Shopmade Catches and Latches

Four woodworkers, four solutions

Hidden Magnets
BY ANDY RAE

Shaker Spinner
BY CHRIS BECKSVOORT

Flipper Catch
BY DOUG NOYES

Button Catch
BY MICHAEL PEKOVICH

Look through a catalog of cabinet hardware and you'll find dozens of gadgets made for keeping doors shut. Nonetheless, many woodworkers create their own catches and latches because they're attractive, not difficult to make and cost little. Another benefit is that there is no clunky metal hardware in the cabinet. We asked four woodworkers to show us how they keep cabinet doors closed. The solutions include hidden rare-earth magnets, a traditional Shaker spinner, a wooden flipper catch made popular by James Krenov and a button catch. All of these look a lot better than most store-bought hardware, and they can be customized to fit your needs.

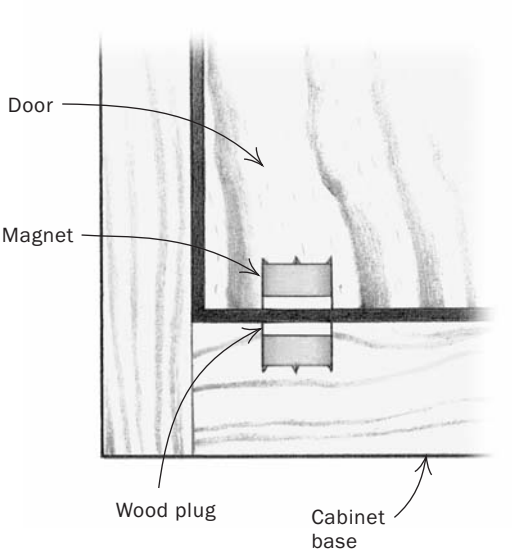
Hidden Magnets

Use the power of rare-earth magnets to keep a door closed

BY ANDY RAE

To keep cabinet doors closed, I often rely on the magnetic attraction of rare-earth magnets, which provide a clean, hardware-free look.

Instead of placing the magnets so that they make contact when the door is shut, I glue them in the top and bottom of the door and the case, leaving them a fraction of an inch apart. The magnets gently pull the door flush to the case once it swings closed—a satisfying effect, especially if the door has been fitted to close tolerances. I cover the magnets with wood plugs.



Keep in mind that this technique works only with free-swinging doors. Avoid self-closing or other spring-loaded hinges.

Investigate your magnets

Rare-earth magnets are my preferred pullers. Ounce for ounce, these slim, ⅛-in.-thick discs pack more power than any other magnet I've seen.

Be sure to size the magnets so that they have the necessary pulling power. I used ⅜-in.-dia. magnets for the small jewelry-box door shown here. Larger ½-in.-dia. magnets work best for typical ¾-in.-thick cabinet doors. With bigger doors you need bigger magnets.

Make mortises for the magnets

Drill the mortises for the magnets in the case pieces before assembling them. Offset the mortise in the base toward the rear, which will help pull the door closed. For my cabinet, I drilled ⅜-in.-dia. mortises in the case top and bottom. Regardless of the diameter of the magnets, make the mortises ¼ in. deep to allow for the nominal ⅛-in.-thick magnets and the wood plugs that hide them. To make flat-bottomed mortises, use a Forstner bit.

Once you've drilled the mortises in the case parts, assemble the case, then build the door. Take your time getting a consistent door reveal. Once you've installed the magnets and covered them with plugs, you'll have little room for adjustments. I aim for a reveal of about 1/32 in. so that the door slows on a cushion of air as it is shut, then is quietly drawn in by the magnets.

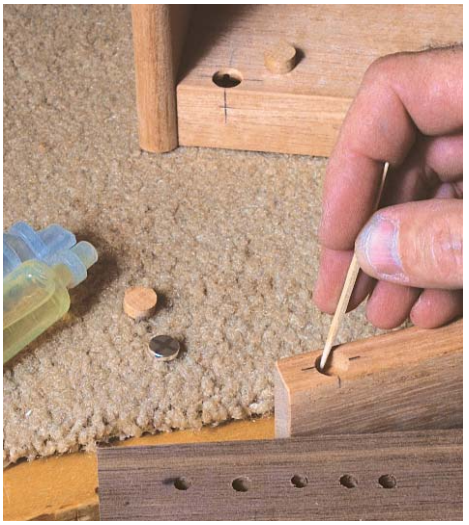
Install the magnets

To determine the door mortise locations accurately, the door must be hung first. Then transfer the centerlines of the mortises in the cabinet to the bottom and top of the door. Remove the door from the case and drill the mortises for the magnets. You can rig up a vertical drilling arrangement

