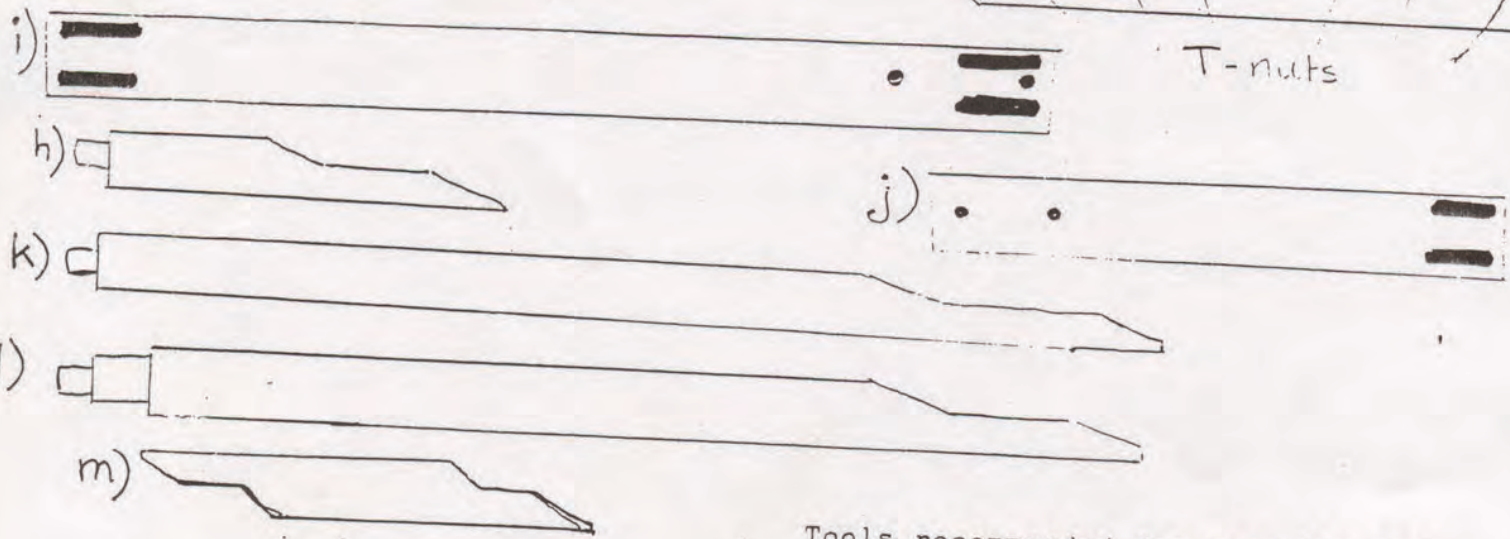
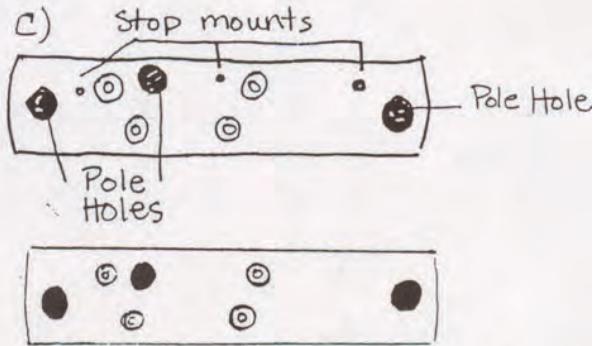
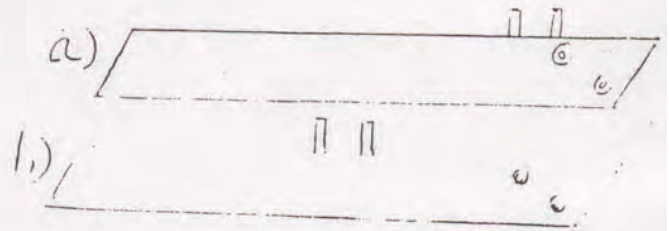


HARDWARE

- 8- 5/16 " X 1 1/2 " hex-head bolts
- 3- 1/4 " X 2 1/4 " hex-head bolts
- 20- 1/4 " X 1 1/4 " hex-head bolts
- 20- 1/4 " washers
- 16- 5/16 " washers
- 8- 5/16 " wing-nuts

WOOD PARTS

- a) 2 1" X 1" wood front legs with two 5/16" bolts extending from near top edge
- b) 2- 1" X 3" wood rear legs with two 5/16" bolts extending from center side
- c) 2- 1" X 5" wood end-boards
- d) 3- wooden shields
- e) 3- wood stops
- f) 3- cog wheels
- g) 2- 34" brace extender coupler
- h) 3- 6"/18" pole extension for baby size pole
- i) 2- 65 1/2" brace
- j) 2- 36" brace extender (This is the queen and king size brace extender)
- k) 3- 42" X 54" pole extension (This is the queen size frame pole extension)
- l) 3- 42" X 54" wood quilting poles with cog end set
- m) 3- 17" X 17" King Extension poles



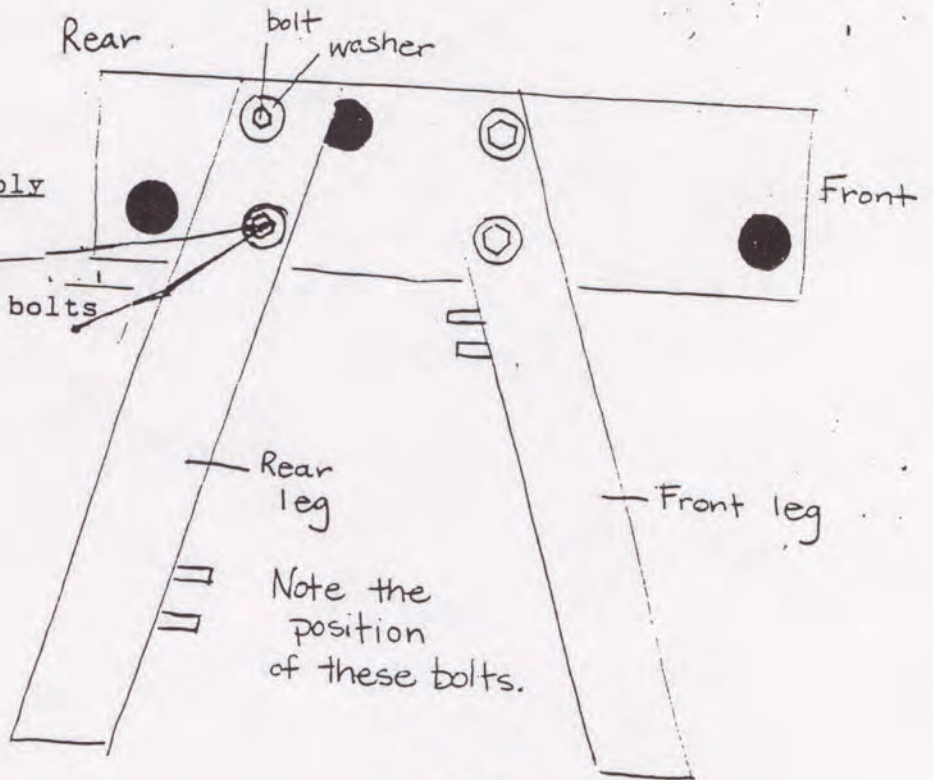
Tools recommended for assembly process:
1/2" and 7/16" sockets, socket driver, and pliers.

