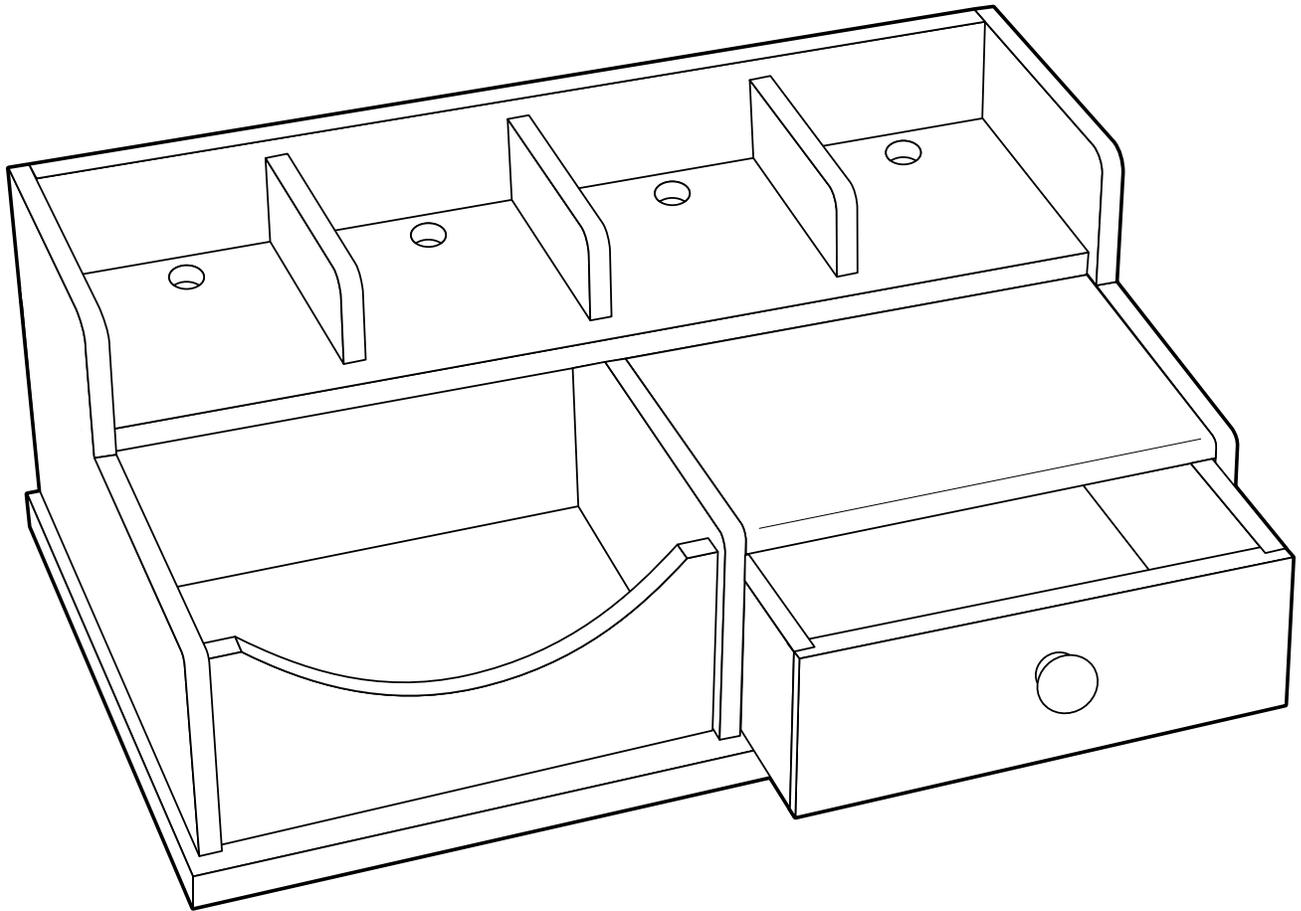




WOODWORKS: INTERMEDIATE PROJECT 2010-2011
CHARGING STATION



Your cell phone needs it, so does your wireless earpiece, your MP3 player, your mega mega-pixel camera and whatever other digital devices you may have: regular recharging. So that's a lot of chargers to keep track of or potentially misplace. Instead of them rattling around in your backpack, how about keeping them all in one place? To prevent loss and confusion, this charging station offers a smart and good-looking way to do that. With slots for four devices, plus a drawer and a tray for necessities like spare batteries and ear buds, this piece can stay put in your room. For intermediate woodworkers, it's an exercise in making efficient use of lumber, resawing wood to nonstandard thicknesses, precision layout, neat gluing and nailing. And after you build it, you'll learn more about applying and using finishes to protect the wood and keep it looking beautiful.

