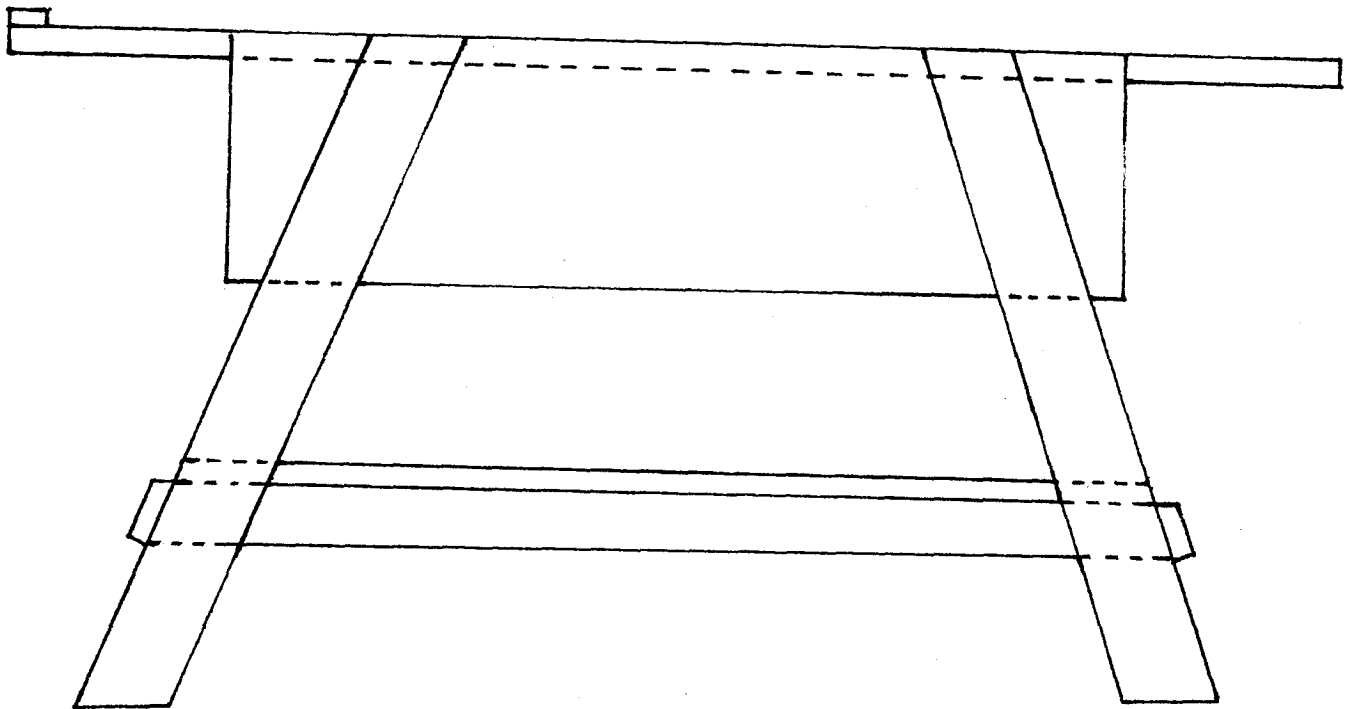


# Construction of the "Niemiera" Planing Bench

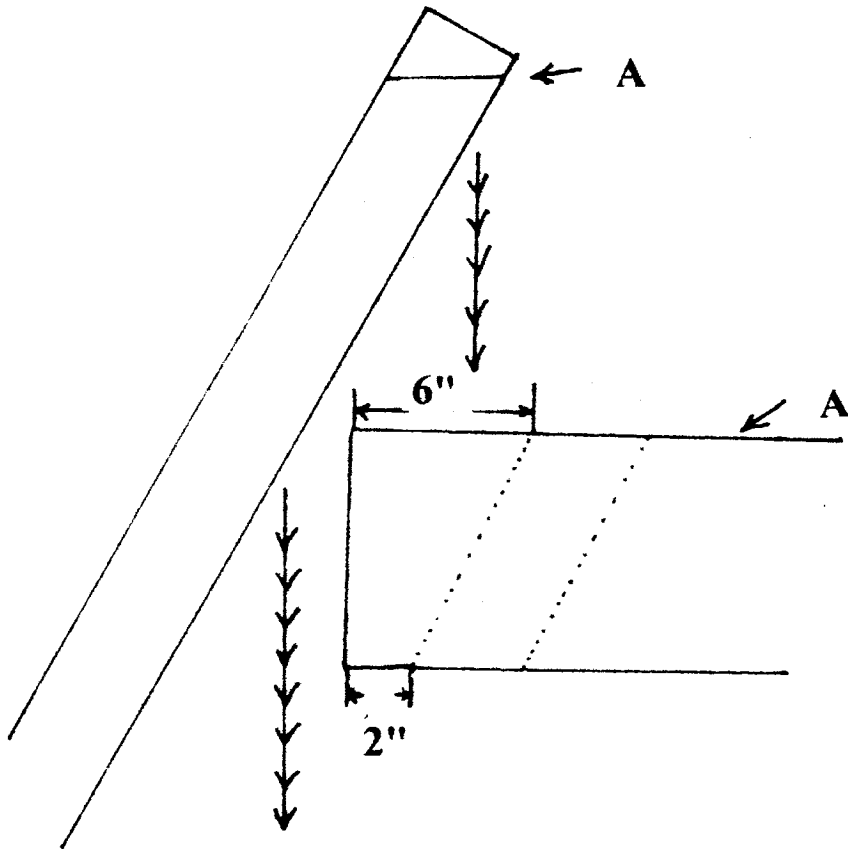
text and drawings by John Niemiera



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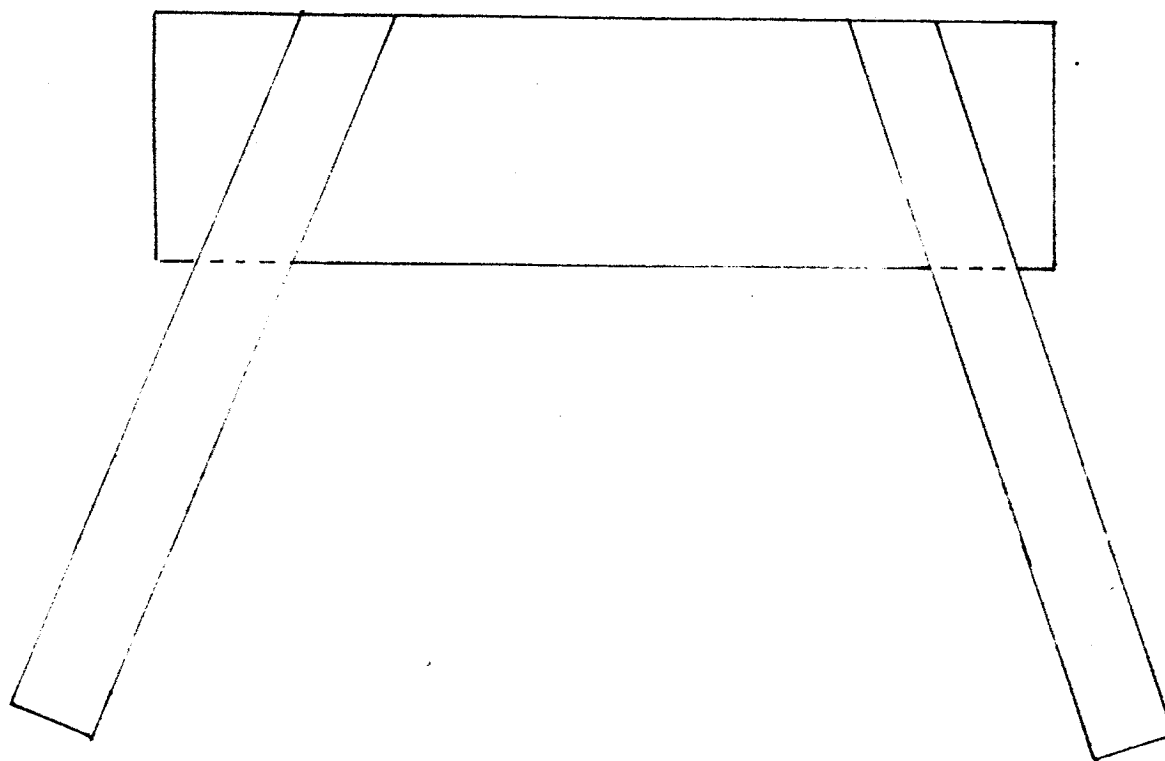
## Construction of the "Niemiera" Planing Bench

1. Position the legs on the plywood, mark the angle on the