WARNING: Read complete instruction before attempting to assemble. Do not change the order of the steps of assembly.

PARTS ASSEMBLY

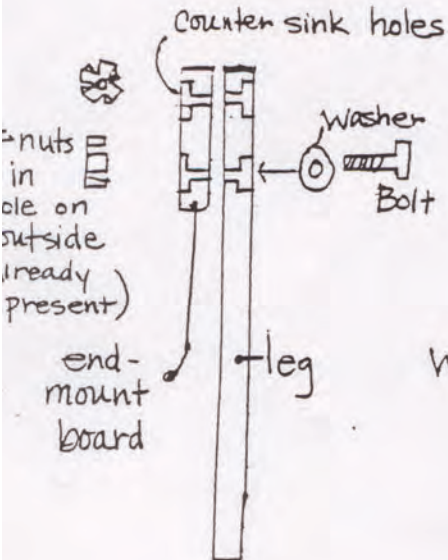
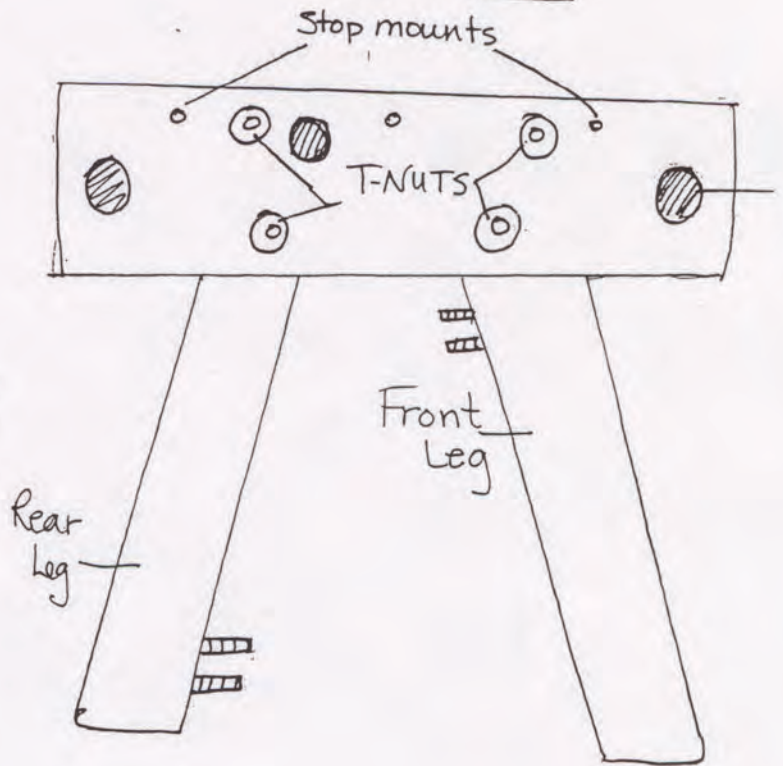
Leg and end-mount assembly

- Outside of end board
- 5/16" washer
- 1 1/2" X 5/16" hex-head bolts



Inside of end board
 (These stop mounts will be present on only one of the end mounts.)

inside of
 Right end
 mount
 Structure
 with legs
 attached



Warning: Do Not place the end-mount board backward - The T-nuts will pull out when the bolts are tightened

Brace assembly

Baby size

Use the 65 1/2" braces without attaching it to the extenders or couple

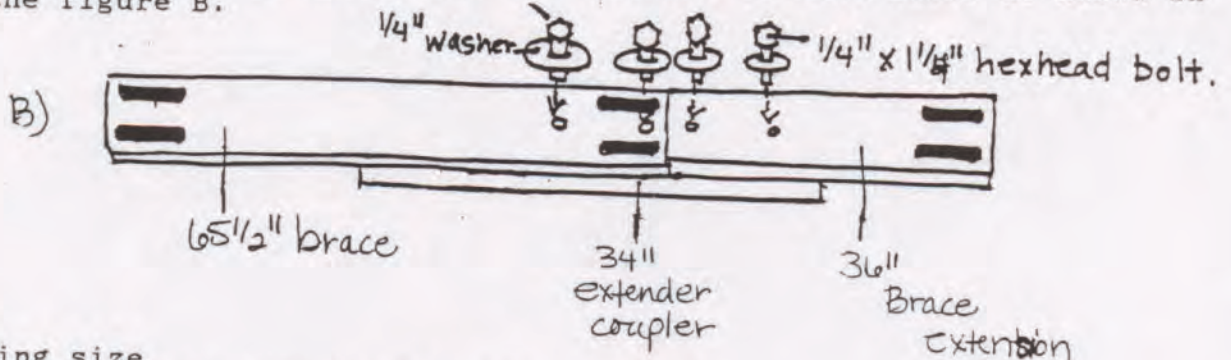
Queen size

Attach one 65 1/2" brace and one 36" brace extender to

one of the 34" extender couplers

using 1/4" washer and 1/4" X 1 1/4" hex-head bolts.

Install the brace coupler to the brace and brace extension using the two sets of holes that are closest to each other as shown in the figure B.



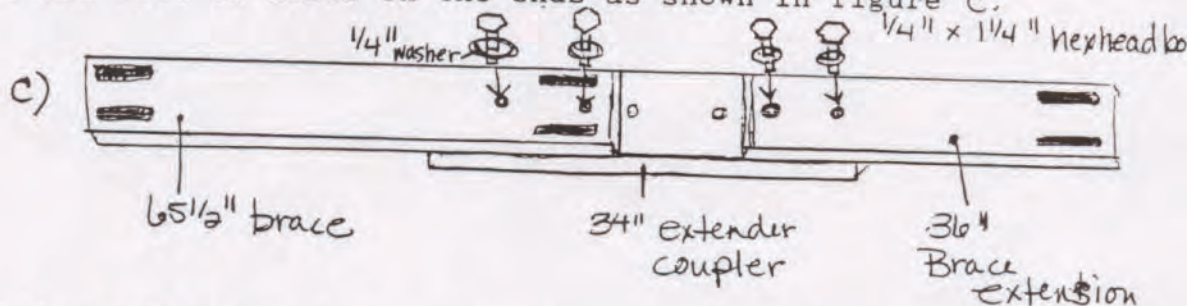
King size

Attach the 65 1/2" braces and the 36" brace extenders to

one of the 34" extender couplers

using 1/4" washer and 1/4" X 1 1/2" hex-head bolts.