TOOLS REQUIRED

Hand Tools

- Combination or try square
- Block plane
- Hand screw clamp
- Bar clamps
- Spring clamps

Power Tools

- Band saw
- Jigsaw
- Table saw
- Jointer
- Random-orbit sander
- Drill with 1" spade or Forstner 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 (for oil based stains and finishes)
- Water-filled metal container with tight-fitting lid (for oil based stains and finishes)
- Minwax® Wood Finish™ Stain Brush or other good quality, natural-bristle brush (for oil based stains and finishes)

SHOPPING LIST

Wood Recommendation: Oak

Alternate Wood: Pine

Part	Qty.	Th. x W x L
A through J, N	1	1" x 5-1/4" x 60"
K, L, M, P	1	3/4" x 10-1/4" x 24"
Q	1	1/2" x 1/2" wood knob

CUTTING LIST

Overall Dimensions: 16-3/8" W x 5-1/2" H x 9-1/2" D			
Part	Name	Qty.	Th. x W x L
A	Shelf	1	3/8" x 4-3/4" x 15-1/8"
B	Back	1	3/8" x 1-3/4" x 15-1/8"
C	Divider	3	3/8" x 1-3/8" x 4"
D	End	2	3/8" x 5" x 9"
E	Support block	2	3/8" x 1-7/8" x 2-7/8"
F	Box back	1	3/8" x 2-7/8" x 15-1/8"
G	Drawer divider	1	3/8" x 2-7/8" x 6-3/4"
H	Drawer top	1	3/8" x 5" x 7-3/8"
J	Tray front	1	3/8" x 2-1/2" x 7-3/8"
K	Bottom	1	1/2" x 9-1/2" x 16-3/8"
L	Drawer front	1	1/2" x 2-7/16" x 7-5/16"
M	Drawer front	1	1/2" x 2-7/16" x 7-5/16"
N	Drawer side	2	3/8" x 2-7/16" x 6-1/4"
P	Drawer bottom	1	1/8" x 6" x 6-13/16"
Q	Knob	1	1/2" x 1/2" dia.

WOOD FINISHING PRODUCTS

Recommended Finish

Prep: Minwax® oil based Pre-Stain Wood Conditioner
 Stain/Finish: Minwax® Wood Finish™ Cherry
 Finish: Minwax® Fast-Drying Polyurethane Semi-Gloss

Alternate Finish

Prep: Minwax® oil based Pre-Stain Wood Conditioner
 Stain: Minwax® Gel Stain Mahogany
 Finish: Minwax® Fast-Drying Polyurethane Satin

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 shop instructor.

- Carefully and fully review plans and instructions before putting a tool to the project lumber.
- Work sensibly and safely. Wear safety goggles when doing work that creates flying chips and sawdust; wear 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

1. Make a plan for resawing the 1" stock in order to get the 1/8", 3/8" and 1/2" finished thicknesses that are needed. Note that part K will be made from two pieces of 1/2" stock that are edge-joined. The goal here is to both minimize waste while using the least amount of wood.

2. Use a band saw to resaw the stock to about 1/8" thicker than the finished thicknesses.

3. Use a planer to mill the stock to its final thicknesses.

4. Cut all the parts to their final size and then finish-sand them prior to assembly. Use a tape measure or ruler to mark all brad locations. Be sure to give them equal spacing, equal distance from edges, etc.

5. Drill 1" holes in the shelf (A), according to the layout shown in Fig. 1. If some of your charging devices require larger holes, drill them accordingly.

6. Glue and nail the shelf to the back (B). If you haven't used a pin nailer before, practice on some scrap pieces.

7. Draw a 1/2" radius on the top front corners of the three dividers (C). Cut them with a jigsaw and sand them smooth.

8. Glue and nail the dividers to the shelf and the back, as shown in Fig. 3. An easy way to position the dividers is with a 3-1/2" wide spacer made from scrap. Be careful to use very little glue to minimize squeeze-out. Should any occur, wipe it away immediately and completely with a damp cloth.

