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Dave Campbell
Editorial Content Chief, *WOOD* magazine



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Supercharged End Table

Wirelessly charge your phone by simply setting it near one corner of the top.



Clean design, cool joinery, and generous drawer space make this contemporary piece shine as an end table or night stand. And it hides a secret: a recess below the top holds an inductive charger (see *next page*) for keeping your phone topped off.

DIMENSIONS:
24" W x 18" D x 24" H

A pegged, modified lap joint secures the top to the legs.

In short, this technology charges a battery wirelessly via a magnetic field generated between induction coils; one in the charger and one in the phone. With the charger in the end table plugged in to a power source, bringing your phone close to it creates an electromagnetic field. Think of the flow of electrons in a magnetic field as wind, and the induction coil in your phone as a wind turbine that converts that flow into power.

EXPLODED VIEW

This diagram shows the exploded view of the wooden box assembly. It includes the front panel with a handle, the side panel, the back panel, and the bottom panel. Dashed lines indicate the alignment and assembly path for each component.



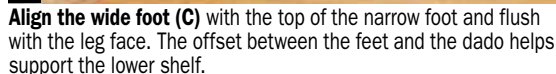
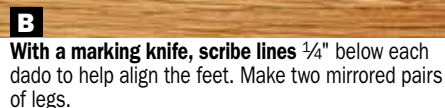
1 Cut the legs (A) to size [Materials List, page 6]. Dado the inside faces of each leg [Drawing 1, Photo A].

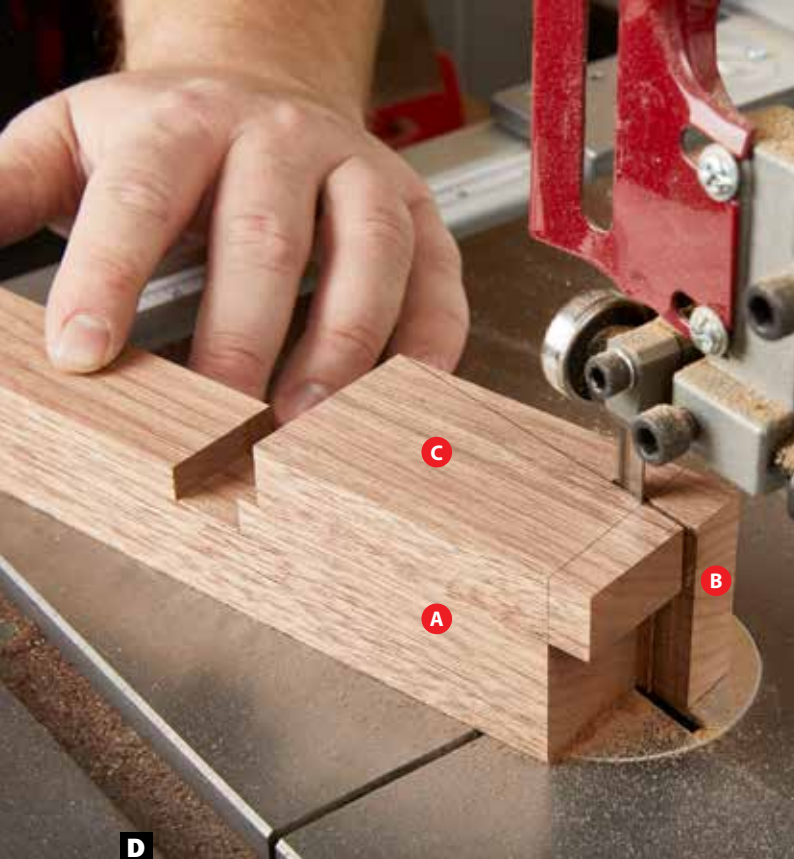
B

A

B

With a marking knife, scribe lines $\frac{1}{4}$ " below each
dado to help align the feet. Make two mirrored pairs of legs.





D Scribe the bottom of the leg onto the edges and faces of the feet (B, C). Then mark and cut the taper on the wide foot.



E Mark the taper on the just-sawn face and bandsaw it. Sand both tapers smooth.

3 Mark the taper on each wide foot (C) and bandsaw to the mark [Drawing 1, Photo D]. Repeat for the second taper [Photo E]. Cut the feet flush with the end of the legs; then set the legs aside.

Next, the shelves

1 Cut the rails (D, E) to size, along with a few test pieces of the same thickness and width [Drawing 2]. Cut the rail joints [Skill Builder].