Install the brace coupler to the brace and brace extension using the two sets of holes on the ends as shown in figure C.



Do not completely tighten the bolts until all are started.

Assemble the second brace in the same manner as the first brace.

Attachment of braces to legs

Stand an end-mount structure in an upright position upon the attached legs.

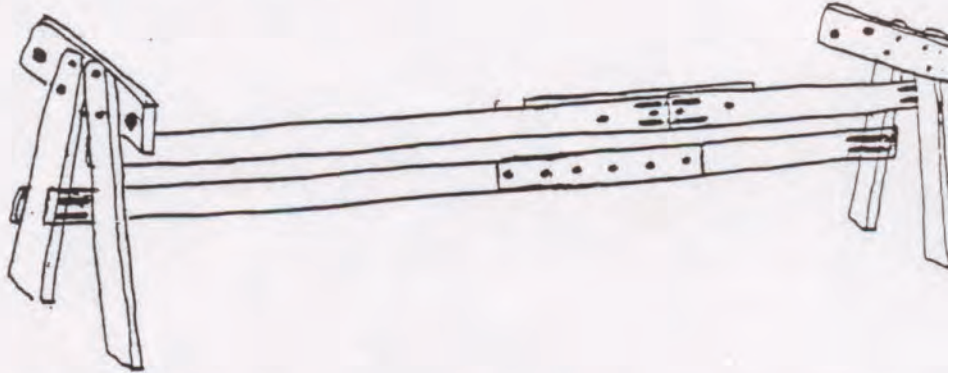
Attach one assembled wood brace to the rear leg of the assembled end-mount and leg structure by fitting the protruding bolts of the leg through the slots of the brace. Place one 5/16" washer around each bolt and loosely screw one 5/16" wing nut onto the extending bolts.

Attach the other assembled brace onto the front leg of that same end-mount and leg structure using the 5/16" washer and the 5/16" wing nut.



Stand the other end-mount structure in an upright position upon the legs and attach the other ends of the braces using the 5/16" washers and wing nuts.

Do not completely tighten the wing nuts yet.



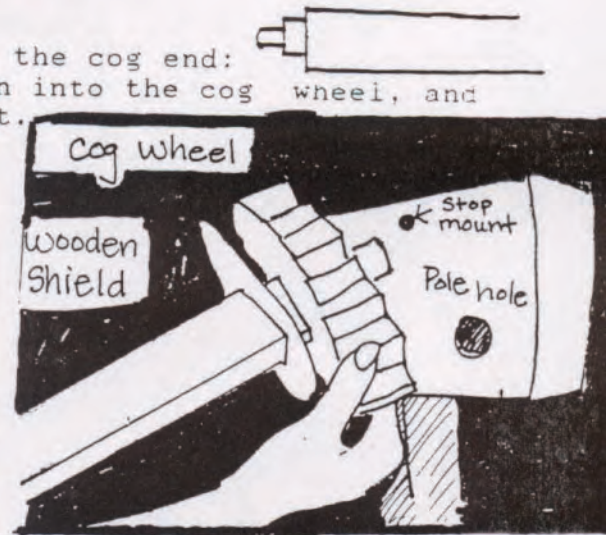
Quilting pole to end-mount assembly

Keep the following cog wheel positions in mind while assembling the quilting poles to end-mounts:

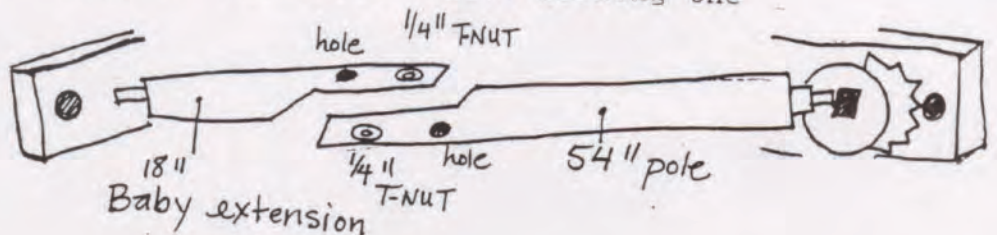


DO NOT DROP THE POLES DURING THIS STEP OF ASSEMBLY.

BABY SIZE POLE ASSEMBLY- 54" pole with the cog end: is inserted into the wooden shield, then into the cog wheel, and then into the pole hole of the end-mount.

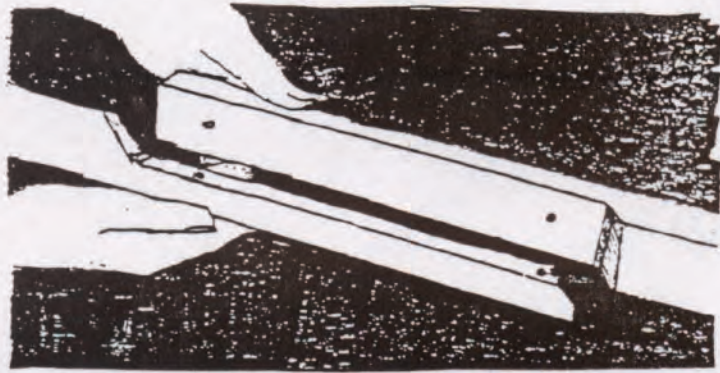


Insert the end of the 18" pole extension into the corresponding hole in the opposite end-mount then bring the joint together and attach the two parts using the 1 1/4" X 1/4" hex-head bolts and 1/4" washers. Do not completely tighten the bolts until both bolts have been started. Tighten the bolts while holding the pole in alignment.



With the ends of both pieces of the poles within the pole holes bring the lap joint together.

M)

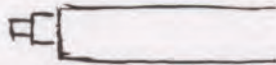


Using the 1 1/4" X 1/4" hex-head bolts and 1/4" washers tighten the joint together.

