The Wenzer Style Crib

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The Wenzer-Style Crib is a design by Jeff Wenze, a woodworking hobbyist. He drew the original sketch plans and sent them to me.

I have built three Wenzer cribs, making modifications with each new project.

The Wenzer has become a popular model among woodworkers, so I thought is would be good to make a solid set of detailed plans to share.

The Wenzer is designed so that it can easily transition into a toddler bed or a full-size bed. After completion, there are no modifications or additional parts needed to change the crib into a bed.

These plans contain two options for the headboard. One is a traditional flat top and the other an arched top.

Components and parts
These crib plans are broken into four main components, the footboard, the headboard and the two sides.

Since many of the parts are similar for all components, it is recommended that you cut all similar parts (slats, rails, legs) at one time while your machine is set up.

Order of Build
The headboard, sides and footboard fit together via threaded inserts and bolts. Because the holes for these connecting points must match up exactly, it is critical that you follow a particular order.

The footboard is the "measuring stick" for where to drill holes in the side legs.

In my case, I fully assembled the footboard first, then used dowel centers in the holes to mark the exact placement for the corresponding holes in the side legs.

By the same token, I did not mark for the headboard holes until the footboard and sides were fully assembled and attached to each other.

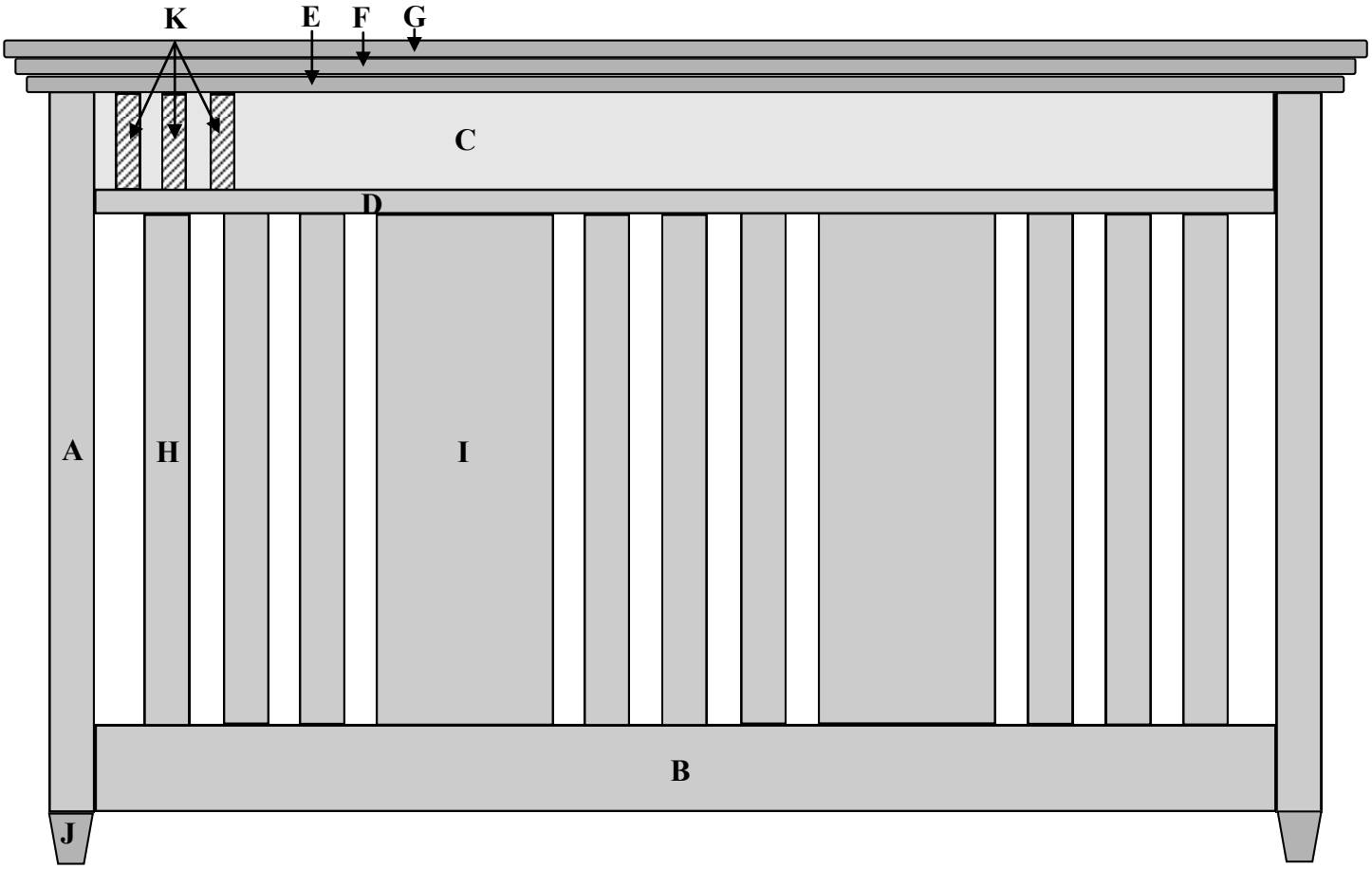
Hardware
The crib is connected to the sides via bolts and threaded inserts. Bolts pass through holes and screw into inserts embedded into the connecting part.


For all connections, you will need a total of **14 1/4 -20 inserts** (Lowe's item number 148250) and **eight 1/4" x 70mm connecting bolts** (Lowe's item number 148300).

The feet come with a threaded rod , so all you need are the threaded inserts. You will need four of inserts, included in the list above. Lowe's item number 295979.

