



Swing Seat

Written and constructed by Craig Tilley

There's nothing more relaxing than sitting back on a comfortable seat, enjoying the outlook of your own garden. This Swing Seat comfortable seats two people and is perfect for the job. The frame joints simply bolt together to enable easy dismantling and moving.

The design as it is enables the swing to be positioned on lawn, deck, or patio by way of the self-supporting framework. Alternatively, if you want to hang the seat from an existing structure, like a verandah roof or pergola, simply build the seat only and anchor the screw eyes firmly to the roof beams of your structure. Another alternative is to build the frame and instead of the swing seat, hang a piece of hardwood and you have a child's swing.

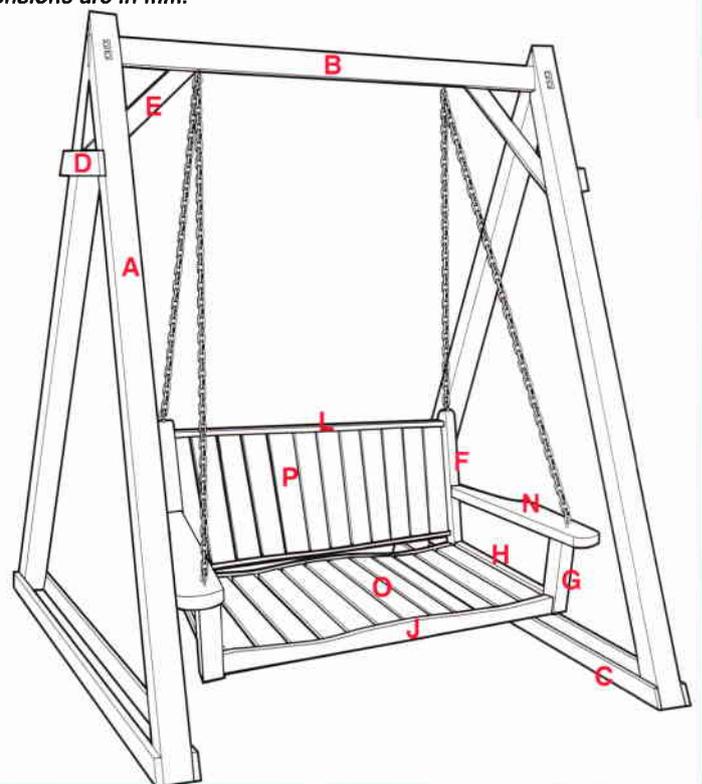
Use any suitable outdoor timber to build the swing. If the swing will be exposed to the weather, make sure you use waterproof glue and that all bolts and screws are galvanised to last outdoors. If protected from the weather, a PVA glue such as Triton Premium Wood Glue can be used with biscuit joints for the seat instead of screws.

A suitable outdoor finish will ensure years of service from your outdoor swing.

Component Specifications

All dimensions are in mm.

Part	Description	Quantity	Width	Thickness	Length
A	Frame sides	4	90	90	2700
B	Frame beam	1	90	90	2400
C	Frame base rails	4	70	20	2300
D	Frame cross rails	2	90	35	570
E	Frame angle braces	2	70	20	580
F	Seat rear corners	2	45	45	530
G	Seat front corners	2	45	45	270
H	Seat end rails	2	70	20	380
I	Seat cross rail	1	50	20	358
J	Seat rails	2	70	20	944
K	Seat supports	2	50	20	944
L	Back rails	2	45	20	944
M	Back supports	2	25	20	944
N	Armrests	2	90	35	535
O	Seat slats	12	70	20	400
P	Back slats	12	70	20	380



Tool Requirements

1. ESSENTIAL: Triton Workcentre with power saw, Triton Sliding Extension Table, Triton Router Table, Triton Jigsaw Kit, router, jigsaw, electric drill and drill bits, hammer, tape measure, try square, screwdriver, steel rule, glue brush, sanding block & sandpaper sheets, dust mask, eye goggles, ear muffs, pencil, protractor to mark angles, spanner, hacksaw, drill press, F clamps.

2. USEFUL: Triton Dust Bag, Triton Superjaws, saw horses, 1/2" (12.7 mm) plug cutter, Triton faceplate sanding disc.

Construction details

Material Shopping List

- 1. WOOD:** Dressed treated pine
90 x 90 - 4 @ 3.0m (for frame sides)
- 1 @ 2.1m (for frame beam)
90 x 35 - 1 @ 2.4m (for armrests & frame cross rails)
45 x 45 - 1 @ 1.8m (for seat rear and front corners)
45 x 20 - 2 @ 2.4m (for back rails and back supports)
70 x 20 - 5 @ 3.0m (for seat and back slats,
frame angle braces)
- 7 @ 2.4m (for frame base rails, seat end
rails, cross rail, seat rails and
seat supports)

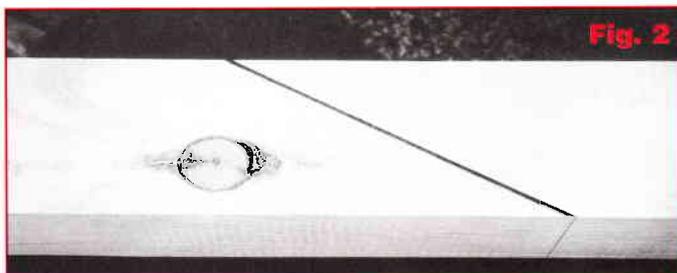
2. FASTENING:

