

6 Ways to

TRADITIONAL
PENCIL-POST



Beds may be the most important pieces of furniture in the house. Not only do you spend a third of your life in them, but their sheer size makes them the focal point of whatever room they inhabit, and a grand canvas for fine wood and craftsmanship.

Beds also pose unique challenges to the woodworker. Headboards (and footboards) are usually held upright by only two joints, which must also knock down to allow the bed to be moved. Beds are also large and bulky, requiring creative methods to deal with the big workpieces. Furniture makers past and present have addressed these challenges in a wide variety of ways; in fact, supporting a mattress may be the only thing beds have in common. For this article, I scoured the woodworking world to find six of the best approaches to bed design, taking a close look at how their makers managed the dance between looks and construction.

All of these skilled pros started with the same realities: mattress size and the desired mattress height. Then they confronted the knock-down joinery, making the side rails removable. While there

Six smart approaches cover



FRAME-AND-SLATS

CONTEMPORARY
PENCIL-POST



are numerous ways to support a mattress, most custom makers go with some version of ledger strips and simple wood slats. Mattress manufacturers make a lot of money selling box springs, but slats achieve the same end while saving you hundreds of dollars. Either way, the choice affects mattress height.

After you deal with the inescapable realities, though, a bed leaves you plenty of room to express yourself. Some makers rely

Build a Bed

BY MATTHEW TEAGUE



PLATFORM WITH THICK TIMBERS

almost any bed you can dream up



FRAME-AND-PANEL

on tradition for design and construction, while others make their own rules. Whether your tastes lean toward the 18th century or the 21st, the six construction methods shown here should cover almost any bed you can imagine.

Matthew Teague is a former Fine Woodworking managing editor. He now designs and builds furniture in his backyard studio in Nashville, Tenn.



SOLID SLABS WITH EXPOSED JOINERY

Photos: Kay Walsh (top); courtesy Ross Day (bottom left); Lee Fatherree (bottom right)

Traditional pencil-post

“This pattern was probably taken from an 18th-century bed that came into the shop for my father to repair,” says Lou Irion, former owner of Irion Company Furniture Makers in Christiana, Pa. Jonathan Sanbuichi, who now runs the company, builds this bed the same way it was done for generations.

When assembled, the headboard and footboard on this bed are too tall to fit through standard doorways, so tall-post designs are engineered to break down completely. To this end, posts attach to the headboard, footboard, and side rails using shallow tenons and traditional bed bolts hidden by bolt covers of varying designs.

The upper portions of the posts are tapered and hexagonal at the top, with hand-carved lamb’s tongues where the taper begins. The upward sweep of the posts draws the eyes upward toward the tester, or canopy. Joining the tester to the posts is straightforward: The maker drives nails into the tops of the posts, removes their heads, and the four corners of the tester are then drilled so that they simply slide in place over the headless nails.

To replicate the look of period rope beds, this design is often built using thick, heavy rails that could have resisted the lateral pull of the rope. To accommodate modern box springs, bed irons

