



Bird Feeder

Written and constructed by Craig Tilley

This wooden bird feeder will be an attractive addition to your garden. Its wide trays allow plenty of room for birds to come and have a snack, and the internal spaces provide dry nesting sites for small birds.

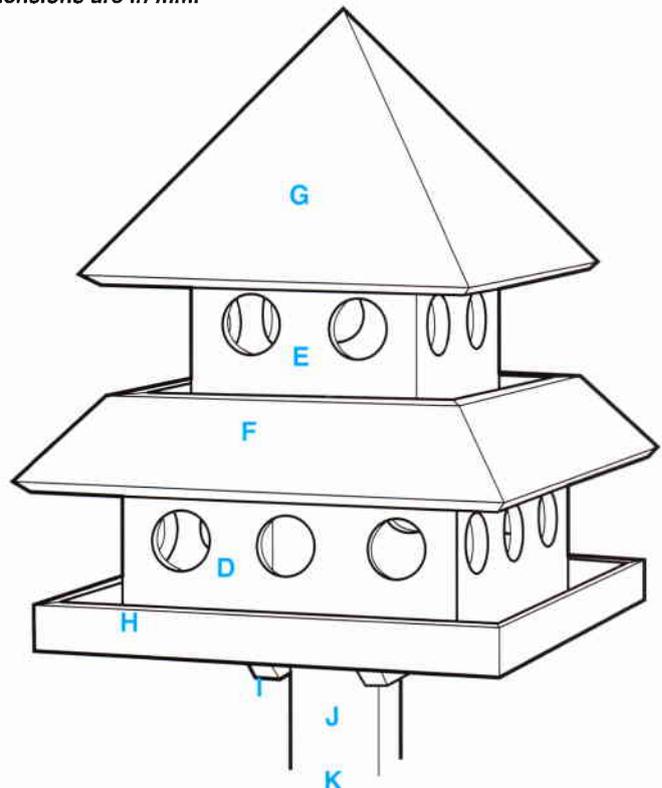
The design is easy to build with most joints being simply glued and nailed mitre and butt joints. The roof panels have compound mitres cut along their adjoining edges so they fit snugly together. The Triton Bevel Ripping Guide is perfect for cutting these joints as well as the 45 degree bevel joints for the walls, in fact any angled joint you'll ever need.

If the bird feeder will be out in the weather, marine grade plywood is the best timber to use. It is expensive but it should last many years outdoors. For a drier location, exterior grade plywood could be substituted. Mount the finished bird feeder on a post with a set of feet to enable it to be easily moved about, or for a more permanent fixture see Step 22. Finish the bird feeder in your choice of outdoor finish or paint.

Component Specifications

All dimensions are in mm.

Part	Description	Quantity	Width	Thickness	Length
A	Bottom level base	1	400	13	400
B	Top level base	1	295	13	295
C	Top piece	1	195	13	195
D	Bottom level walls	4	310	13	210
E	Top level walls	4	210	13	210
F	Bottom level roof	4	110	13	442
G	Top level roof	4	285	13	350
H	Base edges	4	38	13	426
I	Braces	2	70	20	180
J	Post	1	90	90	1200
K	Feet	4	70	20	350
L	Post plate	1	90	12	180



Tool Requirements

1. ESSENTIAL: Triton Workcentre with power saw, Triton Bevel Ripping Guide, Triton Router Table, router, 12.7 mm (1/2 inch) straight router cutter, 2 web clamps, electric drill and drill bits, 54 mm hole saw, hammer, tape measure, screwdriver, nail punch, scissors, steel rule, glue brush, sanding block & sandpaper sheets, dust mask, eye goggles, ear muffs, pencil.

2. USEFUL: Triton Random Orbital Sander & sanding discs, drill press, caulking gun.

Construction details

Material Shopping List

1. WOOD

13mm Marine grade plywood:
1 @ 2400 x 1200 (8" x 4")

70 x 20 Treated pine:
1 @ 1.8 m for feet and braces

90 x 90 Treated pine:
1 @ 1.2 m for post

2. FASTENING

Waterproof adhesive (e.g. liquid nails), treated pine countersunk woodscrews: 50 mm x 10G (22) & 25 mm x 8G (24), 1 x packet of 25 mm galvanised bullet head nails, silicon sealer.

3. OTHER

Flyscreen mesh 800mm x 100mm

4. FINISHING

Wood filler, outdoor wood stain and estapol of your choice or undercoat and paint of your choice.

Construction note:

The roof panels have compound mitre joints along their adjoining edges. To cut these refer to the operating instructions for the Triton Bevel Ripping Guide.

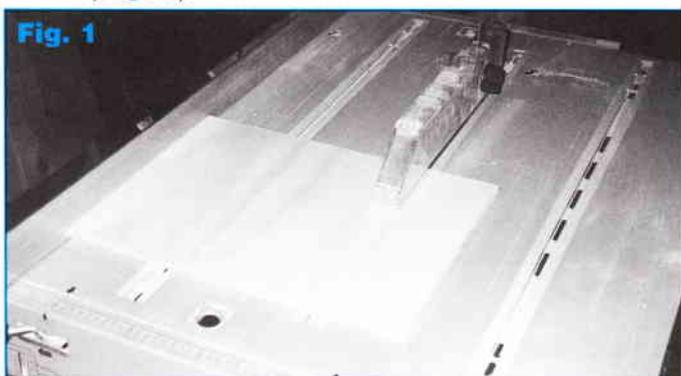
For the shapes used here the "bevel angle" (**b**) is 50° and the "mitre angle" (**m**) is 45°. The "true mitre angle" (**M**) equals 57.3° and the "true bevel angle" or "BEVEL GUIDE ANGLE" (**B**) equals 32.8°.