Waterproof wood glue (e.g. Liquid Nails); Treated pine countersunk woodscrews 8G x 32mm (44)
Treated pine countersunk woodscrews 8G x 50 mm (44); Treated pine countersunk woodscrews 10G x 75 mm (20); Treated pine countersunk woodscrews 10G x 100 mm (28); Galvanised coach bolts M10 x 120 mm, washers and nuts (2); Galvanised coach bolts M10 x 150 mm, washers and nuts (2)

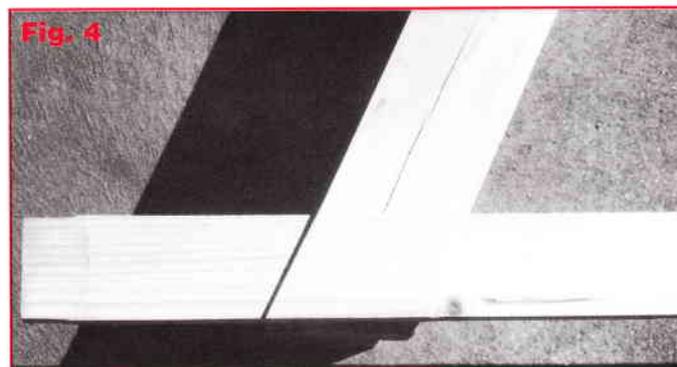
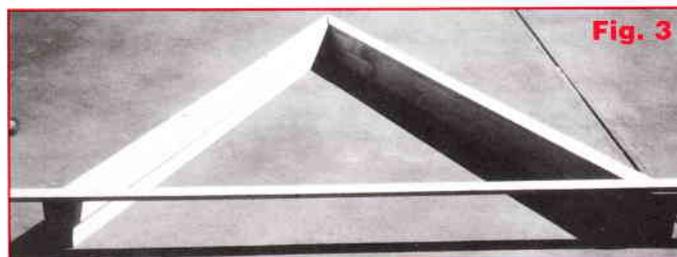
3. OTHER: Galvanised screw eyes - 115 x 7.6mm (Zenith WPL0709, or similar) (6), Galvanised D shackles - 8mm (Zenith WPH0008, or similar) (6); Galvanised chain 6.5mm thick link, or similar (7000mm).

4. FINISHING: Outdoor finish of your choice or undercoat and paint of your choice.

2 Mark the frame sides at a length of 2700 mm from the bottom angles, and mark a 25 degree angle. Mark the wood on all four sides and make the cuts as before (**Fig. 2**).

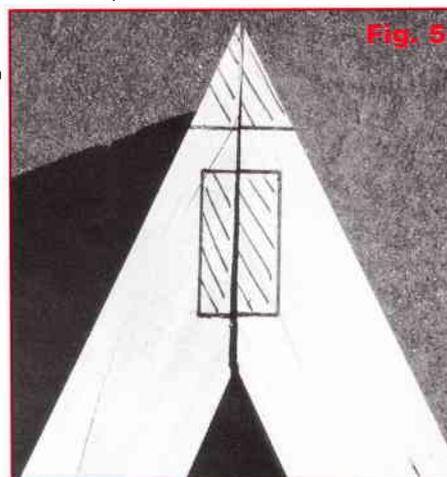


3 When all the angled cuts are made, lay one pair of sides on the ground and align the top angles. Lay the second pair on top of the first and check the angles and lengths match up. Lay the base rails (C) on top of the frame sides (**Fig. 3**) and mark and cut the 65 degree angle cuts at each end (**Fig. 4**).



4 The frame sides have a housing cut out of them which forms the joint with the frame beam (B) cut later. Mark these housings in one set of frame sides. They are 25 mm deep in each frame side, and 90 mm long.

Also, mark the top corners of the frame 25 mm above the top of the joint (**Fig. 5**). These can be trimmed off now or later after the joints are assembled.