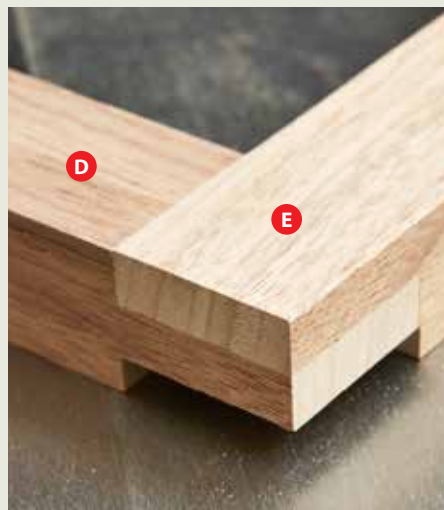
2 Dry-fit a set of rails (D, E), measure for the top and shelf panels (F), and cut them to size. Glue the rails around the panels [Drawing 2].

3 Use a marking gauge to scribe the rails of the two shelves to fit into the leg dadoes [Photos F, G, Drawing 2a]. Cut the notches. Test the fit of the shelves in the leg dadoes.

SKILL BUILDER

Cut a “Swedish lap joint”

Not a true half-lap, but cut in a similar fashion, this joint is actually a bridge joint missing half the bridge. A dowel through the overlapped area pins the pieces to the table legs, below. We couldn't decide what to call it, so we dubbed it the Swedish lap joint in honor of Design Editor John Olson's heritage. Cut test joints first, and when one comes together properly, use those pieces to help reset the blade height as you cut the rails.

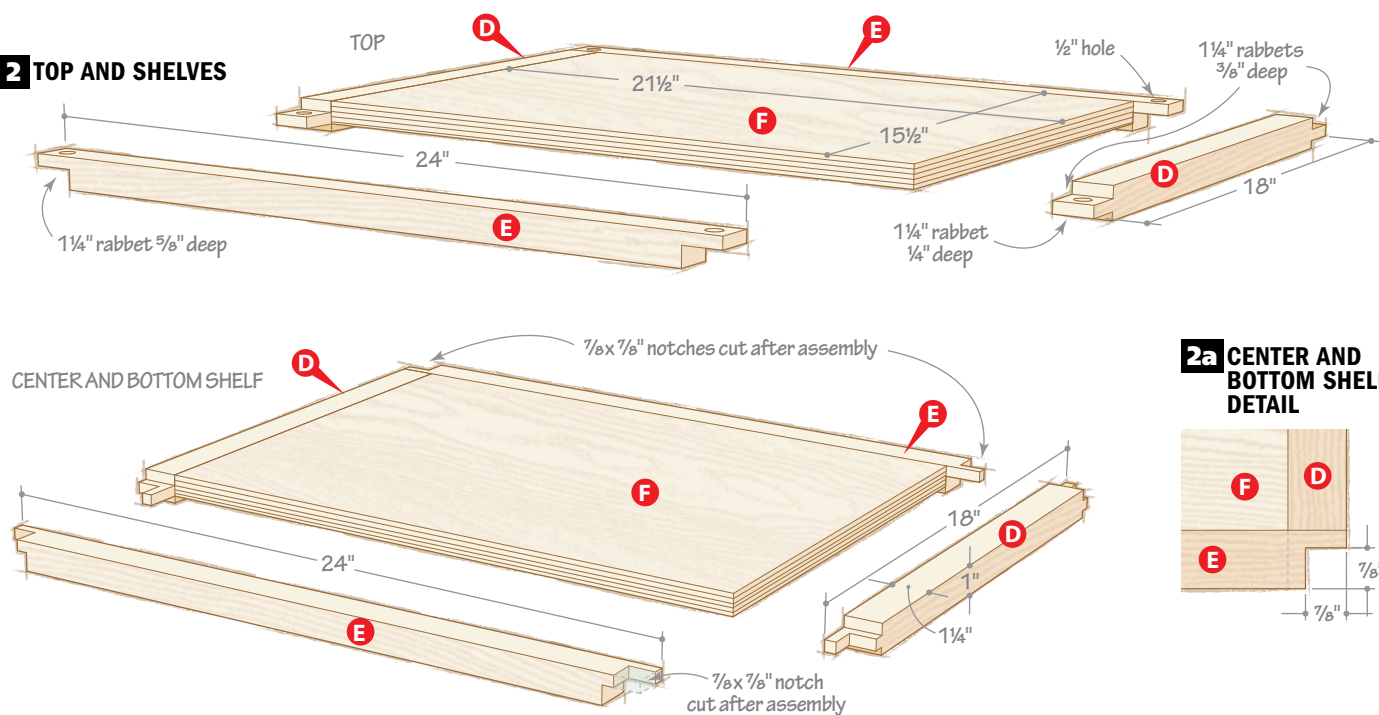


With the pieces on a flat surface, the top faces should be flush, with the mating faces of the lap touching and the ends and edges flush.

