A Hidden Door Catch

This subtle, magnetic method remains unseen

BY JOE MORGAN

While there are many types of latches to hold cabinet doors in place, most don't pull me in. I find protruding mechanisms visually unappealing, and I don't like the sound of latches hitting each other. So I turn to another method: hidden magnets. Concealed rare-earth magnets provide a pristine look and quiet operation. When done right, the magnets have a subtle grab that makes opening and closing a door a pleasure.

For each door, you need one ¾-in.-dia. and four to six ⅜-in.-dia. neodymium disk magnets. Each should be ⅛ in. thick. You will also need a plunge router. I use mine with a mortising jig adapted from Michael Fortune's article "Try this Versatile Mortising Jig" (*FWW* #198). You could also simply clamp a wide base to the door and attach a fence to your router. Just make sure the router is stable.

Mortising the doors

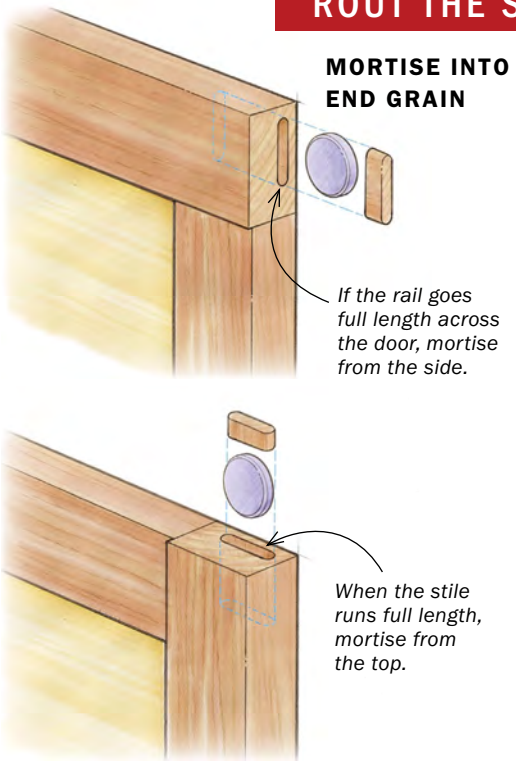
After the door is built and trimmed to fit, you're ready to rout the mortise for the magnet. The mortise should be ⅛ in. deeper than the magnet's diameter so you can glue in a plug to conceal the hole. On the edge of the door, lay out the mortise. Inset the mortise at least ⅛ in. from the inside face of the door, and mark the length to ensure wiggle room for the ¾-in.-dia. magnet. With the workpiece secured and the router stable,

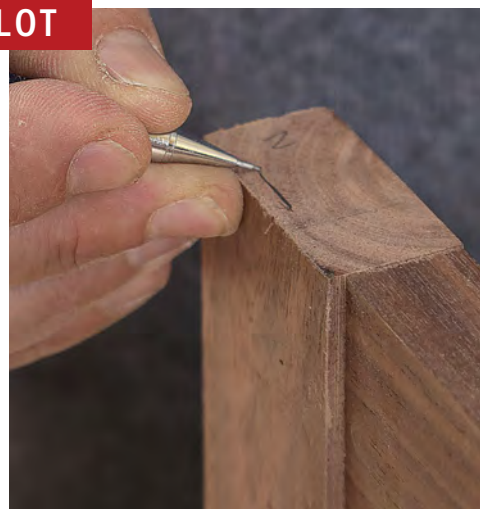
PULLS AND STAYS

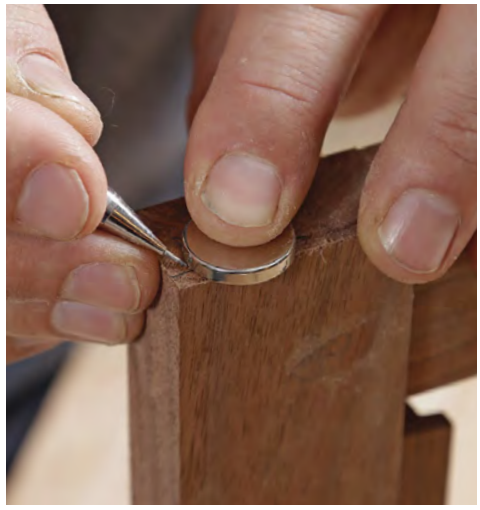
Concealing a single magnet in the door and a stack of smaller ones in the carcase adds function to your furniture without sacrificing clean lines.

