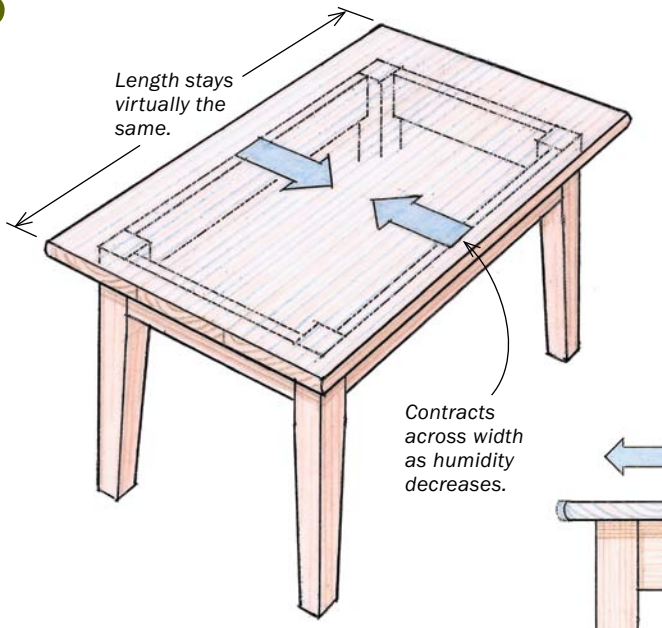
Attaching solid-wood tabletops

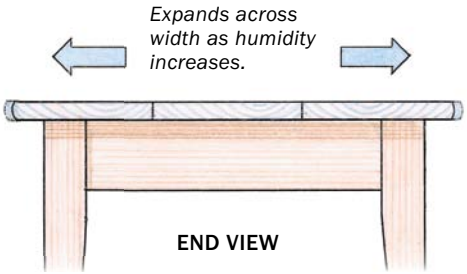
FIVE WAYS TO KEEP YOUR TOP TIGHT AND FLAT THROUGH THE SEASONS

BY BOB VAN DYKE



CONTROLLING MOVEMENT

Solid-wood tabletops will always succumb to changes in humidity as seasons change, expanding and contracting across their width. To avoid buckling and splitting, furniture makers have to attach tops in secure ways that will accommodate this movement.



All solid wood will move with the seasons. A board will increase in width as atmospheric humidity increases and shrink in width when the humidity decreases. Since the beginning, furniture makers have faced the challenge of holding a tabletop securely to its base while allowing for this movement.

There's no shortage of techniques. Here I'll show you a few of the simpler methods available, from shopmade to store-bought. In all cases, be absolutely sure that there is no chance of the screw even coming close to poking through the top. I have seen cases where the tip of the screw is so close to the surface that it creates a small dimple that's visible when the top is viewed in raking light.

If there is any doubt in your mind, don't hesitate to test the whole process on a mock-up top and apron rather than taking the chance of ruining a perfectly good top.

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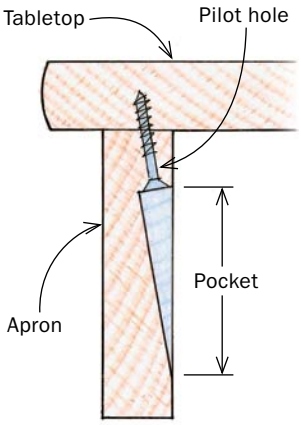
Photos: Dillon Ryan; drawings: Vince Babak

SCREW POCKET



Drill the pilot hole and carve the pocket. *The pilot hole should enter the top of the apron at the center and be angled properly to give the screw the right protrusion into the top. A long bit and a bevel gauge make drilling the pilot hole easy. After chiseling the baseline, use a large gouge to excavate the waste and form the pocket.*

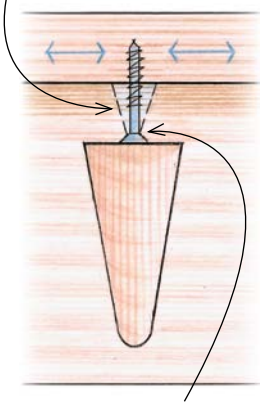
An angled screw in a pocket is one of the simplest and most traditional methods of attaching a top. A long tapered recess, or pocket, is cut into the inside face of the apron using either a flat bench chisel or a large carving gouge. Before you can cut the pocket, you must determine the pilot-hole angle.

To do this, decide how far you want the screw to project into the thickness of the top. This allows you to locate the screw head so that it seats itself near the center of the apron's thickness. The pilot hole by itself does not allow for wood movement. You have to taper the hole in the apron to allow the screw to pivot. This method keeps the top tight all year long.

Taper the pilot hole. *To create the tapered relief on the top edge of the apron, use a ⅛-in. chisel and work down toward the countersink. The taper should start about 3⁄16 in. from each edge of the pilot hole.*

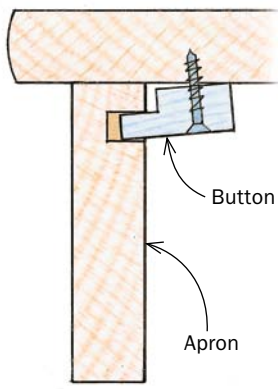
ADD SOME WIGGLE ROOM

The pilot hole in the apron is tapered in the direction that the top will move, which allows the screw to pivot as the top moves.