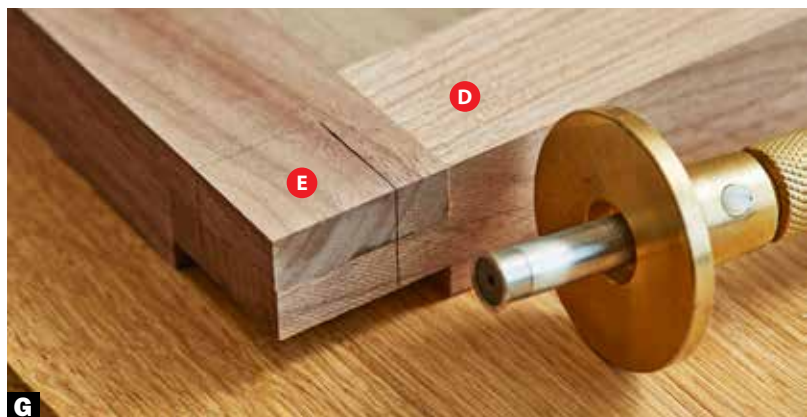


Use one of the test pieces to set your rip fence so the outside edge of the piece is flush with the outside tooth of the blade.

2 TOP AND SHELVES



F Set a marking gauge to match the remaining width of the leg.



G Strike lines along the face and ends of the rails (D, E). In addition to making precise marks, the gauge severs the fibers, reducing chip-out.



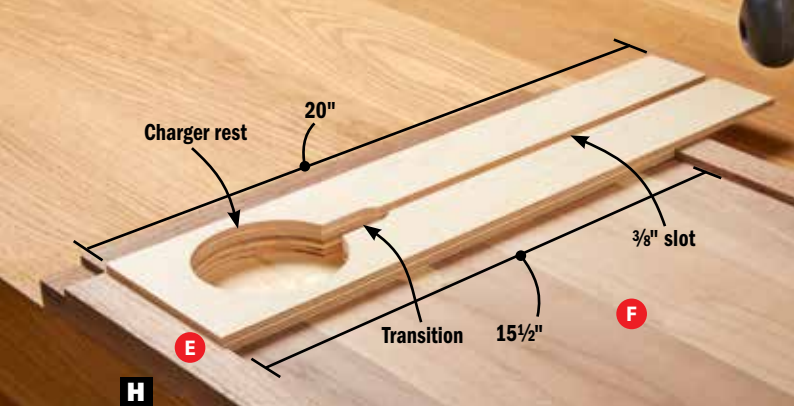
Attach an auxiliary fence to your miter gauge to prevent chip-out. Set the blade $\frac{1}{4}$ " above the table, and rabbet the bottom face of each side rail (D).



Raise the blade to $\frac{3}{8}$ " above the table and rabbet the top face of each side rail (D).



Raise the blade to $\frac{3}{8}$ " and rabbet the bottom face of the front and back rails (E).



H The bottom piece of plywood fits snug between the front and back rails. The top piece extends past the back rail. Make both pieces as wide as your router base.

Hide the charger

1 To rout the recess for the charger, make a template by laminating two pieces of $\frac{1}{4}$ " plywood with the edges and one end flush [Photo H]. Set the template on the underside of the top (D/E/F). Place the charger [Sources] on the template in the desired location and trace around the charger. Jigsaw and sand the template opening to the line. To make a path for the cord, cut a $\frac{3}{8}$ "-wide slot from the charger opening along the length of the template. Shape a transition between the cord slot and charger opening wide enough to allow access to plug the power cord into the charger.

