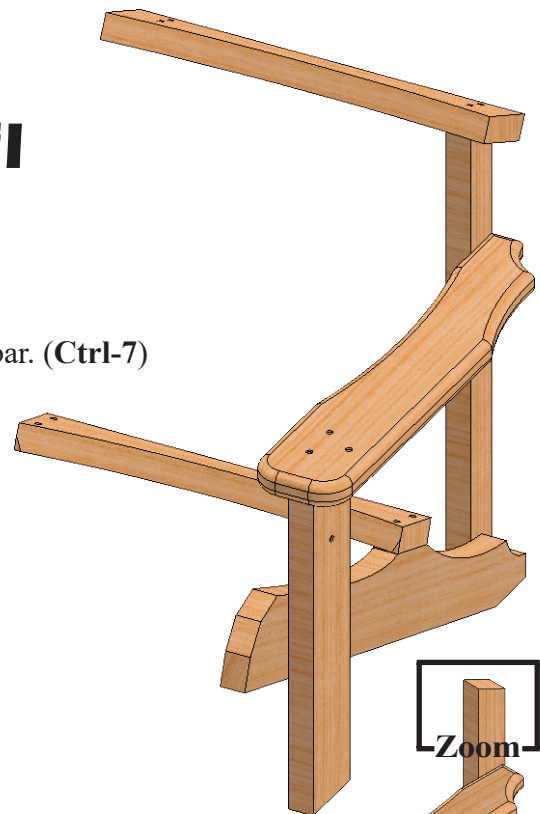
# Chair Top Rail

## A. 3D Sketch.

Step 1. If necessary, open your CHAIR file.


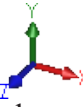
Step 2. Click **Isometric**  on the Standard Views toolbar. (Ctrl-7)

Step 3. Zoom in around **top of back leg**, Fig. 1. To zoom, place the cursor over the top of back leg area and spin the wheel on mouse back. While spinning the wheel keep cursor on the area.



Step 4. Click **3D Sketch**  on the Weldments toolbar.

Step 5. Click **Line**  (L) on the Sketch toolbar.

Step 6. Press Tab to change sketch plane to **YZ** plane . View the Reference Triad  at bottom left corner of display to determine sketch plane.

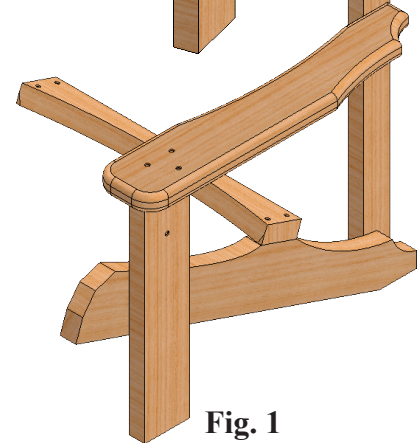



Fig. 1

Step 7. Sketch a line from outside rear corner of leg, Fig. 2.

Step 8. **Right click graphics area and click Select** from menu to unselect Line Tool.

Step 9. **Ctrl click the outside top edge of leg body and line** to select both. Release Ctrl key and click **Make Collinear**  on the context toolbar, Fig. 3.

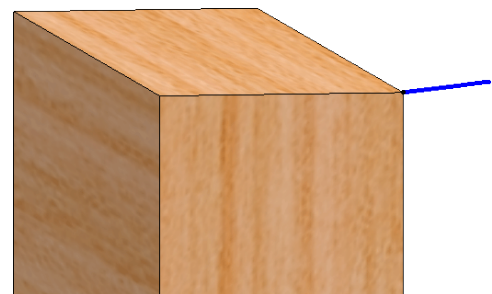


Fig. 2

Step 10. Click **Smart Dimension**  (S) on the Sketch toolbar.

Step 11. Dimension line .25, Fig. 4.

