

Folding Footrest

Background & Credits: Credit for providing the original plan to the TWWG plan box goes to Pat Taylor. Following text extracted from the original Folding Footrest plan sheet in the TWWG Plan Box: "This neat little project is a "Replica" of a mail-order catalog item. With credit going to some ingenious Yankee who sells through "The Vermont Country Store" ... At \$29.50 + \$3.50 for Shipping/Handling. You can make in a weekend for about \$8.00".

Material required: The project can be built from two 48" x 1" dowels and four 48" x 1/2" dowels; or three 1" by 36" and six 1/2" x 36" dowels. Both options require one 1/8" x 36" dowel or 13" of 1/8" diameter brass rod, two Flat-head brass wood screws (#8 x 1 1/2") and two 1" rubber crutch tips.

Builder's Notes: The listed measurements should be examined closely. Pay particular attention to the location of the holes in the cross-ends (PC3) for the pivoting outside leg supports (PC7). You need to provide enough clearance to keep these dowels from rubbing on the legs during the folding/unfolding process; I suggest moving the holes to the outboard side by at least 1/64". Additionally, I raised the screw holes for the PC3 rotator from 9 1/2 to 9" to increase the height of the leg supports and to reduce tension on the PC7 dowels. I also increased the PC1 legs to 23" for added height. For future editions, I would probably increase the overall width by 1 or 1 1/2" in order to provide more leg room. The March 1995 cost was approximately \$22.00 for Oak dowels, crutch tips, brass rod etc.. *Note: The Graphics, Figures 1 & 2, for the Leg Assembly and the Foot & Leg Support Assembly are not drawn to scale. The measurements shown in the cutting list were taken from the original plans.*

Cutting List:

Part	Description	Quan	Size
PC1	Legs	2	1 X 21" Dowel *
PC2	Rotator	1	1 x 9 13/16" Dowel *
PC3	Cross-ends	2	1 x 14" Dowel
PC4	Cross-rails	3	1/2" x 11" Dowel
PC5	Pegs	2	1/2 x 1 1/4" Dowel
PC6	Leg Support	5	1/2" x 18" Dowel
PC7	Pivots	2	1/2" x 19 3/4" Dowel
PC8	Pins	12	1/8" x 7/8" Dowel, or Brass Rod
* Length of PC1 & PC2 to be determined during assembly: See instructions:			

Construction Tips: When cutting dowels to length, support them well from behind, as with a miter gauge or a "V" Block. This is especially true on a bandsaw; the downward motion of the blade tends to make the dowel roll out of control if not properly supported. A jig such as a "V" Block will be necessary for accurate drilling of the holes.

Making The Leg Assembly: Cut the two legs (PC1) to length, then drill three 1/2" diameter x 3/4" deep holes in each leg. The first hole is drilled 1 3/8" from the top; The second hole is drilled 3 3/4" From the top; And the third is drilled 12 3/8" from the top. The legs can be increased a few inches in length in order to elevate the feet & legs to a higher degree). (If leg length is increased, the third hole should be adjusted downward from the

top to provide better symmetry and stability, or maybe a fourth Cross-rail could be added.

Rotate each leg dowel 180° in the "V" Block and drill another set of holes 5⁵/₈" from the top (This hole is for part PC5). Change to a 1/8" bit, then drill and countersink a pilot hole for a 1 1/2" long #8 woodscrew 9 1/2" from the top of each leg. This screw will be used for fastening the Rotator (PC2) in place. Slightly chamfer each end of PC4 and one end of PC5 to facilitate entry into their

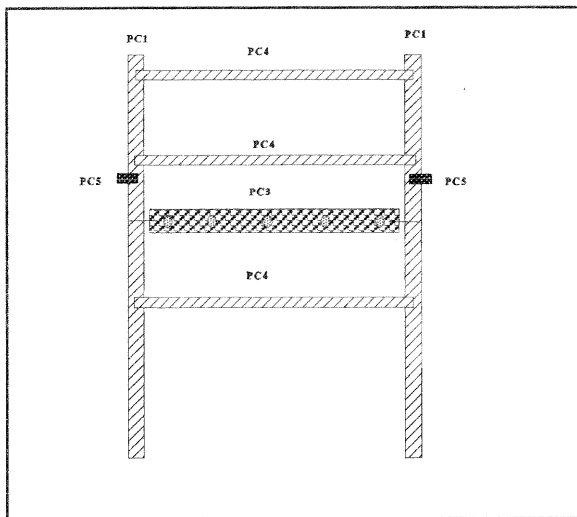


Figure 1: Leg Assembly.

sockets and to provide some space for glue. The leg parts are now ready for sanding and assembly. After the glue has dried, pin the upper and lower cross-rails to the legs by drilling at a 90° angle for the insertion and gluing of the PC8 pins. (Wood glue for dowels. Epoxy, Crazy, RooClear et.al. for brass rod.)