Photo, this page: Joe Morgan; drawings: Dan Thornton

ROUT THE SLOT







Mark the mortise wall. *For strength, leave ⅛ in. of material between the mortise and the inside face of the door (left). Center the ¾-in. magnet on your first line to find the ends of the mortise (right). Add 1/32 in. on each end (1/16 in. overall) to give the magnet some wiggle room.*

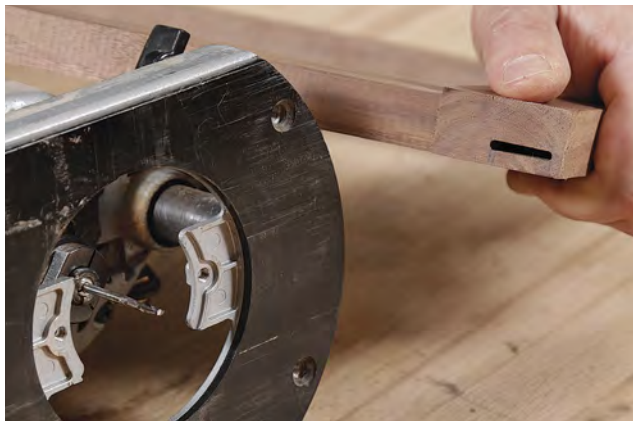
rout the mortise. Place a magnet inside and glue a plug in place.

Magnet testing

It is important to have the correct amount of magnetic force. Too much, and the door will be hard to open. Too little, and the door might not stay closed. Rare-earth magnets are remarkably strong, but their attraction falls off quickly as they move apart. To test how many magnets the carcase needs, first build the doors, install their magnets, and add their hinges.

Clamp the door in place. *Morgan first clamps the door tight to the bottom of his jig's platform with a wooden hand screw, then tightens the main clamp.*

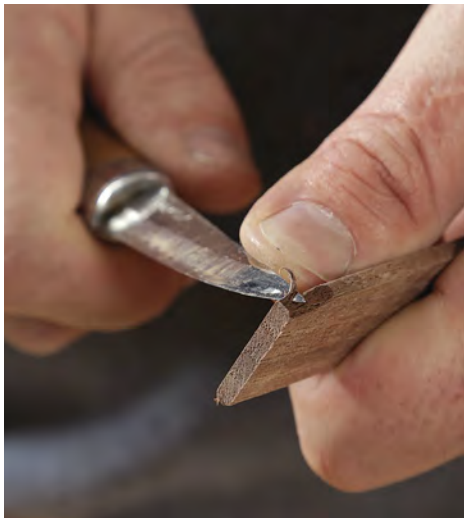
TIP To cut the ⅞-in.-deep mortise, Morgan chucks a ⅛-in. spiral bit in a ⅛-in. collet adapter, allowing him to use a standard plunge router.

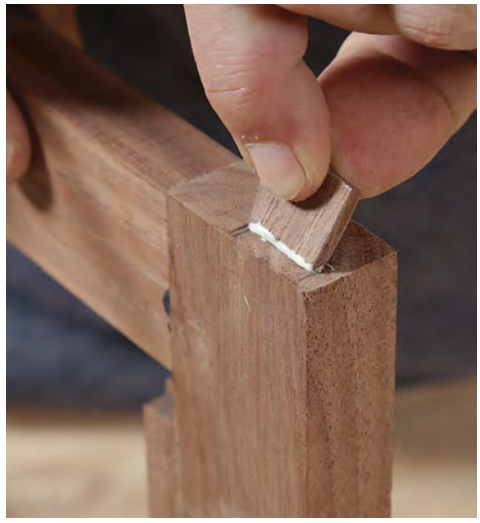


Set the stops. *Morgan's jig allows him to limit front-to-back and side-to-side travel, keeping his router on track. Because his magnets are ⅛ in. thick, Morgan uses a ⅛-in. solid carbide spiral bit. The magnets are ¾ in. dia. and he cuts the mortise ⅞ in. deep to leave a little room for a plug.*

INSTALL THE DOOR MAGNET

Drop it in and plug it up. *The magnet should sit about ⅛ in. below the surface (right). Morgan makes plug blanks at the tablesaw, then rounds the corners with sandpaper and tapers the leading end with a knife (below). Keep it a little overlong to make it easier to handle (below right).*





Make it flush. *A fine-tooth pull saw and slicing cuts with a sharp chisel make quick work of the extra length, leaving you with a clean, flush surface on the frame.*

For the test, I attach the door to the actual carcase or, if the case isn't finished, a tall scrap clamped vertically in the vise. Make sure the door is perfectly level and plumb. You will need a short length of 1/16-in. veneer and, to start, four or five 3/8-in.-dia. magnets. Hold the stack of magnets flush against the veneer and approach the back of the door. Start 2 in. from the hidden magnet and move slowly toward it to test the magnetic attraction. Your goal is to have the magnets engage when they are 3/4 in. to 1 in. apart. Add or remove magnets until you land in this range. Whatever number works is how many magnets you should put in the carcase.

Install the magnets in the carcase

Now that you know how many magnets the carcase needs, double check the width of the carcase member they're going into. In this cabinet, I'm using a subtop rail that has been trimmed to length and will be pocket-screwed in place. The part must be narrower than its final width by the thickness of the veneer you'll use to cover the magnets. Since my veneer is 1/16 in. thick, I ripped my rail 1/16 in. underwidth. The veneer strip will bring the part to the correct final dimension. A quick note: Because the magnets are so strong, I opt for shop-sawn veneer instead of typically thinner commercial veneer.