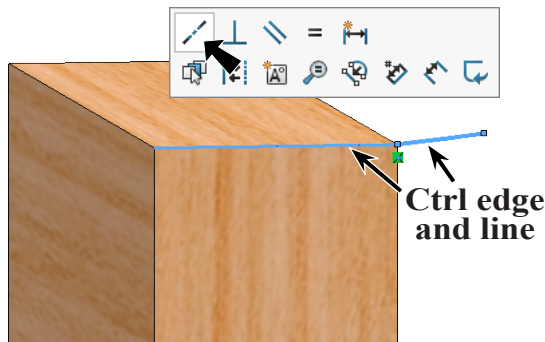


Fig. 3

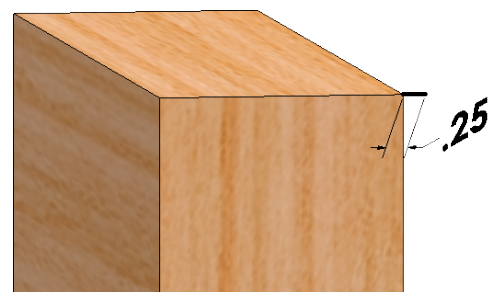



Fig. 4

Step 12. Click **Line**  (L) on the Sketch toolbar.

Step 13. Press Tab to change sketch plane to **XY** plane

Step 14. Sketch a line from **left to right** away from short line, **Fig. 5**. To sketch line on X axis, click away from short line at approximately Position 1 to start line. Move cursor across sketch along X

axis, when cursor changes to  (yellow X) click, Position 2.

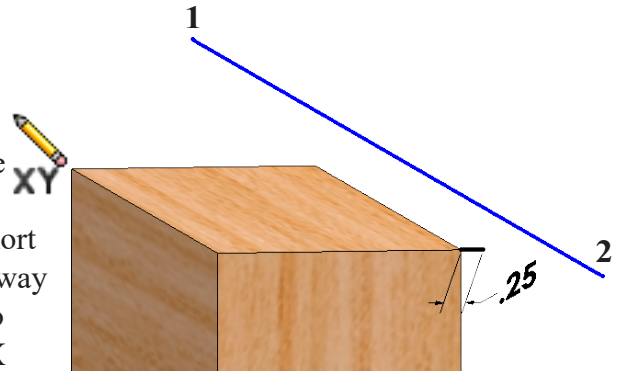



Fig. 5

Step 15. Click **Smart Dimension**  (S) on the Sketch toolbar.


Step 16. Dimension line **23.25**, **Fig. 6**.

Step 17. **Right click graphics area and click Select** from menu to unselect Smart Dimension.

Step 18. **Ctrl click endpoint of short line and long line. Release Ctrl key and click Make Coincident**  on the context toolbar, **Fig. 7**.

Step 19. Click **Smart Dimension**  (S) on the Sketch toolbar.

Step 20. Add **1.5** dimension, **Fig. 8**. Before adding dimension, you might have to zoom out, use Z key, and drag left endpoint out to left.

Step 21. Click **Zoom to Fit**  (F) on the View toolbar.

Step 22. Click **3D Sketch**  on the Weldments toolbar to exit 3D Sketch.