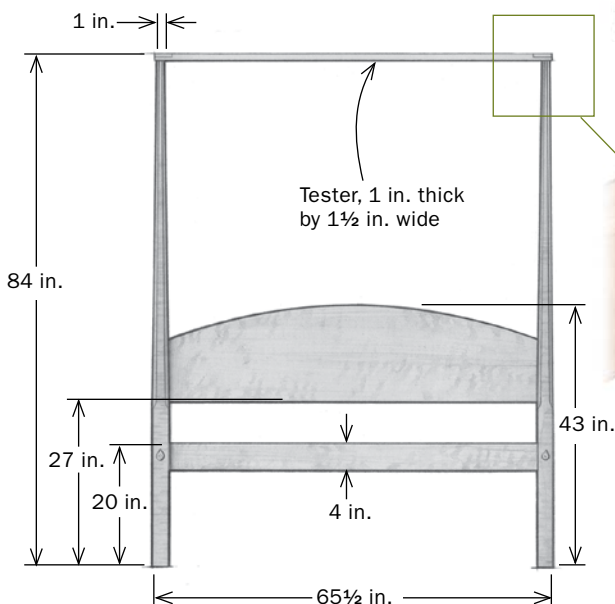
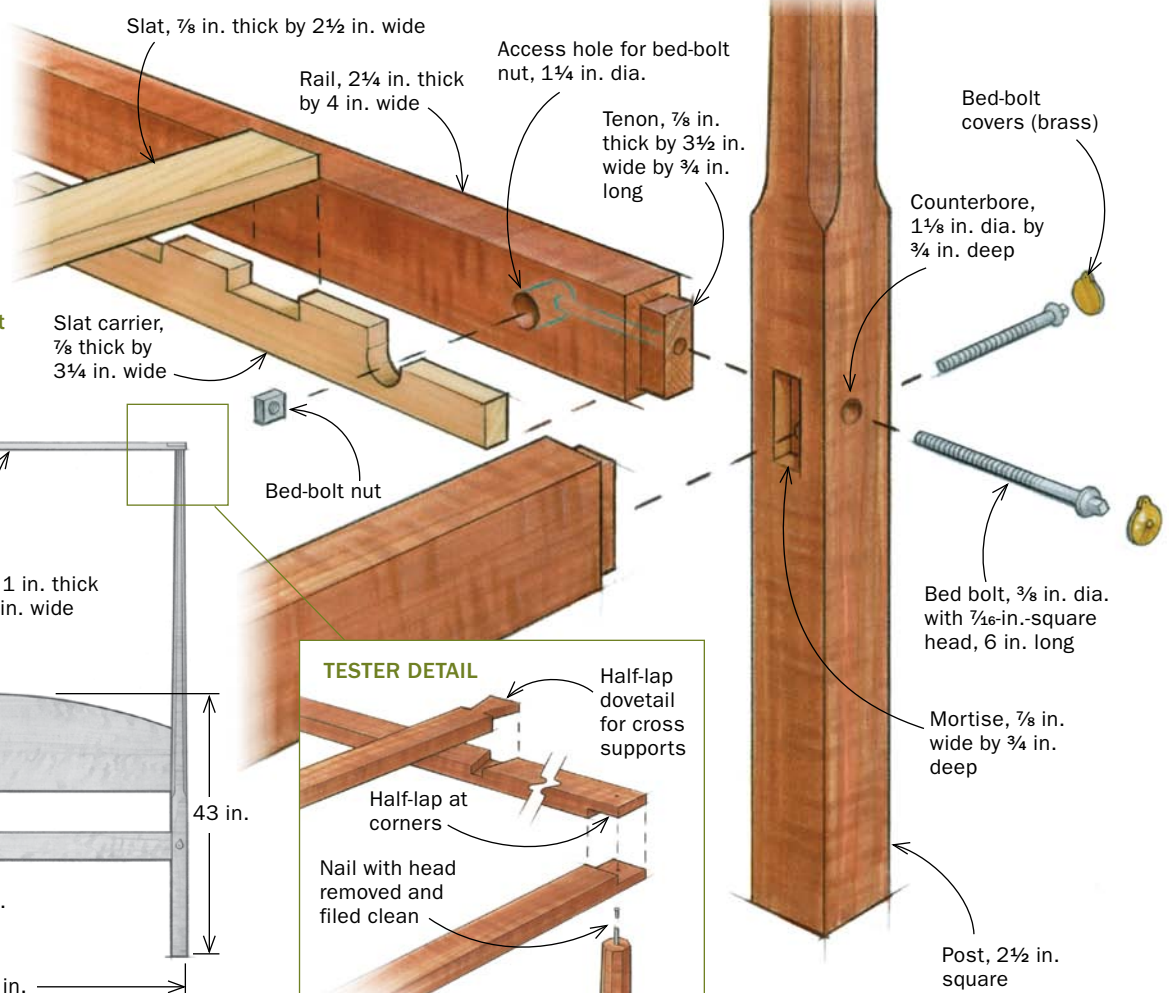


Shaker simplicity, canopy optional. Irion’s clean design is a tribute to 1800s-style pencil-post beds, and features brass covers over the hardware.

must be mortised low on the side rails, a look that almost requires the bed to be dressed with a dust ruffle. A cleaner look, which is also historically accurate, skips the box spring altogether and uses slats to support the mattress.