If a roof angle other than 50° is used the other angles will change and will need to be re-calculated using the equations provided in the product instructions.

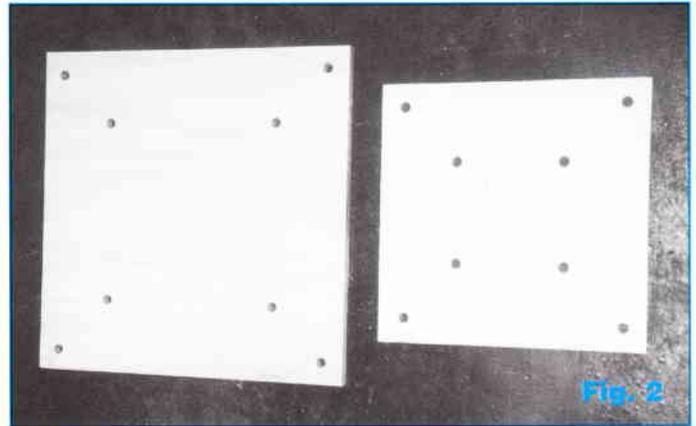
Following the operating instruction sequence, use the workcentre protractor with the outer scale set to 12.3° (57.3 - 45) on the (⊖) side of "0" to cut the mitres at one end and set to 32.7° (90 - 57.3) for the mitres at the other end. When using the Bevel Ripping Guide, set it to the BEVEL GUIDE ANGLE of 32.8° and use the same protractor angles of 12.3° and 32.7°.

This is clearly explained in the text and photos in the construction details that follow.

Cut the two bases (**A** and **B**) and the top piece (**C**) to size on the workcentre in rip saw mode (**Fig. 1**).



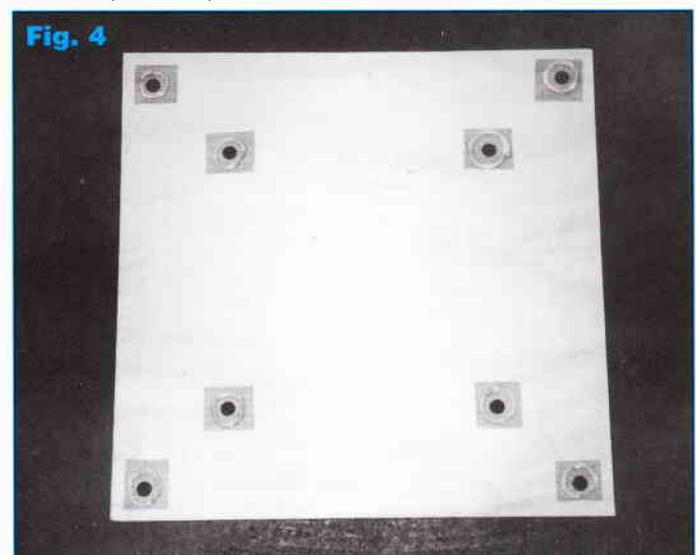
2 Cut eight 12 mm drainage holes in each base piece. Position the centre of the corner holes 25 mm from each edge, and the holes inside the nesting box areas, 90 mm from each edge (**Fig. 2**).



3 Cover each hole with a 30 mm square of flyscreen mesh, held in place with a bead of silicon sealer. The mesh will allow excess water to drain away without taking the bird seed with it.

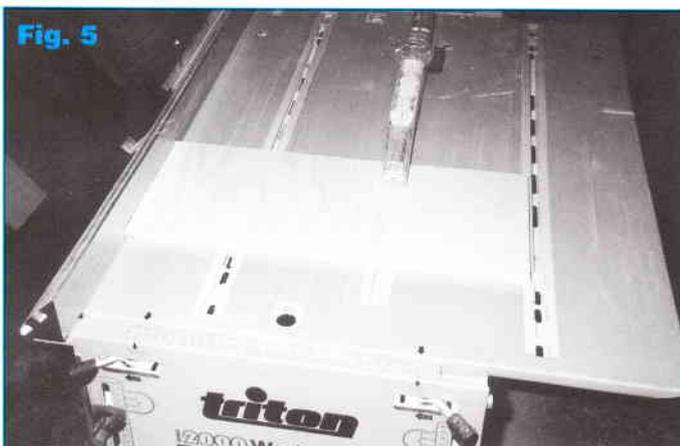


Use a caulk gun if you have one, to squeeze out a bead of silicon around each hole (**Fig. 3**) then lay each mesh square in place on the bead.