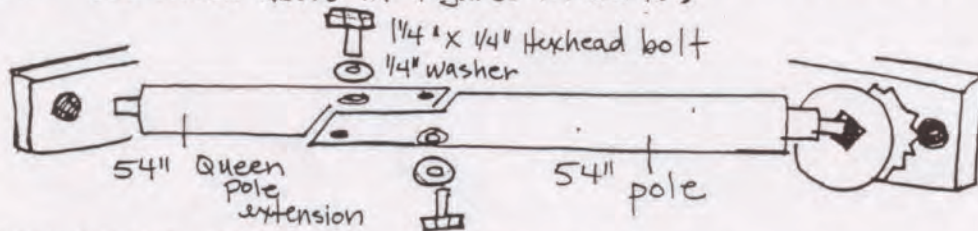
N)



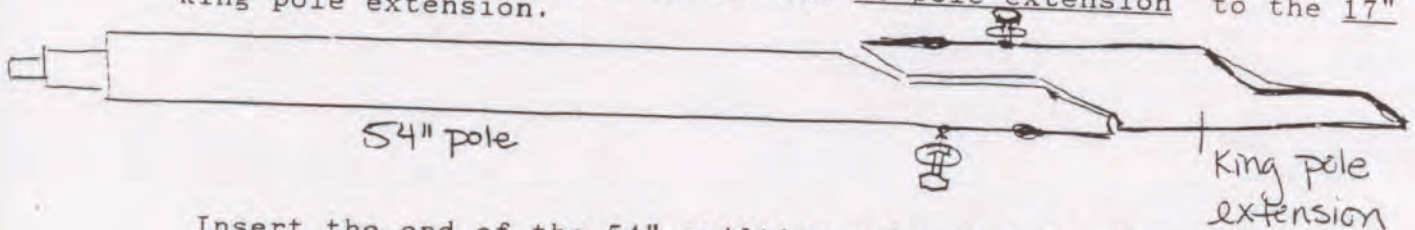
QUEEN SIZE POLE ASSEMBLY- Insert the end of the 54" quilting pole that has the cog set:



into the wooden shield, then into the cog wheel, and then into the pole hole of the end-mount board that has the stop mounts present upon it. (See picture on page 4)
 Insert the 54" pole extension into the corresponding hole in the opposite end-mount then bring the joint together and attach the two parts using the 1 1/4" X 1/4" hex-head bolts and 1/4" washers. Do not completely tighten the bolts until both bolts have been started. Tighten the bolt while holding the pole in alignment. (as shown above in figures M and N)



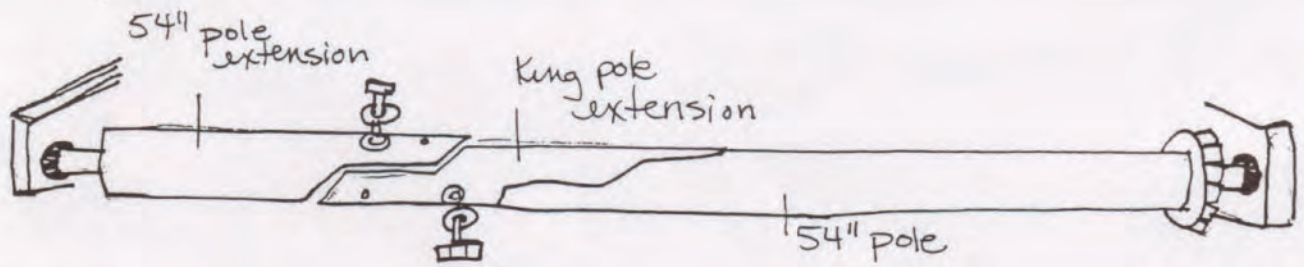
KING SIZE POLE ASSEMBLY- Attach the 54" pole extension to the 17" king pole extension.



Insert the end of the 54" quilting pole that has the cog set: into the wooden shield, then into the cog wheel, and then into the pole hole of the end-mount board that has the stop mounts present upon it.

Insert the end of the pole extension structure into the corresponding hole in the opposite end-mount then bring the joint together and attach the two parts using the 1 1/4" X 1/4" hex-head bolts and 1/4" washers. Do not completely tighten the bolts until both bolts have been started. Tighten the bolt while holding the pole in alignment. (as shown above in Figures M & N.)

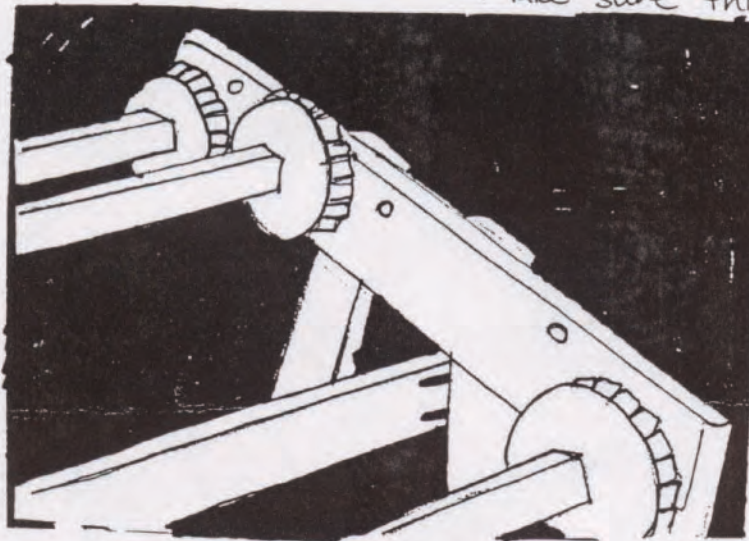
©1984
 Jim M. Rankin



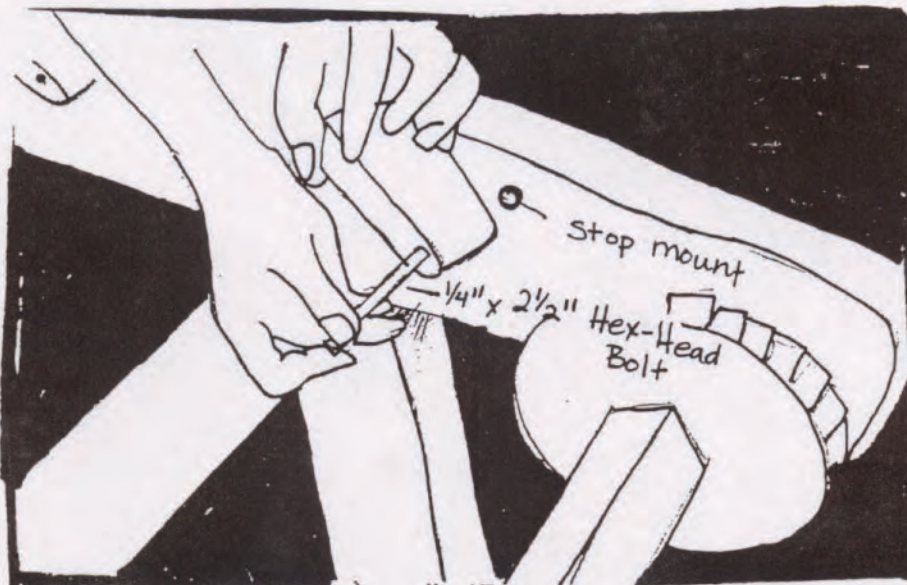
Adjust both end-mounts to hold poles within the pole hole securely so that the pole will not fall from the holes while assembling the other poles in the same manner as described.