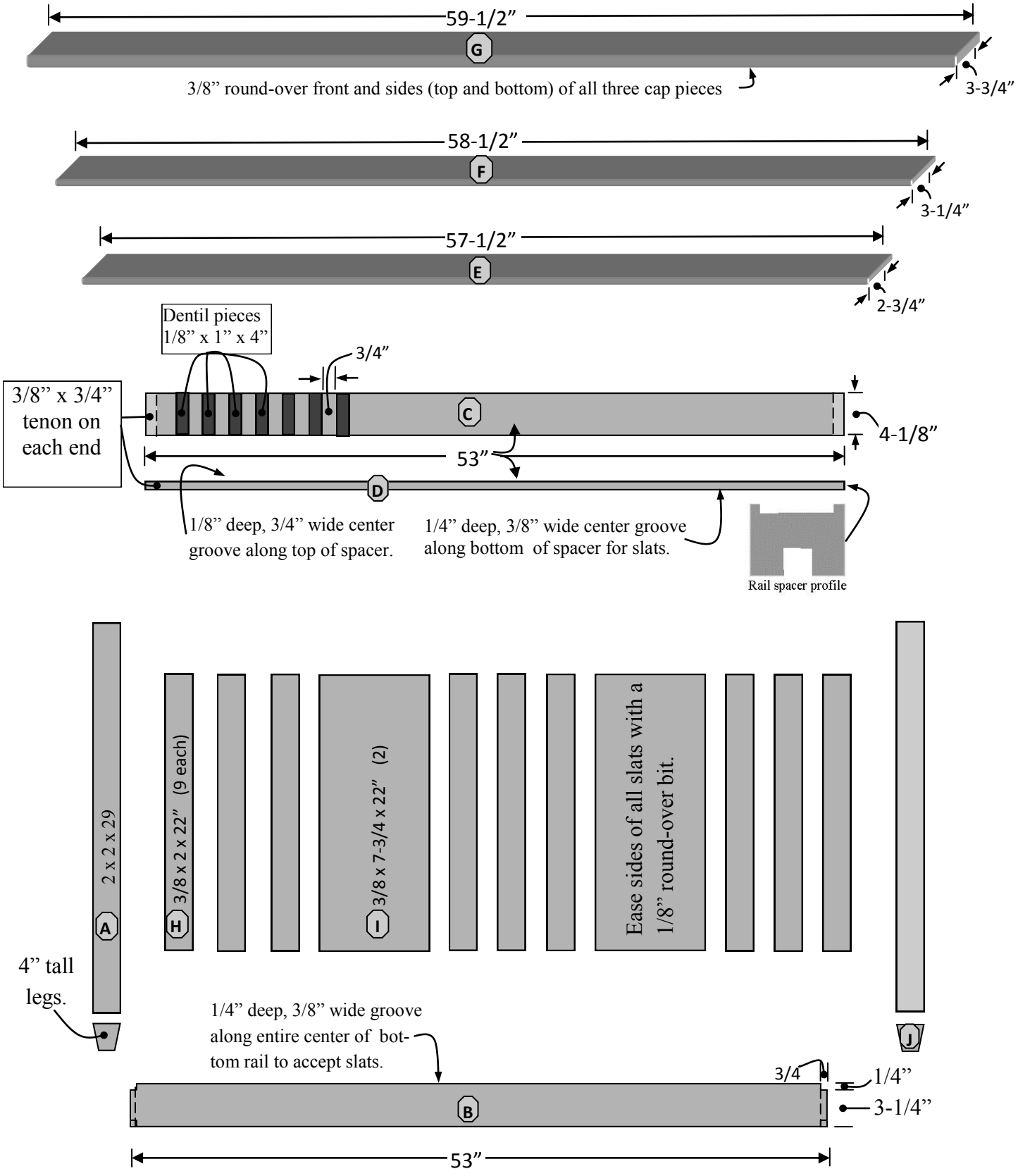
The mattress frame and scissor mechanism can be ordered from Products America at (800)205-9642 or online at www.productsamerica.com.
You will need one **MS60** (mattress spring) and one **PH66** (scissor lift).

Footboard



Part	Description	Amount	Size (inches)
A	Legs	2	2 x 2 x 29
B	Bottom Rail	1	3/4 x 3-1/2 x 53
C	Top Rail	1	3/4 x 4-1/8 x 53
D	Top Rail Spacer	1	3/4 x 1 x 53
E	Cap Bottom	1	5/8 x 2-3/4 x 57 1/2
F	Cap Middle	1	5/8 x 3-1/4 x 58 1/2
G	Cap Top	1	3/4 x 3-3/4 x 59 1/2
H	Slat	9	3/8 x 2 x 22
I	Slat	2	3/8 x 7-3/4 x 22
J	Feet	2	4” tall (Item #: **295979** at Lowe’s)
K	Dentil Strips	30	1/8 x 1” x 4”

Footboard


59-1/2”
G
3/8” round-over front and sides (top and bottom) of all three cap pieces
3-3/4”
58-1/2”
F
3-1/4”
57-1/2”
E
2-3/4”
Dentil pieces
1/8” x 1” x 4”
3/4”
3/8” x 3/4” tenon on each end
C
4-1/8”
53”
D
1/8” deep, 3/4” wide center groove along top of spacer.
1/4” deep, 3/8” wide center groove along bottom of spacer for slats.
Rail spacer profile
2 x 2 x 29
A
3/8 x 2 x 22” (9 each)
H
3/8 x 7-3/4 x 22” (2)
I
Ease sides of all slats with a 1/8” round-over bit.
4” tall legs.
J
1/4” deep, 3/8” wide groove along entire center of bottom rail to accept slats.
3/4
1/4”
3-1/4”
B
53”

Footboard parts detail

Legs
To accept the rail tenons, cut a 3/4” deep mortise to 4 3/4” down from the top and to 3 1/4” up from the inside bottom of each leg.

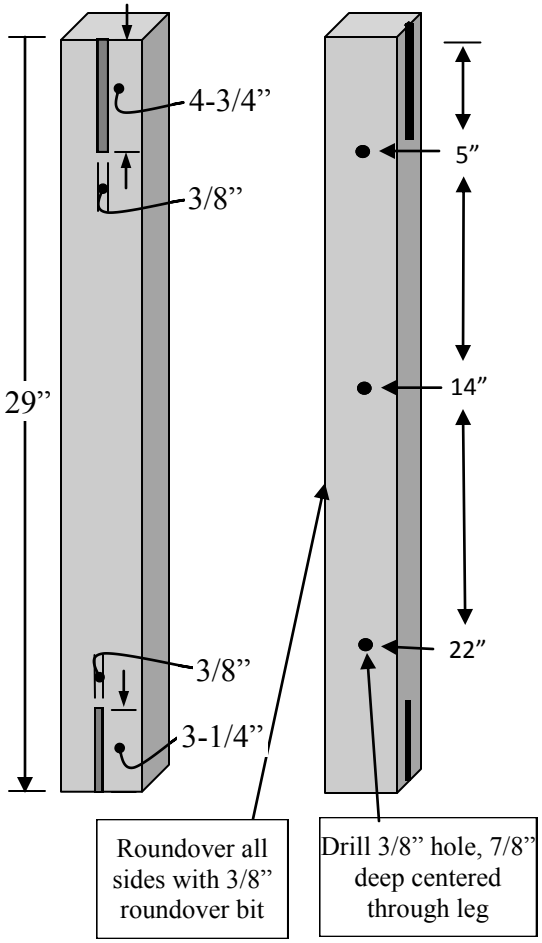
To attach the side assemblies later, drill a 3/8” hole, 7/8” deep, to accept threaded inserts on the backside of each leg. (See *Hardware* section)

From the top, measure and drill 1/4” holes centered on the legs at 5”, 14” and 22”.