plywood, and also mark the cut at the top of the leg. Cut points "A" at a 10 degree angle using either a tablesaw or jigsaw.



## Construction of the "Niemiera" Planing Bench

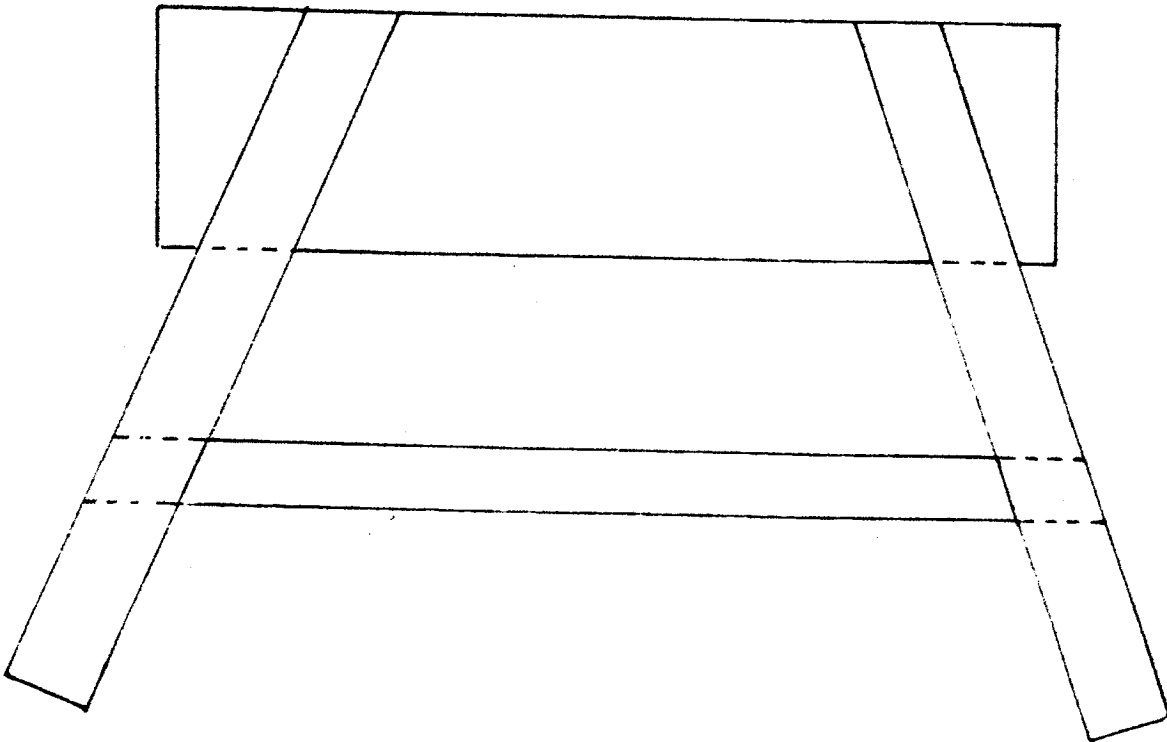
2. With glue between the lines, position the legs on the plywood and clamp. Turn the assembly over and set screws from the inside of the plywood into the legs.