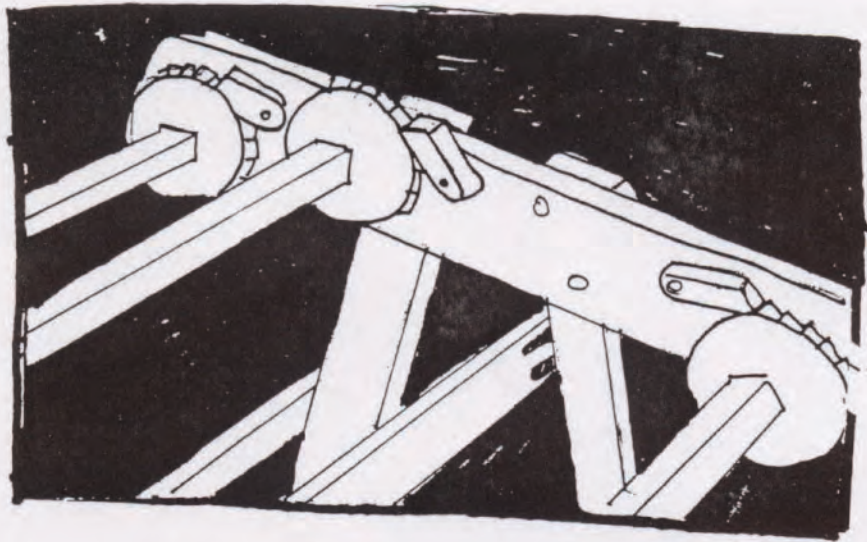
After assembly of all three poles to their positions within the pole holes adjust the end-mounts again so that the leg structures are at right angles to the floor. Completely tighten the wing-nuts on the braces. You can use pliers to tighten the wing-nuts if desired. "Finger tight" is not strong enough to hold for extended use. About 1/2 turn past finger tight with pliers will keep the frame solid for months. *Make sure this structure is solid.*

It should not sway if it is properly tightened.



Attach the wood stops with 1/4" X 2 1/2" hex-head bolts. Tighten to finger tight-Not wrench tight.

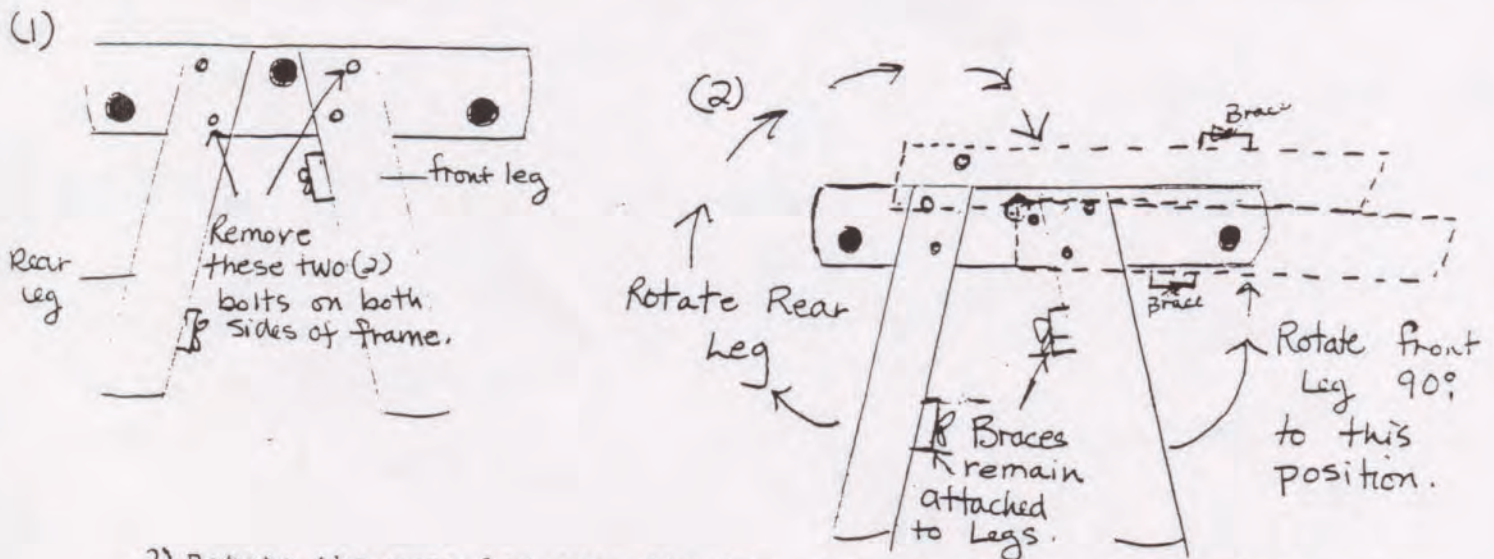




How to Fold Frame

Fold up- The new fold-up feature is impressive. In about one minute the quilter can fold the whole frame with the quilt still attached (and taut), into a vertical position that takes up only about eight inches in width.

1) To fold the frame with a quilt installed, simply remove the bottom bolt on the rear leg and the top bolt on the front leg (this should be done on both sides). Leave the other bolts in but loosen them a little so that the legs will move. Do not loosen the wing nuts that hold the braces to the legs.



- 2) Rotate the rear leg over the top and let the front leg shift 90 degrees to become parallel with the end mount board.
- *Do not drop the frame or let it twist out of square. Two people may be required for this procedure.
 - *Do not carry the frame by the poles.

Fold up hint: Fold up the front legs before removing the bolts from the rear legs.