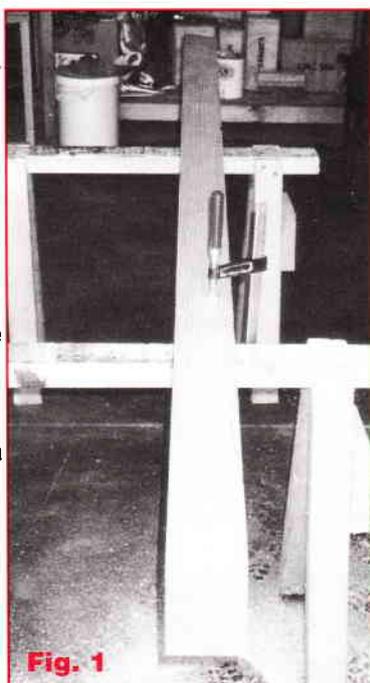


The Frame

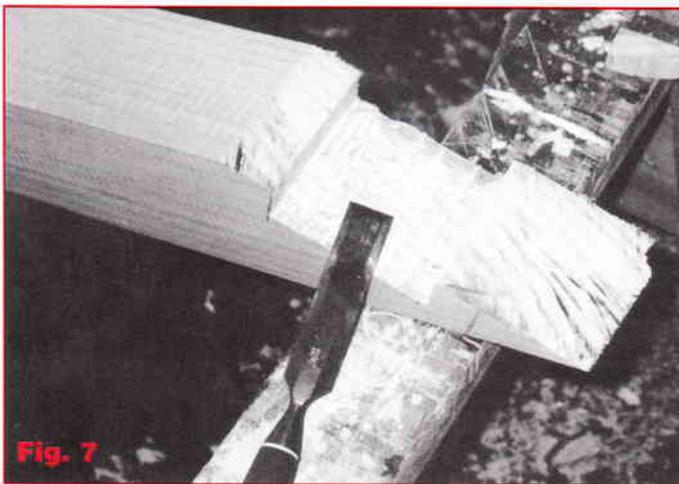
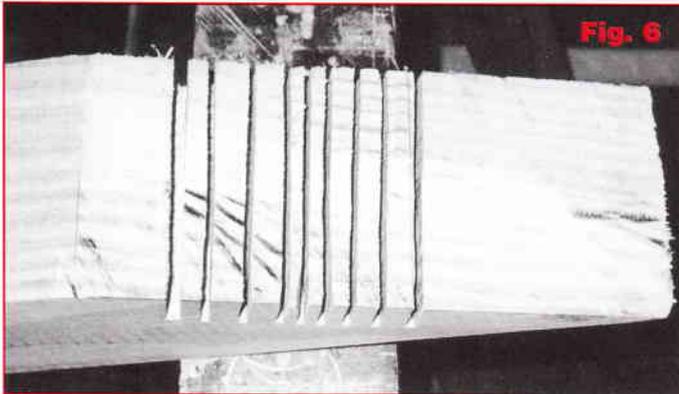
I Mark the bottom angles at 65 degrees in the four frame sides (A) with a protractor.

To cut them, use your power saw held freehand, rather than try of manoeuvre them on the workcentre. Due to the depth of cut, mark the wood on all four sides.

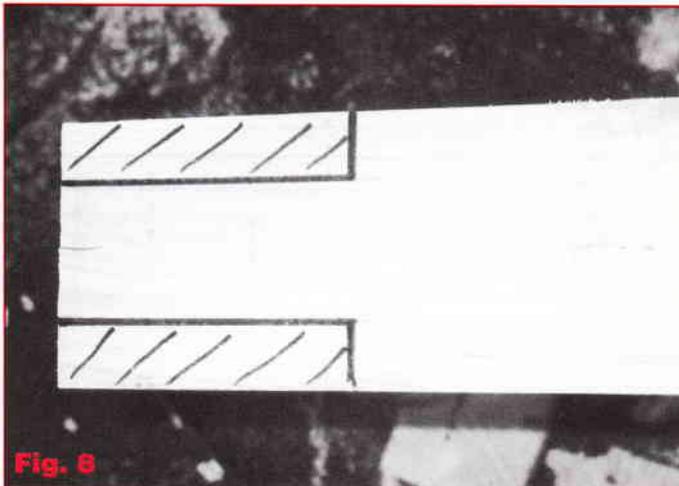
Set your power saw to a cut depth of about 50 mm and make one cut along the marked line, then flip the wood over and finish the cut from the other side. Clamping the wood to a saw horse will hold it steady while you cut (**Fig. 1**).



5 Cut the housings with your power saw, hand held, set to a depth of 25 mm. Make several passes with the saw (**Fig. 6**) and then use a mallet and chisel to clear out the waste (**Fig. 7**).

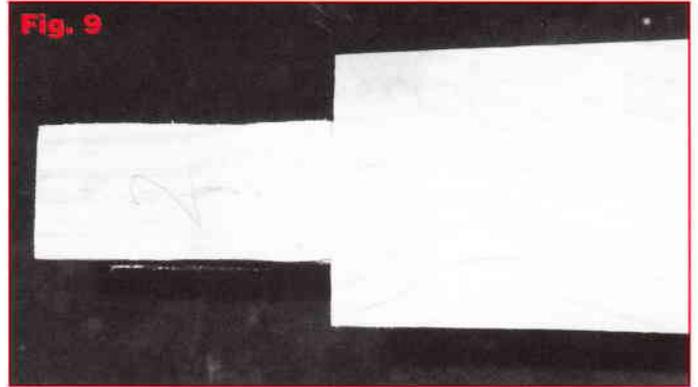


6 Mark and cut matching shoulder-less tenons on the ends of the frame beam (**Fig. 8**). Remove enough waste from each side to give a 50 mm wide tenon. The tenons should be about 100 mm long so they will extend 10 mm beyond the frame sides when assembled.

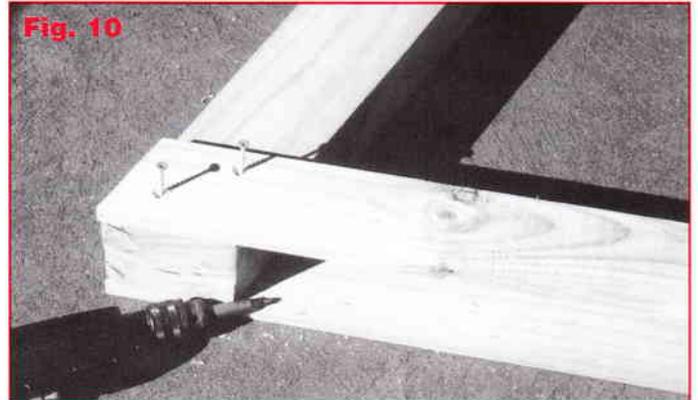


This can be done with your power saw hand held, or better still, use the Triton Workcentre in the rip saw mode and the Sliding Extension Table. A Triton Height Winder Kit enables the saw height to be accurately adjusted. Alternatively, the crosscut mode is just as effective for this type of cut.