## Construction of the "Niemiera" Planing Bench

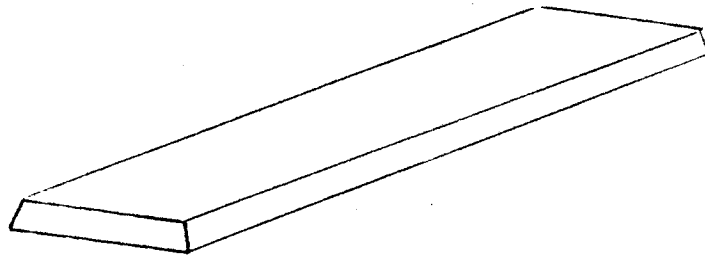
**3. Rip cut the stringers at 10 degree angles to get the proper width. Set the stringers on the inside of the assembly, and mark the position on the inside of the legs. Mark the end cuts. Cut the stringers, put glue between the lines, clamp, and set the screws in place from the inside of the stringer going into the legs.**

**Steps 1,2,3, are done for both sides of the bench.**

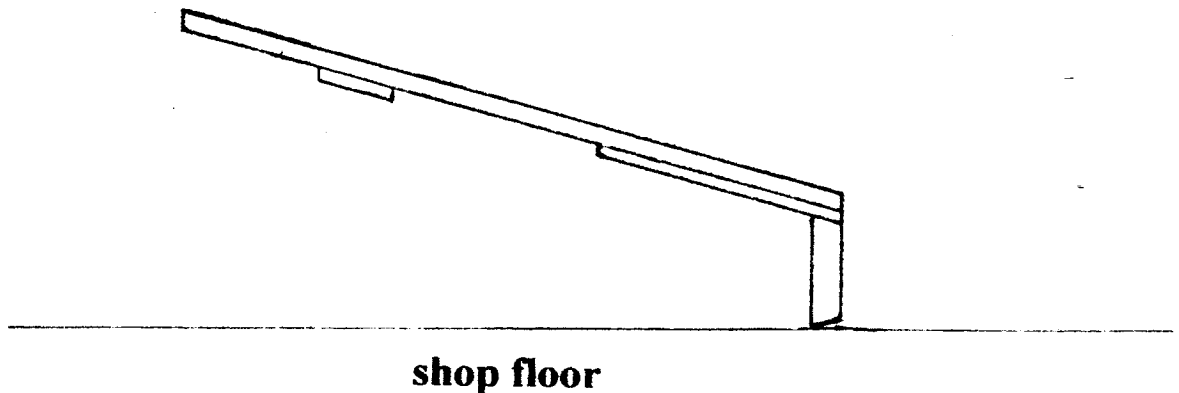


## Construction of the "Niemiera" Planing Bench

4. Cut the planing bench top to length. Rip cut both sides at a 10 degree angle to the correct width. Run the top thru a thickness planer to true up the planing bench top. If you dont have a thickness planer, try using a belt sander, or good ole fashioned sweat and muscle during hand planing and hand sanding with a sanding block.

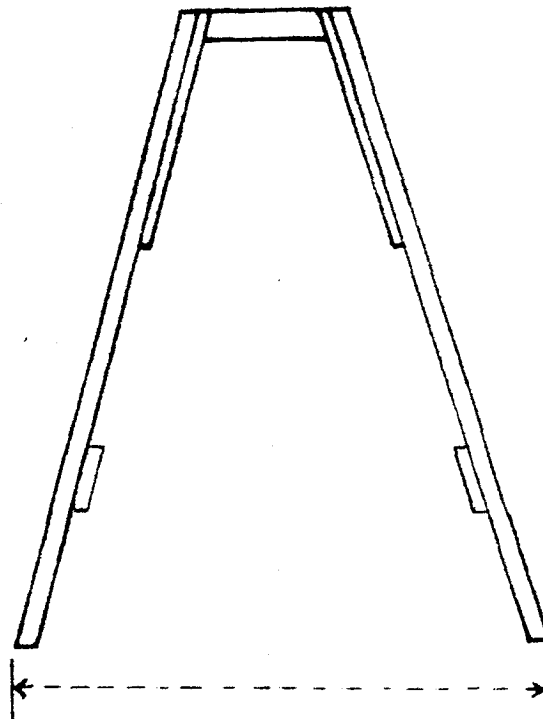
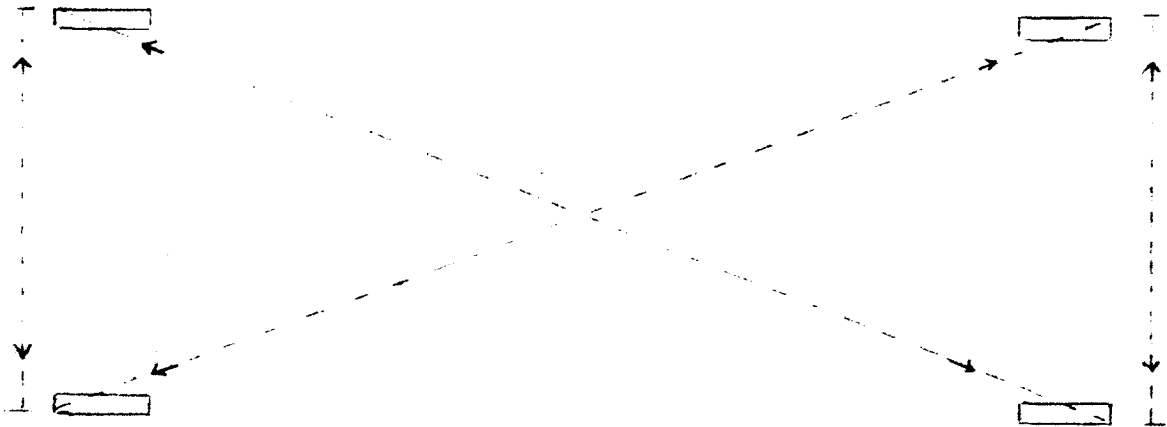