Standard quilt sizes:

King- 102" X 108"

Queen- 90" X 108"

Regular- 84" X 96"

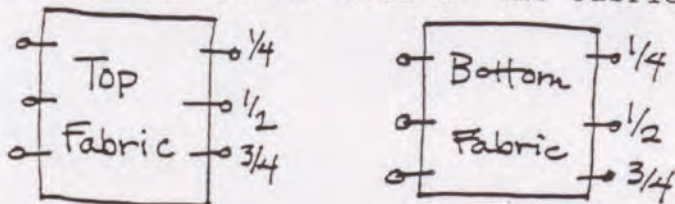
Twin- 72" X 90"

Baby- 45" X 60"

QUILTING

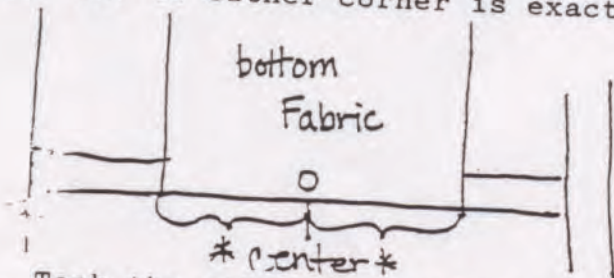
Material for the quilt top and quilt bottom layers should be equal in size. The batting should also be at least the same length as the top and bottom layers of fabric or longer by 3-6 inches. These three layers should also be cut straight and even on both ends to ensure a smooth roll as the material is rolled onto the poles.

To assist in maintaining equality of stretch of fabrics and to know where you are in the process of the quilting, you may measure and mark with pins in quarter increments. Do this on the top and bottom fabrics. As you are quilting and rolling the fabrics the top pins will be a little ahead of the bottom pins. This is due to the roll of the fabric.



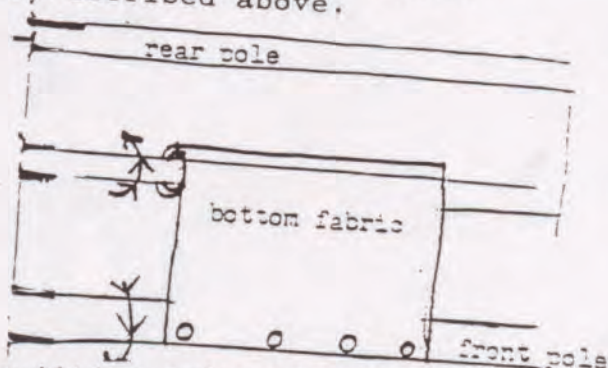
Bottom fabric placement

Tack the center of the bottom fabric onto the center of the front pole. Be careful to place the fabric naturally and evenly along the pole-Do Not Stretch. Tack corners to pole. Measure with a yard stick from the center tack to each corner. Adjust material and re-tack to ensure that the measurement from the center out to either corner is exactly the same.



* measurement of these two areas should be equal to each other.

Tack the other end of the bottom fabric to the middle quilting pole using the same technique as described above.



arrows indicate direction of roll

Roll the material onto the middle quilting pole making a smooth roll. Be sure that no wrinkles are present while rolling. At this point, you do not have to roll the fabric tightly onto the pole. Roll until the fabric is without much slack between the two poles. Apply the wood stop to the cog wheels to hold this position.

The batting will be placed next to the bottom fabric on the front pole and the top layer will, or course, be positioned on the top.

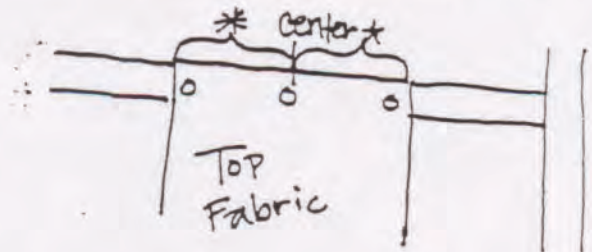
Tack the batting and top fabric onto the front pole. Corners and center of the top and batting layers should be placed exactly on the top of the bottom fabric's corners and center.

Tack the other end of the batting and top material to the rear pole. Measure to ensure that the measurement from the center to corner of the fabric is equal to the measurements on the front pole.



All three layers will be tacked to the front pole.

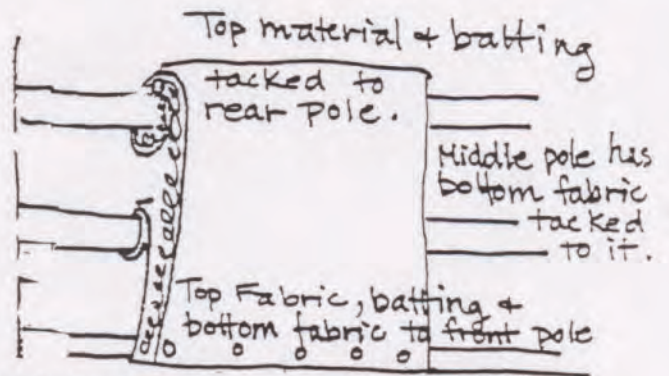
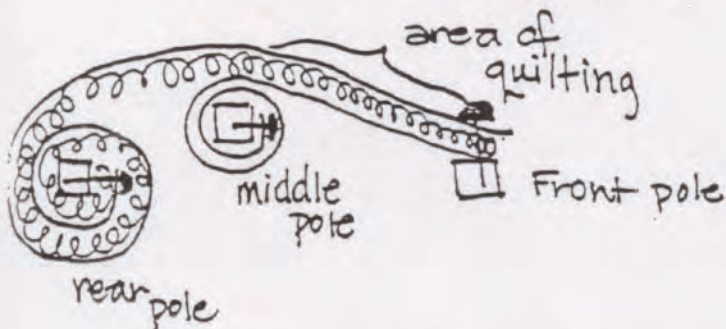
*Measurement of these two areas should be equal to each other and to the measurement of the front pole materials.



Smoothly roll these layers onto the rear pole. (Roll the quilting pole in the direction of turn as described in the assembly instructions.)

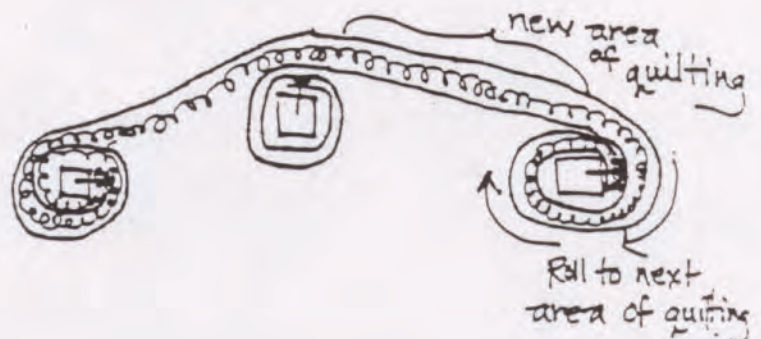
Roll until the materials are smoothly and tautly stretched between the two poles.