Make several passes with the saw and then use a mallet and chisel to remove the waste on each side of the tenons (**Fig. 9**).



7 Assemble the base corners with two 50mm treated pine screws at each corner (**Fig. 10**). Stand up the sides with the aid of a couple of



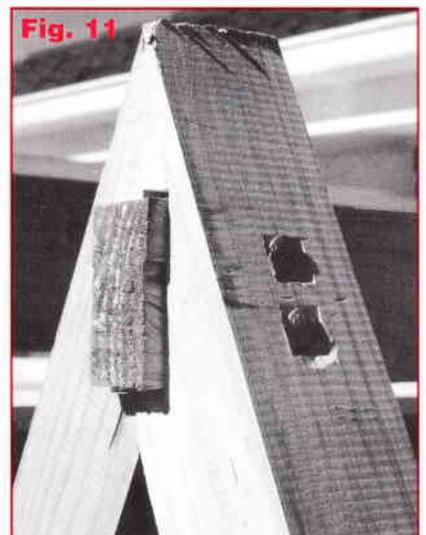
assistants to hold them steady and insert the beam tenons into the housings.

8 Assemble the top joints with two galvanised coach bolts, washers and nuts at each joint. The top one is 120mm long and the bottom one is 150mm long.

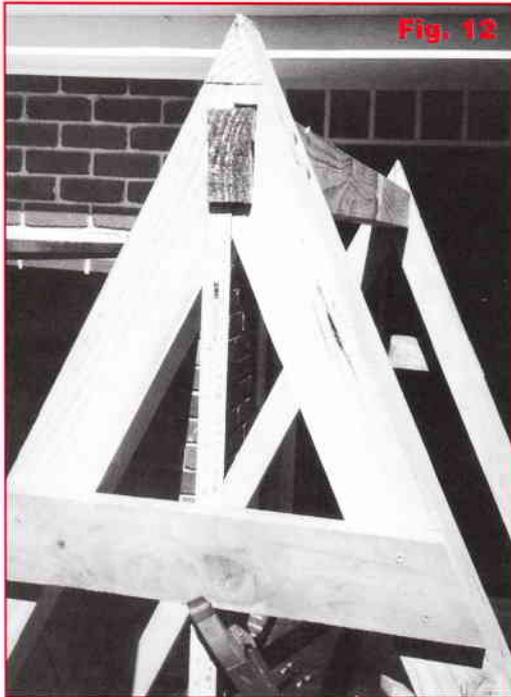
To line up the bolt holes through the three pieces at each end, drill two clearance holes for the bolts through the tenon in the frame beam first. Ensure these holes are drilled at right angles to the face of the wood.

Support one of the side pieces on a saw horse with its housing uppermost. Position the tenon in the housing and drill through the holes into the side until the drill comes out on the underneath side.

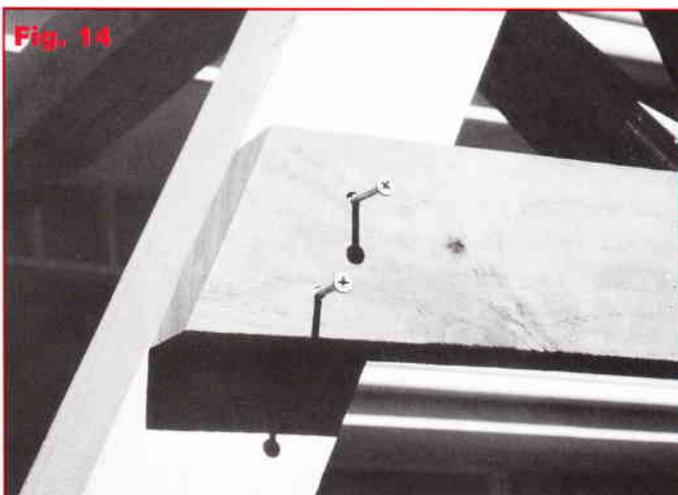
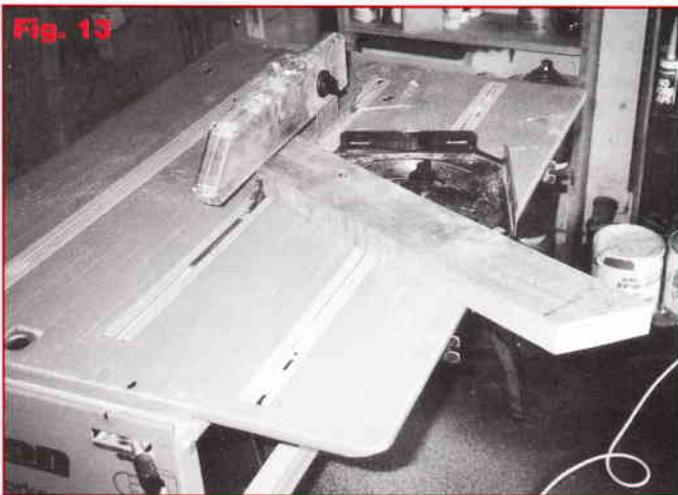
Repeat for the other side pieces. Chisel out some of the wood at the openings of the holes in the sides so the heads of the bolts and the washers and nuts sit flat (**Fig. 11**).