NOTE: The legs are mirror images of each other. Insure correct placement of mortises and insert holes before proceeding with cuts.

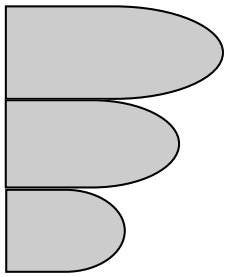
To accept the feet later, drill a 3/8” hole, 7/8” deep, into the center of the bottom for threaded inserts.

Finally, roundover all side edges with a 3/8” roundover bit.



Cap
Cut all parts according to the cut list and **round over the front and side edges only** with a 3/8” roundover bit.

When gluing the cap parts together, make sure the back sides are flush. After the glue dries, you may need to “shave” the back side on the table saw to get a flush finish.


Cap profile

Dentil profile
Applying the dentil molding is the last step after glue up and will be addressed in assembly instructions.. Approx. 30 of 1/8” x 1” strips will be required.

Slats
The slats are cut approx. 3/8” longer than needed. Determine the final length after a dry fit of the outer frame.

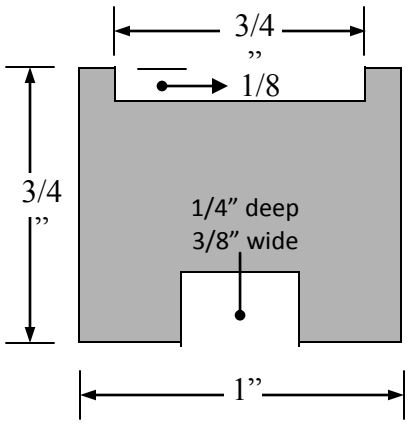
Round over the edges of the slats with a 1/8” roundover bit.

Footboard parts detail

Top Rail
The top rail is cut according to the cut list. Just like the bottom rail, you will need to cut the same tenon to fit into the mortise at the top of the leg. The top of the tenon is flush with the top of the leg.

Top Rail Spacer
The top rail space will also need a tenon. Additional cuts are required to accept the top rail and the slats.

After cutting the tenons, route a 3/4" wide, 1/8" deep dado along the top of the spacer. This will accept the top rail.



Rail spacer profile

To accept the slats, cut a 1/4" deep x 3/8" wide groove along the entire center of the bottom of the spacer. After assembly, you'll glue small filler pieces in the empty spaces between the slats. (See assembly page)

NOTE: Ease all edges of the rails with a 1/8" roundover bit except the bottom of the top rail. It needs to fit snug in the dado.

For the spacer, do not use a router. Sand by hand to ease the edges.

Bottom Rail
The bottom rail is cut according to the cut list, however you will need to cut a 3/8" x 3/4" long tenon on each end to fit into the mortises on the bottom of the legs. The tenon requires a small 1/4" cut at the top to make the rail fit flush with the bottom of the mortise.

To accept the slats, cut a 1/4" deep x 3/8" wide groove along the entire center of the top of the rail.

Footboard assembly

1 Before you break out the glue bottle, dry fit the entire footboard to make sure all the pieces fit together properly. In addition to clamps, I used a ratchet strap kit to pull everything tight.

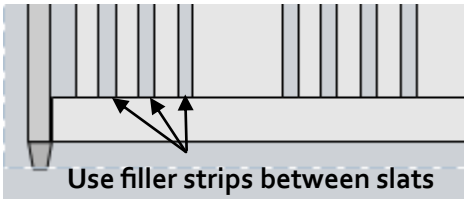
Sand all parts to 150 grit before final assembly. Hand-sand all parts with 220 grit after assembly.

2 Begin by gluing the bottom rail to the legs and check for square.

Dry fit the slats in their general position (they float snuggly in the dado and DO NOT get glued) into the bottom rail, then slide the top spacer rail into place to help position the slats.

3 Slide and glue the top rail into position. The bottom of the top rail should be glued into the top rail spacer dado and the tenons glued to the dado in the legs. The top rail should be flush with the top of the legs.

4 Once the rails are in place, it's time to permanently position the slats by filling in the dado spaces between them.



Cut 24 filler pieces (spacers) 1/4" x 3/8" x 1 1/2" long. Starting with the middle slat centered on the headboard, glue a filler piece on both sides (top and bottom) to "lock" it in place. Working from the middle out, continue to glue spacers between all the slats, making sure the slats are tight against the filler pieces.

5 Next, using a dowel jig, drill 3/8" x 3/4" deep holes in the center of the legs and every 8-10 inches along the center of the top rail to accept the cap.

Using dowel centering pins in the holes drilled in the top rail, place the cap in position. The cap is centered lengthwise and flush with the back edge of the legs. See Figure 1. Mark the position of the corresponding dowel holes in the bottom of the cap.

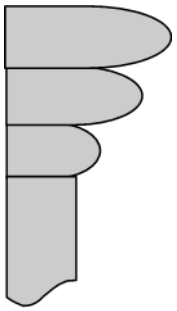


Fig. 1

To drill these holes, I started with a 1/8" drill bit to make sure I was exact and worked with progressively larger bits until I reached 3/8" x 3/4" deep. Glue the cap to the top rail using 3/8" x 1 1/2" fluted dowel pins.