Adjust the bottom tension by rolling the pole until you get the material to the desired tension. DO NOT OVER-TIGHTEN. Apply the wood stop to the cog wheel. Adjust the tension of the top and batting by rolling the pole until you get the tension of the layers to your desired tension. DO NOT OVER-TIGHTEN. Apply the wood stop to the cog wheel.



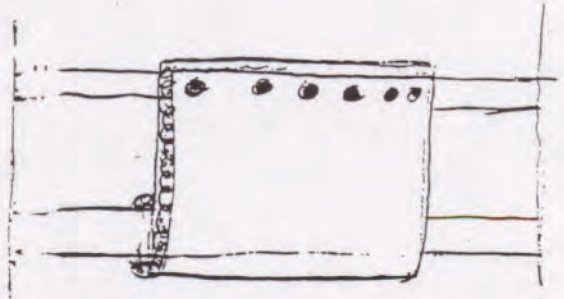
Begin quilting the area of the three layers that is between the front pole and the middle pole.

After completing this first area, release the stops from the cog wheels and roll to the next area of the three layers. Re-apply the cog wheel stop to the front cog wheel. Roll middle and rear poles to adjust the tautness of the quilting area and then apply stops to the rear and middle cog wheels.



Continue quilting on in this manner.

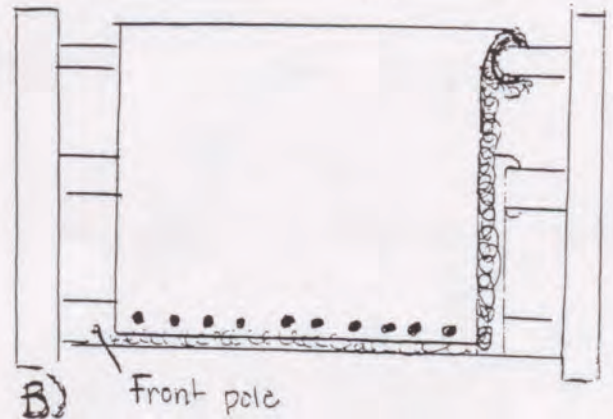
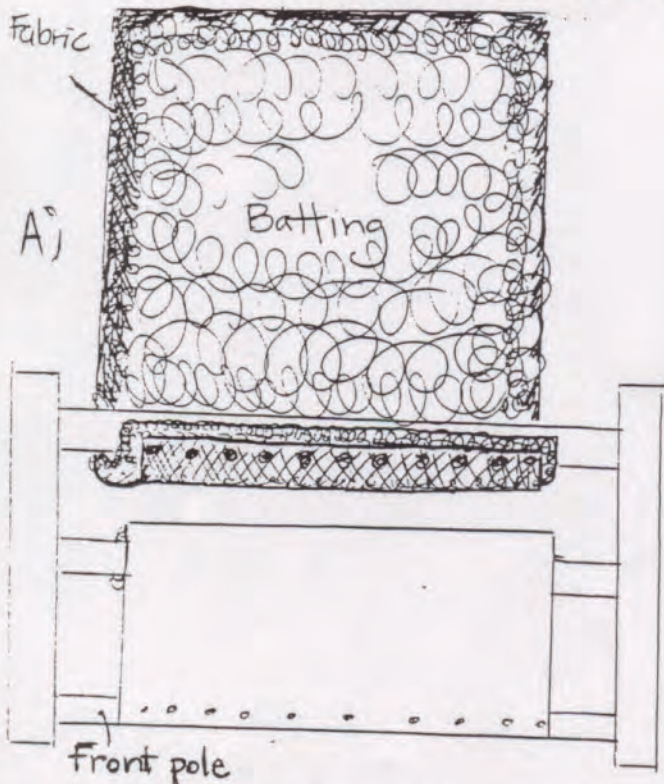
When you get to the end of the possible quilting areas there will still be an area that needs to be quilted due to the separate placement of the bottom and top fabric layer. To finish the complete quilting task, remove the batting and top layer from the rear pole and re-tack the edge to the middle pole exactly on top of the edge of the bottom layer of fabric.



Use of delicate batting

Install the bottom fabric as described previously.

- A) Lay the top fabric and batting fabrics out together and tack them to the rear pole. Then roll the fabrics onto the pole so that it will all be rolled on the rear pole.



- B) Take the loose end of the batting and top fabric and tack it to the front pole on top of the bottom fabric.

Then roll the rear pole to tighten the tension of the top fabric. Adjust the tension so it about equal to the bottom tension. Now you are ready to quilt.

* The cog wheels provide a great deal of leverage. Do not over-tighten the poles or they may bow in. *

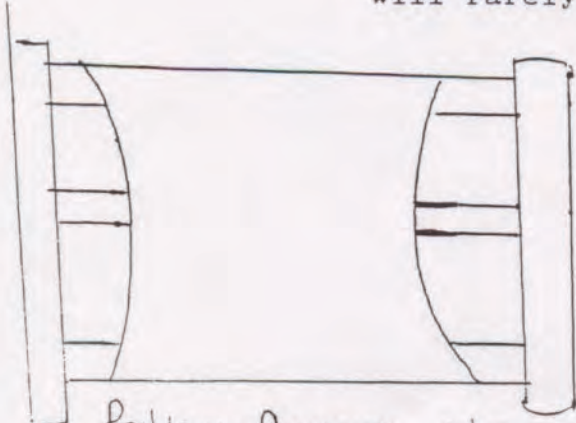
TROUBLE SHOOTING

Problem: Fabric sags on one side or in middle

Solution: Fabric may not be square and cut evenly and straight.
Take it off and square it up or pull.

Problem: Sides of quilt have a concave edge

Solution: The fabric was stretched along the pole. Take the fabric off. Let it relax until it is not misshapen and then re-install without stretching it along this edge. If quilt is properly installed, Side tension will rarely need to be applied.



Problem: Concave edge

Problem: Battings tears or separates during the tightening of the cogs.

Solution: The batt was just too small. By using a few extra inches of batting and letting it sag down a little between the two rear poles this will not be a problem. If batting is torn or uneven you may unroll the rear pole which holds the batting and top fabric and fix it at any time during the quilting process.

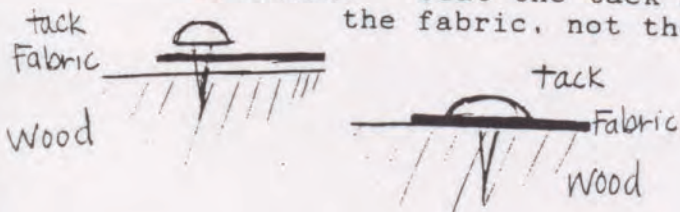
Problem: Poles are bowing in

Solution: Causes may be: 1. Seam down the center of the fabrics may be sewn to tightly and is not giving with the rest of the fabric. If the seam is the problem the quilt may be attached sideways. Seams must batch however.