TRADITIONAL BED BOLTS, OFFSET FOR CLEARANCE

The tall posts mean this bed must knock down completely for transport. To prevent the criss-crossing bed bolts from colliding mid-post, the side rail’s bolt hole is centered, but the end rail’s bolt enters ½ in. below. As with all beds, the exact height of the rails is determined by mattress height and placement.



Contemporary pencil-post

Designer and maker Bill Huston of Kennebunkport, Maine, is drawn to simple forms like this variation on a traditional pencil-post bed. While eight-sided posts are more common, tapered four-sided posts offer a similar visual presence yet appear more streamlined and contemporary, a look Huston prefers. He also chose a simple pattern for the headboard, then centered three wenge inlays near the top, a modern touch that has become a signature on his work.

Like the traditional pencil-post design, the posts, rails, and headboard of this bed break down completely to fit through doorways. Where tradition calls for through-bed bolts, however, Huston uses shopmade bed bolts that are invisible from the outside of the bed. Instead of buying specialty bolts, Huston opts for inexpensive 6-in. hanger bolts that have machine threads on one end and wood threads on the other. The wood threads are permanently screwed into the posts. The other end of the hanger bolt is let into a hole drilled into the end of the bed rail. To secure that end of the

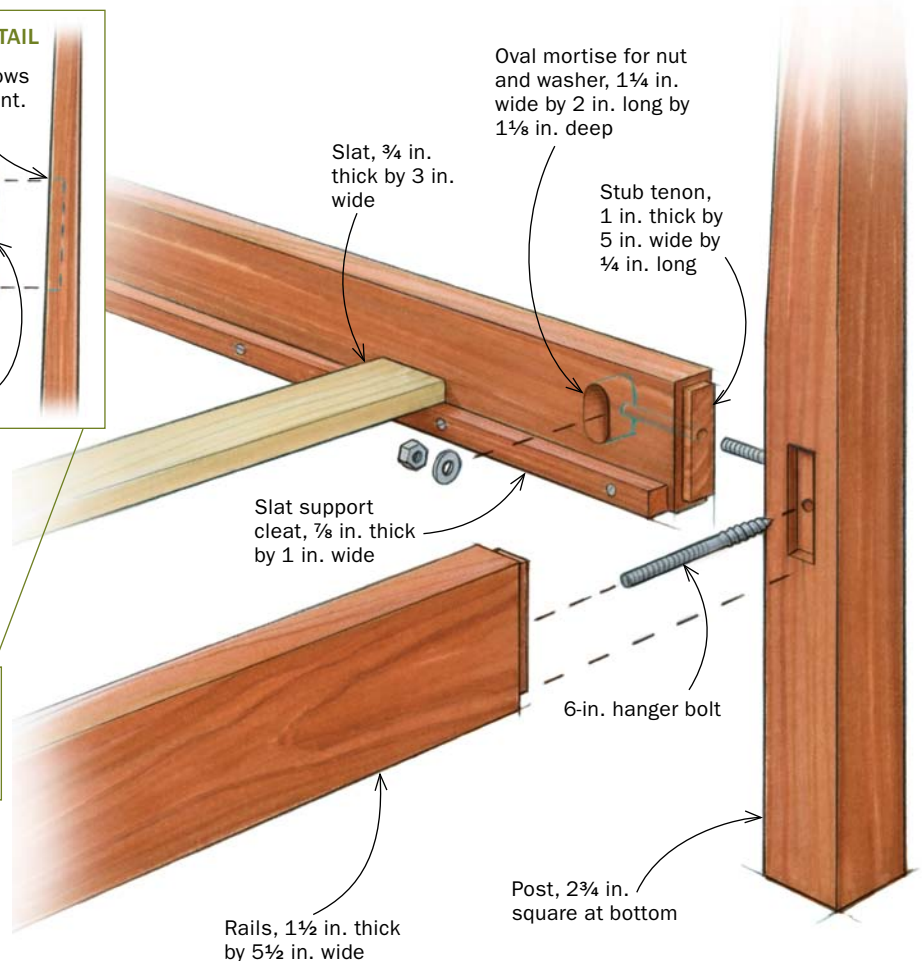
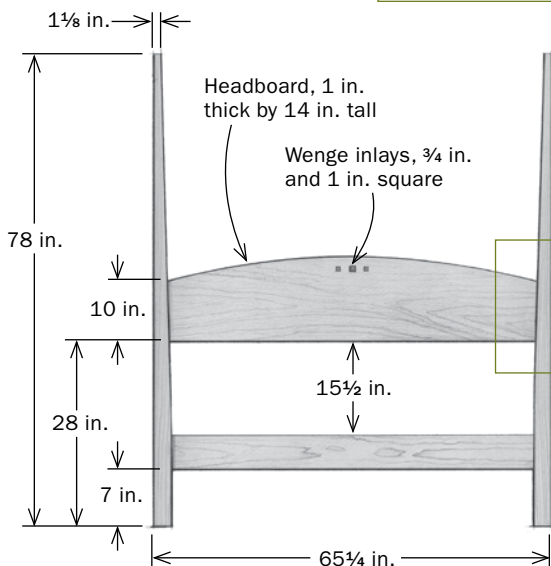
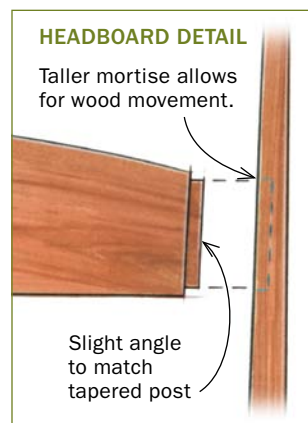