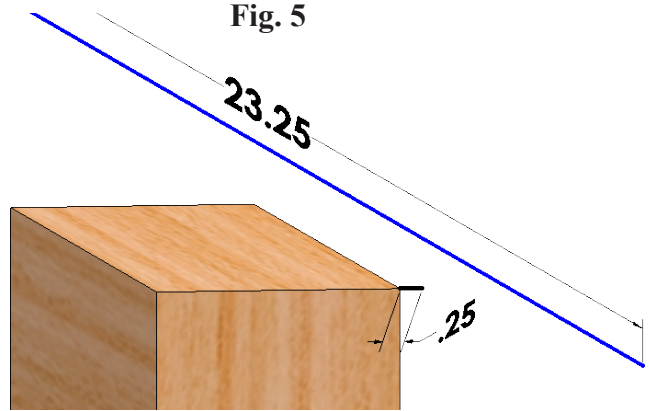


Fig. 6

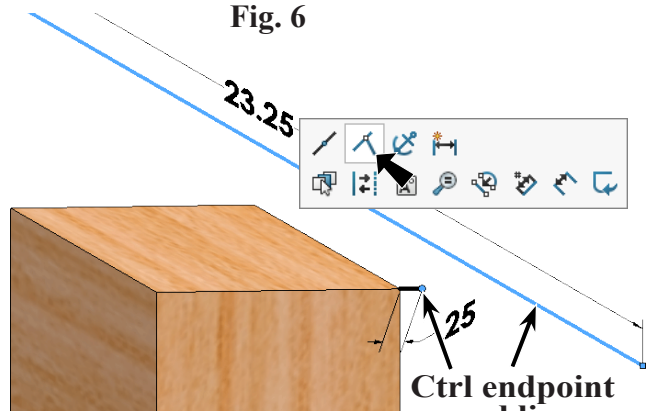


Fig. 7

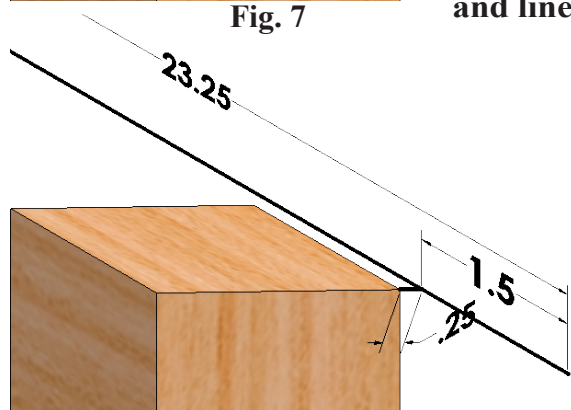


Fig. 8

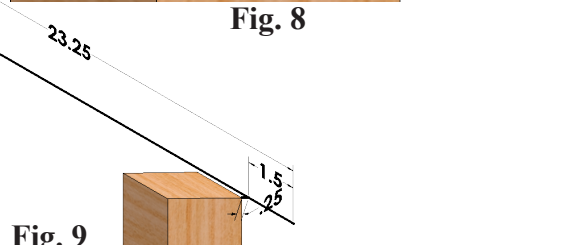


Fig. 9

## B. Structural Member.

Step 1. Click **Trimetric**  on the Standard Views toolbar.

Step 2. Click **Structural Member**  on the Weldments toolbar.

Step 3. In the Structural Member Property Manager set:

under Standard, **Fig. 10**

**My Profiles**

under Type:

**Chair Wood**

under Size:

**2 x 6**

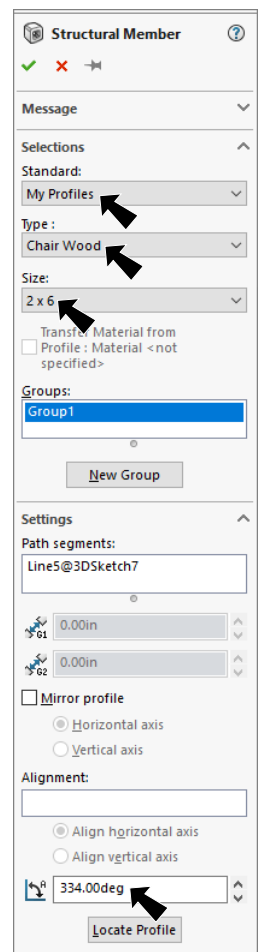
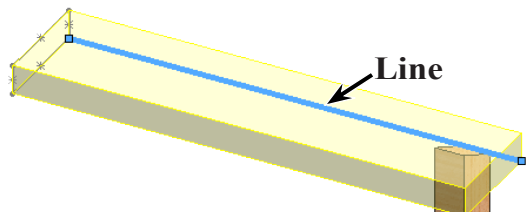
click **long line** in 3D sketch, **Fig. 11**