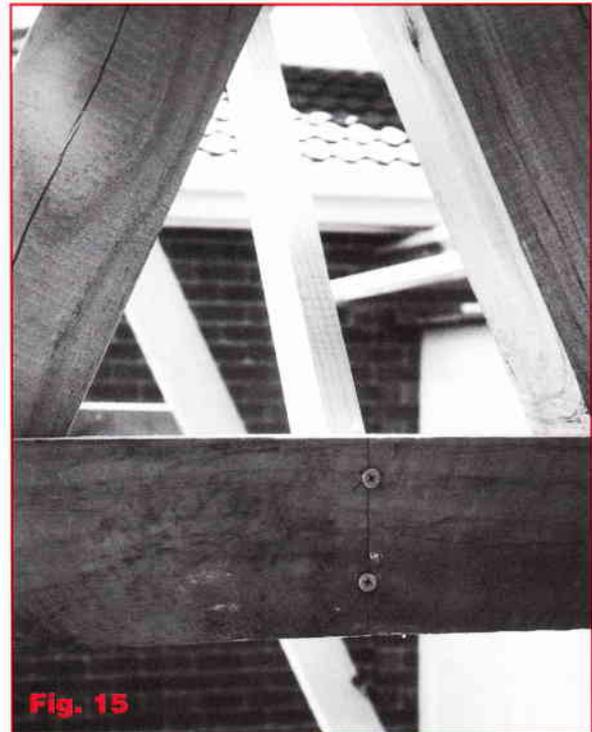
9 Add the cross rails (**D**) positioning them 315 mm down from the bottom face of the beam (**Fig. 12**).



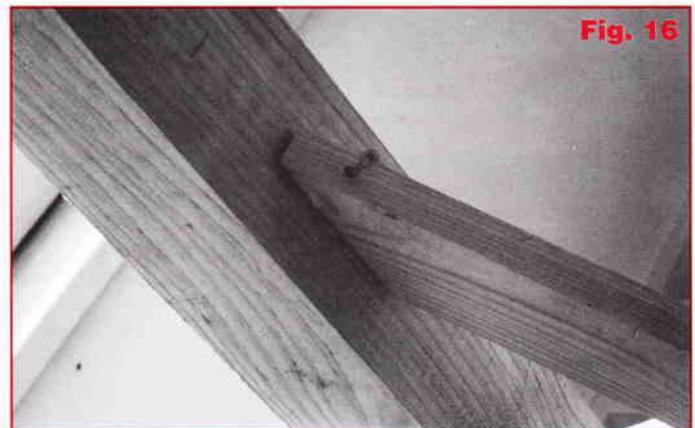
Cut the 65 degree angles on the workcentre in rip saw mode, using the protractor (**Fig. 13**). Drill and screw them to the frame sides with two 75 mm treated pine screws at each joint (**Fig. 14**).



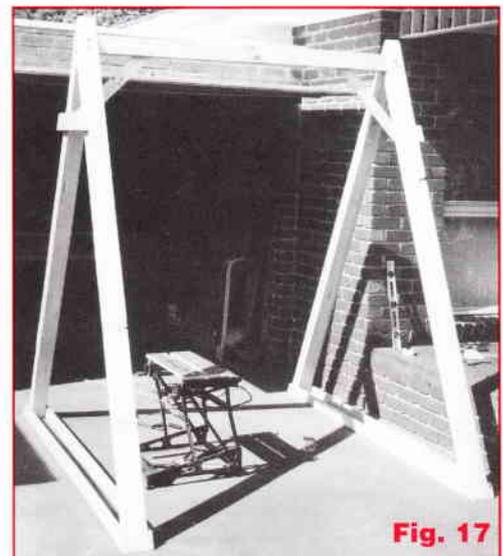
10 Add the angle braces (**E**), cutting the 45 degree angles on the workcentre. Drill and screw them to the cross rails with two 75 mm screws at each joint (**Fig. 15**).



Attach them to the underside of the beam with one 75mm screw (**Fig. 16**).

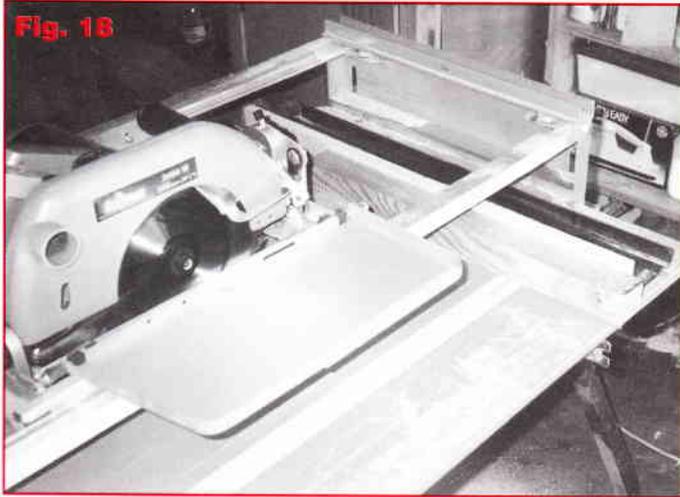


11 Tighten all the screws and bolts. This completes the frame (**Fig. 17**).



The Seat

12 Cut the seat front corners (G), seat rails (J), seat supports (K), back rails (L), and back supports (M) to length on the workcentre in the crosscut mode (Fig. 18).



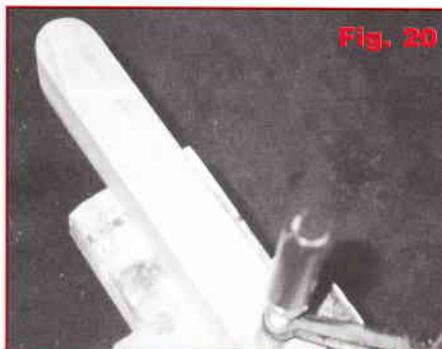
13 The seat end rails (H) and rear corners (F) have a 10 degree angle cut in their ends. Do this on the workcentre in tablesaw mode with the protractor (Fig. 19).