Drill mortises before gluing up the case. *One set of magnets is recessed into mortises drilled into both the case top and bottom.*

With the case assembled, transfer the mortise location. *Use a piece of tape to pull the door flush with the outer edge of the case.*

Photos, except where noted: Timothy Sams; facing page (bottom left): Erika Marks



Mark the magnets to ensure that they are oriented correctly. *Glue the magnets in place, add wood plugs, then pare and sand the plugs flush.*

on the drill press to make clean and accurate mortises. But precise mortises can be made with a Forstner bit mounted in a handheld drill—as long as the bit is ½ in. dia. or less. Larger-diameter Forstner bits have a spooky tendency to wander, ruining the cut. Make sure to practice on scrap if you opt for hand drilling, and wrap a piece of masking tape around the bit to flag the correct depth.

Establish the proper polar orientation of each pair of magnets and mark them with a felt-tipped pen. Use epoxy or cyanoacrylate glue to secure the magnets. Reinstall the door and check that it closes properly. If the mortises have been drilled correctly, the magnets will pull the door flush to the face of the cabinet.

Install tapered wood plugs to hide the magnets, carefully matching the grain orientation. Once the glue has dried, pare and sand the plugs flush. If you've carefully achieved a snug fit, the plugs disappear. And your friends will wonder what kind of magic is holding the door in place. □

Andy Rae is a cabinetmaker, furniture maker, teacher and writer. He is the author of The Complete Illustrated Guide to Furniture & Cabinet Construction *(The Taunton Press, 2001).*

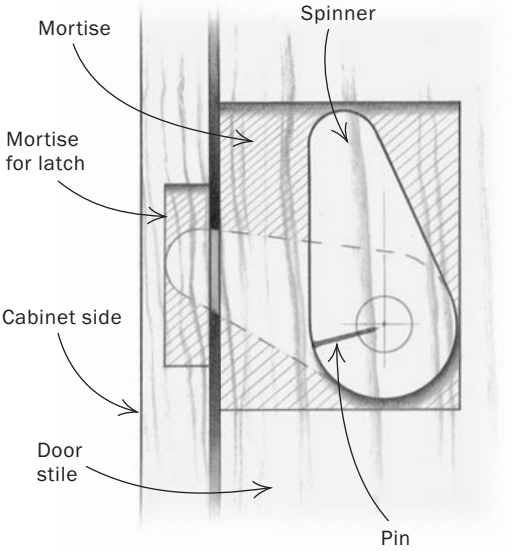
Shaker Spinner

The simple spinner is refined to become an elegant latch

BY CHRIS BECKSVOORT

Spinners have been used for years to keep barn doors shut. I've redesigned the spinner for my cabinets from the simple but effective exterior latch to a refined and almost completely hidden mechanism within the door stile.

The earliest spinners consisted of a small piece of wood with a pin through the center mounted on the frame next to the door. When the spinner is in the vertical position, the door can be opened. With the spinner turned horizontally, the door is locked.



A few years back I decided to incorporate the spinner inside the lock stile of the door frame. I make the spinner into an oval. The result is substantially more work in layout, mortising and fitting, but it's much cleaner looking and almost entirely out of the way.

The door knob must be placed on the centerline of the door stile, and the spinner must extend out of the stile by at least ¼ in.

Lay out the mortise. *With the knob hole drilled in the center of the stile, use a cardboard cutout to determine the spinner's placement. Then mark the mortise 1⁄16 in. larger than the spinner itself.*

Drawings: Michael Gellatly

when closed yet fit completely within the door stile when in the fully opened position. Begin by drilling the knob hole through the stile. Then make a cardboard cutout of the spinner, sized so that it won't reach into the door-panel groove. Locate the mortise by swinging the cutout in a 90° arc around the door-knob hole. The width of the mortise should be about a third the thickness of the door frame—usually ¼ in. for a ¾-in.-thick frame.

Once the mortise is complete, shape and drill the spinner and check the fit with the knob attached. If all works well, pin it in place with a small brad or brass escutcheon pin. The spinner should not be glued, because there's a great risk of glue getting onto the knob shaft, which will muck up the works.