under Settings

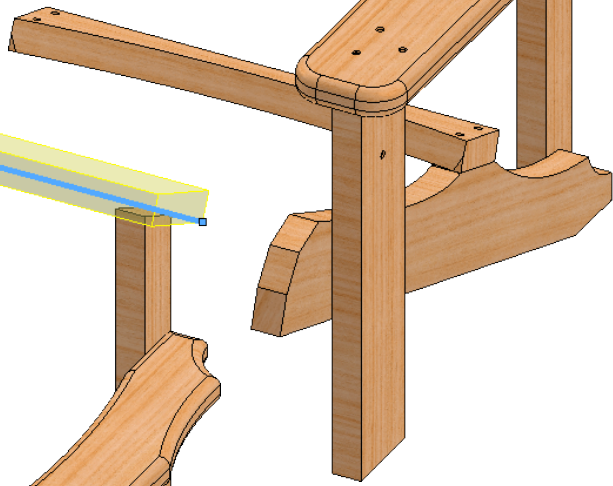
**Rotation Angle**  **334°**

press **Tab** key, **Fig. 12**

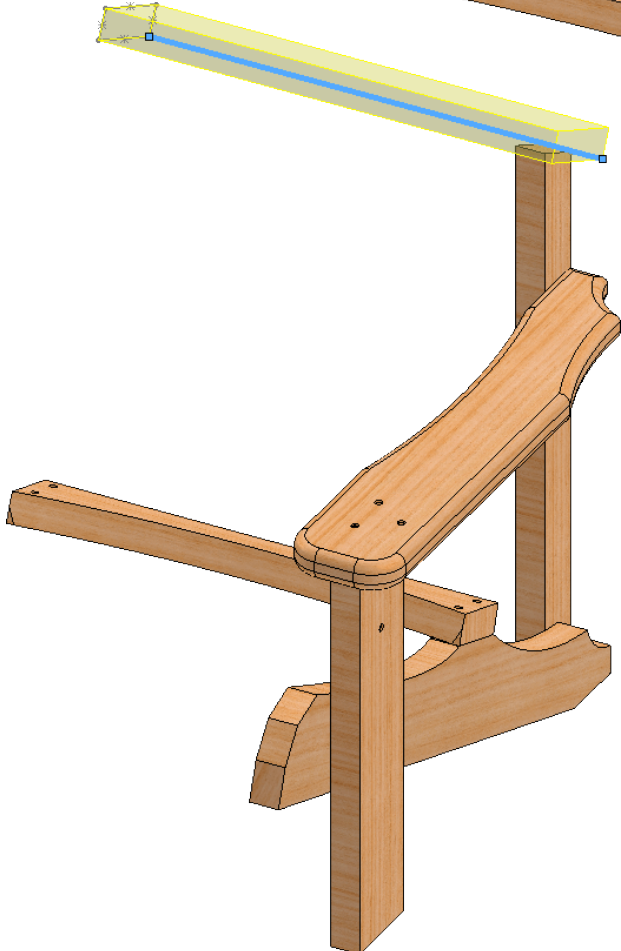
click **OK** .



**Fig. 10**




**Fig. 11**



**Fig. 12**

### C. Rename Structural Member6 TOP RAIL.

Step 1. Rename Chair Wood 2 X 6(1) to TOP RAIL in the Feature Manager, Fig. 13.

Step 2. Hide 3DSketch7. To hide, click 3DSketch7 in the Feature Manager and click Hide  on the context toolbar, Fig. 13.

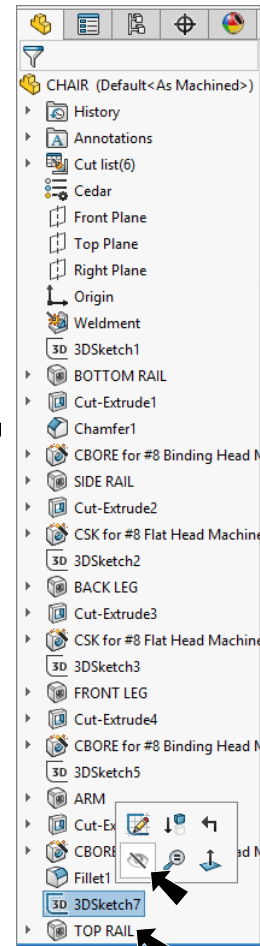





Fig. 13


### D. Extruded Cut.

Step 1. Click top face of Top Rail member and click Sketch  on the context toolbar, Fig. 14.

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

Step 3. Click 3 Point Arc  (S) in the Arc flyout  on the Sketch toolbar.