Cut the three cross-rails (PC4), and the two fulcrum pegs (PC5) to length from 1/2" dowel rod. Verify the depth of the drilled holes before determining the actual length of the cross-rails.

Making The Foot & Leg Support: Next, cut the two Cross-end pieces (PC3) to length

from 1" dowel rod, and take an exact measurement of the inside distance between the two legs. This distance determines the length of the Rotator (PC2) which should be fairly close to 9 13/16". Now, cut the five Leg Supports (PC6) and the two Pivots (PC7) to length from 1/2" dowel rod. Drill 1/2" x 3/4" deep holes 1" (63/64" or 31/32" depending on side clearance desired) in from each end of the two Cross-ends (PC3) and set one piece aside. Take the remaining Cross-end (PC3) and drill five additional holes in line with then end holes and spaced equidistant on 2" spacing starting in the

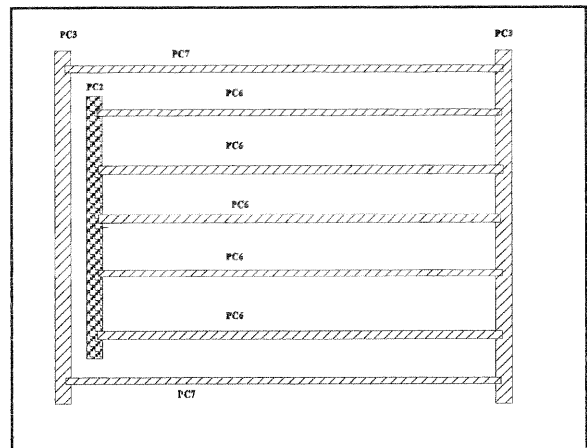


Figure 2: Foot & Leg Support Assembly.

center. Drill matching holes in the Rotator (PC2). Drill 1" deep pilot holes for the #8 wood screws in the center of each end of the Rotator (PC2). Before sanding and gluing, chamfer the ends of all 1/2" dowel pieces to facilitate assembly and to provide space for the glue.. Drill and pin the Pivots with 1/8" dowels or brass rod(PC8).

Making the "V" Block: The "V" Block should be close to 18" long and can be made out of chunk of 2" x 4" or other suitable material; It should be straight, flat and square. Cut the two-by-four into a "V" block; This is done by tilting your saw blade (or table) to 45 degrees, and setting your

Rip fence $\frac{1}{2}$ " from the blade on the side away from the tilt. Elevate blade 1" above the table and pass the length of the two-by-four over the blade, holding the stock tightly against the fence with push sticks and featherboards. After the first cut, reverse the stock end-for-end and make the second cut. The "V" should be at least 1" wide at the top, and at least $\frac{3}{4}$ " deep.

Caution! Don't stand directly behind the blade or you might have a "V" shaped wedge of wood protruding from your stomach or chest. Whether you use a saw with a tilting table or one with a tilting arbor, the operation is tricky and treacherous, and will probably take several tries to get a decent cut.

Depending on your outlook, a radial-arm saw may provide the greatest degree of safety and ease of blade and fence adjustment. Another approach would be to bevel two pieces with a 45° angle and then edge-join them to form the "V".

Pinning the Dowel Joints: To provide additional stability at the points of greatest stress, some of the $\frac{1}{2}$ " dowels are pinned to their sockets in the 1" dowels. $\frac{1}{8}$ " dowels are not readily available in anything except generic hardwood (Birch or Ramin) so you might want to use brass rod as I did.

Finishing the Project: Sand before you glue and minimize glue squeeze-out. Apply the finish of your choice, but a Danish oil or shellac finish may be easier to repair where the dowels rub against each other during folding and unfolding. If desired, plug the screw holes where screws attach the Rotator dowel. However, you might want to consider providing for later access to these two screws.