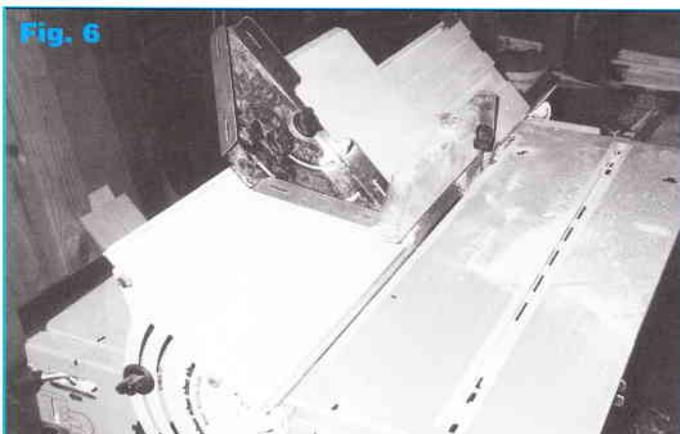


As the silicon dries it will hold the mesh in place (**Fig. 4**).

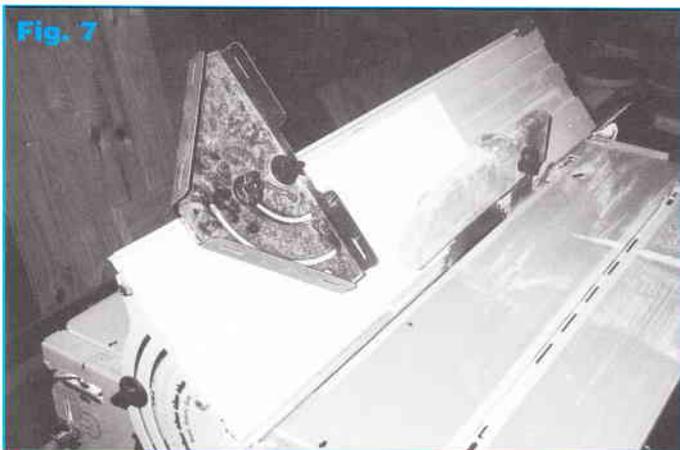
- 4** Cut all the wall panels (**D** and **E**) to size on the workcentre in the rip saw mode. Use the fence set to the correct width for each cut (**Fig. 5**).



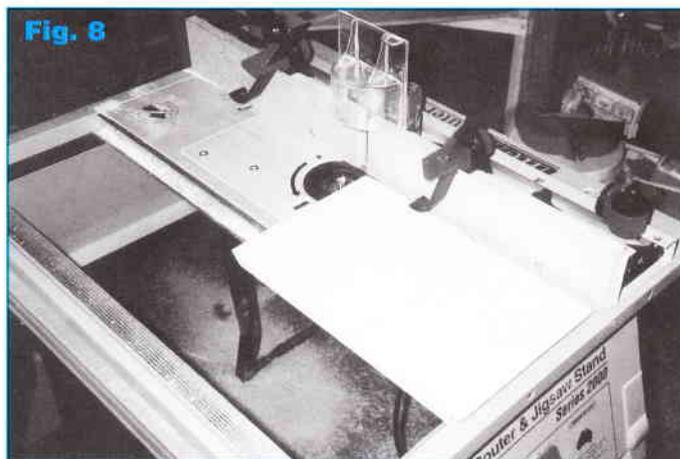
- 5** Bevel both sides (short edges) of each of the wall panels using the Triton Bevel Ripping Guide set at 45° (**Fig. 6**).



Change the Guide angle to 50°, flip the wall panels around and bevel cut their tops (one of their long edges) for the roof panels to attach into. Using the protractor makes it easier to support the wood as it is cut (**Fig. 7**).



- 6** Cut 13mm wide and 5mm deep rebates, 25mm down from the tops (50° edges) of all the wall panels (**Fig. 8**). The top level base and top piece fit into these later.



Use a straight 12.7 mm router cutter (like the Triton cutter RBA132 or RBA 332) to do this.

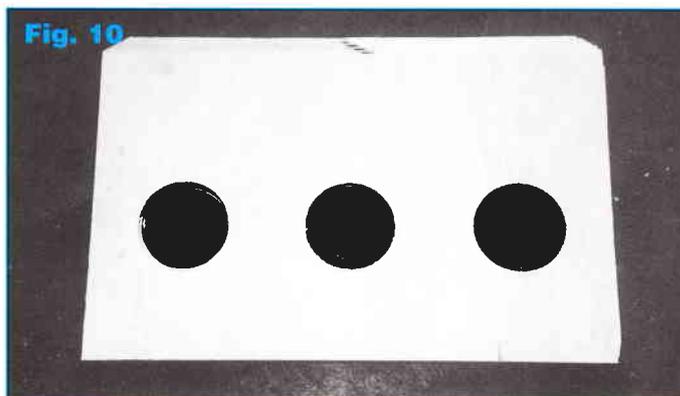
Make the first pass with each piece then a second pass with the fence set 1 mm further out to make the 13 mm width needed. Note that the scales on the Router Table don't relate to distance from the fence as this will vary depending upon which size cutter is installed.

- 7** Cut three holes in each of the bottom level walls and two in each of the top level walls with a 54 mm diameter hole saw mounted in a drill press.



Ensure the wood is clamped to the drill press table with a support piece underneath (**Fig. 9**). A hole saw can be used with a portable drill hand-held but the workpiece needs to be securely clamped while it is drilled.

Position the centre of the holes 80 mm up from the base of the walls and spaced equally along each wall (**Fig. 10**).



8 Glue and join the four top level wall panels together with the top piece in the rebates and clamp them together until the glue dries.