5. Measure and mark the center of the top on each side. Now measure and mark the width of the side assembly, centered against the top. Run a bead of glue along the side of the top, keep the glue between the lines. With the help of a friend to hold the side assembly at the correct 10 degree angle, set the assembly centered on the top, and set screws in place. Repeat for the other side.



## Construction of the "Niemiera" Planing Bench

6. Stand the bench assembly up, and check for square by doing diagonal measurements from leg to leg, in the same manner you check a newly installed window for square. The measurements of the dotted lines should be the same. Also check the width measurements.

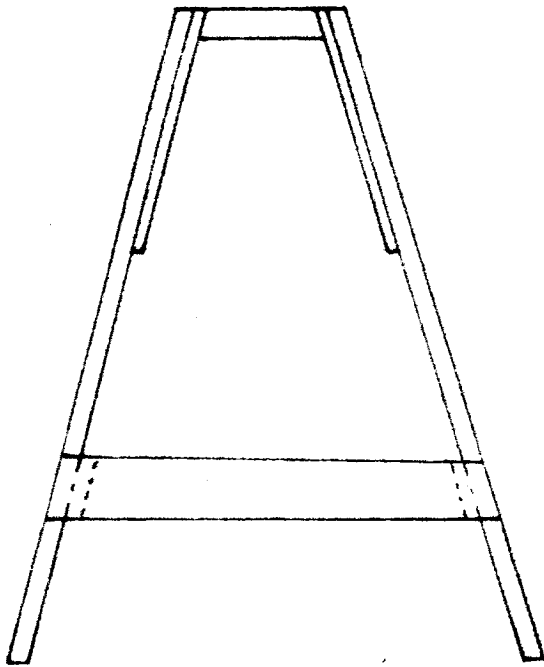


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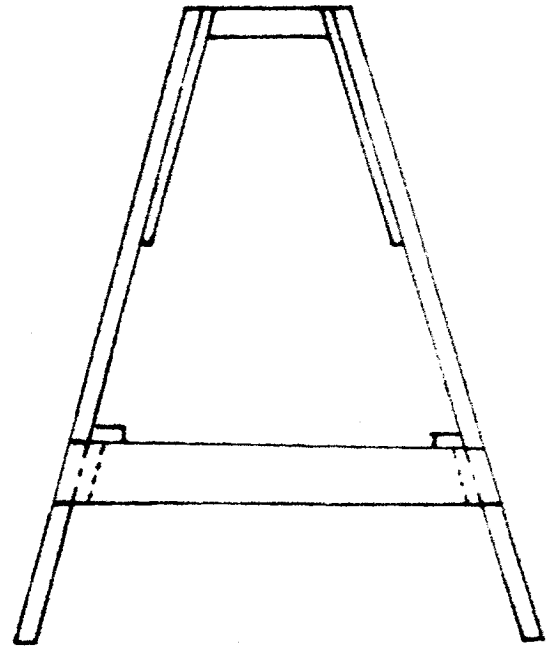
## Construction of the "Niemiera" Planing Bench

**7. Rip cut the end stringers at a 17 degree (top cuts only), and rip the bottom to the correct width. Position the end stringers in place, mark the ends, cut, glue, and set screws in place.**

**8. Rip a 10 degree angle on each outside edge of the cap stringers. Rip the inner side to the correct width. Position in place above the side stringer, mark, cut, glue, and set screws in place.**