Mark where the magnets will go in the carcase and drill a 3/8-in. hole there as deep as the stack of 3/8-in. magnets is tall. After drilling, insert the stack. Now prepare the strip that will be glued onto the carcase rail to hide the magnets.

The next step is very important. Check and double-check to make sure the carcase magnets are in the correct orientation to attract the door magnet. (If they are flipped the wrong way, you will have a trick door that never shuts, since the magnets will repel each other.) Now glue the edging to the carcase. □

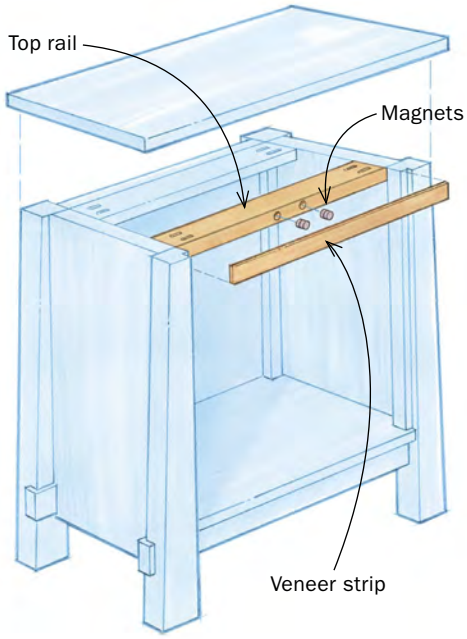
Joe Morgan is a furniture maker and marquetry specialist in Park Rapids, Minn.

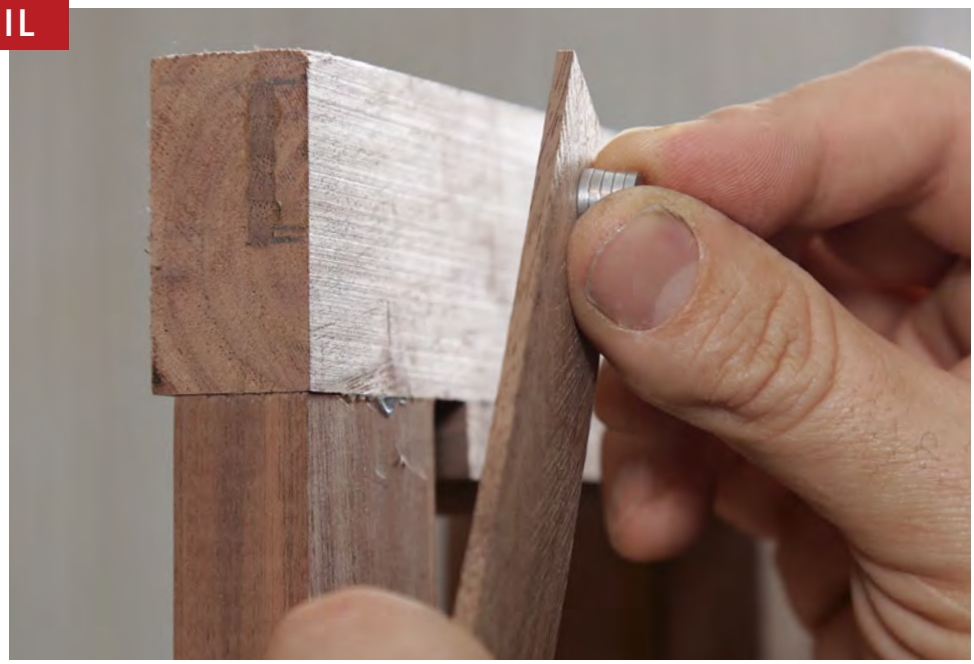
Online Extra

To learn more about this self-taught cabinetmaker turned fine furniture maker, go to **FineWoodworking.com/268.**

ADD MAGNETS TO THE RAIL

HIDE MAGNETS BEHIND VENEER





Magnet test. *To determine the number of magnets you'll need in the carcase, hang the door, hold a stack of magnets behind a veneer strip, and approach the magnet hidden in the door. You want their attraction to engage when they're about ¾ in. to 1 in. apart.*

Determine where to install the magnets. *Sticking the smaller magnets to the one in the door lets you easily mark their centerline on the top of the door. All you have to do after that is line up the door with its final position on the case rail and transfer the mark across. Measuring works, too.*

Drill the rail. *Morgan relies on a doweling jig to help him drill square to the board. Tape on the bit acts as a depth gauge. You want the top magnet to sit flush with the surface.*

Drop and cover. *After placing the magnets inside, glue on the shopsawn veneer strip. Morgan uses a clamping caul with clear packing tape on one edge.*

Photos, except where noted: Barry NM Dima