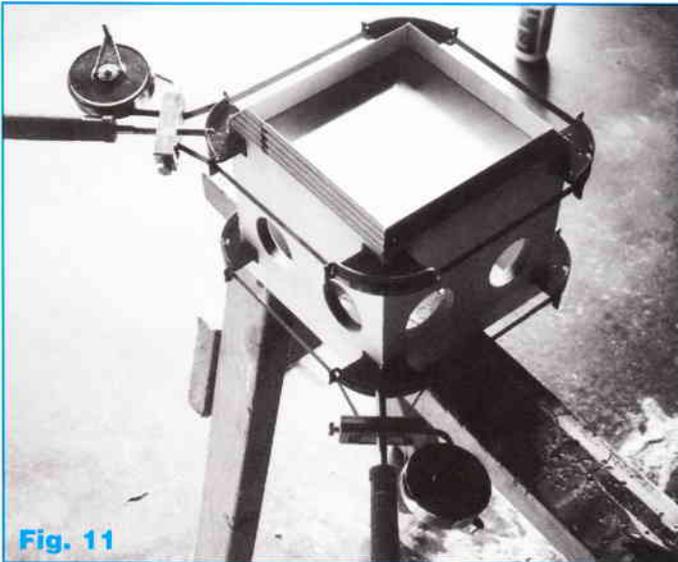


Fig. 11

We used two web clamps for this job (**Fig. 11**). They are terrific devices, traditionally used for clamping picture frames together but great for lots of other gluing jobs. They have a steel web and four corner blocks. As the clamp is tightened the web becomes taught and hold the blocks against the workpieces drawing them evenly together.

Nails can be used in addition to the glue to hold the joints together if necessary. Punch their heads below the surface.

9 When the glue is dry, if desired, paint the inside of this section now, along with the upper face of the top level base.

Drill pilot holes, approximately 35mm in from the edges of the top level base piece, ensuring the wall section is centred on the base. Glue and screw it to the top level wall section using eight 25mm treated pine screws. Two for each wall.

Glue up the bottom level wall panels with the top level base piece inserted in the rebates. Use two web clamps as before (**Fig. 12**).

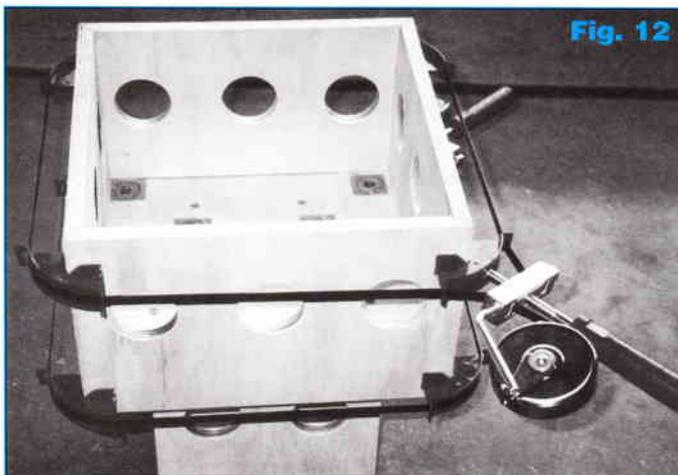


Fig. 12

10 Next, if desired, paint the inside of this section along with the upper face of the bottom level base and wait to dry.

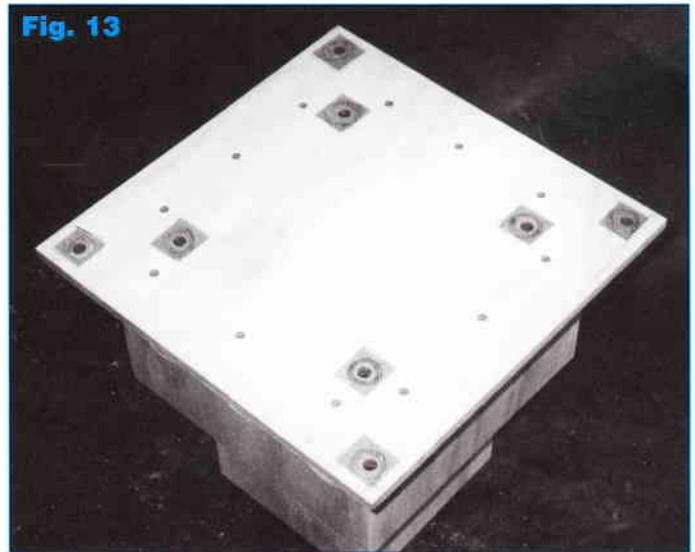


Fig. 13

Drill pilot holes, approximately 45mm in from the edges of the bottom level base, ensuring the wall section is centred on the base. Glue and screw it to the base level walls using twelve 25mm treated pine screws. Three into each wall (**Fig. 13**).

Cut the base edges (**H**) to size (**Fig. 14**) and bevel their corners on the Triton Bevel Ripping Guide set at 45° (**Fig. 15**).