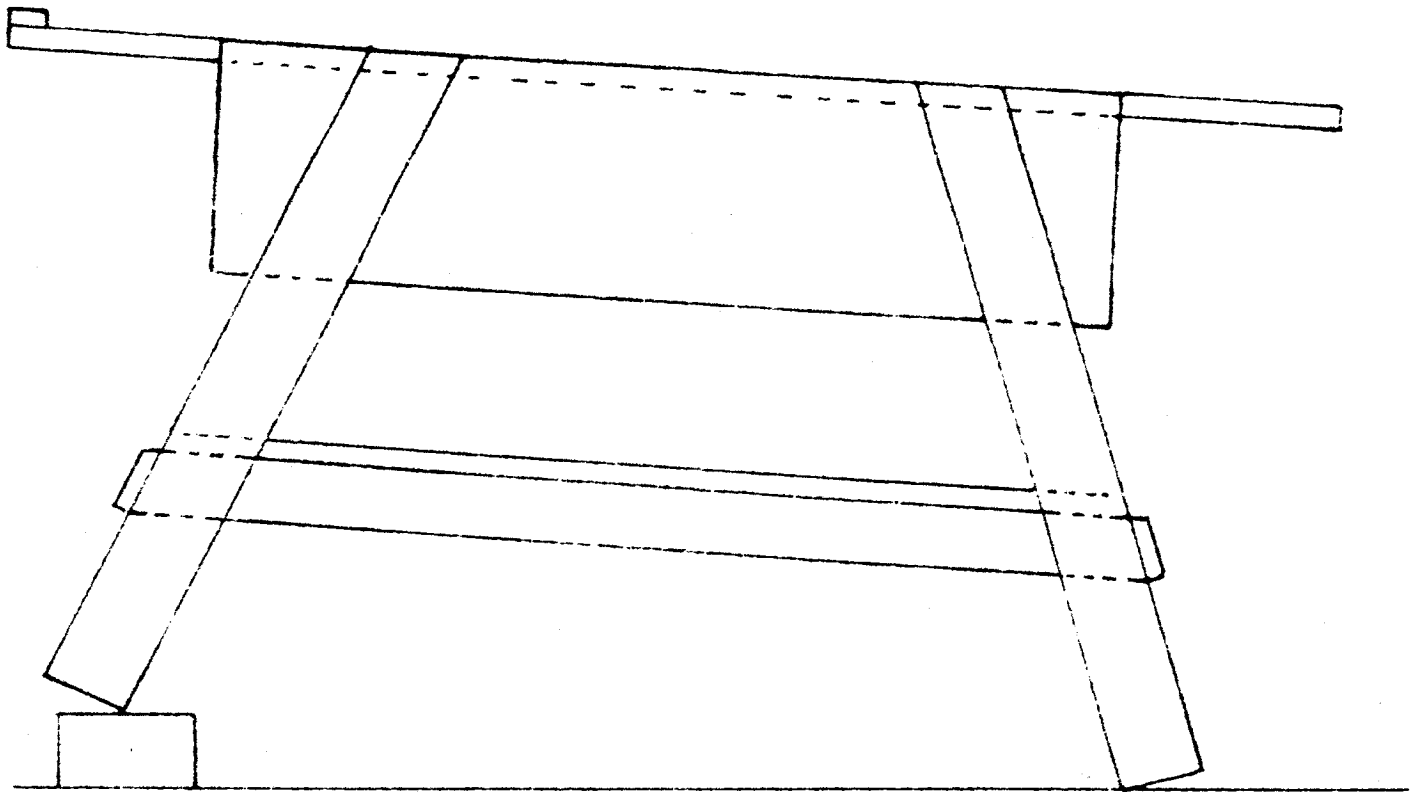
**step 7.**



**step 8.**

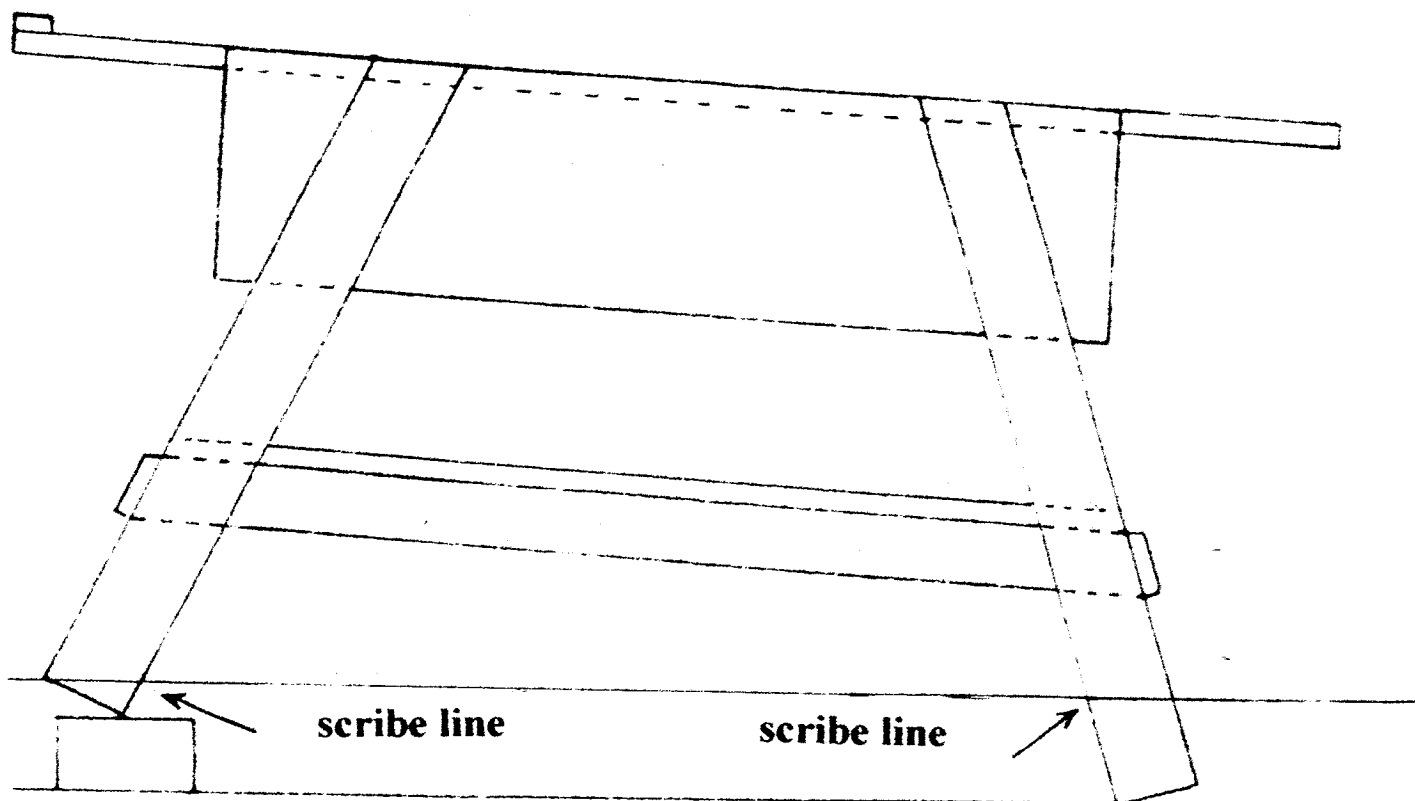
## Construction of the "Niemiera" Planing Bench