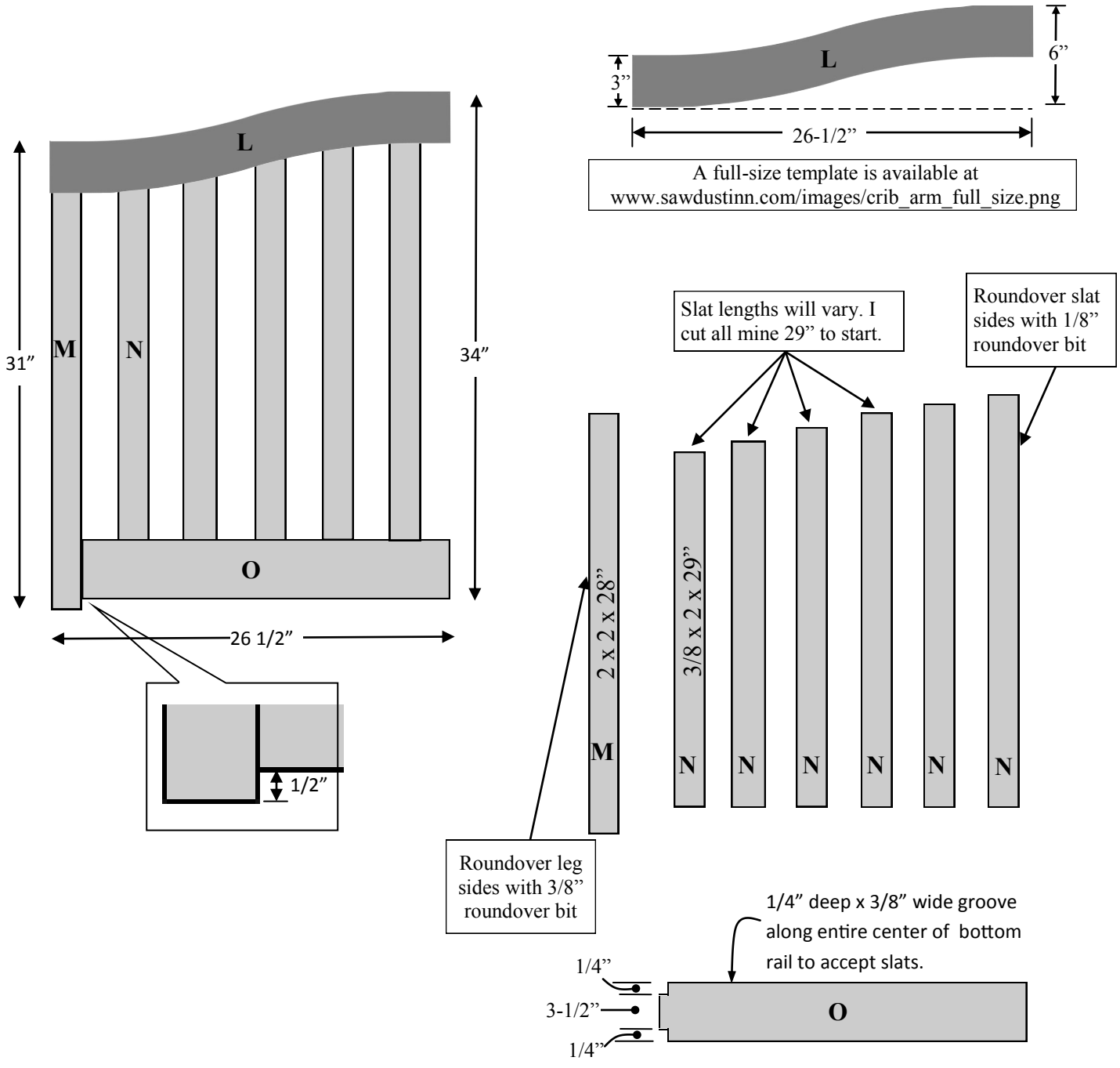
6 The last step in the footboard assembly is the dentil mold detail.

The dental mold is nothing more than thin strips glued directly to the front of the headboard on the top rail.

The strips are 1/8" thick x 1" wide x 4" long. Begin by centering the first strip on the top rail. Use a 3/4" spacer to measure for the next strip to the right and left. Continue this process until you reach the end of the top rail. It is possible that you may use less than a full-width strip to finish out the molding.

NOTE: DO NOT insert threaded inserts until all sections of the project are fully constructed. You will be using the drilled holes and dowel centering pins to establish corresponding holes on other sections.

Sides



Part	Description	Amount	Size (inches)
L	Arm	2	2 x 6 1/2 x 27 (rough)
M	Side Leg	2	2 x 2 x28
N	Slat	10	3/8 x 2 x 29 (rough)
O	Bottom Rail	2	3/4 x 4 x 25 1/4

Sides parts detail

Legs
The legs are straightforward. I glued up stock to form the 2 x 2 x 28” legs.

Cut a 3/8” wide x 3/4” deep x 3 1/2” long mortise to accept the lower rail. The mortise begins 3/4” from the bottom of the leg. The mortise should be cut 3/8” from the inside of the back of the leg.

Next, drill 1/4” through holes for the connecting bolts that attach the sides to the footboard.

To determine the position for the holes, insert dowel centering pins into the footboard holes already drilled and mark the side leg. When marking, the bottoms of the legs should be flush.

Drill a 3/8” x ” hole in the center of the bottom of the side leg for a threaded insert. (This is for the foot, when the crib is transitioned into a toddler bed.

Lastly, round all edges using a 3/8” roundover bit.

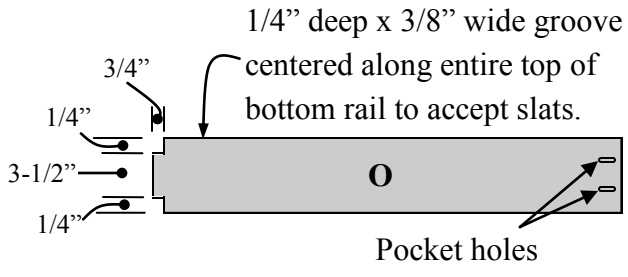
Slats
Because the slats are different lengths, determine the final length after a dry fit of the outer frame.

Round over the edges of slats with a 1/8” roundover bit.