Tall posts with hidden hardware. Huston's modern take on the pencil post does away with the tester and visible bed bolts for a sleeker look.

bolt, a nut and washer are set into a mortise on the inside of the rail. Shallow $\frac{1}{4}$ -in. tenons on the ends of the rails make quick work of assembly and alignment. "As with any spare design," says Huston, "the more straightforward the design, the more important the choice of woods and graining."

HIDDEN VARIATION ON TRADITIONAL BED BOLTS

Hanger bolts are the key, with one side simply screwed into the wood. An easy way to drive them is to lock two nuts halfway down the machine-threaded end, and then turn the outer nut with a wrench. Ultimately the machine-threaded end goes into the end of the rail and emerges in an oval slot where a nut and washer can draw the rail and post tight.



Frame-and-slats

Kevin Rodel's clients requested a four-post, slat-type, Stickley-style Arts and Crafts bed in quartersawn white oak, but left the other details to his own tastes. In the end, Rodel guided them toward the Glasgow style, in keeping with his other work. He began by working out the shape of the posts as well as the slat size and orientation. Once the basic shape was determined, he turned to the joinery. Because the bed is a low-post design, the headboard and footboard can be solid assemblies glued up using traditional mortise-and-tenon joinery. For knockdown joints where the side rails meet the head and footboard, he opted for through-bed bolts (horton-brasses.com; part No. H-73) located using shallow tenons on the rails, much like those used on Irion's pencil-post bed. Instead of using traditional bolt covers, however, Rodel squared up the mortises used to recess the bolt heads and then plugged