9. Put a 2 inch block under the front legs of the bench assembly. This will be the tilt of the planing bench.



## Construction of the "Niemiera" Planing Bench

10. Rip a scrap piece of wood 2 inches wide the length of the leg spans. Scribe this line against your planing bench legs. With a hand saw, or a jig saw cut this line at a 10 degree angle tilting up towards the top of the bench. By doing so, all four legs will firmly be seated when the bench is placed on a flat level surface, and your bench will have a 2 inch rise going from the back to the front of the planing top.



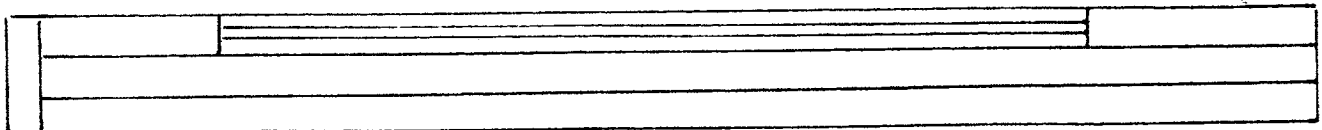
## Construction of the "Niemiera" Planing Bench

11. Rip cut the planing form resting board to width, then cut to length. Pre drill slightly over sized holes, and set screws in place. Do not glue! This planing form resting board has to be allowed to expand and contract with temperature and humidity changes. Gluing will cause it to a. buckle, b. crack, or c. both.

12. Rip to width the mitre guage board. Cut to length. Using a tablesaw with a dado set installed, or a router with a dado cutter, dado cut the mitre into the board. Make sure that the dado is centered in the width of this board. Dry fit the mitre guage slot into the dado on the mitre guage board. If the fit is good, pre drill slightly over sized holes in the mitre guage wooden board, install the mitre guage slot, and screw this assembly to the top of the planing bench top. Do not glue!

13. Cut and install end stop. Pre drill slightly over sized holes, and set screws. Do not glue!

see full sized cross section drawings next page



## Construction of the "Niemiera" Planing Bench

**14. Now cut your aluminium stock to width, and length. Next machine a open rabbet at both ends for the "T" washers. Drill the three pilot holes, the center being used to attach the mitre clamp block, and the end two for the washer hold down assembly. Counter sink these holes.**

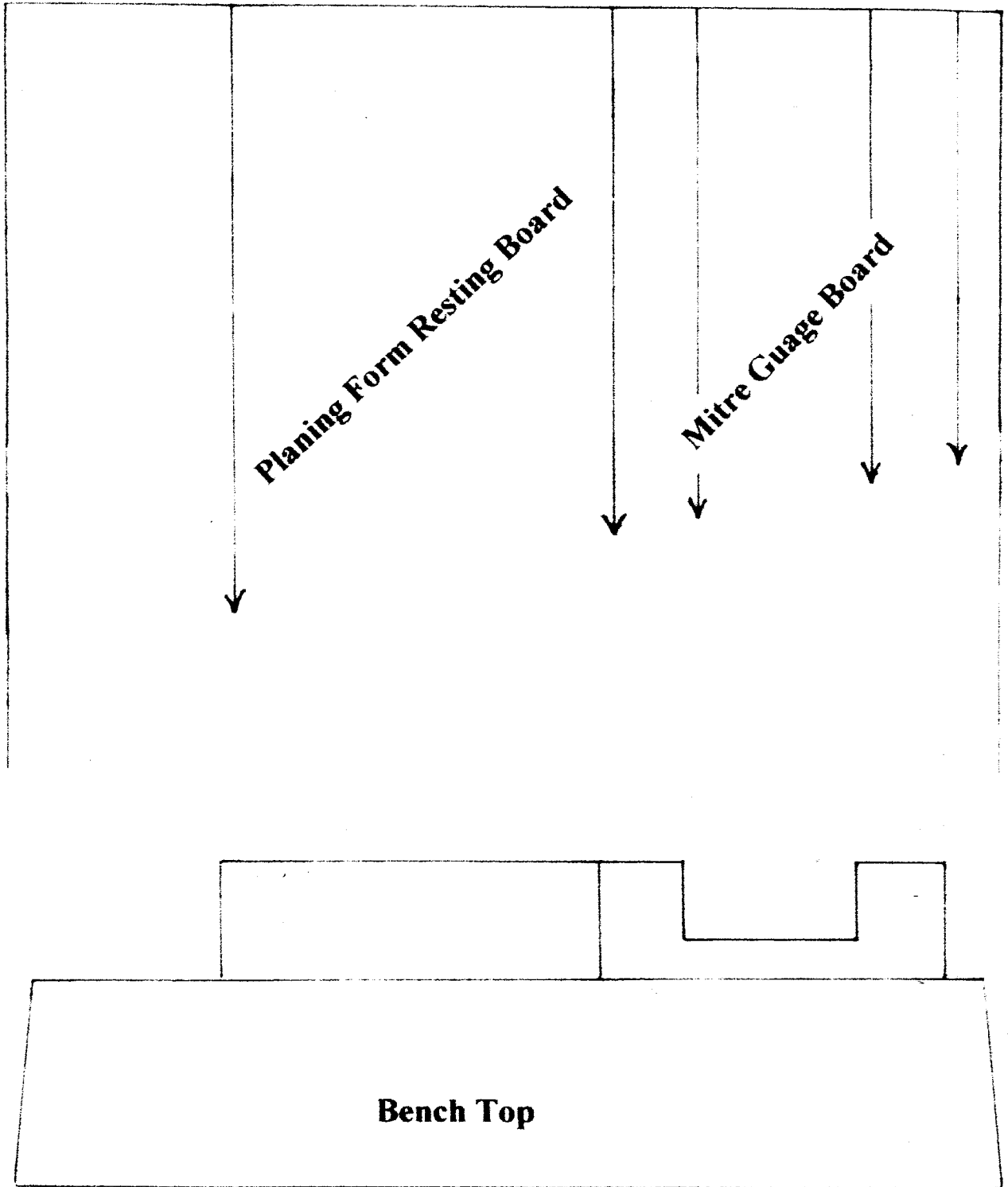
**Cut at 10 degree angle cuts the width and length of the mitre guage block.**