9. Lay out the S-curve on the ends (D) according to the layout shown in Fig. 1. Cut the curves with a band saw or jigsaw. Sand the cut smooth; use a hand-held drum sander to smooth the inside radius.

10. Glue the support blocks (E) to the inside faces of the ends.

11. Glue and nail the back (F) to the spacers.

12. Glue and nail the A-B-C assembly to the ends and support blocks.

13. Round over the top front corner of the drawer divider (G) to the same radius as those made for the ends.

14. Glue and nail the divider to the drawer top (H).

15. Glue and nail the G-H assembly to the main assembly.

16. Draw the curve on the tray front (J), cut it with a jigsaw or band saw and sand it smooth.

17. Glue and nail the tray front to the main assembly as shown in Fig. 4.

18. Make the bottom (K) by edge-joining two 4-3/4" wide pieces of 1/2" stock. Run the joining edges through a jointer. Apply a thin bead of glue to one edge and clamp the pieces together. Wipe away any squeeze-out immediately. When the glue is dry, sand both faces smooth.

19. Glue and clamp the bottom to the main assembly as shown in Fig. 5.

20. Sand the front edge of the drawer top (H) to conform to the radius cuts on the end and drawer divider.

21. Measure the drawer opening and cut all the drawer parts (L, M, N, P) to fit. Cut rabbets in the ends of the drawer front (L) and back (M) using a table saw or router table. Cut dados in the front, sides and back to accept the drawer bottom. The rabbet and dado dimensions are shown in Fig. 1.

22. Glue and nail the drawer pieces together, assuring that the assembly is dead square.

23. Drill the drawer front for the pull. Install the pull after all the finishing has been done.

24. Finish-sand the entire piece to prepare it for finishing. Attach the drawer knob (Q; Rockler Woodworking and Hardware, www.rockler.com, (800) 279-4441, 1/2" Matte Black Knob, #1032MB, \$3.51).

STAINING AND FINISHING

Woodworker's Tip: *Though you may be tempted to cut short your sanding, preparation and application time, don't do it. These tasks are very important steps in obtaining a high-quality finish. Remember, it is the finish, just as much as the fit and smoothness of the parts that will have great bearing on how people judge your craftsmanship. To ensure an excellent result, follow the steps listed in this section and also the instructions the finish manufacturer puts on its products.*

FINISHING TIPS

- Test the stains and finishes you are planning to use on scraps of wood. On the back of the scrap, mark the stain/finish combination and the type of wood. Allow all samples to dry thoroughly before making your final finish selection. Save your samples for quick reference on future projects.
- All stains and finishes must be allowed to dry thoroughly between coats. Remember that drying times can vary due to humidity and other climatic conditions.

- If you have some leftover stain or finish, wipe the can rim so that stain or finish in the rim won't dry out and prevent the lid from forming a tight seal.
- Brushes used for oil based finishes must be cleaned with mineral spirits.

Recommended Finish

25. Before applying Minwax® Wood Finish™ to a hardwood or softwood, apply Minwax® oil based Pre-Stain Wood Conditioner, following the directions on the can. Applying a pre-stain wood conditioner will help to ensure even absorption of stain and prevent blotchiness.

26. Apply the Minwax® Wood Finish™ you've chosen using a natural-bristle brush and a clean, lint-free cloth, following the directions on the can. The brush will help you get the stain into the inside corners. Allow the Wood Finish™ to set for about 5 to 15 minutes, then wipe off any excess. To achieve a deeper color, you may apply a second coat after 4 to 6 hours, repeating the application directions for the first coat. Allow the stain to dry for 24 hours before applying the protective clear finish.

Woodworker's Tip: *When wiping off stain, make certain that your last wipe with the cloth goes with the grain of the wood. This way, any stain you might miss during wipe-off will be visually minimized by the wood grain.*

27. Apply Minwax® Fast-Drying Polyurethane Semi-Gloss, following the directions on the can. Use a good quality, natural-bristle brush. Allow the first coat to dry overnight.

28. The next day, sand all surfaces lightly with 220-grit or finer sandpaper using with-the-grain strokes. Dust off and wipe all surfaces with a cloth lightly dampened with mineral spirits. Apply a second coat of polyurethane and set the piece aside to cure overnight.