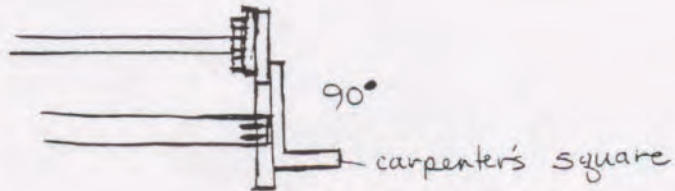
2. Fabric is not cut evenly.
3. Too much tension has been applied
4. Fabric has been stretched along the poles instead of smoothly laid along the pole then attached.

Problem: Fabric pulls/tears out at the thumb tacks when tension is applied.

Solution: Seat the tack all the way in. The head should hold the fabric, not the post.



Problem: Poles squeak as they roll or they do not roll freely.
Solution: The frame is not square. Square it up with the floor using a carpenters square or an uncut piece of poster board or a picture frame. If the frame still squeaks after making sure that the frame is in good square alignment, rub some paraffin or candle wax on the dowel ends of the poles.



Care of quilting frames:

We suggest that you store quilting frames in a dry place. These frames are made of unfinished vertical grain wood and can have some splintering occur. The frames can be sealed with an application of tung oil to help preserve the wood and to help in preventing warping. If a woodpart is broken it can be glued and clamped until glue dries. The wood glue will restore the strength to the part if it is glued and clamped and allowed to dry properly. If any nut or bolts are are lost or are missing they can be replaced at most hardware stores.

If any breaks occur due to workmanship or flaws in the lumber return the part to:

The Grace Co.
3918 So. 2200 W.
WVC, UT 84119
973-7852

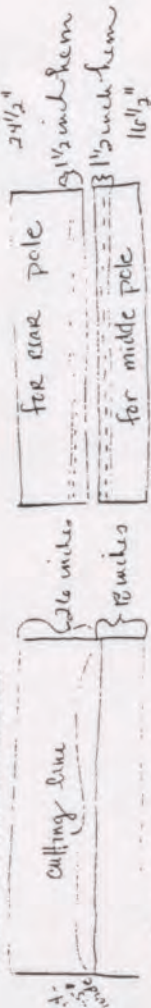
We will repair or replace any defective part free of charge for one year from date of purchase. After the year from date of purchase we will still replace any part with a minimal cost of wood & service.

USE OF CLOTH LEADERS AND SIDE TENSION STRIPS

Muslin leaders may be used on the middle and rear poles.

Purchase 44"-44" muslin in the following lengths depending on the size of frames:
 Baby- 57" (you purchase 1 3/4 yard and cut off 3". Save this 3" material for side tension cloth if desired)
 Queen-95" (you purchase 2 3/4 yard and cut off 1")
 King-107" (you purchase 3 yards and cut off 1")

Lay material flat and unfolded:

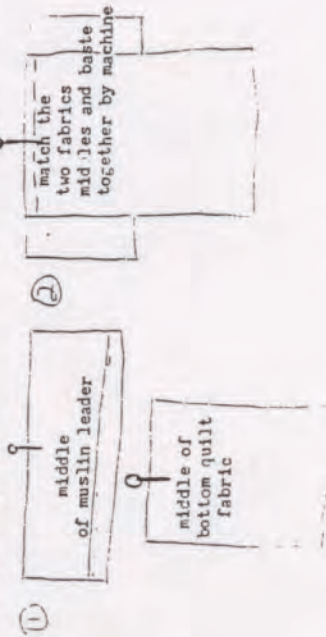


Sew 1/2" hem on the edge that was just cut. This hemmed edge will be tacked to the pole.

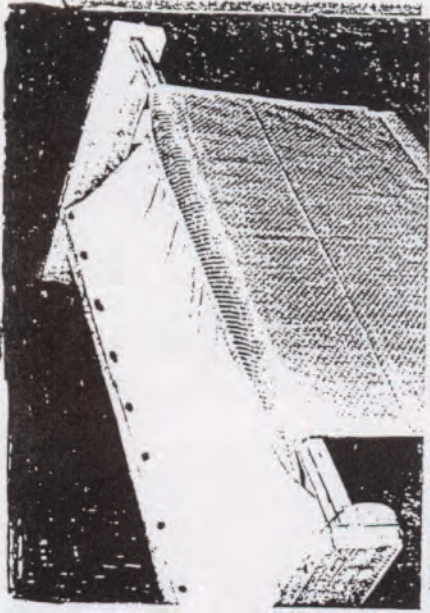
The muslin leaders can be tacked to the poles first then the quilt materials (excluding the batting) can then be pinned or hand basted to the leaders. The easiest way of using the leaders, however, is to baste the leaders by machine to the materials and to then tack the materials to the poles.

In the following example of applying the leaders and materials to the poles the bottom material and the leader were machine basted then tacked to the front and middle poles. The top material was pinned to a muslin leader that was tacked to the rear pole.

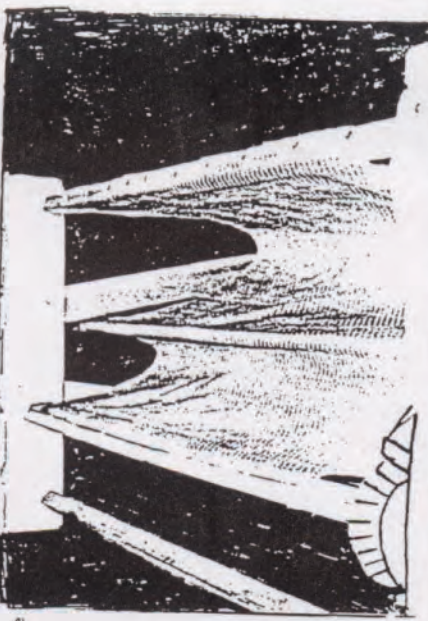
A. Pin the middle of the bottom material fabric to the middle of the muslin leader and baste the two together.



C 1987 Jim K. Bagley



B. The leader and bottom material have been basted together. The leader was then tacked to the middle pole.



C. The bottom material is tacked to the front pole.

The materials are rolled onto the middle pole making a smooth roll.

C. Continue rolling until the bottom fabric is tautly stretched between the two poles. Apply the wood stop to the cog wheels to hold this position.



C 1987 Jim K. Bagley