I aim for close tolerances between the knob shaft and matching hole. For most cabinet doors I use knobs with ½-in.-dia. shafts (⅜ in. dia. for very small doors). To make life easier, I shape all knob tenons with a plug cutter, chuck them into the lathe and turn the knob proper. If you think about it, the knob shaft is the only critical part of the process. The ½-in.-dia. shaft must fit precisely in the matching hole bored into the door. The plug cutter eliminates the most difficult portion of the task.

For a ½-in.-dia. knob shaft, drill a 33/64-in.-dia. hole through the door stile and a ½-in.-dia. hole through the spinner. Now the knob will spin freely in the door frame yet hold the spinner securely. Next, with the spinner in the closed position, align the grain of the knob with the grain of the door frame. Then turn the spinner into the open position and pin it. This detail makes it easy to tell whether the spinner is in the open or closed position.

After 30 years as a woodworker, I was some proud of myself for coming up with this idea of installing the spinner in the door frame. Then in 1996, while shooting photos for *The Shaker Legacy* (The Taunton Press, 1998), I came across a small chest with drawers and doors at the Art Complex Museum in Duxbury, Mass., in which the door knob passed through a mortise in the edge of the door. Although the spinner itself was missing, it was clear that the Shakers had the same bright idea 160 years ago. □

Chris Becksvoort is a contributing editor.

Chop out the mortise. *Becksvoort chisels out the mortise by hand.*

The knob should slide in with a little pressure. *The spinner must swing freely and should be hidden when the latch is open.*

Predrill for the pin. *To avoid splitting the spinner, drill a hole for the escutcheon pin.*

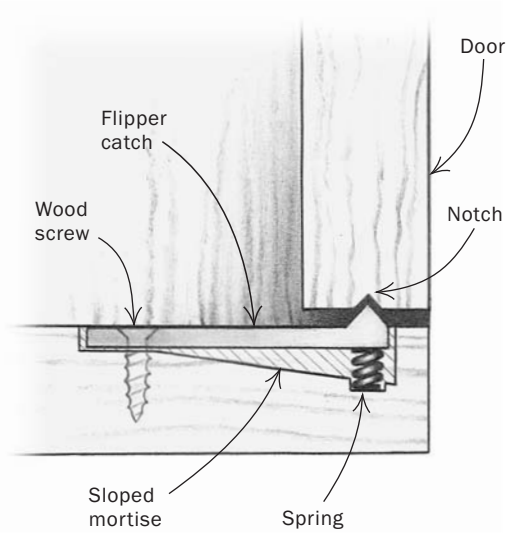
Secure the spinner and knob with a pin. *Instead of glue, use a small brad or escutcheon pin and drive it in using a nailset.*

Flipper Catch

An all-wood solution to keeping doors closed

BY DOUG NOYES

I discovered flipper catches in one of James Krenov's books on cabinetmaking. I like these catches because they are easy to make and allow me to utilize exotic hardwood scraps. The one I frequently use is basically an L-shaped wood flipper that is recessed into a mortise in the case bottom. A small spring provides the necessary resistance to keep the flipper engaged with the bottom edge of the door.



I make the catch out of a contrasting hardwood, such as ebony, because it resists wear. Although I make the catch to fit, the catch for a ¾-in.-thick door typically measures approximately ¼ in. thick by ⅜ in. wide by 1½ in. long.

Sketch the profile on a blank, cut it out with a handsaw, then shape the catch with a file or knife. Drill a slightly oversized hole for the attachment screw to allow the catch to pivot. Countersink the hole so that the screw is flush with the top of the catch.

Next, cut the sloped mortise, which allows the catch to recede when the door is closed. Use a plunge router with a fence to make the mortise. It is a short mortise (only 1½ in. long), so be careful not to cut too deep too fast.

Square up the mortise with a chisel. Drill a hole in the deeper part of the mortise to hold the spring. The hole should be about ⅛ in. deep and the same diameter as the spring. I use ⅛-in.-dia. springs from ballpoint pens trimmed to ¼ in. long, but you can also get springs from a hardware store.

Put the catch into the mortise to test the fit. It should be snug but not overly tight. If it fits, place the spring in its hole, put the catch in place and secure the assembly with a small wood screw.