**Center the aluminium stock under the mitre guage block and mark the hole locations. On the wood mitre guage block drill the end holes 3/8 inch deep and slightly oversized.**

**On the aluminium channel tap the end holes, and fit the washer and screws into this assembly. Seal threads with lock-tite. Let these end screws protrude one 1/4 inch above the channel assembly. This washer assembly attached in this manner to the aluminium channel will make a "T" locking assembly that will ride in the mitre guage slot.**

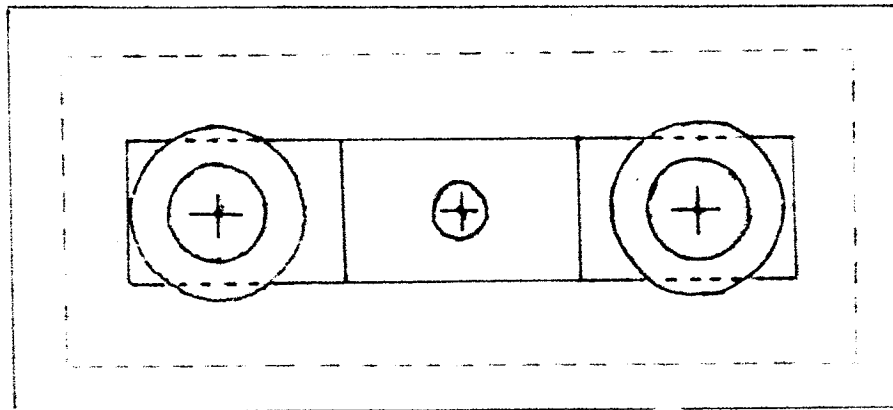
**Attach the wood mitre clamp block using the center hole for your screw thru the channel up into the block. The block will not shift due to the two end screws protruding into two open holes drilled into the bottom of the clamp block.**

# Construction of the "Niemiera" Planing Bench



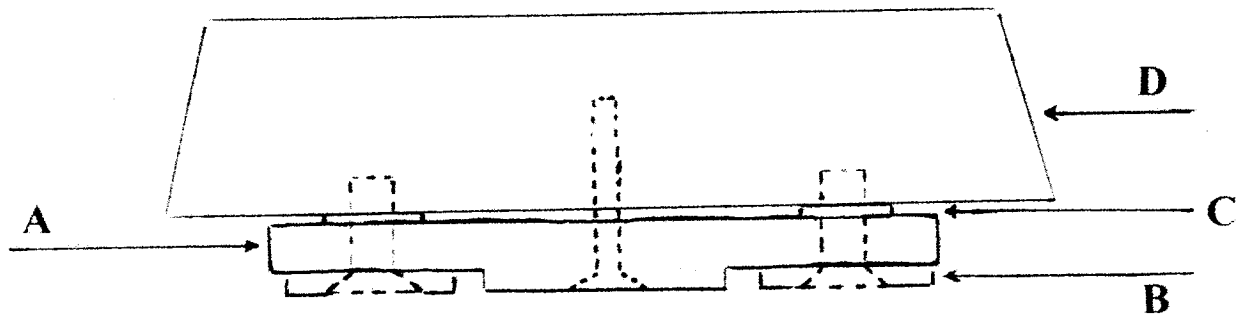
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## Construction of the "Niemiera" Planing Bench