Step 4. Sketch 3 Point Arc across Top Rail, Fig. 15.

Step 5. Click Smart Dimension  (S) on the Sketch toolbar.

Step 6. Dimension both 4.5s first, then arc 45.5, Fig. 15.

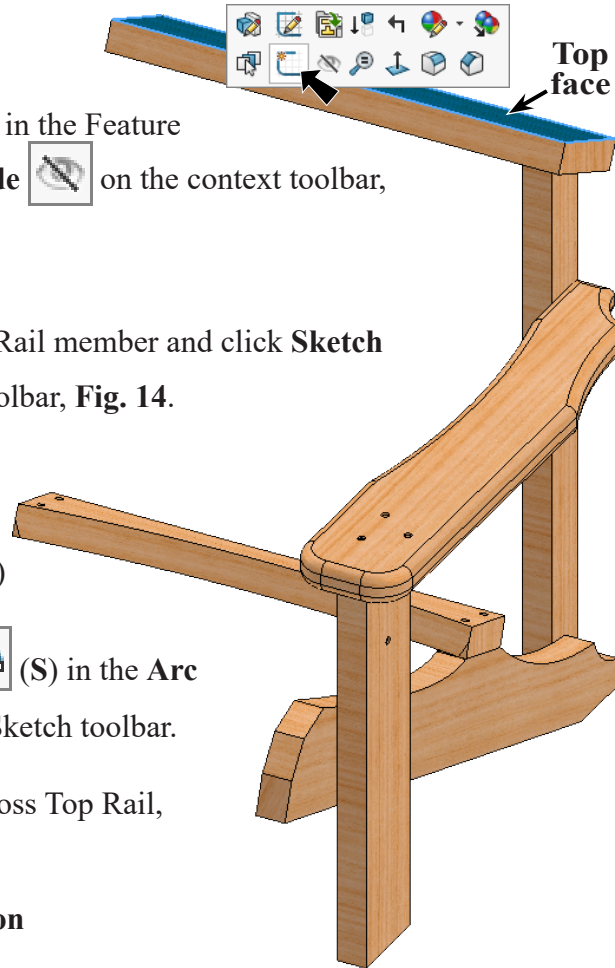


Fig. 14

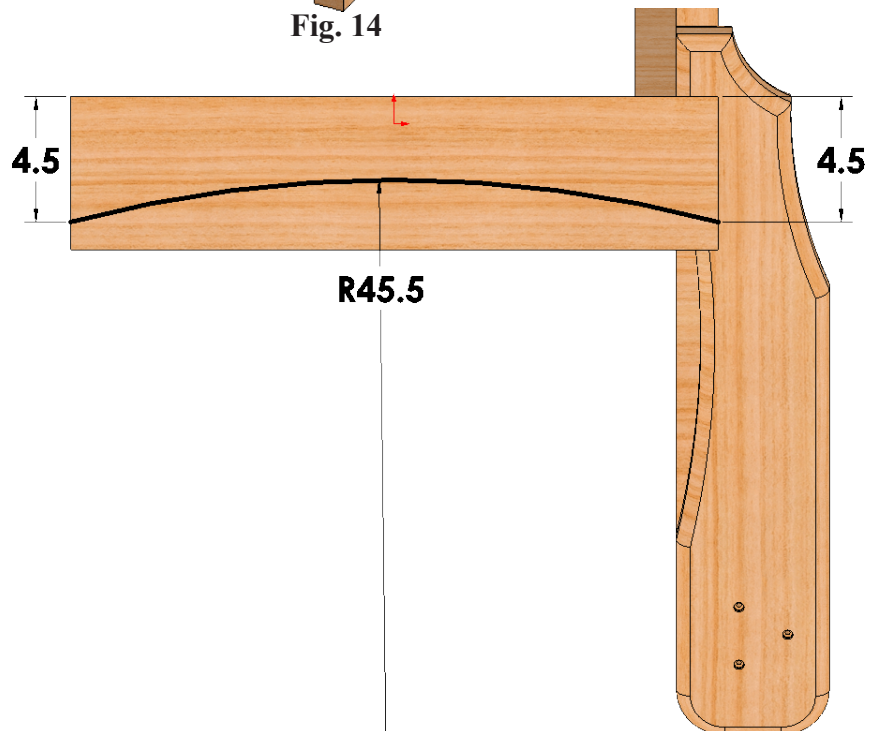



Fig. 15



Step 7. Click **Extruded Cut**  on the Weldments toolbar.

