

WOODWORKS: INTERMEDIATE PROJECT

ADIRONDACK CHAIR



The Adirondack chair originated at the camps and resorts of New York's Adirondack mountains during the late 1800s. It was the solution to adding a little comfort while in the wilderness, and has become an outdoor classic. This version, like its forebears, is designed for maximum comfort with a deep seat, spacious arms and a slanted back. When you want to take a nap, just pull up the matching footrest. When summer's gone, you can fold up both the chair and footrest for easy moving and storage. Part of the beauty of this chair is its simple construction. You'll gain experience with cutting curves using a jigsaw or band saw and with precision assembly by making sure that the seat and back slats are identically spaced apart.

TOOLS REQUIRED

Hand Tools

- Clamps
- Hacksaw
- Vise flat file

Power Tools

- Tablesaw or circular saw with rip and crosscut blades
- Electric drill with countersink bit
- Jigsaw or band saw
- Belt or drum sander
- Router with 1/8" or 3/5" roundover bit

Miscellaneous

- Pencil
- Tape measure
- Safety glasses
- Carpenter's glue
- 120, 150 and 220-grit sandpaper
- Clean, lint-free cloths
- Respirator
- Gloves for finishing
- Mineral spirits
- Water-filled metal container with tight-fitting lid (for oil-based stains and finishes waste products)
- Paint pad or good quality, natural-bristle brush

SHOPPING LIST

Item	Quantity
1x8 clear pine	6'
1x6 clear pine	37'
1/4" x 1-3/4" carriage bolts	6
1/4" flat washers	22
1/4" cap nuts	10
1/4"x 3" hanger bolts	4
#8 x 1-1/2" flat head wood screws (brass, bronze or stainless steel)	90
1/8"x 3/4" stainless steel or brass bar stock	12"
5/8" diameter decorative pegs	2

NOTE: The hardware used for your furniture can be ordinary plated steel if it will be kept indoors. But if you want a really weatherproof and handsome piece, use stainless steel, bronze or brass. These materials will enhance the look of stained furniture.

CUTTING LIST

Overall Dimensions: 41-1/2"H x 22"W x 5-1/2"D			
Key	Part	Pcs.	Dimensions
A	Seat supports	2	3/4" x 5" x 36"
B	Arms	2	3/4" x 6-3/4" x 31"
C	Legs	2	3/4" x 4" x 20"
D	Arm braces	2	3/4" x 4" x 5"
E	Seat slats	8	3/4" x 2-1/2" x 20"
F	Back slats	2	3/4" x 2-1/2" x 27"
G	Back slats	2	3/4" x 2-1/2" x 29-1/2"
H	Back slats	2	3/4" x 2-1/2" x 32"
J	Front brace	1	3/4" x 2-1/2" x 21-5/8"
K	Middle brace	1	3/4" x 2-1/2" x 21-1/2"
L	Bottom brace	1	3/4" x 2-1/2" x 20"
M	Arm supports	2	3/4" x 2-1/2" x 23"
N	Hinge bars	2	3/4" x 1-1/2" x 6"
P	Slats	6	3/4" x 2-1/2" x 16"
Q	Sides	2	3/4" x 2-1/2" x 16"
R	Legs	2	3/4" x 2-1/2" x 9-1/2"
S	Stops	2	3/4" X 3/4" X 2"

Recommended Wood – Pine (stain grade)

Alternate Wood – Fir or any type of construction-grade lumber

WOOD FINISHING PRODUCTS

Recommended Finish

Thompson's® WaterSeal® Advanced Tinted Wood Protector in Natural Cedar. (Also available in Honey Gold, Rustic Red, Nutmeg Brown and Coastal Gray)

Alternate Finish

Thompson's® WaterSeal® Waterproofer Plus Tinted Wood Protector, available in five colors: Honey Gold, Natural Cedar, Rustic Red, Nutmeg Brown and Coastal Gray.

BEFORE YOU BEGIN

Good craftsmanship begins and ends with good work habits, so make the following steps part of your routine workshop practice. If you have any doubts or questions about how to proceed with a project, always discuss them with your instructor.

- Carefully and fully review plans and instructions before putting a tool to the project lumber.
- Work sensibly and safely. Wear safety goggles and the appropriate respirator whenever making sawdust or working with thinners or other solvents.
- At the end of every work session, clean up your shop area and put away all portable tools.