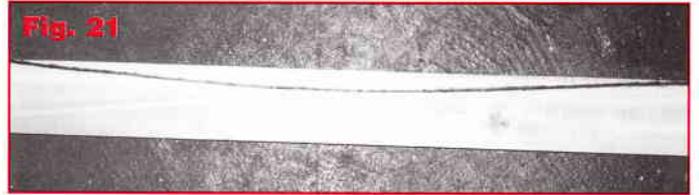
While in the tablesaw mode rip the seat supports (K) down from 70mm to 50mm wide and the back supports (M) down from 45mm to 25mm wide.

14 Mark and cut a curve over the top end of the rear corners with a jigsaw (Fig. 20).

The Triton faceplate sanding disc can be used for this task if you have one.



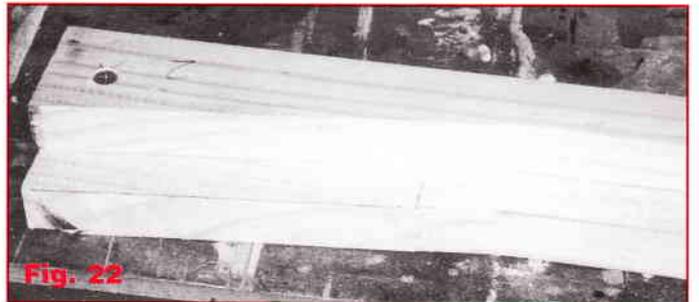
15 Mark a slight curve halfway along the front edge of one of the seat rails (Fig. 21). This is easily done by hammering in 3 nails where the curve will be and bending a thin timber or plywood offcut between the nails to make a curve.



Trace along the edge of the plywood offcut with a marker pen and cut out the shape with a jigsaw.

Use the offcut as a template and mark out the other half of the rail. Cut out the shape with a jigsaw and use this rail to mark out the other seat rail and the two seat supports. Do the same for the back rails and back supports but make them slightly less curved than the seat rails. Make all the cuts using a jigsaw.

16 To make the rebates for the seat slats and back slats to sit in, glue and screw the seat and back supports to their respective rails with five 32mm screws.

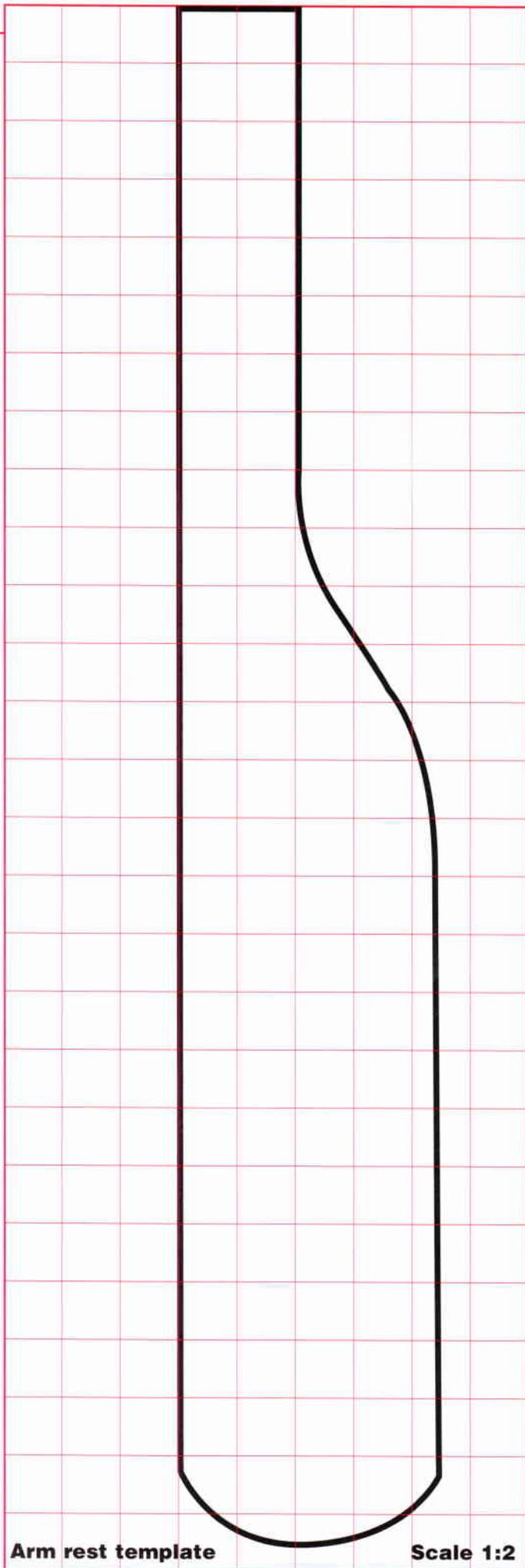


This will form a 20 mm wide rebate along the curved edge (Fig. 22).

17 Cut the armrests (N) to length on the workcentre in the crosscut mode. Use the template overleaf to draw a curved shape on each face then cut it out with a jigsaw (Figs. 23 & 24).