Step 8. In the Cut-Extrude Property Manager set:  
under Direction 1, **Fig. 16**

End Condition **Through All**

The Direction arrow should point towards area to be cut away,

**Fig. 17**. If arrow is pointing in wrong direction, check **Flip side to cut**  
**to cut, Fig. 16**.

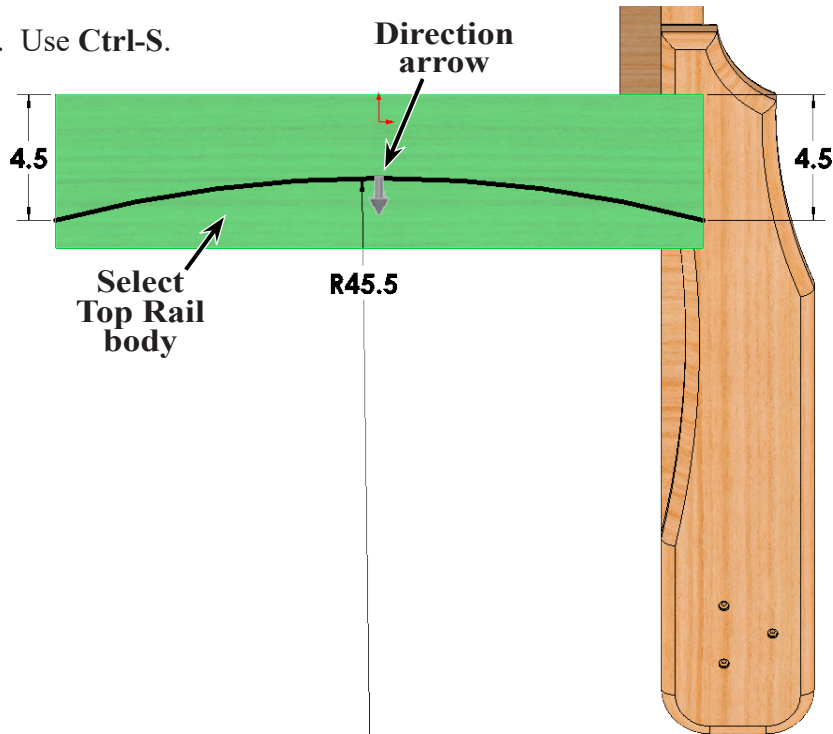
under Feature Scope

unselect **Auto-select**

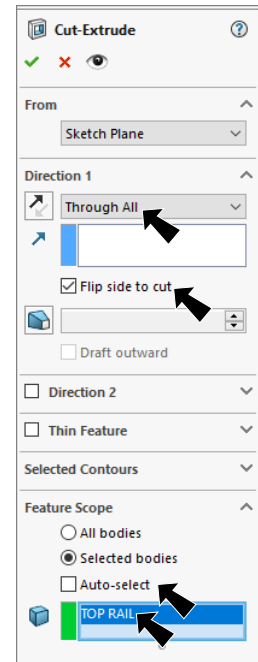
click **Top Rail, Fig. 17**

click OK .

Step 9. Save. Use **Ctrl-S**.

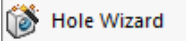


**Fig. 17**



**Fig. 16**

## E. Hole Wizard Counterbore.

Step 1. Click **Hole Wizard**  on the Weldments toolbar.