CUTTING AND ASSEMBLY PROCEDURE

Building the Chair

1. Rip the boards and then crosscut all the parts to length according to the plan and CUTTING LIST. With a jigsaw or band saw, cut all the curved pieces. Use a 1" grid of pencil lines to transfer the patterns to the wood.

Woodworker's Tip: Use a router with a roundover bit to soften selected edges for comfort and better appearance, such as the top edges of the seat and back slats and the arms.

2. Sand the curved edges with a belt sander or drum sander chucked into an electric drill. Sand all the parts.

3. Drill holes in all the parts that need them, except for the holes in the seat supports (A) where they attach to the legs (C). In each seat slat (E), drill two holes 3/8" from each end.

Woodworker's Tip: A combination drill and countersink, used in a drill press or drill guide, will enable you to make quick and consistent holes on the slats.

4. Screw the hanger bolts into the ends of the braces (K, L). Clamp the edges of the boards to prevent the wood from splitting (Fig. 2).

5. Screw the slats (E) to the seat supports (A). Start with the slat farthest back, then do the one at the front. Space out the remaining slats and screw them in place. You may need to file flat surfaces on the curved edges of the sides so the slats rest firmly.

6. Assemble the back. Screw the slats to the bottom brace (L), then attach the middle brace (K) 10-1/4" above the bottom brace.

7. Screw the arms (B) to the arm supports (M), and the arm braces (D) to the legs (C), being sure to leave the braces protruding above the tops of the legs (see detail in Fig. 1).

8. Bolt the hinge bars (N) to the back assembly. Use washers between the wooden pieces.

9. Bolt the arm supports (M) to the legs (C) and back, and clamp the legs to the seat assembly. Then screw the hinge bars to the seat supports.

10. Adjust the legs (C) so they are square, then drill through the holes in the leg and into the seat supports (A, Fig. 1). The peg must have a

firm fit in its hole, so be sure to make a test hole first on scrap. Bolt the legs to the seat, insert the pegs, and screw on the front brace (J).

11. Attach the front brace (J) to the legs.

Building the Footrest

12. Cut all pieces to size, then cut and sand the curves as you did those of the chair.

13. Cut the angled ends of the legs (R). Drill screw holes in the slats, bolt holes in the sides, and chop a shallow mortise for the metal hooks (see the plan detail in Fig. 1).

14. Bend the hooks in a metal vise, cut them off with a hacksaw, and file or grind smooth. Use a slat (P) as a guide for drilling clearance holes for the screws.

15. Screw the slats and hooks to the sides (Q) and bolt on the legs (R). As with the seat, you may need to file flat surfaces on the curved edges of the sides so the slats rest firmly. Do not insert screws too close to the narrow ends of the sides.

16. Hook the footrest to the chair and adjust the legs so they are flat on the ground. Clamp them there. Screw the stops (S) to the inside so that when the legs are unfolded the stops will keep them in the correct position (see the plan detail in Fig. 1).

PROTECTING YOUR PROJECT

Any type of wood that's used outdoors needs protection from water damage. There are a variety of protective coatings available, including clear and tinted wood protectors and semi-transparent and solid stains. Each of these finishes has a different look and maintenance requirement.

We've chosen Thompson's® WaterSeal® Advanced Tinted Wood Protector in Natural Cedar to give your project complete protection. This product provides maximum strength waterproofing in a coating that also resists mildew and U.V. (ultraviolet radiation in sunlight) damage. This product can be applied to damp, freshly cleaned wood so you can clean and treat your project in one day. Plus, the transparent tint will give plain pine just the right amount of rich wood tone. This product is also available in Honey Gold, Rustic Red, Nutmeg Brown and Coastal Gray sheer wood tones.

Woodworker's Tip: Always be sure to choose a waterproofer that exceeds industry standards for waterproofing on wood.

STAINING AND FINISHING

FINISHING TIPS

- Coverage: The approximate coverage of Thompson's® WaterSeal® Advanced Tinted Wood Protector on pine is 200 square feet per gallon. A gallon of Thomson's® WaterSeal® Waterproofer Plus Tinted Wood Protector will cover about 200 to 300 square feet.
- When you apply Thompson's® WaterSeal® Advanced Tinted Wood Protector or Thompson's® WaterSeal® Waterproofer Plus Tinted Wood Protector, do not mix it with other waterproofing products, because variations in the final appearance of the surface being treated may result. Also, do not thin these products.