Fig. 14

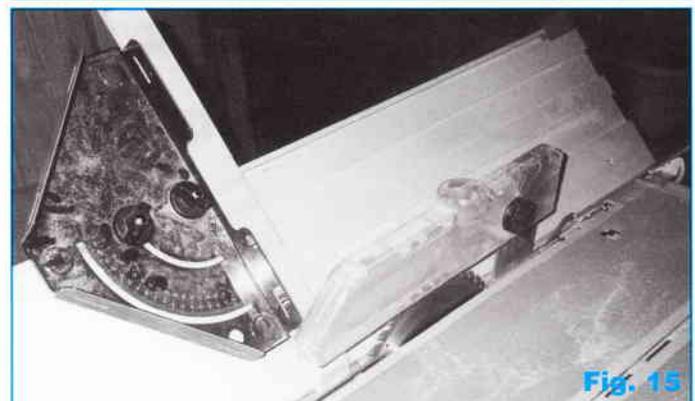


Fig. 15

Glue and nail them in position so they butt against the outside edges of the bottom level base. (See **Fig. 27** for their position.)

Punch the nail heads below the surface. Remember to cover them with wood filler later.

12 Cut the bottom level roof panels (F) to width but longer than needed.

Mitre cut one end of two pieces on the workcentre in rip saw mode using the protractor. Set the protractor to 32.7° on the inside (upper) scale (Fig. 16).



Mitre cut one end of the other two pieces but this time set the protractor to 12.3° using the same scale. This will create two "corners".

13 Install the Bevel Ripping Guide and set it to 32.8° . Cut the mitred end of each roof panel again using the protractor to guide the cuts.

Set the protractor to 32.7° (Fig. 17) for one set of cuts and to 12.3° (Fig. 18) for the other set. This should form the correct compound mitre for the roof joins.



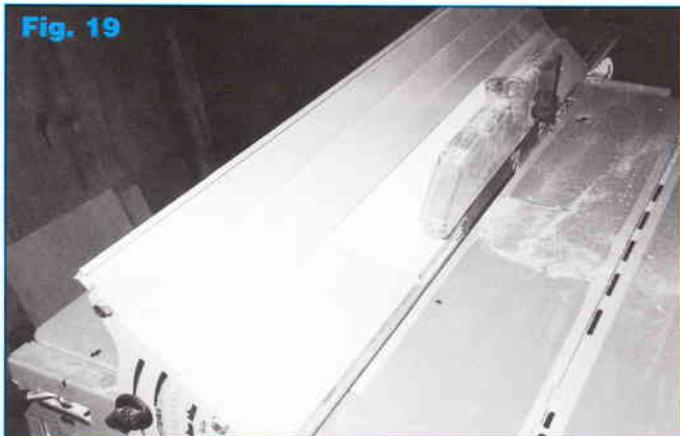
If you are not confident to do this, practice using scrap material until you are satisfied with the results.

14 Test the cuts by holding two adjoining roof pieces in place on top of the bottom level walls.

Adjust the angles if there is too much of a gap between the panels and re-cut them.

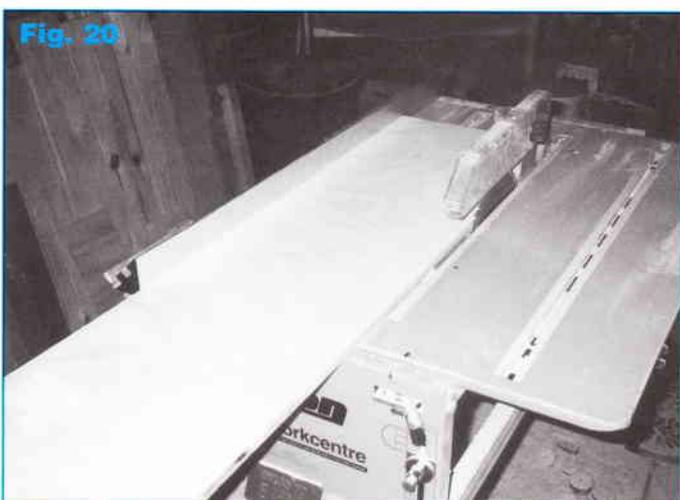
When you are happy with the fit of adjoining pieces, mark the other end of the panels and cut them in a similar fashion. First make the mitre cuts on the workcentre, then the bevel cuts on the Bevel Ripping Guide. Keep track of where each piece fits to ensure they are cut correctly.

15 When the compound cuts are complete, cut a 40° angle along the top edge of each roof panel to enable it to finish flat on top (Fig. 19).

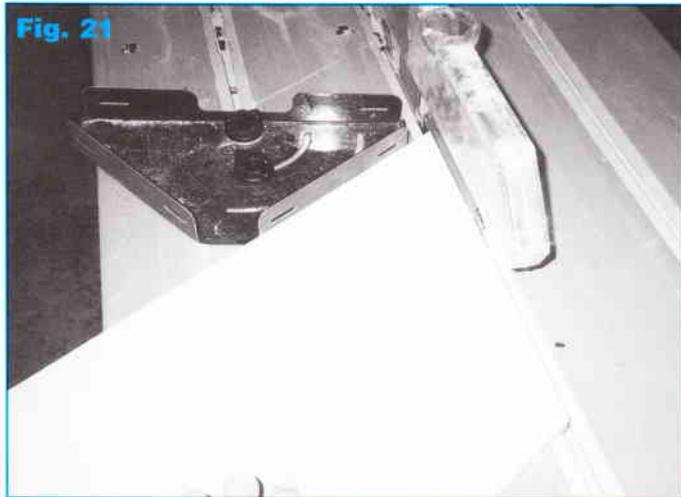


Do this with the Bevel Ripping Guide set at 40° . Take care as the cut is completed and the wood becomes unsupported.