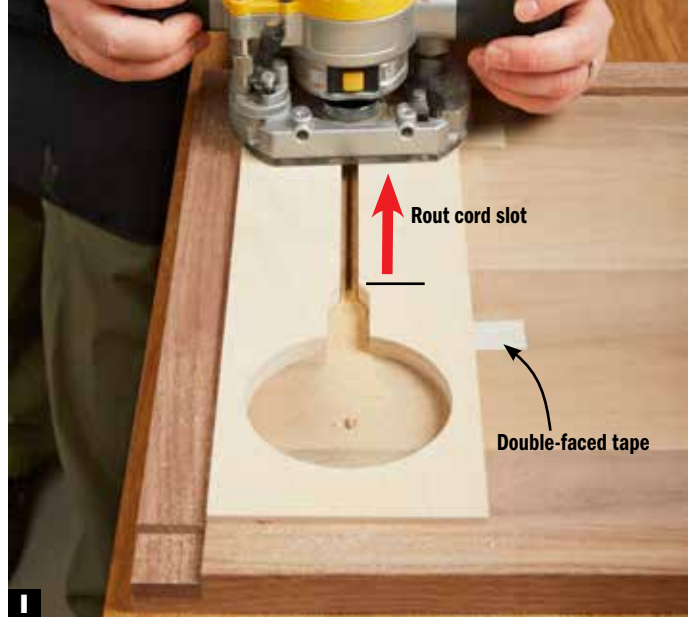
2 Secure the template to the underside of the top with double-faced tape, then rout the slot and recess [Photos I, J]. Chisel a slot in the back rail wide enough to allow the port (small) end of the cord to pass through.

Put things together

1 Glue the legs to the shelves [Exploded View]. Cut the side and back panels (G, H) to fit between the legs. Dry-fit the side and back panels, check the fit of the top, then glue the three panels in place [Photo K].

2 Rip the spacers (I) to size and glue them between the legs [Exploded View]. Glue the top (F) to the side and back panels (G, H).

3 Make a drilling guide [Photo L] to help bore holes into each leg. To do this, at the drill



I With a $\frac{3}{8}$ " guide bushing and a $\frac{1}{8}$ " straight bit, rout the channel for the cord. Rout slightly deeper than the cord thickness.



J Remove the bushing and install a $\frac{3}{4}$ " pattern bit. Rout the charger recess $\frac{5}{8}$ "-deep in the tabletop. Leave the template in place while you temporarily place the charger and test its fit and function. Rout deeper if necessary.

press, drill a $\frac{1}{2}$ " hole in a thick scrap, centered $\frac{5}{8}$ " from an end and edge. Tack on fences to register the jig. After drilling the holes in the legs, glue in lengths of walnut dowel. Cut and sand the dowels flush after the glue dries.

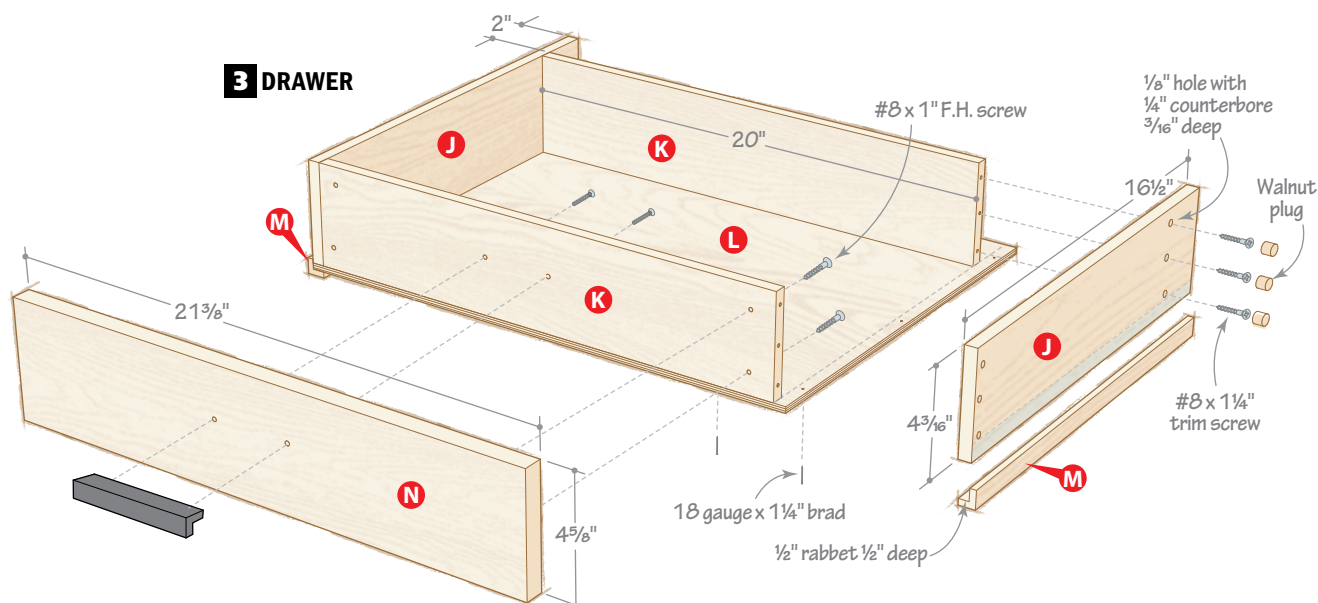


K Glue and clamp the side and back panels to the legs and to the top shelf.



