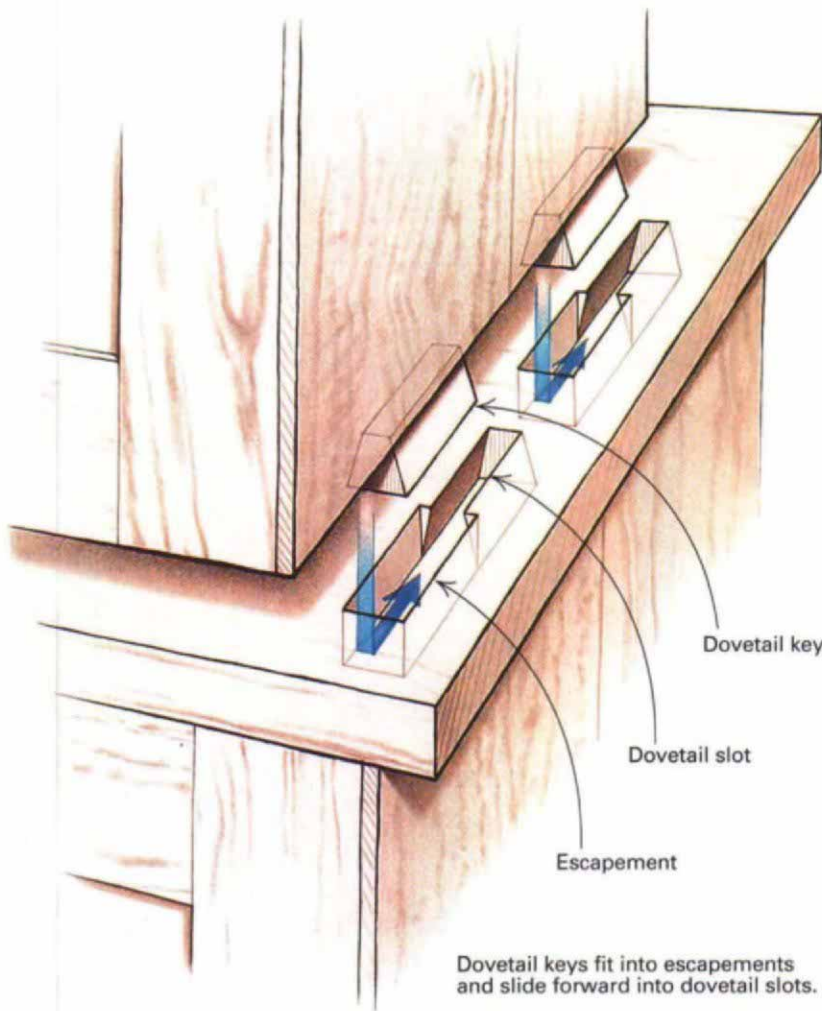


# Housed Sliding Dovetails

*A strong, hidden joint  
that's ideal for large cabinets*

by Tony Konovaloff



## Key size is crucial

Dovetail keys longer than 2 in. are difficult to fit. Make two per case side for a strong, simple joint.

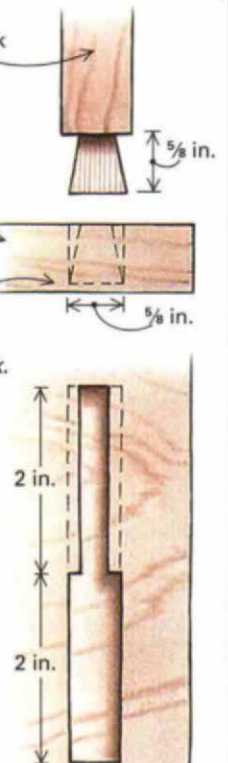
Side of upper case,  $\frac{3}{4}$  in. thick

Cut the dovetails  $\frac{1}{8}$  in. narrower than the case sides.

Top of lower case

Leave the bottom of the slots  $\frac{1}{8}$  in. thick.

Cut the escapements and slots the same length as the dovetail keys.



My shop is quite small. There is just enough room for a bench, a tool box and a place to stand and work. I like it that way. My tools are always within easy reach and are hard to misplace. And the shop doesn't require much heat in the winter. But there's one problem: Large cabinets don't leave much room to work. Even desks take up all the available floor space. And to work on large china cabinets, I have to take down the ceiling lights.