Recommended Finish

For maximum strength protection against water damage, use Thompson's® WaterSeal® Advanced Tinted Wood Protector.

17. Read and follow the directions found on the back of the can. Be sure that both surface and air temperature are above 50° F and remain above freezing 24 hours after application. If you're working outside do not apply product if rain is forecasted within 48 hours of application.

18. Before applying Thompson's® WaterSeal® Advanced Tinted Wood Protector, the wood surface must be free of all dirt, mildew, mold, waterproofer, wood stains and other contaminants. Then do a trial test before full application. The surface may darken slightly with application and color appearance is different when the wood is fully dry.

19. Shake or stir contents for a minimum of 2 minutes before use. Intermix all containers (of the same color) to be used to assure color uniformity.

20. Apply using a paint pad or brush. For small projects, a brush is the preferred applicator.

21. Apply only one thin, even coat. DO NOT APPLY A SECOND COAT. A heavier or additional coat will not improve performance or appearance. Avoid puddling. Tackiness will result if over-applied. May also occur after application if overnight temperature falls below 50°F within 48 hours of application. Drying time will vary depending on wood surface and humidity. Allow a minimum of 12 hours before using the chair.

22. Clean brushes and equipment with soap and water. Dry product can be removed with mineral spirits.

Alternate Finish

23. Before applying Thompson's® WaterSeal® Waterproofer Plus Tinted Wood Protector, read and follow the directions found on the back of the can. Be sure that both surface and air temperature are above 50° F during application and for 48 hours after application, and if you're working outside, do not apply product if rain is forecasted within 24 hours of application.

24. The surface must be free of all dirt, mildew, mold, waterproofer, wood stains and other contaminants. If the surface is damp or wet from cleaning or weather, allow the surface to dry thoroughly (a minimum of 48 hours) before application.

25. Before applying this product over the entire surface, a small trial patch is recommended to verify color.

26. In most applications, only one light coat is necessary. Apply with a brush, roller, paint pad, or by dipping the piece into the product. Regardless of which application method is used, remove excess within 15 minutes by redistributing it to drier areas or wiping it off.

27. Oiliness and tackiness will result if over-applied or applied to wet or damp surface or if overnight temperature falls below 50° F within 48 hours of application.

28. Allow at least 48 hours to dry before you sit in the chair. Drying time will vary depending on the substrate, temperature and humidity.

29. Clean brushes and equipment with mineral spirits, then rinse with clean water.

IMPORTANT: If using oil-based Waterproofer Plus Wood Protector, place rags, steel wool and waste immediately after use in a sealed, water-filled metal container.

NOTE: For all waterproofing products, the length of protection will vary depending on environment. Perform the following splash test once a year to see whether reapplication is necessary. Sprinkle water on various sections of surface to be sealed. If water absorbs and darkens color of substrate within 5 seconds, the surface is porous and considered ready to be treated. If water beads up or otherwise sits on top of surface, then surface doesn't need protection at this time. For maximum protection from color change and other damage caused by the sun, reapplication is recommended every year. Vertical and horizontal surfaces will experience color changes at different rates.

PRODUCT SAFETY

For your safety and the safety of those you work with, always read the safety warnings, which manufacturers print on their labels, and follow them to the letter. Typical safety advice and instructions will contain information such as the following:

DANGER: Rags, steel wool and other waste soaked in these products may spontaneously catch fire if improperly discarded. Immediately place rags, steel wool and waste after use in a sealed, watertight, water-filled metal container. Dispose in accordance with local fire regulations.

When using Thompson's® WaterSeal® Waterproofer Plus Tinted Wood Protector:

CAUTIONS: CONTAINS ALIPHATIC HYDROCARBONS. Keep away from heat and open flame. Use only with adequate ventilation. For Exterior Use Only. To avoid overexposure, if treating enclosed exterior rooms or porches, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved), or leave the area. Avoid contact with eyes and skin. Causes skin and respiratory tract irritation. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

FIRST AID: In case of eye contact, flush thoroughly with large amounts of water for 15 minutes and get medical attention. For skin contact, wash thoroughly with soap and water. In case of respiratory difficulty, provide fresh air and call physician. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately.

DELAYED EFFECTS FROM LONG-TERM OVEREXPOSURE.

Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN.**

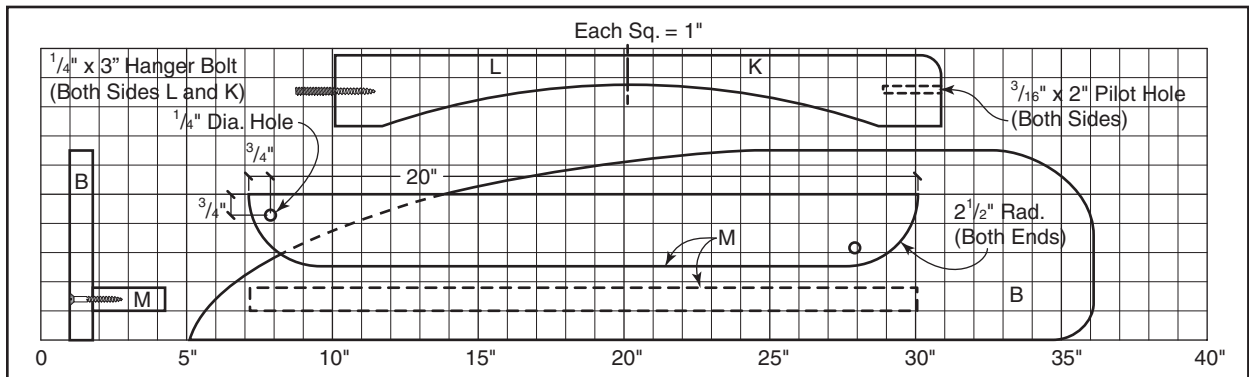
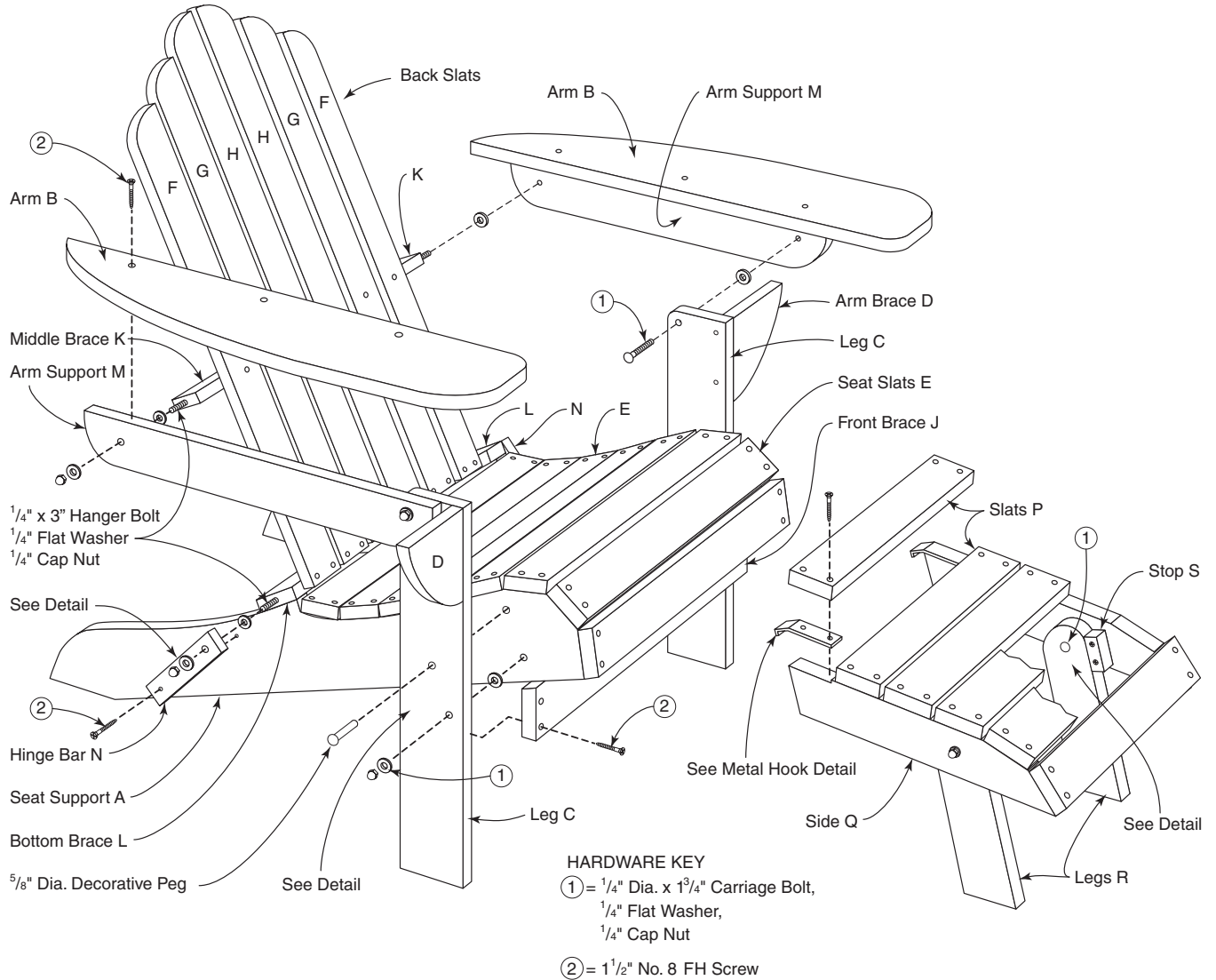
**When using Thompson's® WaterSeal® Advanced
Tinted Wood Protector:**