full sized bottom view of mitre guage assembly—minus clamp

full sized side view of mitre guage assembly—minus clamps

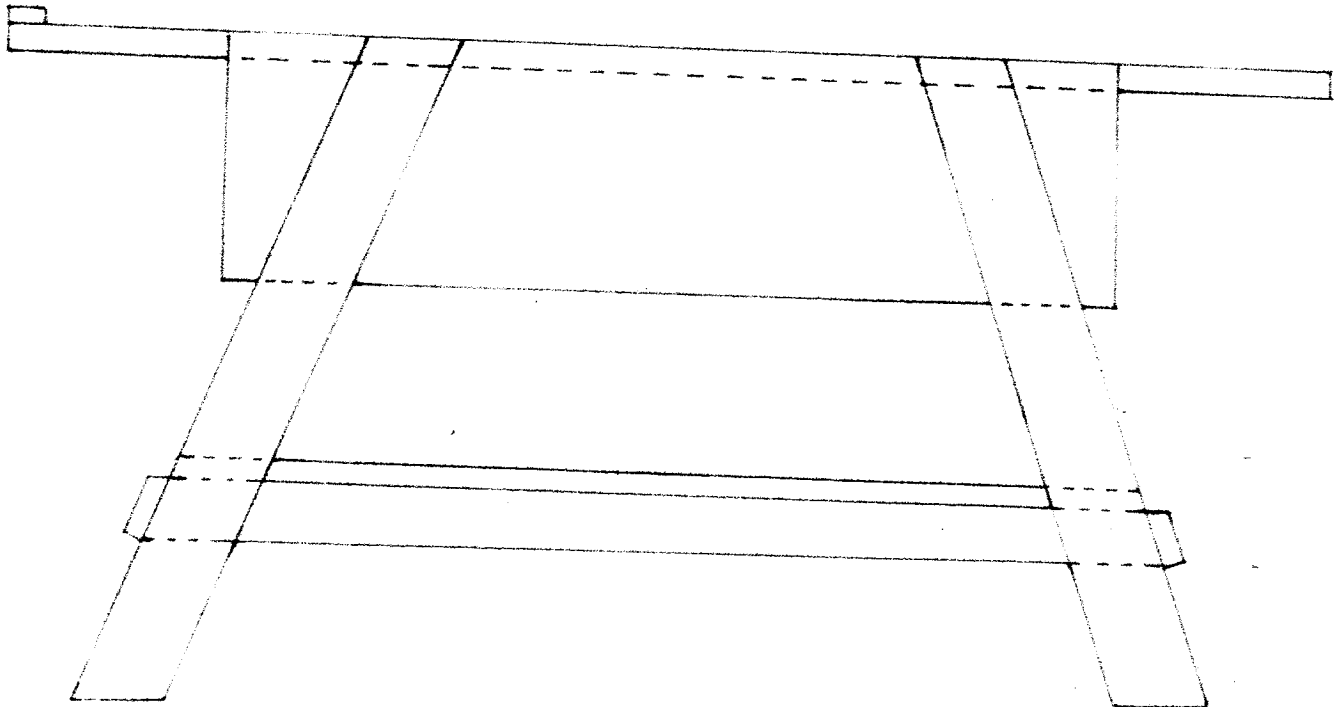


- A. washer hold down assembly
- B. "T" washers
- C. spacers (washers)
- D. mitre guage block

## Construction of the "Niemia" Planing Bench

### Adjustment of the mitre guage assembly

Attach your choice of clamp (centered in the block) to the top of the clamping block. Slide this assembly into the mitre slot, it should operate and move smoothly in the channel. When you engage the clamp against a strip of cane, the whole assembly will lock in place, thus locking your strip of cane in the planing form. Adjust the clamp so it just has a snug fit to the cane. Unlock the clamp, lift your form, and under the butt end of your form place a small piece of a router matt ( I use a 1"by 2" by 1/4") piece. Your locking assembly is now tuned to firmly hold your split strips during planing.



## Materials List

- planing bench top :** 2" x 6-3/4" x 74"  
rip sides @ 10 degree cut  
use Oak, or Maple
- planing bench legs :** 2" x 4" x 44"  
adjust for your height  
use Douglas Fir, or Oak
- planing bench sides :** 1/2" x 12" x 48"  
use cabinet grade plywood
- planing bench stringers:** 3/4" x 3-1/2" x ?  
position and cut to length  
rip side stringers @ 10 degree cut  
rip top of end stringers @ 17 degree cut  
rip edge of cap stringers @ 10 degree cut  
use Poplar, Pine, or Maple
- planing resting board:** 3/4" x 2-1/2" x 6'  
use Maple, or Poplar
- mitre guage board:** 3/4" x 2-3/16" x 48"  
use Maple
- stop block:** 1/4" x 1-1/2" x 6-1/4"  
use Poplar
- aluminium hold down:** 3/8" x 3/4" x 3-1/2"  
rabbet 1/8" x 1-1/8" at each end

**mitre guage block:**

**1" x 2-1/8" x 4-5/8"  
make 10 degree cuts  
use Maple, or Oak**

**screws:**

**# 6 coarse 1-1/4", 1-5/8", 1/4"-20 x 3/4"**

**washers:**

**7/8", 1/2"**

**mitre guage track:**

**Woodworkers Warehouse item # t303  
48" track**

**clamp:**

**(your choice) I used an Eagle Clamp  
item # g2288 at Woodworkers Warehouse**

**glue:**

**Elmers Carpenter Glue**

**Prior to assembly**

- 1. Read the construction directions.....(a few times).**
- 2. Dry fit and clamp the entire bench.**
- 3. Sand all surfaces.**
- 4. (optional) route all edges using 1/2" rounding over bit.**
- 5. Countersink all screws @ 6" spacing.**

**Over the years, I've studied numerous styled workbenches, alot of sharpening stations, woodworking tables, and various bench tops, including planing desk tops. The "Niemiera" planing bench is my rendition of these studies, and what I believe to be the only known ergonomically correct planing bench. With planing on the up lift motion, gone will be the days of lower backaches, and with the third hand locking mechanism to hold your split strips while creating your cane masterpiece, gone are the days of tendonitis of the forearm and wrist.**

**So plane some cane, and make alot of shavings.....**

A handwritten signature in black ink, consisting of a stylized, cursive script that is difficult to decipher but appears to be a personal name or brand mark.