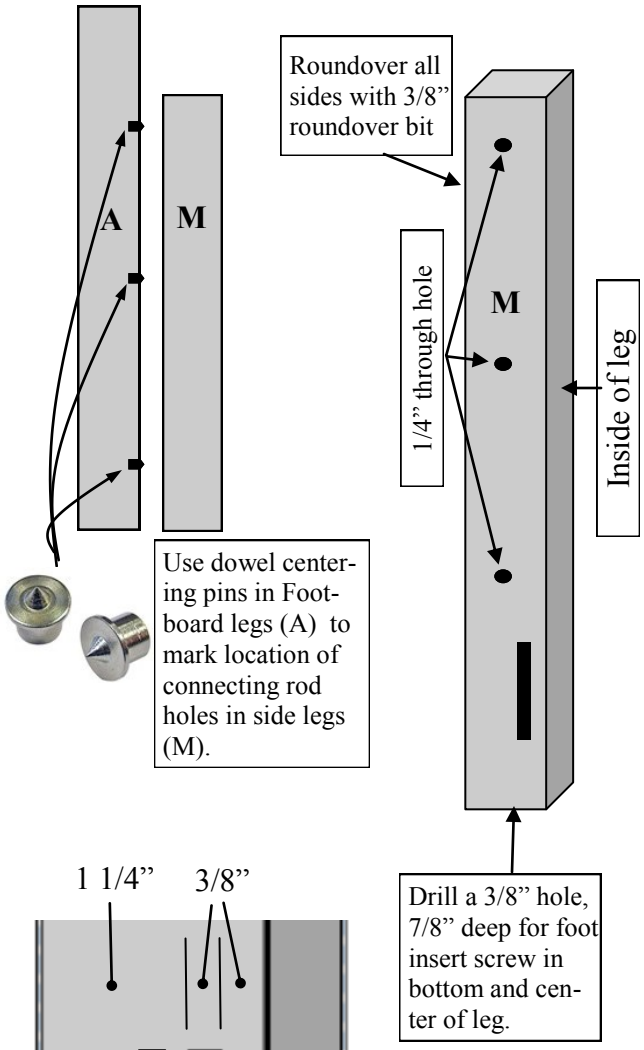
Bottom Rail
Just as with the footboard, the bottom rail is cut according to the cut list, and will need a 3/8” x 3/4” long tenon on each end to fit into the mortises on the bottom of the legs. The tenon will require a small 1/4” cut at the top and bottom to make the rail fit into the mortise.

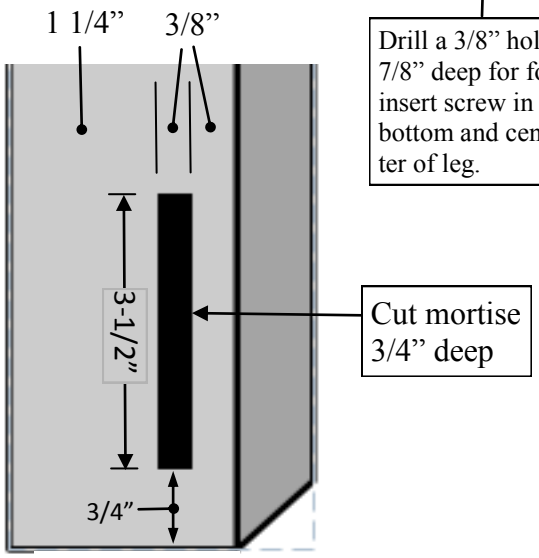
To accept the slats, cut a 3/8” x 3/8” groove along the entire center of the top of the rail.

Lastly, drill two pocket holes on the inside of the end of the rail. These will be used to attach the side to the headboard later.



NOTE: The legs are mirror images of each other. Insure correct placement of mortises and insert holes before proceeding with cuts.





Mortise detail

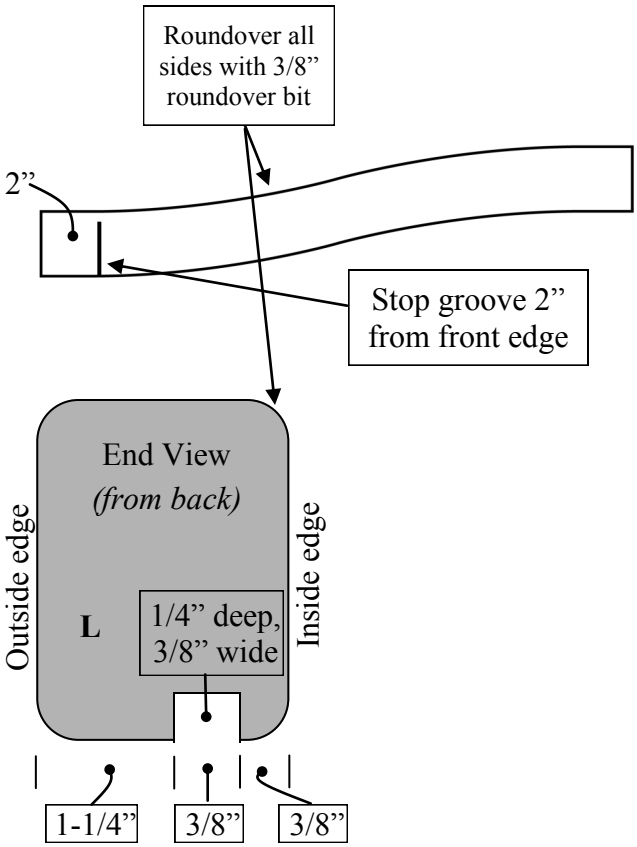
Sides parts detail (arms)

Curved Arm
The arms are cut from glued up stock to form a base block from which to cut the arm shape. The cut list refers to two pieces (one for each arm). This creates a lot of waste.

However, if you have wide boards, you can glue up one 10” wide block and get both arms from a single block.

A full-size template is available online at http://sawdustinn.com/images/crib_arm_full_size.png.

Here’s how I made mine:



1. Make a hardboard or plywood template of the arm.
2. Cut the blank to the exact length of the arm.
3. Using the template, trace and cut the rough shape of the arms on the bandsaw.
4. With the template attached to the blank (double-sided tape), I used a flush trim bit (w/bottom bearing) to trim the arm to final shape. Because the bit would only reach half the height of the arm, I removed the template. Flipped the arm over and used the freshly routed edge as the guide to complete the process.

5. With the arm now to finished size, set up the router table with a 3/8” wide, 1/4” deep slot cutting bit.
6. Route a grove on the bottom of the arm to accept the slats. The grove is located 3/8” from the inside of the arm. The grove runs from the back of the arm to 2” short of the front of the arm (see detail on this page).

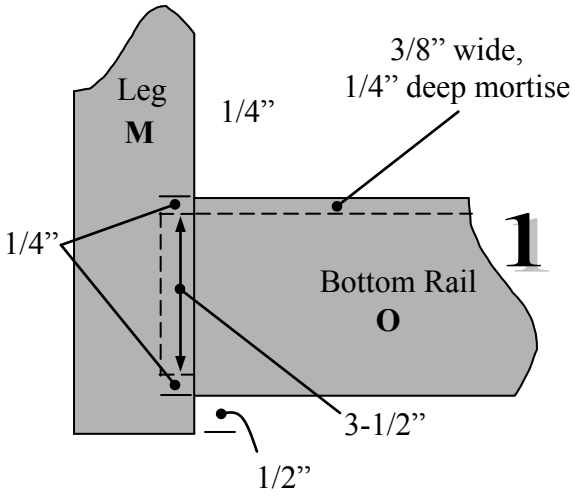
7. Roundover all side edges with a 3/8” roundover bit.