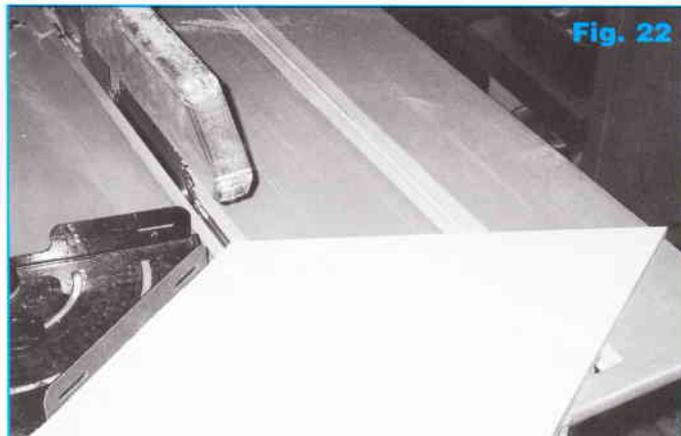
16 The top level roof panels (G) are triangular in shape. Start by ripping a 285 mm wide x 1200 mm long piece of ply on the workcentre with the grain of the wood parallel with the 285 mm edge (Fig. 20).



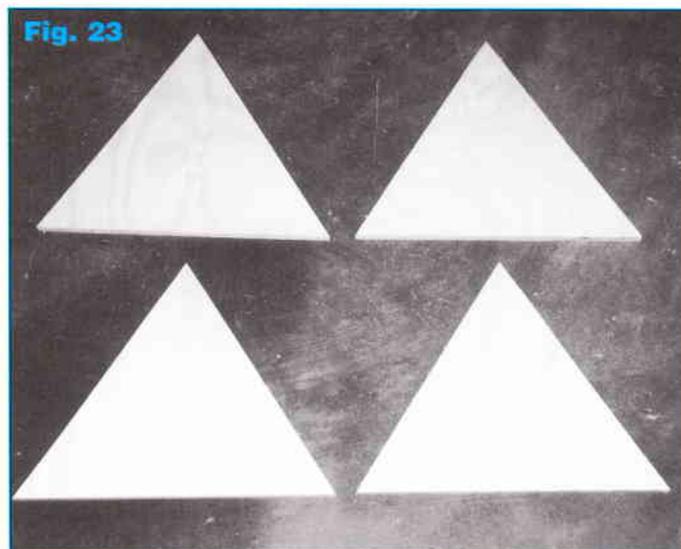
Then use the protractor set to 12.3° and with the 1200mm edge of the wood against the short face of the protractor, feed the wood smoothly and evenly through the saw (**Fig. 21**).



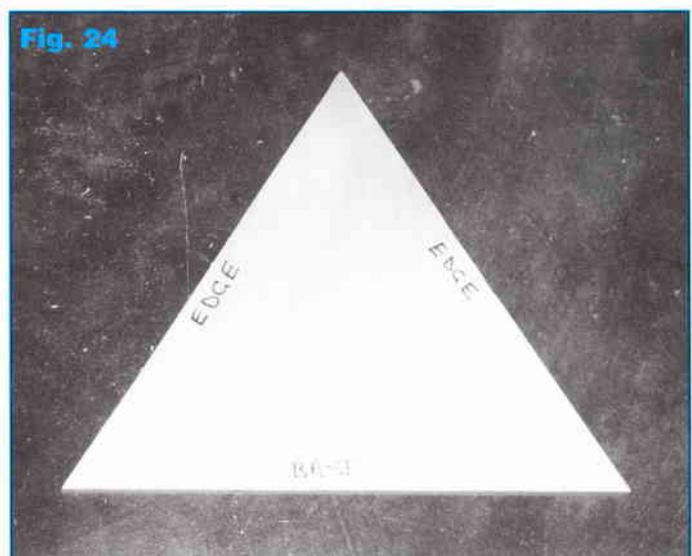
Flip the wood over so the 1200mm face remains against the short face of the protractor and cut it again (**Fig. 22**), forming a triangle.



Repeat these cuts until you have four identical triangular pieces (**Fig. 23**).



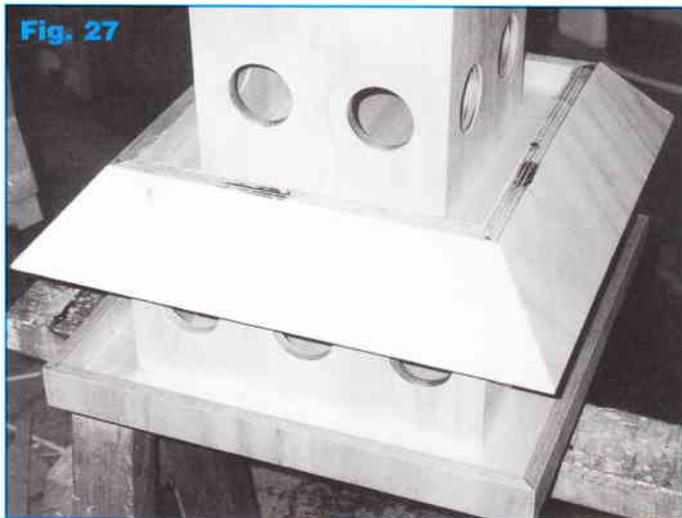
Mark the base of each triangle (those that were against the protractor face while cutting) and the edges on the underneath of each piece (**Fig. 24**).