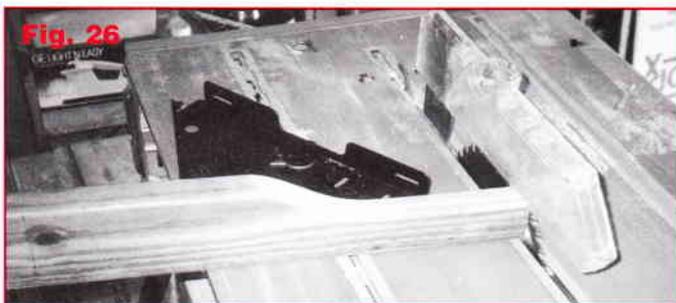


The rear end of the armrests is cut to match the 10 degree slope of the rear corners. Cut these on the workcentre in rip saw mode using the protractor set at +10 degrees for one side and -10 degrees for the other (Figs. 25 & 26). Make sure you make these cuts in the correct orientation as they form a left and right-handed armrest.

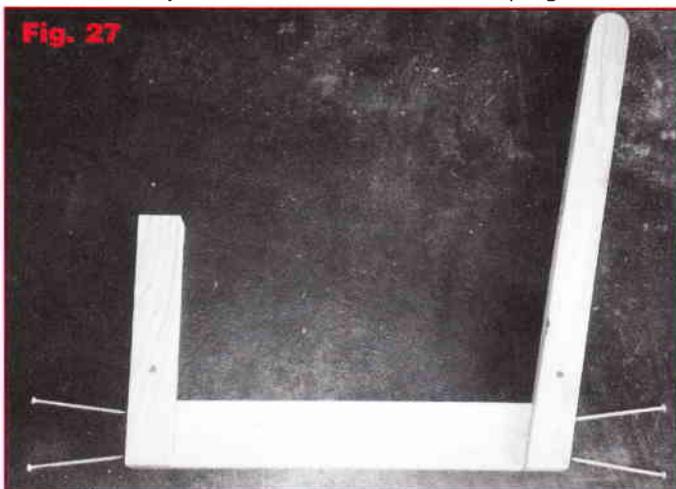


Arm rest template

Scale 1:2

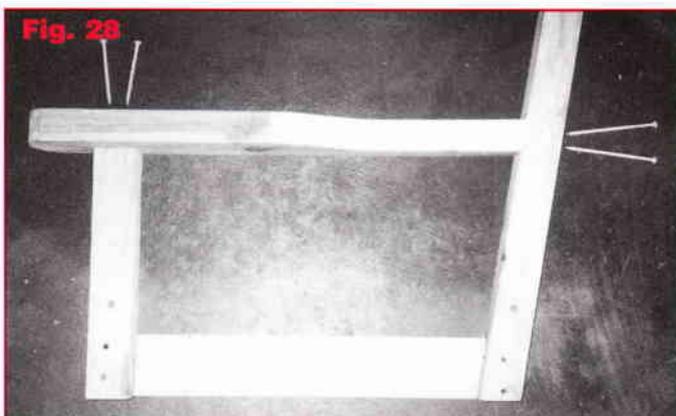


18 Drill screw holes for the seat end rails and corners (**Fig. 27**). Angle the screws and counterbore the heads with a 12.7 mm ($\frac{1}{2}$ ") drill bit so they can be covered with wood plugs cut later.



The end rails finish flush with the inside faces of the corners. Use two 100mm treated pine screws at each joint. Glue and assemble parts for both ends of the seat.

19 Drill screw holes for the armrests (**Fig. 28**). Angle the screws and counterbore the heads as before. Use glue and two 100mm screws to attach the rear corner to the armrest, and two 75mm screws to attach the armrest to the front corner.



20 While these joints are drying, the outside edges of the seat and back rails can be rounded over on the router table using a rounding over bit. Mounting the cutter guard directly onto the router table makes this particularly easy on the new Router table (**Fig. 29**).

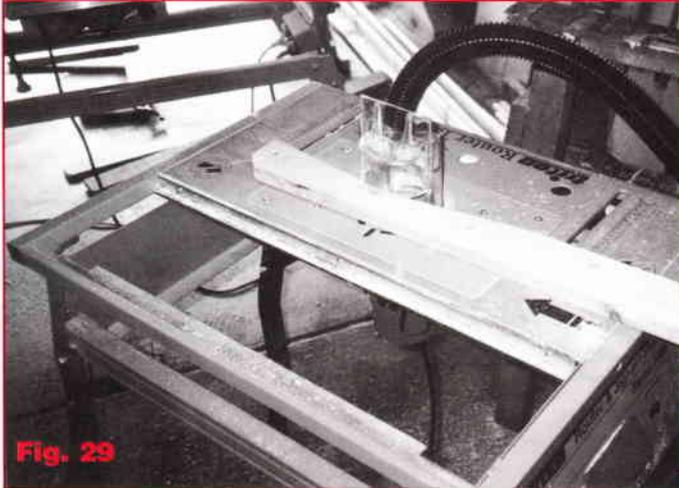


Fig. 29

21 When the seat end frames are dry, join them to the two seat rails and two back rails with two 100 mm screws at each joint. Angle and counterbore the screw heads as before.

Position the two seat rails 400 mm apart so the seat slats will fit between them later. Likewise, position the two back rails 380 mm apart so the back slats will fit between them later.

22 Cut the cross rail (**I**) to width and length so it fits between the two seat rails (**Fig. 30**).



Fig. 30

Glue and screw it in place with one 75 mm screw at the front and one at the back, slightly off-centre so they will be hidden under the seat slats. Counterbore the front screw so it can be covered with a wood plug later. The rear screw can be left flush with the rear seat rail.