Sides parts assembly

Assembly of the sides requires a specific order to insure it is square and to the correct measurement specifications. Go slow and take your time!

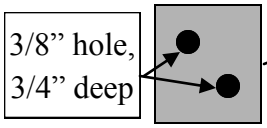
Sand all parts to 150 grit before final assembly. Hand-sand all parts with 220 grit after assembly.

1 Begin by gluing the bottom rail to the leg and check for square.(See illustration 1)

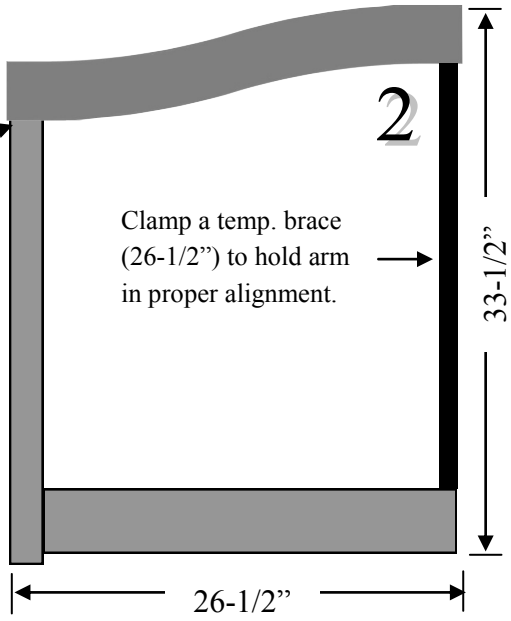


2 The leg and the arm are attached with two 3/8” by 1-1/2” wooden dowels. Before proceeding, and because the slat grooves are offset, insure that you have the correct arm with the correct leg assembly so that the groove and bottom rail are on the outside of the crib.

Start by drilling two 3/8” by 3/4” deep holes in the top of the leg.



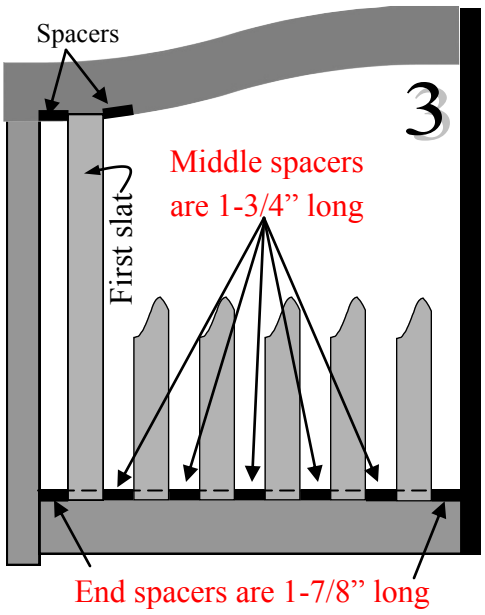
Then, using dowel centering pins in the holes you just drilled, align the arm and mark the position for the corresponding holes. To insure correct alignment of the arm, I clamped a temporary brace at the back of the arm and bottom rail. (See illustrations 2)



Drill 3/8” by 3/4” deep holes into the arm, then assemble the arm and leg with 3/8” x 1-1/2” dowels and glue (keep the temp brace on for the next step).

3 Now begin dry fitting the slats and spacers, starting with the leg end first. Install a 1-7/8” x 1/4” x 3/8” spacer into the groove on the bottom rail and arm next to the leg.

NOTE: The two spacers on the outside of the first and last slats will are slightly longer (approx. 1-7/8”). All other spacers are 1-3/4”. (See illustration 3)



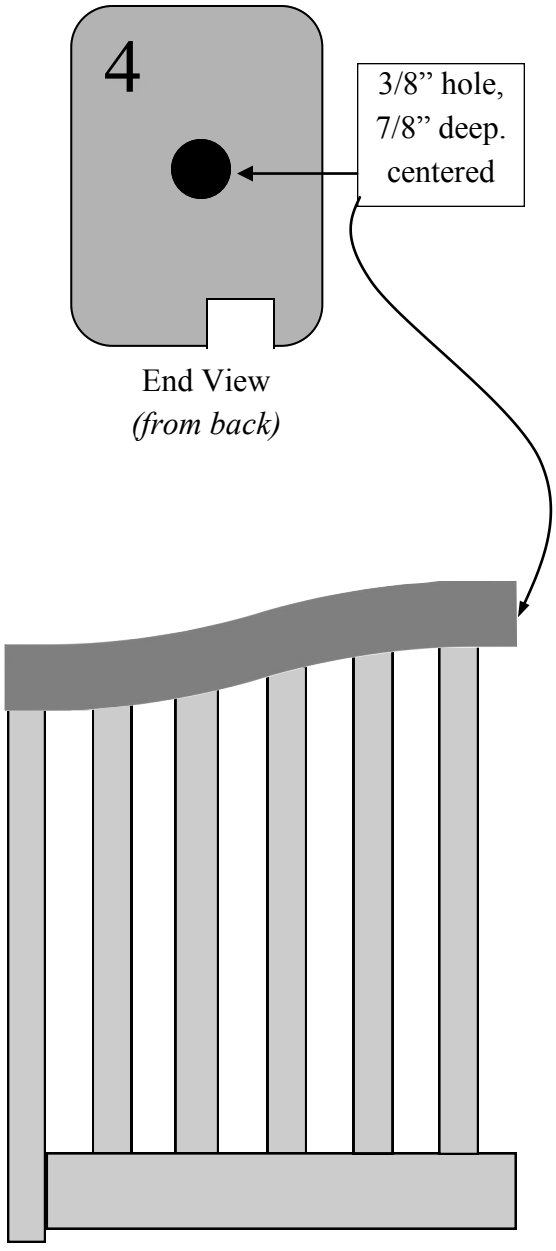
RANDY’S TIP: Because the top of the slat needs to be curved to fit snuggly in the groove of the arm, trace the curve by setting the slat under the arm in the place it will go. Cut a good-fitting curve on a bandsaw, then cut the slat to its final length.

Sides parts assembly (cont.)