17 Cut the compound mitre angles in the “edges” of the triangular top level roof panels using the Bevel Ripping Guide and the same angles as in Step 14 (**Fig. 25 & 26**).



18 Glue and nail the bottom level roof panels in place into the wall panels below (**Fig. 27**).



The roof panels should be level with the top edges of the wall panels.

Join the roof panels together with a bead of silicon between them to produce water tight joints. Punch the nail heads below the surface.

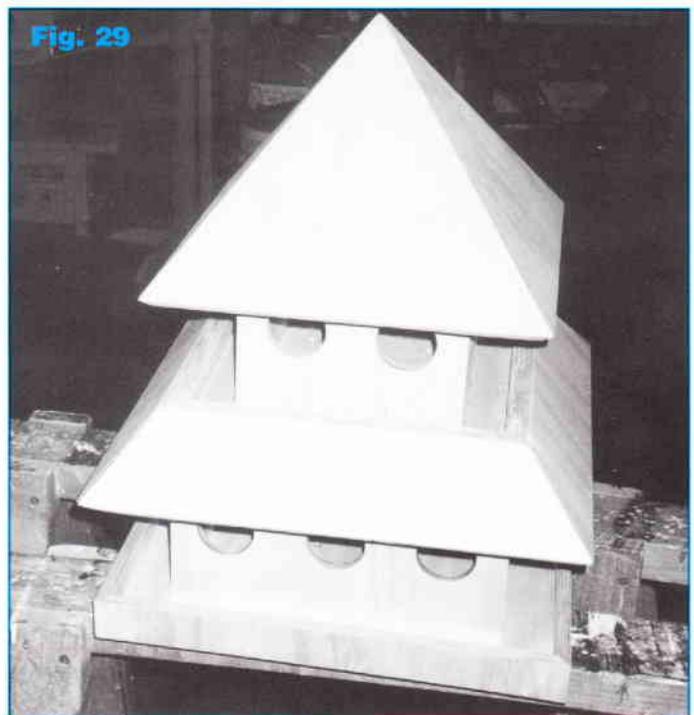
19 Glue and join the triangular top level roof panels together and clamp their bottom corners in the web clamp used before (**Fig. 28**).



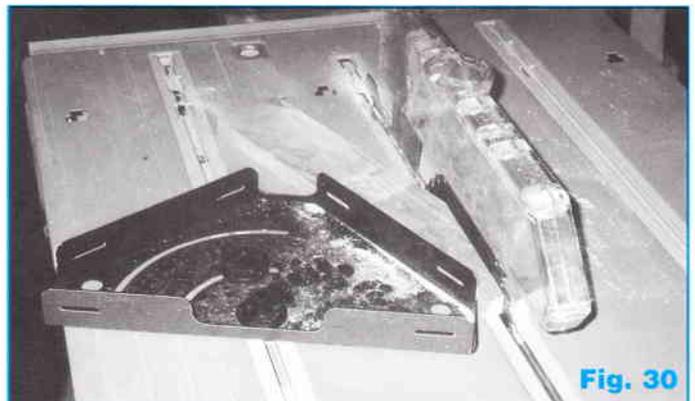
Pin the top ends of the roof panels together with 25 mm nails driven into adjoining roof panels.

When this assembly is dry, position it on top of the wall panels. It should self-level but take a bit of time to get it right.

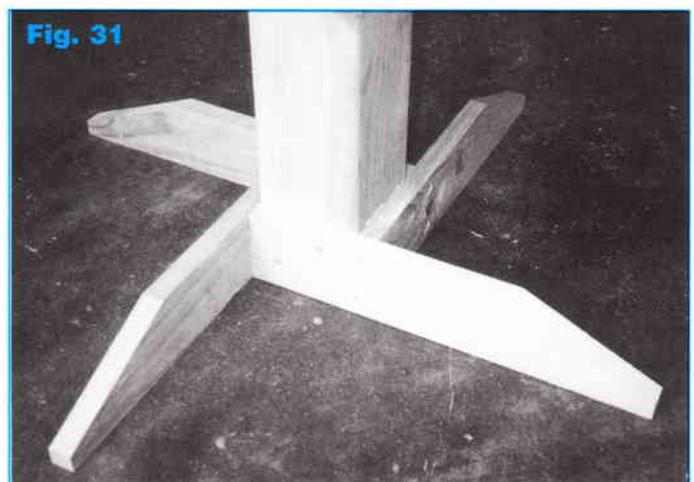
Then glue and nail it in place into the walls below (**Fig. 29**). Punch the nail heads and cover them with wood filler. Fill all other punched nails with wood filler at this stage.



20 Cut the feet (**K**) to length and trim off the top corners to an angle of 20°. Use the workcentre and protractor to make these angled cuts (**Fig. 30**).



Cut the post (**J**) to length and glue and screw the feet to the bottom end of the post with four 50 mm treated pine screws at each joint, two into the post and two more into the adjacent foot (**Fig. 31**).