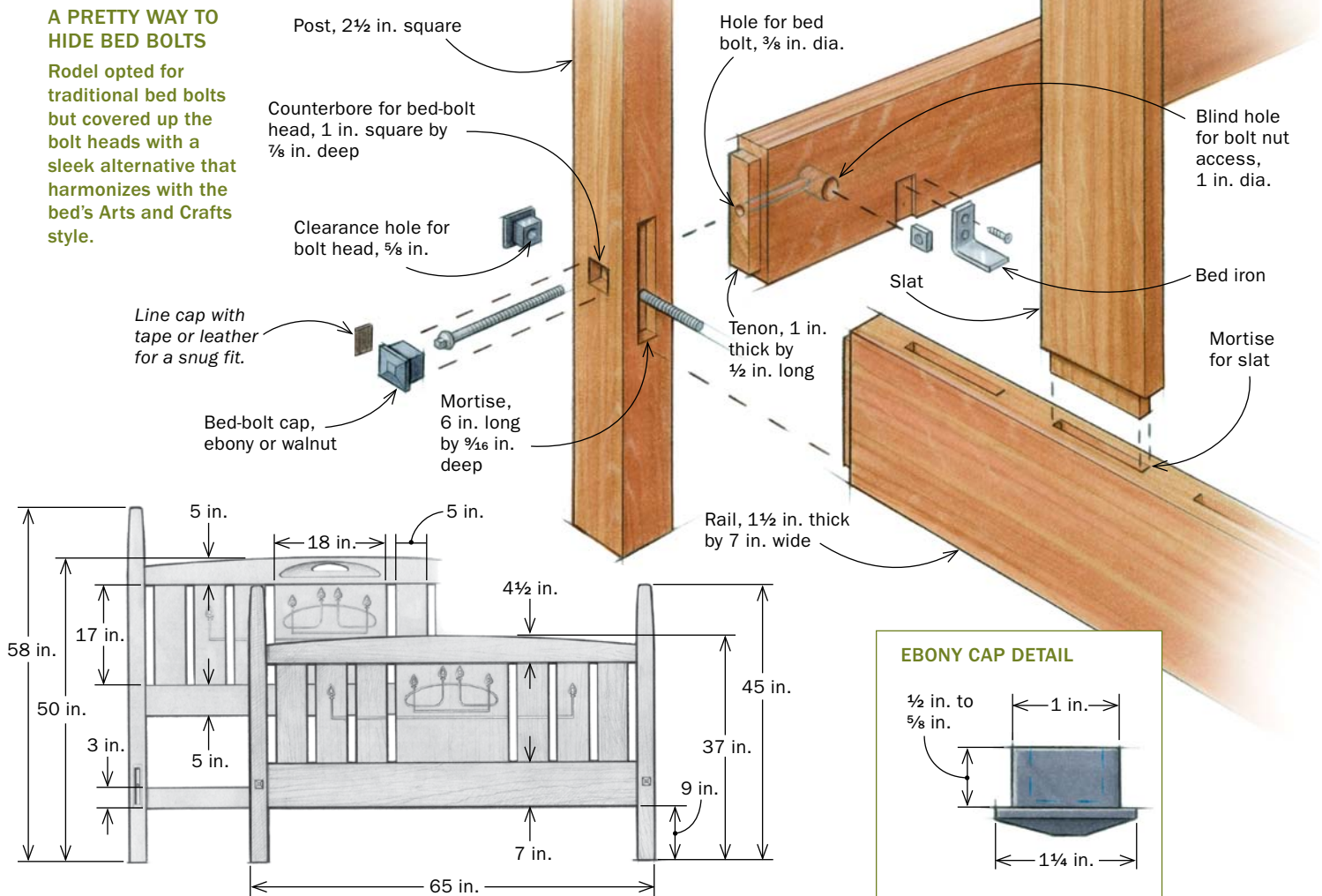
Hide the hardware, show off the artistry. The slats on Rodel's Arts and Crafts bed showcase the maker's detailed inlay and relief carving, while a clever cap conceals the hardware.

them with ebony caps. The edges of the caps are lined with tape or leather, which compresses just enough to create a friction fit, making them removable.

Because his clients already owned a mattress and box springs, he attached simple bed irons (also available from Horton Brasses) as low as possible on the side rails.

A PRETTY WAY TO HIDE BED BOLTS

Rodel opted for traditional bed bolts but covered up the bolt heads with a sleek alternative that harmonizes with the bed's Arts and Crafts style.



Frame-and-panel

Design ideas often come from unexpected places. The inspiration for Seattle woodworker Ross Day's bed came while he was watching a commercial promoting travel to Japan and featuring someone playing a *koto*, a Japanese instrument with strings stretched over a long, convex wooden soundboard. "The shape of the instrument attracted me," he said, "I just really liked the curves."