The taper extends to the bottom of the countersink for the screw head.

CABINETMAKER'S BUTTONS



Shopmade buttons are strong and allow for plenty of wood movement. The buttons each have a tongue cut into the end grain that fits into a shallow mortise on the inside face of the apron. The tabletop is free to expand and contract while the buttons slide in their mortises.

The buttons can be made quickly by cutting a rabbet on both ends of some hardwood stock. Cut the ends off at the bandsaw, and repeat the process. Last, drill a countersunk hole through each button.

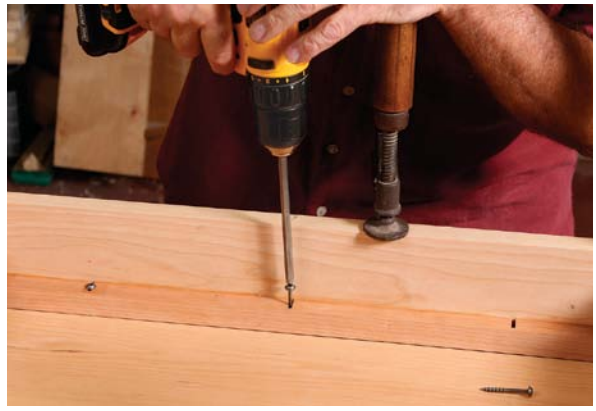
Make the mortise a bit wider than the button and locate it so that the top of the button sits about 1/16 in. below the top of the apron. This forms a gap that will make the button pull the top down tightly to the apron as it's screwed in place, and the side gaps allow it to move side to side as needed.

Make some buttons. *Cut a rabbet in the end of a flat, wide board and crosscut the buttons to length at the bandsaw. Then move the fence and cut them to width.*

Positioned to allow movement. *The buttons will move with the tabletop while keeping it tightly secured. Insert the buttons about halfway into the mortises, then screw them in place.*

LEDGER STRIPS

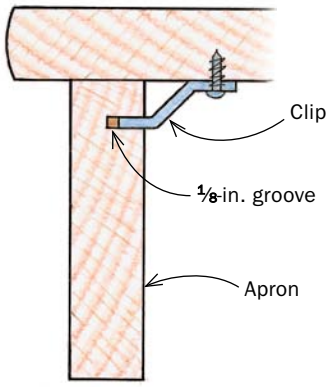
Another effective and low-tech method is to glue or screw ledger strips about 1/32 in. below the top edge of the inside face of the apron. Round-head screws are then driven into the tabletop from underneath. The pilot holes in the side apron ledger strips must be tapered (see p. 23) to accommodate the movement of the top from front to back. The back edge of the top is secured by cutting a few sawkerfs into the face of the rear ledger strip and then gluing that face to the apron. A screw through the center of each sawkerf will have complete freedom to pivot front to back with the seasonal movement of the top.



Glue the strips. *The ledger strips along the front and back of the table get kerfed at the tablesaw and glued in place about 1/32 in. from the apron's top edge. The slots in the front and rear strips, as well as the pivoting screws in the side strips, will let the top move without binding.*

Store-bought solutions

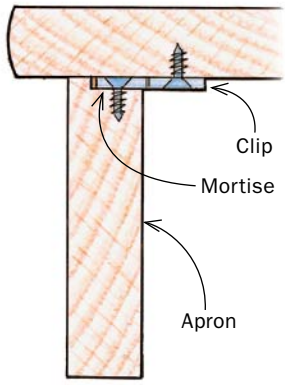
TABLE MOUNTING CLIPS



Simply groove and attach. *Table clips are very similar to cabinetmaker's buttons, except they are attached to the aprons via a ⅛-in. groove cut into the aprons at the tablesaw. Just like the buttons, leave space between the clip and the back of the groove to let the top move.*

Also known as Z-clips, these can be found at most hardware stores and retailers. Installation is fast and easy. The clips fit into a tablesawn groove on the inside face of the apron. The groove should be located far enough below the apron's top edge so the clip exerts constant pressure, ensuring that the top stays tight.

FIGURE-8 CLIP



These fasteners are also easy to use and fairly unobtrusive. The name comes from the clip's shape, which allows it to pivot around the two screws in the apron and the top as the top moves front to back. A shallow hole drilled into the top edge of the apron houses the clip, which is screwed in place before the top is set onto the frame. Locate the hole so that the center of the clip hangs beyond the inside face of the apron. The top is then screwed on through the second hole in the clip. The clips on the front and back aprons should be angled slightly so that the clip will pivot to either side when the top expands or contracts across its width.

Attach to the apron first. *The figure-8 clips are screwed into a shallow, oversize hole drilled into the top edge of the apron with a Forstner bit.*

Then to the top. *The clips at the front and back should be screwed at an angle to allow movement. Clips on the ends can stay perpendicular to the apron.*