CAUTIONS: Use Only With Adequate Ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved), or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

FIRST AID: In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately.

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FIG 1. ADIRONDACK CHAIR DETAIL



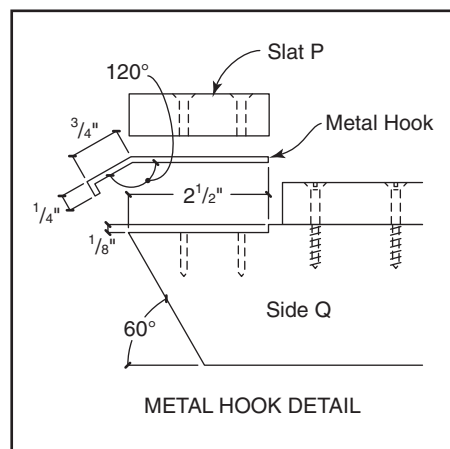
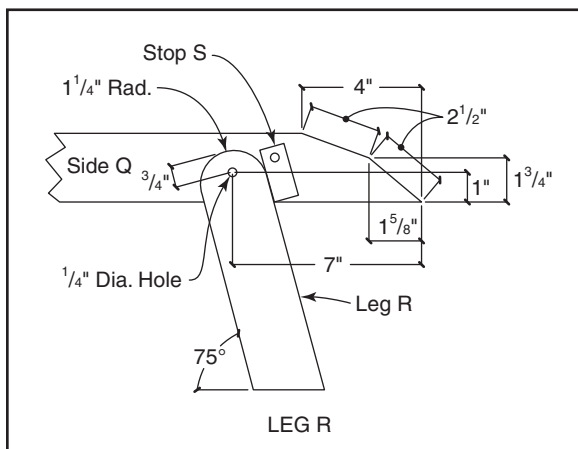
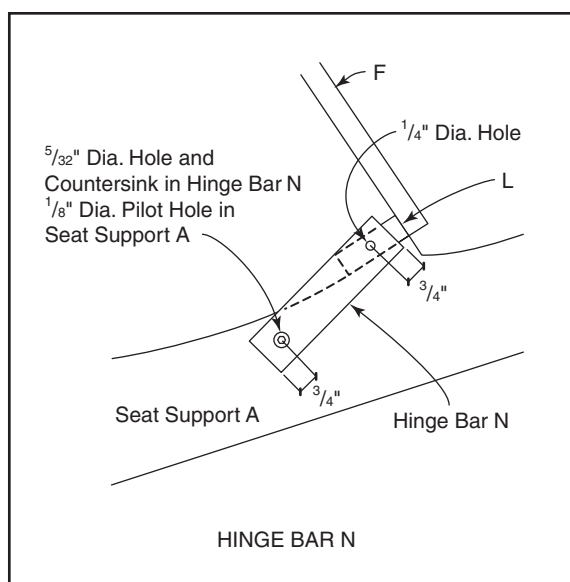
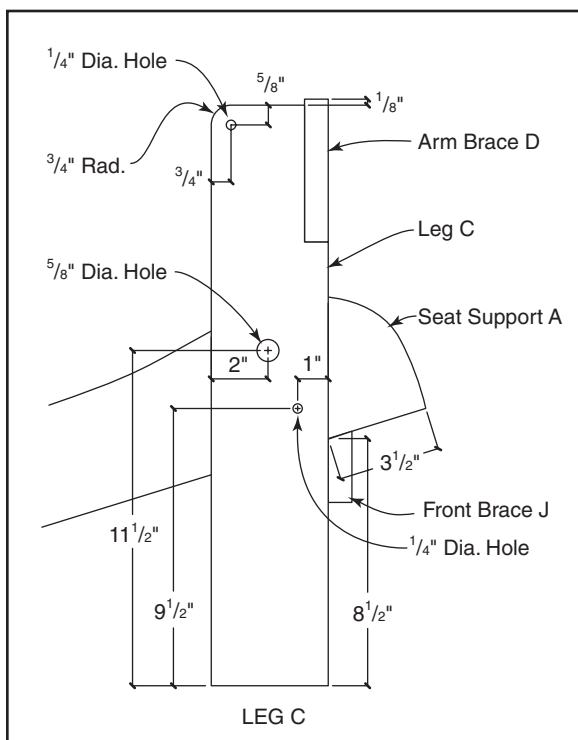
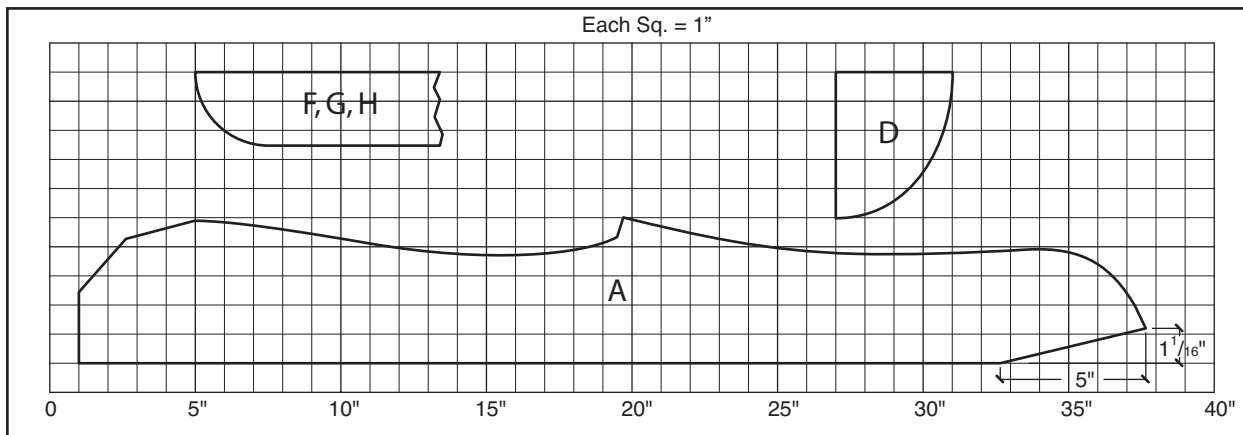