29. The following day, sand all surfaces lightly with 220-grit sandpaper. Dust off and wipe the piece with a cloth lightly dampened with mineral spirits and apply the third and final coat of polyurethane. Allow the finish to cure for a few days before using the piece.

Alternate Finish

30. Before applying Minwax® Gel Stain to softwood such as pine, apply Minwax® oil based Pre-Stain Wood Conditioner, following the directions on the can. Applying a pre-stain conditioner will help ensure even absorption of stain and prevent blotchiness.

31. Apply Minwax® Gel Stain using a clean, lint-free cloth or natural-bristle brush. Follow the directions on the can. Allow the Gel Stain to set for about 3 minutes, then wipe off any excess with a clean, lint-free cloth. To achieve a deeper color, you may apply a second coat after 8 to 10 hours, repeating the application directions for the first coat. Allow the stain to dry for 24 hours before applying the finish.

32. Apply Minwax® Fast-Drying Polyurethane Satin, following the directions on the can. Use a good quality, natural-bristle brush. Allow the first coat to dry overnight.

33. The next day, sand all surfaces lightly with 220-grit or finer sandpaper using with-the-grain strokes. Dust off and wipe all surfaces with

a cloth lightly dampened with mineral spirits. Apply a second coat of polyurethane and set the piece aside to cure overnight.

34. The following day, sand all surfaces lightly with 220-grit sandpaper. Dust off and wipe the piece with a cloth lightly dampened with mineral spirits and apply the third and final coat of polyurethane. Allow the finish to cure for a few days before using the piece.

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.

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in U.S.) or contact your local health authority.

DANGER: Rags, steel wool, other waste soaked with oil based stains and clear finishes, and sanding residue may spontaneously catch fire if improperly discarded. Immediately place rags, steel wool, other waste soaked with this product, and sanding residue in a sealed, water-filled metal container. Dispose of in accordance with local fire regulations.

When using oil based wood finishing products:

CAUTIONS: CONTAINS ALIPHATIC HYDROCARBONS.

Contents are **COMBUSTIBLE**. Keep away from heat and open flame. **VAPOR HARMFUL**. 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 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 a chemical 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. CONFORMS TO ASTM D-4326. Contact a physician for more health information.

FIG 1.