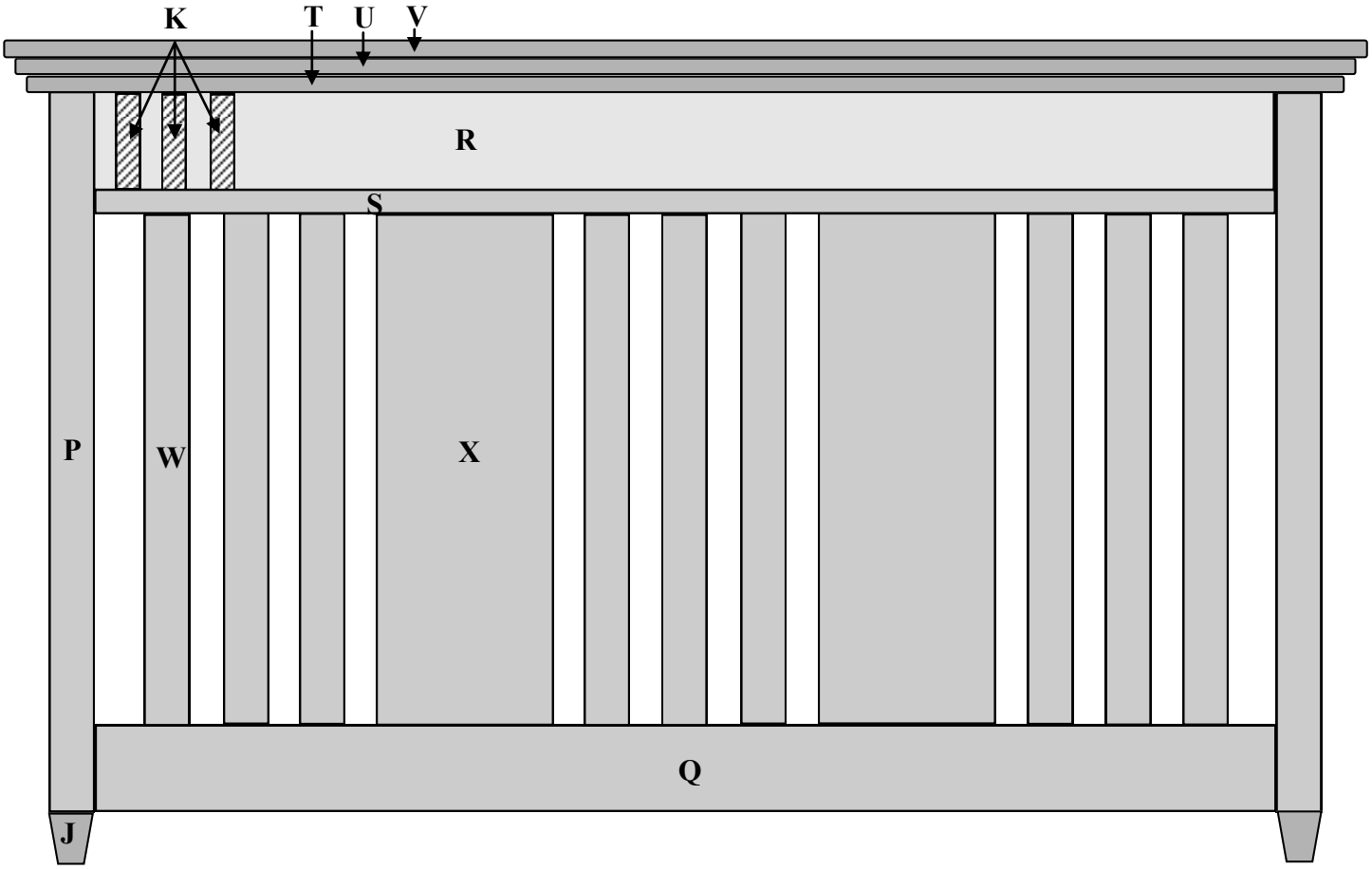
Measure, cut and insert the first slat by sliding it in place, then insert a 1-3/4” spacer on the opposite side of the slat. Measure, cut and insert the next slat. Continue this process until all slats are in place.

Once you are satisfied that the spacers and slats fit correctly, you can disassemble the parts, add glue and reassemble. After the glue dries, you can remove the brace.

4 The next step in the assembly is to drill a 3/8” hole, 7/8” deep centered on the back of the arm. This hole will accept a threaded insert that will connect the headboard to the sides. Do not insert the threaded insert until the connecting holes in the headboard are drilled.