Step 2. In the Property Manager, on the Type tab set:  
under Hole Type, **Fig. 18**

select **Counterbore** 

under Standard:

select **ANSI Inch**

under Size:

select **#8**

under End Condition:

**Through All**

under Options

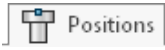
check **Under head countersink**

Under Head Countersink  **Diameter .33**

under Feature Scope, **Fig. 18**

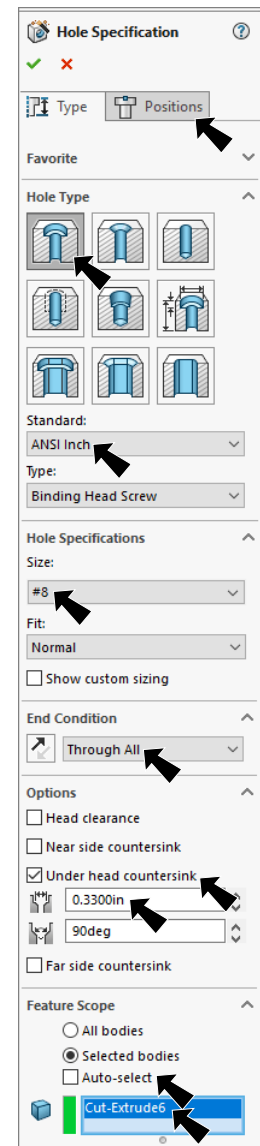
unselect **Auto-select**

click **Top Rail**, **Fig. 19**

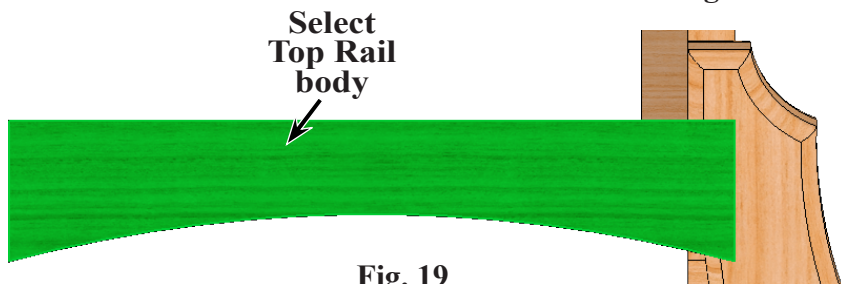
Step 3. Click **Positions** tab  at top of Property Manager.

Step 4. Click top **face** one time as face for holes. Then, click twice to **place two holes inside right edge**, **Fig. 20**.

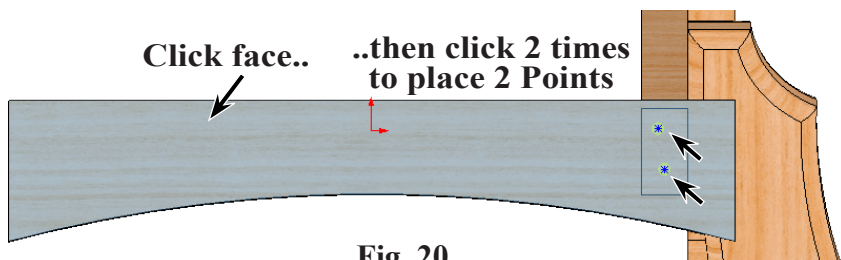
Step 5. **Right click graphics area and click Select** from menu to unselect Point tool.




**Fig. 18**



**Fig. 19**



**Fig. 20**

Step 6. **Ctrl click both Points** to select both. Release Ctrl key and click **Make Vertical**  on the context toolbar, **Fig. 21**.

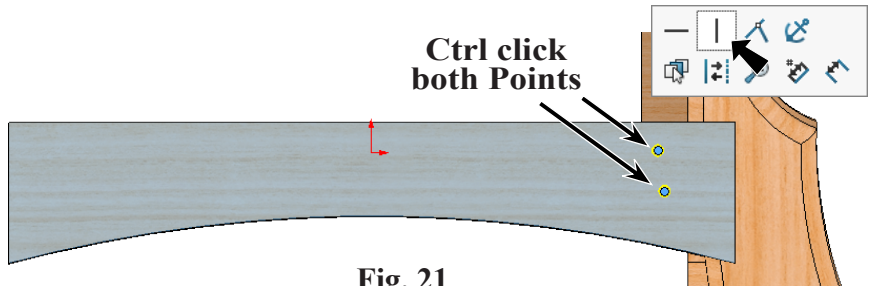



Fig. 21

Step 7. Click **Smart Dimension**  (S) on the Sketch toolbar.