23 Cut the back slats (**P**) to length on the workcentre in crosscut mode and glue and screw them in place. Use 32 mm screws driven from behind to hold them in place. Counterbore the heads of some of the screws if needed to bite firmly into the slats (**Fig. 31**).



Fig. 31

24 Cut, glue and screw the seat slats (**O**) in place in the same way using 50 mm screws driven from underneath.

25 Cut a supply of wood plugs (**Fig. 32**) from an offcut of timber using a 1/2 inch (12.7 mm) plug cutter bit in a drill press (**Fig. 33**). Lever the plugs out with a screwdriver, then glue them into the counterbores to cover the exposed screw heads (**Fig. 34**). The screws at the back of the seat don't need to be covered as these are unlikely to be seen.

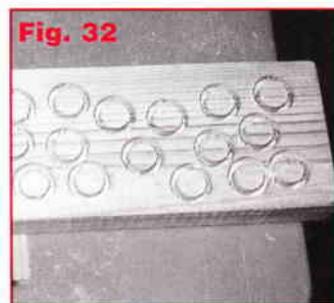


Fig. 32



Fig. 33



Fig. 34

Sand the plugs down later when the glue is dry.

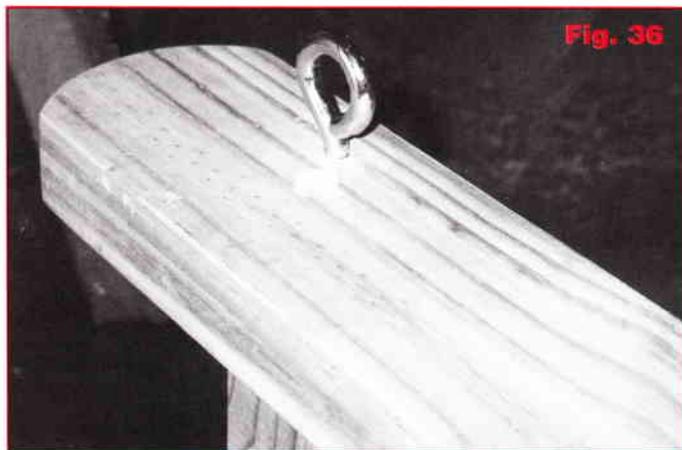
If you don't have a plug cutter, it is a very useful tool and will come in handy for many other projects where you need to hide screw heads. Alternatively, use a length of hardwood dowel cut into short pieces to act as plugs.

26 Ensure the glue used in constructing the seat is allowed to fully cure and reach its maximum strength. This completes the seat (**Fig. 35**).

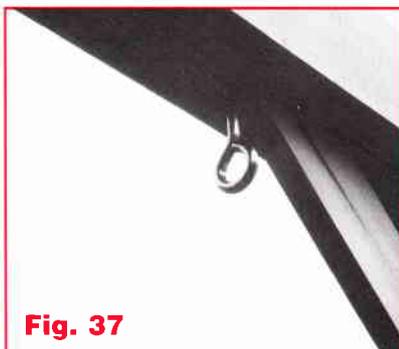


27 Install two galvanised screw eyes at each end of the swing seat. These are screwed into the top of the rear corners and through the armrest into the front corner.

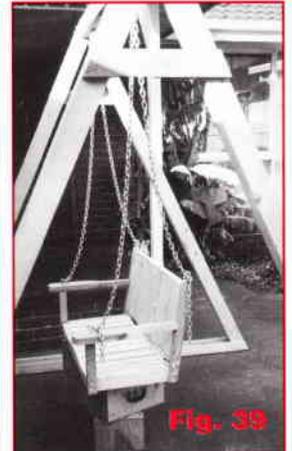
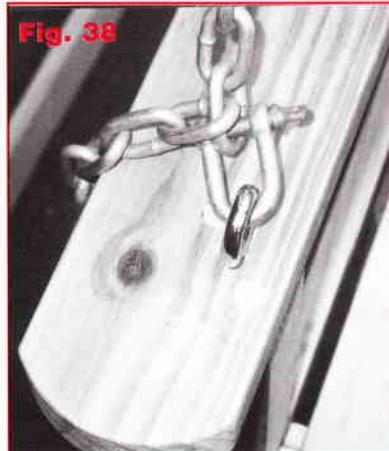
Drill a pilot hole first and screw the screw eyes all the way in until only the eye is above the wood (**Fig. 36**). This will provide maximum strength at the hanging points.



Mark the underside of the frame beam, adjacent to the two angle braces and install the remaining two screw eyes in the beam (**Fig. 37**).



28 Prop the seat on some boxes under the frame so that the seat is at the desired height. (We chose approximately 500 mm).



Connect four lengths of chain longer than required to the screw eyes with D shackles (**Fig. 38**). Keep some slack in the chain so the seat will drop about 50 mm when the boxes are removed (**Fig. 39**). Having excess chain is helpful as it allows you to adjust the seat height easily at this stage.

29 Remove the boxes and check the height of the seat. Reconnect different links of the chain to the shackles to give the seat a slight tilt to the rear, making a more comfortable sitting angle (**Fig. 40**).

Be careful about putting too much weight on the seat yet, especially if the glue has not cured fully.

When you are happy with the height and angle of the seat, mark the links to be cut then remove the chains and cut them to the desired lengths with a hacksaw. Re-hang the seat and tighten the shackle pins firmly (**Fig. 41**).