L Clamp the drilling guide at each corner with the fences pressed against the table front and side. Drill with a brad-point bit for clean, straight holes.

3 DRAWER



Add the drawer

1 Cut drawer parts J–L to size [Materials List]. Glue the sides (J) to the front and back (K) [Drawing 3], then drill counterbored pilot holes, and drive trim screws. Glue and brad the bottom (L) to this assembly. Fill the counterbores with walnut plugs.

2 To make the runners (M) [Drawing 3], rabbet each edge of a 3"-wide blank, then rip a runner from each edge. Glue a runner to each side of the drawer.

3 Cut the false front (N) 1/8" narrower and shorter than the drawer opening. Slide the drawer into the table, and position the false front [Photo M]. Remove the drawer and secure the false front with the pull [Sources] and screws [Drawing 3].

4 Apply a finish. (We sprayed on a satin-finish lacquer.) Secure the charger and cord with hot-melt glue so they can be removed if needed. 🌳

Cutting Diagram



1 1/2 x 7 1/4 x 72" Walnut *Plane or resaw to the thicknesses listed in the Materials List.



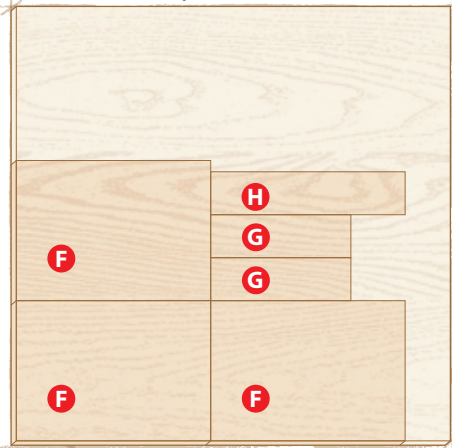
1/2 x 2 x 48" Walnut



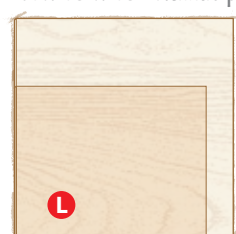
3/4 x 5 1/2 x 48" Walnut



3/4 x 5 1/2 x 96" Maple



3/4 x 48 x 48" Walnut plywood



1/4 x 24 x 24" Birch plywood

This project requires 7 1/2 board feet of 3/4" walnut, 2 board feet of 4/4" walnut, 1 square foot of 1/2" walnut, and 4 square feet of 1/2" maple.

Materials List

Part	FINISHED SIZE			Matl.	Qty.	
	T	W	L			
Carcase						
A	legs	1 ¼"	1 ¼"	23 ¾"	W	4
B*	narrow feet	½"	1 ¼"	3"	W	4
C*	wide feet	½"	1 ¾"	3"	W	4
D	side rails	1"	1 ¼"	18"	W	6
E	front/back rails	1"	1 ¼"	24"	W	6
F	top/shelf panels	¾"	15 ½"	21 ½"	WP	3
G	side panels	¾"	4 ¾"	15 ½"	WP	2
H	back panel	¾"	4 ¾"	21 ½"	WP	1
I	spacers	½"	¾"	15 ½"	W	2
Drawers						
J	sides	½"	4 ⅜"	16 ½"	M	2
K	front/back	½"	4 ⅜"	20"	M	2
L	bottom	¼"	16 ½"	21"	BP	1
M	runners	¾"	¾"	16 ½"	W	2
N	false front	¾"	4 ⅝"	21 ⅜"	W	1

*Parts initially cut oversize. See the instructions.

Materials key: W—walnut, WP—walnut plywood, M—maple, BP—birch plywood.

Supplies: #8 x 1 1/4" trim screws, #8 x 1" flathead screws, #18 x 1 1/4" brads, 1/2 x 12" walnut dowel.

Blade and bits: Dado set; 3/4" top-bearing pattern, 1/8", 1/4" straight router bits; 3/8" guide bushing, 1/4" plug cutter.

Sources: SurgeDisc wireless charger, no. SD180, 5-volt, 2-amp power adapter with microplug, woodmagazine.com/surgedisc; Hickory Hardware 96mm pull in Flat Onyx, no. 4883068, menards.com.



Apply double-sided tape to the drawer front (K). Use 1/16"-thick spacers to position the false front (N) with an even reveal all around. Press the false front against the drawer, then pull out the assembly.

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Project design: **John Olson**
Illustrations: **Roxanne LeMoine, Lorna Johnson**