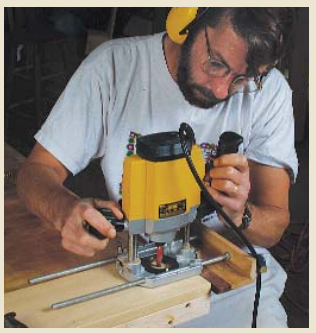
I usually make a shallow notch (1/16 in.) in the bottom of the door to engage the catch. If the door is made of very soft wood, such as redwood or pine, it's not a bad idea to insert a piece of hardwood in the bottom of the door to prevent excessive wear.

To determine the location of the notch, first close the door several times on the catch, which will create a shiny spot where the catch is rubbing. At the end of this shiny spot make the notch for the door to catch. If this shiny spot does not appear, rub the top of the catch with a pencil and then close the door. The pencil mark indicates the location of the notch.

A variation on this catch is to include a positive stop. By shaping a shoulder onto the catch itself, I can control the closed position of the door. I use this variation on inset-door applications or on double doors that can be opened individually.

A little trimming here and filing there, and you'll have a good catch that makes a subtle "click" when the door is closed. □

Doug Noyes is a furniture designer and woodworker in Guilford, Conn.



Cut the ramped mortises. *Use a plunge router to make a sloping mortise for the catch.*

Pare the mortise to the length of the catch using the catch as a guide. *Pare less vigorously as you come close to the desired width.*

Assemble the catch. *The spring sits in a hole bored in the deep end of the mortise.*

Button Catch

Simple, unobtrusive and easy to make

BY MICHAEL PEKOVICH

Shape the button on the drill press. *Use a block with a predrilled hole in it to gauge the right size of the button.*

Drill the stepped hole. *Mark the bit with tape to indicate the correct depth.*

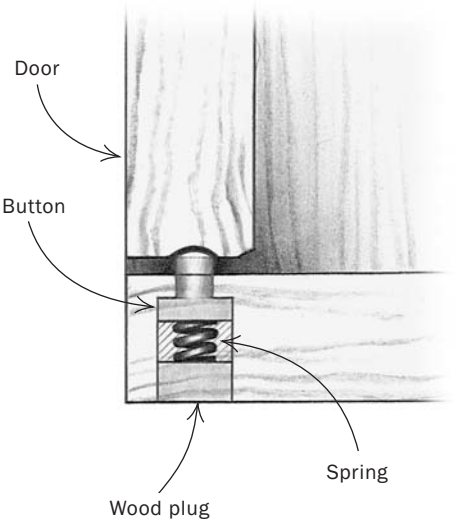
Drill the button hole. *Use some scrap stock to prevent tearout.*

I had been floundering in art school for a couple of years when I stumbled into a beginning woodworking class. One of my first projects was a simple pencil box with a sliding lid. At wits end for a way to secure the lid short of tying it closed, I approached my instructor, John Snidecore, who showed me a simple spring-loaded wood button catch.

Twenty years later I'm still working wood and still using the button catch on a variety of projects. But I have since modified the design to work as a door catch. The concept is simple: a stepped button slides up into a stepped hole from below. A spring supports the button, and a wooden plate or plug covers the bottom of the hole.

To align the button to the door, I use an approach that's almost foolproof. Hang the door and locate the button about 1 in. from the edge of the door, midpoint in its thickness. Transfer this location to the bottom of the case. From the bottom, drill a ⅜-in.-dia. hole, stopping ⅛ in. shy of the opposite side. With a ¼-in. bit, continue the hole through the case bottom and use a piece of scrap to prevent blowout. Then wedge the door securely in the closed position and drill just into its bottom edge. The drilled indent becomes the cup for the button.

To make the button, simply chuck a short length of hardwood dowel into a drill press. With a file in hand, it's quick work to create the desired profile. After a test fit, cut the button to length. Before doing so, I like to round and polish the top of the button while it's easy to grab. From this point it's just a matter of inserting a spring in the hole and capping it.



For small projects such as my pencil box, I glue a plug into the hole and finish it smooth. For most case pieces, where long-term maintenance is an issue, I prefer a plate screwed to the case bottom, which allows for easier button replacement, if necessary. One final task is to use a gouge or carving knife to cut a shallow notch on the inside edge of the door bottom where it strikes the button. This notch and the rounded button top combine to make for smoother door closing. □

Notch the door. *The notch is shallow and angled so that it will depress the button as the door closes.*

Michael Pekovich is the art director.