2) During step two, ensure the frame remains square. Assemble the axle assembly as shown (Fig 8) with the outside measurement between the two wheels about 20", they will be adjusted later. With a 1/2" drill bit, drill a hole 3/4" deep in pieces J, centred, 1" from the bottom ends. Use a drill depth gauge as shown (Illustration 1). Place the axle in these holes. Now put the frame together as shown (Fig 6 & 7) following the following procedure. Drill a 1/8" hole in each piece J, 5 7/8" from the bottom, going in the same direction as the axle. Countersink with a 1/4" bit on the outside edges. Place a piece H between the pieces J, the bottom edge 5" above the bottom of J, and drill a 1/16" hole into H through the hole previously drilled in J. Remove H, ensure the 1/16" hole is 1 1/2" deep, glue the ends, re-insert and screw H in with 3" #8 flathead screws, one at each end. Drill one more 1/8" hole in each piece J, going in a direction perpendicular to the previous holes, 5 5/8" from the bottom. Drill similar holes in pieces N, 7 5/8" from their bottoms. Place in pieces H between N and J, and drill pilot hole in H as before. Glue and screw in the two new pieces H with 3" #8 flathead screws. Now insert another piece H between the two pieces N and follow the above procedure, drilling holes 7 7/8" from the bottom ends. Drill, countersink, drill pilot holes, glue and screw in the final bottom level H with 3" #8 flathead screws. Ensure that the edges of all the pieces H are flush and level. Follow this same procedure to attach the pieces H for the next shelf, placing these new pieces H 11 1/2" above the first level of pieces H. (NOTE: If you are going to insert a propane bottle in the lower shelf, measure the height of the bottle, and mount the next shelf accordingly. Leave out two middle pieces G so that the upper part of the bottle will stick through. This will serve to prevent the bottle from falling over. Read the safety label on the propane bottle and follow those directions for mounting. It is also a good idea to nail some extra nails through the bottom pieces E and F into the pieces H to assist with the extra weight.) Drill two 1/8" holes in each end of the pieces F, 1 1/4" from the ends. Countersink with a 1/4" drill bit. Hold each piece up against it's rightful place on the HN and JN assembly, with the bottom edge flush with the bottom edge of H, and protruding 3/4" at each end. Drill 1/16" pilot holes into J and N, drilling through the holes previously drilled. Glue and screw these pieces with 1 1/2" #8 flathead screws. Repeat this procedure to attach pieces E, drilling 3/4" from each edge. The edges of E and F should be flush. Lay in the pieces G&P in the bottom shelf and space evenly. Nail in pieces G with 2" finishing nails. Repeat to attach the pieces G&P for the upper shelf.

3) Center piece B under A with the outside edges flush and a gap 3/4" on the inside as shown (Fig 9). Trace the outline of A on B, and remove B. Pre-drill the marked edges of B with two 1/8" holes each, countersink with a 1/4" bit, glue the marked edges, turn A over and screw B to A with 1 1/4" #8 flathead screws. Drill the two pieces M with eight 1/8" holes, two on each end 3/4" from each end. Countersink with a 1/4" bit. Hold one piece M up to pieces N and drill 1/16" pilot holes into pieces N. Repeat with the other piece M into pieces J. Glue and screw the pieces into N and J with 1 1/2" #8 flathead screws. Glue the top edges of pieces M, and the tops of N and J, and place top A on the frame. One of the pieces M should fill the 3/4" gap between B and A. Nail through A into pieces M, N, and J with 1 1/2" finishing nails. Blunt the ends of the nails to prevent splitting.

4) Cover the surface of B with a film of glue, place in two tiles. Glue the edges and ends of K and L, place in the cutout, and nail to piece A with 1 1/2" finishing nails. Cover the surface of A with glue and lay in the tiles. Ensure that the tiles do not protrude over the edge of A. Glue the edges of A and B, nail on pieces C and D with 1 1/2" nails Blunt the ends of the eight nails for attaching C into D to prevent splitting. Wipe off excess glue and allow the cart to dry overnight.

5) Tighten nuts so that the wheels do not wobble, but not so much as they will not turn. Set nails and fill nail and screw holes with wood putty. A hint, to match your stain and putty, stain a small patch of wood and allow stain to dry. Mix enough stain into the putty to match dry colored stain. Sand entire project and stain.