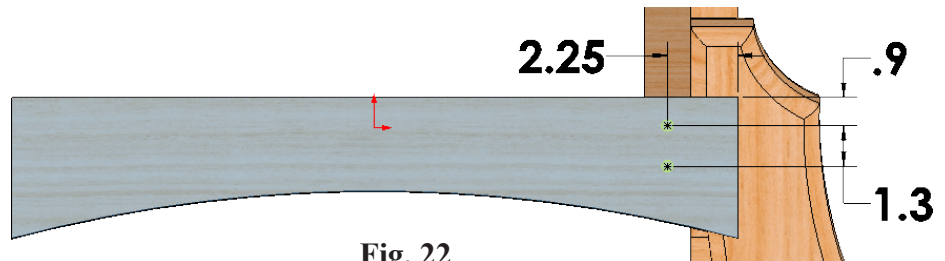



Fig. 22

Step 8. Add dimensions, **Fig. 22**.

Step 9. Click **Centerline**  (S) on the Sketch toolbar.

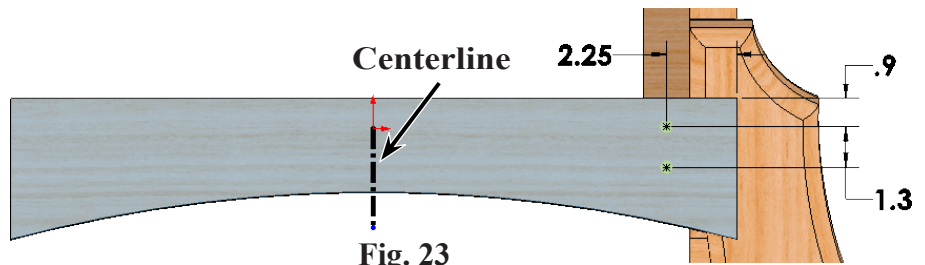



Fig. 23

Step 10. Sketch a vertical centerline down from Origin , **Fig. 23**.

Step 11. **Right click graphics area and click Select** from menu to unselect Centerline tool.

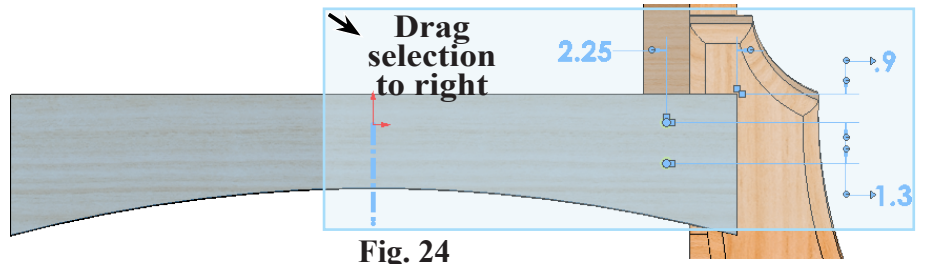



Fig. 24

Step 12. Drag a selection around all geometry, **Fig. 24**.

Step 13. Click **Mirror**  on the Features toolbar, **Fig. 25**.

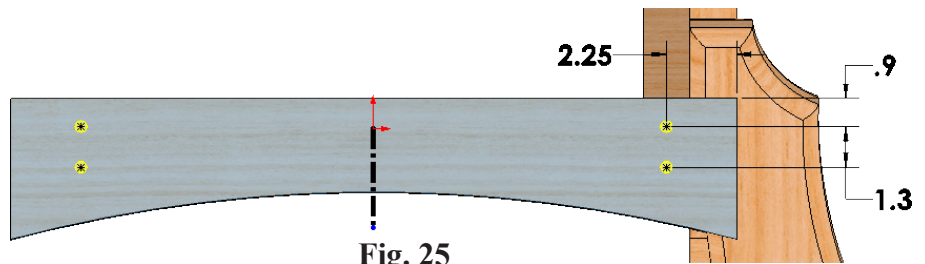



Fig. 25

Step 14. Click OK  in the Hole Wizard Property Manager.

Step 15. Save. Use **Ctrl-S**.



Fig. 26