Having a small shop doesn't keep me from making large cabinets. However, I do

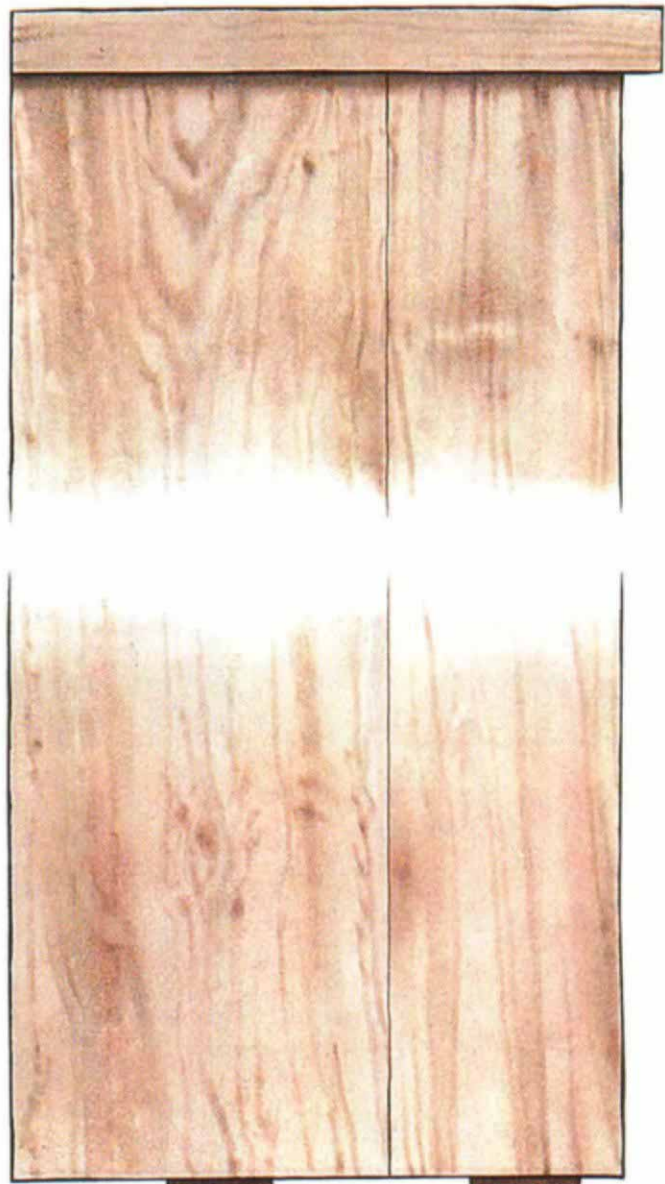
make a lot of knockdown joints to keep big pieces of furniture manageable.

There are endless ways to connect large case pieces, but most knockdown designs I've seen are lacking in one way or another. Some are weak; others require clunky or expensive hardware. Sliding dovetails are an option, but they show at the back of the case, and they tend to bind.

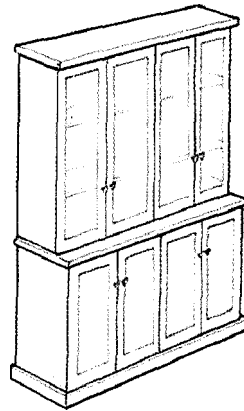
To solve some of these problems, I devised a strong connection using housed sliding dovetails (see the drawing above). I cut small dovetail keys on the bottom of

the sides of the upper case and dovetail slots with escapements on the top of the lower case. The keys fit down into the escapements and then slide forward into the slots, locking the cases together and eliminating the need for hardware. And nothing shows in the front or back when the cases are assembled.

The joint holds upper and lower cases tightly together but knocks down smoothly and easily without binding. It doesn't require special tools to make or very much time. But to make sure that you understand



**Large cases joined securely**  
 Housed sliding dovetails will keep upper and lower cases of the largest cabinets snugly together.