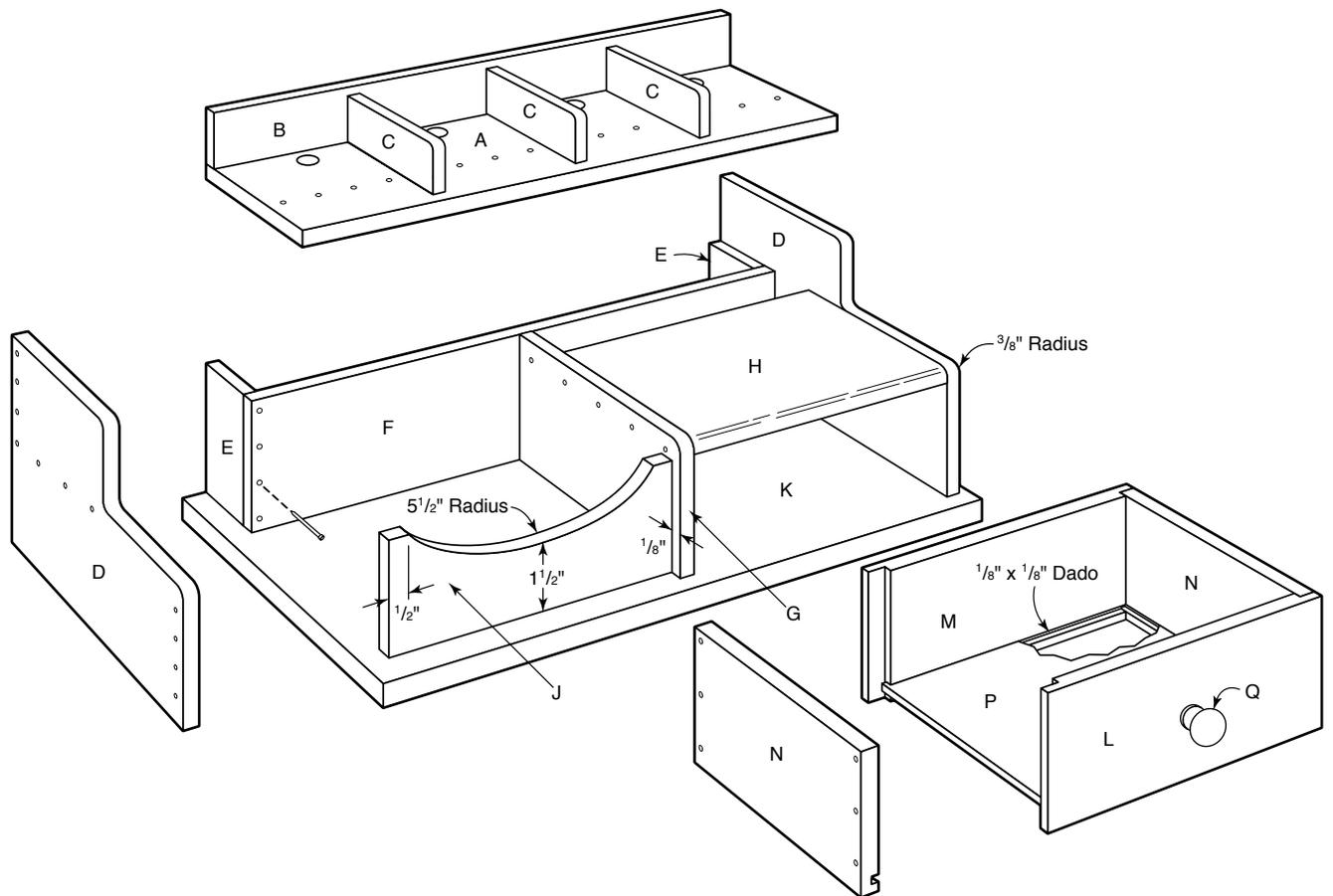
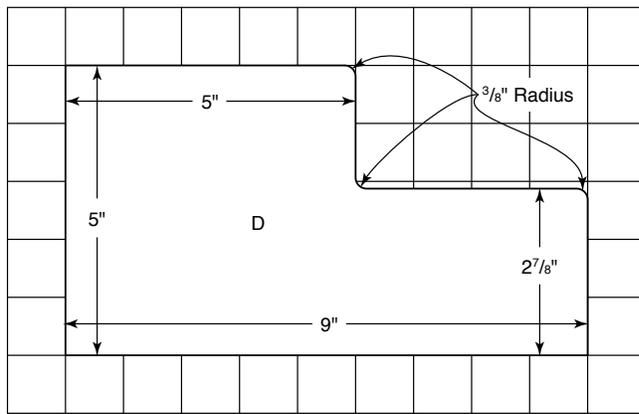
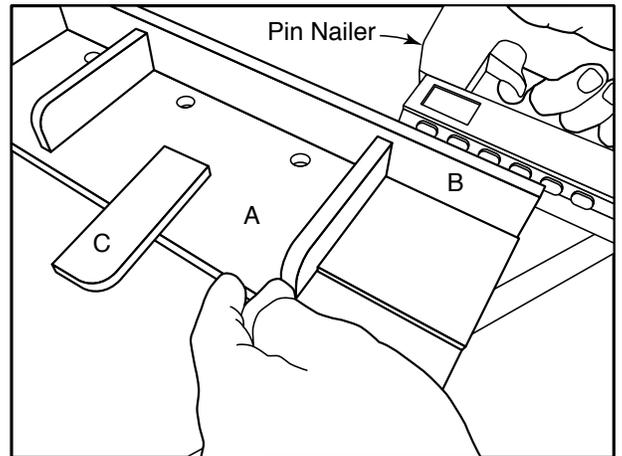


FIG 2.

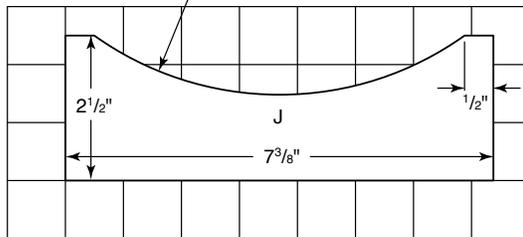


One Square = 1"

FIG 3.



$5 1/2$ " Radius



One Square = 1"

FIG 4.