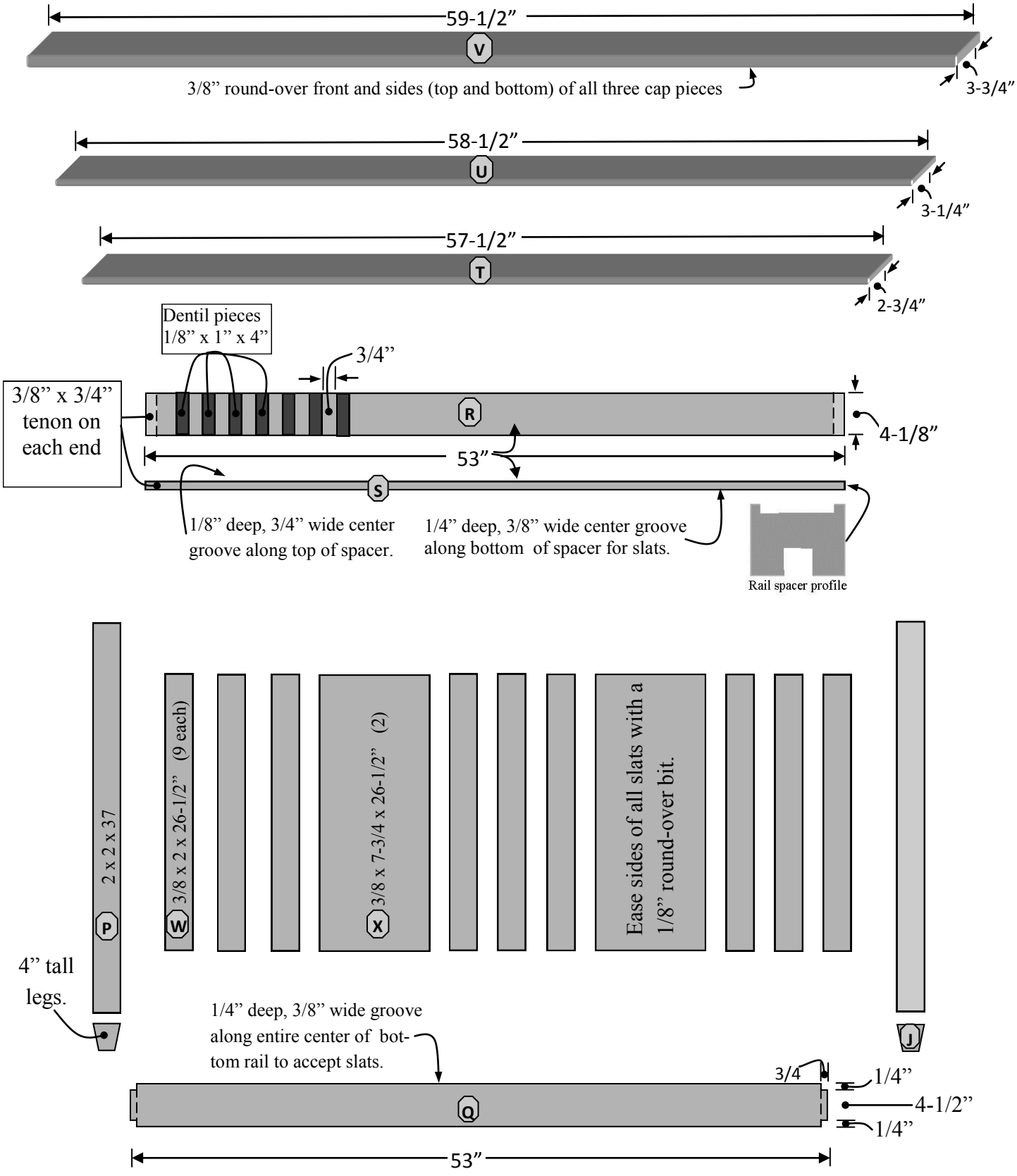


Headboard



Part	Description	Amount	Size (inches)
P	Legs	2	2 x 2 x 37
Q	Bottom Rail	1	3/4 x 5 x 53
R	Top Rail	1	3/4 x 4-1/8 x 53
S	Top Rail Spacer	1	3/4 x 1 x 53
T	Cap Bottom	1	5/8 x 2-3/4 x 57 1/2
U	Cap Middle	1	5/8 x 3-1/4 x 58 1/2
V	Cap Top	1	3/4 x 3-3/4 x 59 1/2
W	Slat	9	3/8 x 2 x 26-1/2
X	Slat	2	3/8 x 7-3/4 x 26-1/2
J	Feet	2	4” tall (Item #: 295979 at Lowe’s)
K	Dentil Strips	30	1/8 x 1” x 4”

Headboard


59-1/2”
V
3/8” round-over front and sides (top and bottom) of all three cap pieces
3-3/4”
58-1/2”
U
3-1/4”
57-1/2”
T
2-3/4”
Dentil pieces
1/8” x 1” x 4”
3/4”
3/8” x 3/4” tenon on each end
R
4-1/8”
53”
S
1/8” deep, 3/4” wide center groove along top of spacer.
1/4” deep, 3/8” wide center groove along bottom of spacer for slats.
Rail spacer profile
2 x 2 x 37
P
3/8 x 2 x 26-1/2” (9 each)
W
3/8 x 7-3/4 x 26-1/2” (2)
X
Ease sides of all slats with a 1/8” round-over bit.
4” tall legs.
J
1/4” deep, 3/8” wide groove along entire center of bottom rail to accept slats.
3/4
1/4”
4-1/2”
1/4”
Q
53”

Headboard parts detail (flat cap)

The headboard is almost identical to the footboard instructions. The primary difference is the placement of the connecting holes and the length of the mortises on the legs.

Legs
To accept the rail tenons, cut a 3/8” wide, 3/4” deep mortise at the top and bottom on the front of each leg as indicated in the illustration at right.

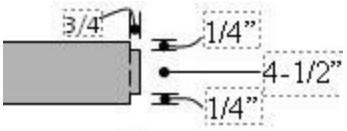
To accept the feet later, drill a 3/8” hole, 7/8” deep, into the center of the bottom for threaded inserts.

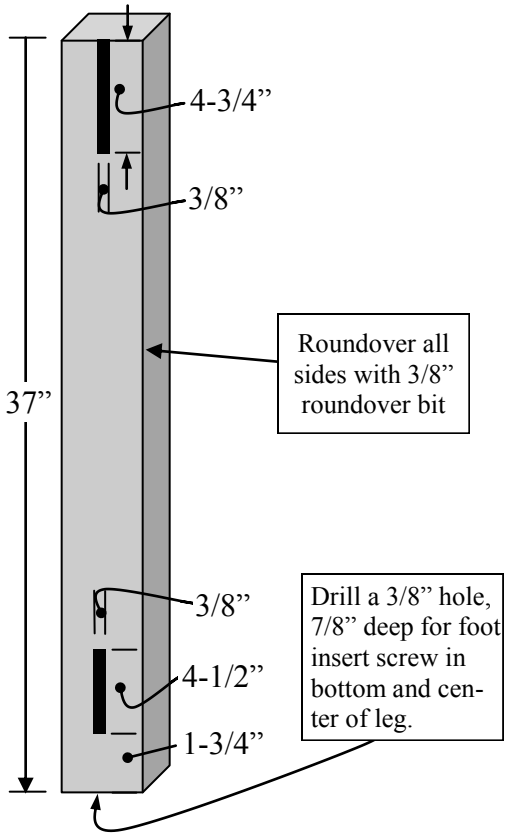
Finally, roundover all side edges with a 3/8” roundover bit.

Cap, Slats, Dentil molding
Other than the size difference, the instructions for these parts are identical to those for the footboard.

Top Rail, Top Rail Spacer, Bottom Rail
Other than the size difference, the instructions for these parts are identical to those for the footboard.

Bottom Rail
The bottom rail is cut similar to the bottom rail on the footboard, except for the size of the tenon. See the details below.





Headboard and crib assembly

1 To begin assembly of the headboard, follow the directions outlined in steps 1-6 for the footboard.

Once the headboard is complete, it is time to fit the components together.

2 Begin by installing the threaded inserts into the footboard only. Then, using the connecting bolts, attach the legs to the footboard.

With the leg and footboard assembled, it is time to dry fit the headboard to its position and measure for the connecting rod holes.

3 With the footboard/sides assembly on a flat surface, place 1/2” thick blocks under the rear of the bottom side rails so that the assembly is level.

With dowel centering pins in the holes in the rear of the side arms, move the headboard into place and mark for the 1/4” holes that will accept the connecting bolts.

In addition, make sure the bottom side rail is located 3/8” from the inside edge (Figure 3b).

4 After the holes are drilled in the headboard, install the threaded insert in the side arm and use a 1/4” bolt and pocket hole screws to attach the pieces together.

This completes the construction and assembly of the crib. Now you can take the four components apart, perform a final hand sanding and apply finish.