FIG 2. SCREW IN THE HANGER BOLTS

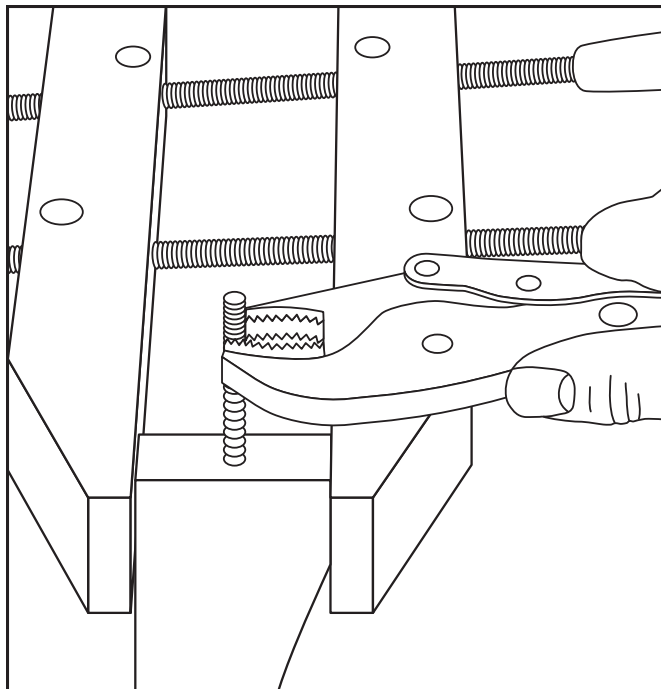


FIG 3. DRILL THE BOLT HOLES