On materials:

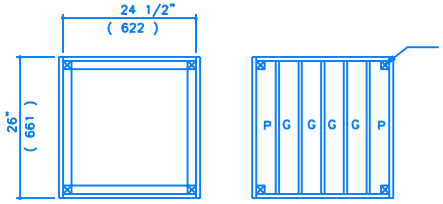
We suggest the use of clear cedar.

TOOLS

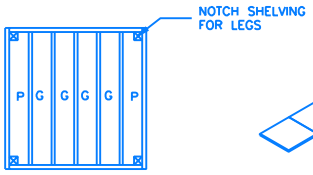
Hammer
Hand or Power drill
Jigsaw
Tablesaw
1/2", 1/16", 1/2" and 1/4" drill bits
Screwdriver
1/2" wrench

TOOLS

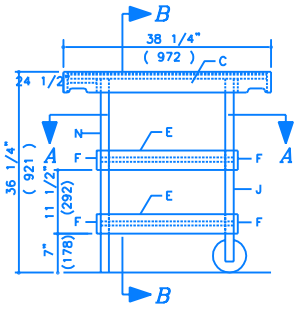
Pencil
Square
Measuring tape
Compass
Glue spreader or
Notched trowel for tiles
Miter box



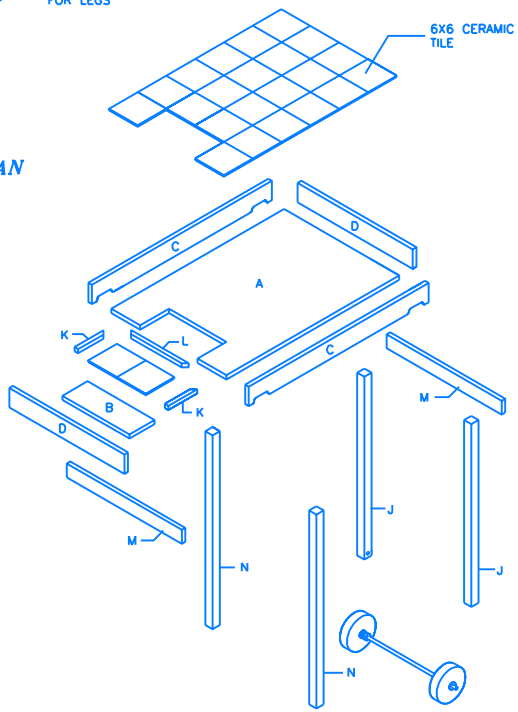
SECTION A
FIGURE 4

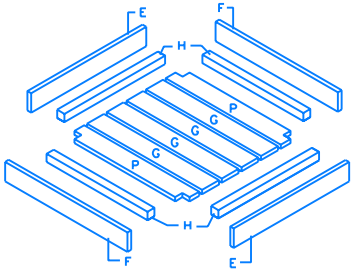


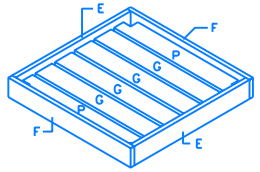
SHELF PLAN
FIGURE 5



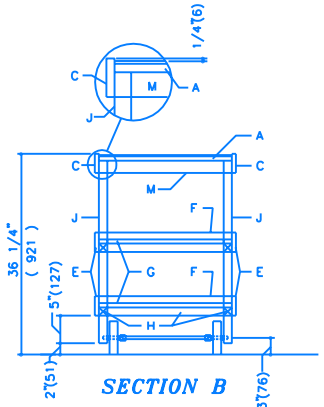
ELEVATION
FIGURE 6



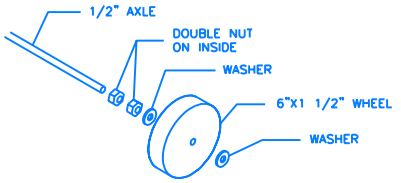




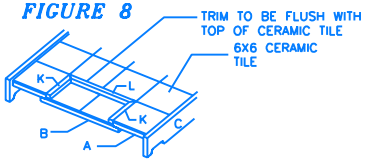
EXPLODED VIEW



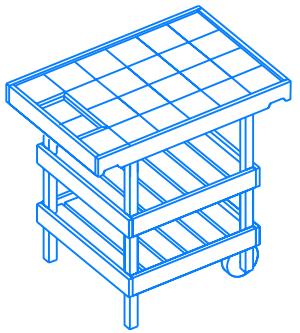
SECTION B
FIGURE 7



AXLE DETAIL
FIGURE 8



RECESS DETAIL
FIGURE 9



BARBEQUE CART
COMPLETED PROJECT