21 Cut the post plate (L) to size and glue and screw it to the top of the post with two 50 mm screws (Fig. 32).

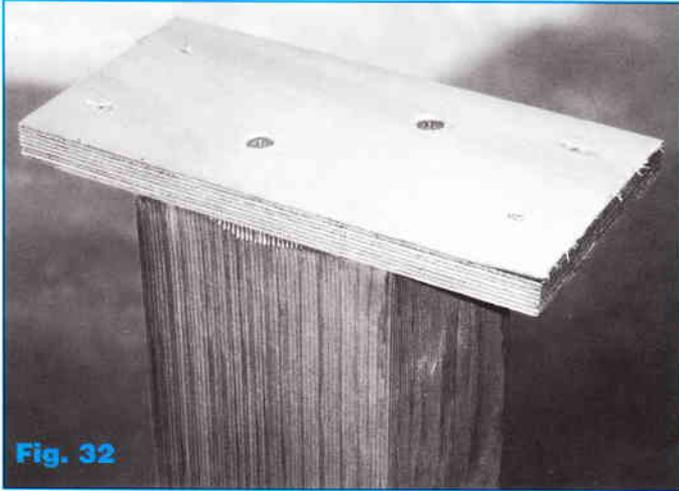


Fig. 32

Sit the bird feeder centrally on top of the post plate and screw it to the underside of the bottom level base with four 25 mm screws but no glue (Fig. 33). This will allow the bird feeder to be removed easily from the post if the need arises.



Fig. 33

Cut the braces (I) to size and trim off the bottom corners on the Workcentre at a 45 degree angle (Fig. 34).

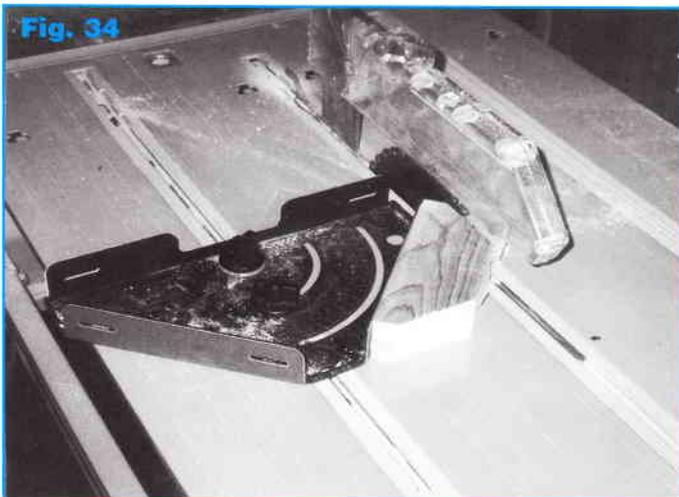


Fig. 34

Screw them to opposite sides of the post, using two 50 mm treated pine screws for each one (Fig. 35).



Fig. 35

22 For a more permanent solution, you may choose to cement the post into the ground.

Cementing the post into a bucket, then burying the bucket into the ground provides a remarkably easy solution should you ever wish to relocate your bird feeder.

23 Sand the dried wood filler, all surfaces and edges smooth, then finish the bird feeder as desired (Fig. 36).

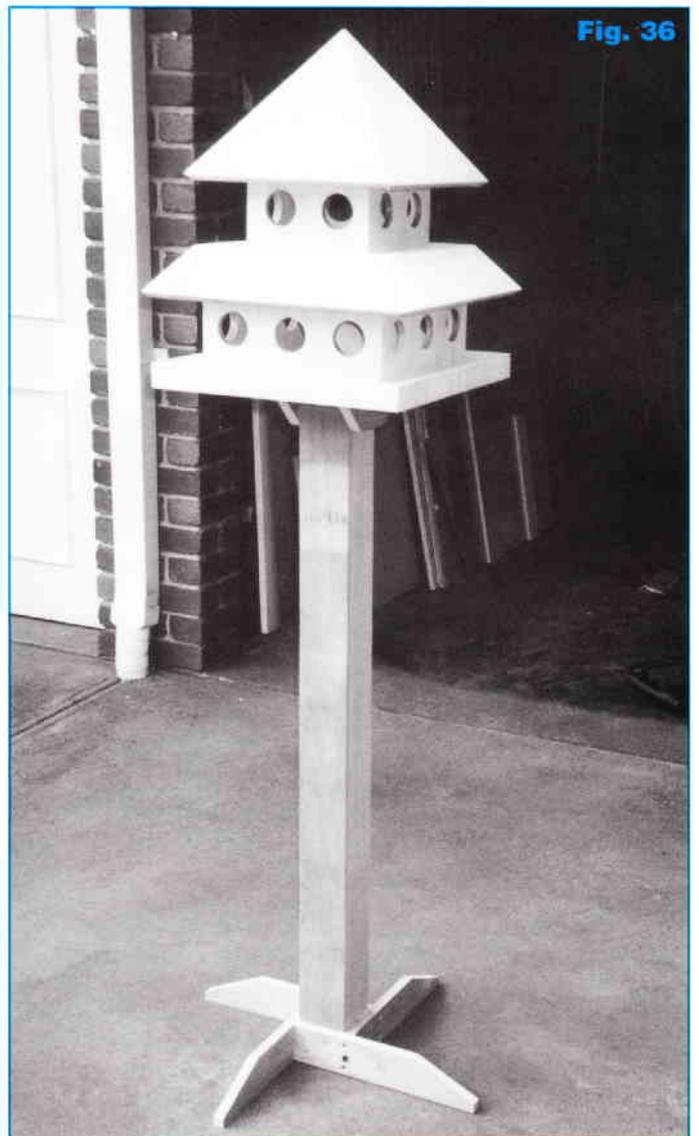


Fig. 36