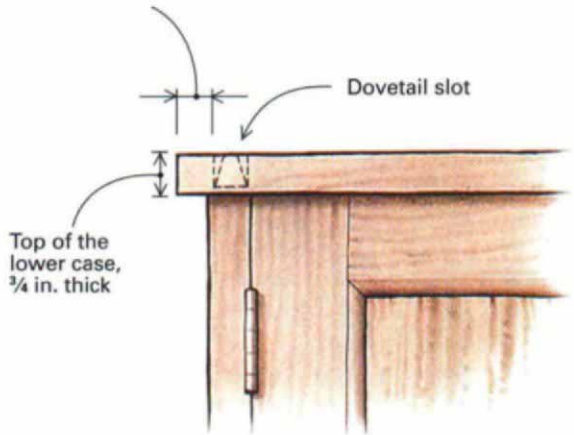
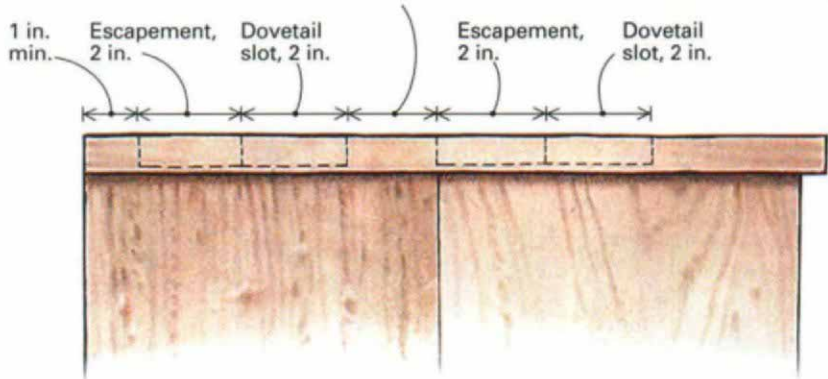


3 in. min.      Dovetail key      3 in. min.      Dovetail key

*Space the slots and escapements far enough apart to leave room for an inch or more of solid wood.*

Make upper case at least 1½ in. narrower than lower case top so that dovetail slots are at least ¾ in. away from the edge.

Dovetail key



Top of the lower case, ¾ in. thick

Dovetail slot



After cutting a dovetail the full width of the upper case side, cope out the dovetail keys (left), and then clean up the shoulder with a chisel (right). Pare carefully: The line of the finished joint depends on the flatness of the shoulder.



what's going on with the joinery, it's a good idea to work up a practice piece.

### Cut the dovetails first

Before gluing up the top half of the case, I cut the dovetails on the bottoms of the case sides. There are many ways to do this. I use a dovetail plane, but a router and jig would work as well.

Next I cut out sections of the dovetails to leave two keys, each about 2 in. long (see the photos above). The proportions of the keys depend on the thickness of the stock you use. Generally, I cut them  $\frac{1}{8}$  in. narrower than the case sides and  $\frac{1}{8}$  in. shorter than the thickness of the top of the bottom case (see the drawing detail on p. 62). Their placement is important. They must be far enough apart so they don't interfere with each other. If the dovetails are 2 in. long, the escapements and slots must each be 2 in. long. To maintain strength, each slot and escapement pair should be at least an inch apart. This means that 2-in. dovetails must be spaced at least 3 in. apart, and the front of the rear dovetail must be 3 in. from the back of the upper case.

After I cut the keys to length, I complete the upper case. It's important to remember that the shoulders of the dovetail keys rest on the top of the lower case. Only the keys should extend below the line of the should-



*Mark the dovetail slots first. The locations for dovetail slots in the top of the lower cabinet are marked directly from the dovetailed keys.*



*Layout the escapements using the dovetail slots as a guide. When you cut the joints, remember that the escapements are at the back of the cabinet.*

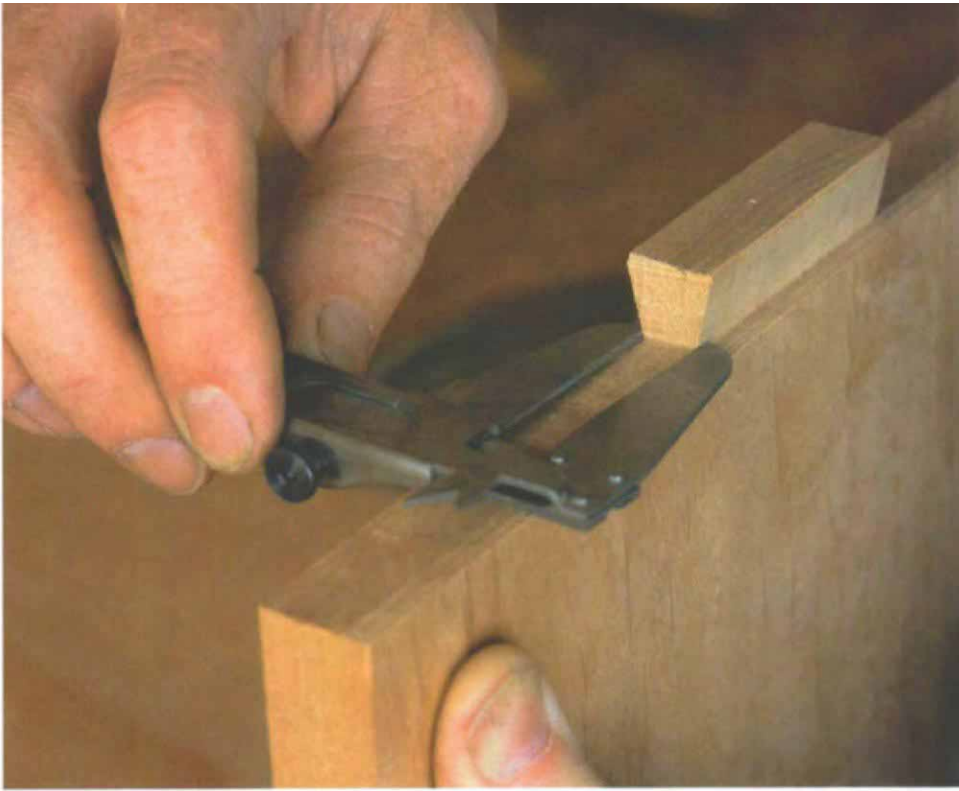
ders; otherwise, the upper case will not sit evenly on the lower case, and the joint will not function properly.

### Lay out the dovetail slots and escapements

Once the upper case has been glued and assembled, I can lay out the escapements and dovetail slots on the top of the lower case. I start by placing the upper case onto the lower case and marking the front, back and sides of each slot and escapement. To determine the width of the top of the dovetail slots, I transfer the measurement from the dovetails themselves with vernier calipers (see the top photos on the facing page). It is important that the upper case be assembled: It's the only way to be absolutely sure the slots will be in the right place. However, this isn't necessary when making a practice piece.

### Cut the escapements before the dovetail slots

I remove the bulk of the waste from the escapements with a brace and bit and pare to the lines with a chisel. I cut them just slightly deeper than the dovetails are tall. You don't need to leave as much stock in the bottom of the escapements as you would for a sliding dovetail, just enough to keep them solid. I leave about  $\frac{1}{8}$  in. of material



*Don't measure, transfer. The tops of the dovetails and slots should be the same width. Find the width with a vernier caliper (left), and then mark it in the middle of the slot (above).*

at the bottom of each. I test-fit the dovetails in the escapements before I cut the dovetail slots. The dovetails should just slip into the escapements with no extra room front or back. The shoulders of the dovetails, not the bottoms of the escapements, hold the weight of the upper case.

*Carefully pare the slot walls (right). Cut a little at a time, and test the fit frequently. Pay attention to the angle. It's easy to wander from it.*

*Just pull back, and lift out (below). The housed sliding dovetail requires no contortions to take apart, even though it is very solid when assembled.*



### Fit the slots to the dovetails

I cut the slots slightly undersized and then pare them to fit the dovetails bit by bit. I work slowly, keeping an eye on the angle and the marked lines. The hard part is that you can't really see what you are trying to fit. Don't try to get it all at once (see the center right photo).

Fitting the first 1/4 in. or so of each dovetail makes a good reference for cutting the rest of the slots. The finished joint should feel snug, neither binding nor loose. Putting it together and taking it apart shouldn't take a mallet or Herculean strength.

After you've finished the joint, apply a good coat of paste wax to all parts of the dovetails and slots. The wax helps the joint work smoothly. You now have a hidden, stable and graceful knockdown connection for a two-piece cabinet.

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