Day began with the curves in the top rail of the headboard, and later mimicked that curve throughout the bed in both the shapes of the panels and in the compound angles of the legs.

A few years earlier, Day had purchased a few planks at the lumberyard, convinced that their curved graining would one day come in handy. He bandsawed the planks into veneer, jointed the seams with a plane, and attached them to plywood cores. The veneered panels are grooved on edge and glued into the tenoned frames



Harmonious lines, veneer construction. Matching curves inspired by musical instruments are paired with the beautiful grain of custom-sawn veneer.

using solid cherry splines. Small gaps around the panels create interesting shadowlines.

Day's ingenious version of a hidden knockdown joint uses cap-head screws, accessed at one end by a hidden mortise in the rails and secured at the other end in threaded inserts that are set into the back side of a slip tenon in the headboard and footboard.

SLIP TENONS MAKE FOR A STRONG AND ACCURATE JOINT

Day's bed features panels and rails joined to the posts by slip tenons. They're strong, forgiving, and the matching mortises are easy to make with a router or a slot mortiser.

Side rail, 1 3/4 in. thick by 7 1/2 in. wide

Cap-head screw, 3/8 in. by 2 1/2 in., and washer, goes into threaded insert.

Outside of post tapers to 1 5/16 in. at top

Slip tenon, 1/2 in. thick by 6 3/4 in. wide by 1 5/8 in. long

Access pocket for bolt, 1 1/2 in. wide by 3 in. long by 1 in. deep

Threaded insert

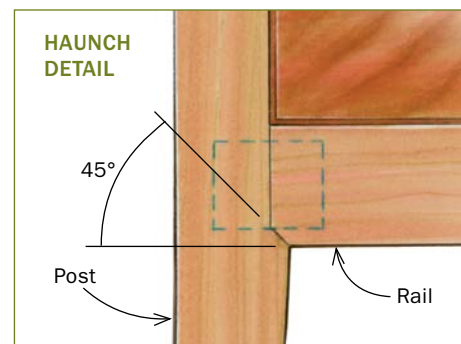
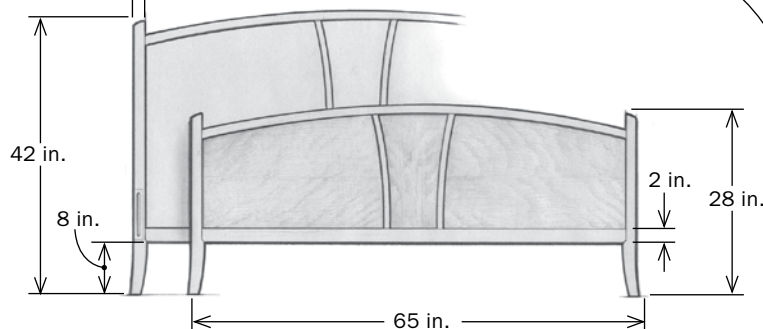
Rail, 1 3/8 in. thick

Double slip tenons, 3/4 in. thick by 1 7/16 in. wide by 1 7/8 in. long

Posts, 1 7/8 in. sq. at haunch, 1 3/16 in. sq. above haunch

L-bracket

Post, 1 1/4 in. at foot



Solid slabs with exposed joinery

While many makers try to envision the lines of a design first and figure out the joinery later, Oakland, Calif., woodworker David Fay tries to “refine the lines and minimize ornamentation so that the actual construction method is the thrust of the design ... to emphasize the simplicity and elegance of the joinery.”

For his Rockwell bed, Fay’s starting point was finding an attractive joint for a detachable rail. The *sage-kama*, a joint common in Japanese architecture, came to mind. Fay learned to cut this wedged, half-dovetailed, through-tenon early in his training when he used one to build a sawhorse in a woodworking class, and he knew that the wedges are easily tapped back into place when they loosen over time.

This particular bed is designed to work with a futon mattress. Cleats are attached to the inside of the bed rails and supporting slats are set on top. The cleats are positioned so that the top of the futon sits about 6 in. above the rails.

The head and footboard also take advantage of their joinery as



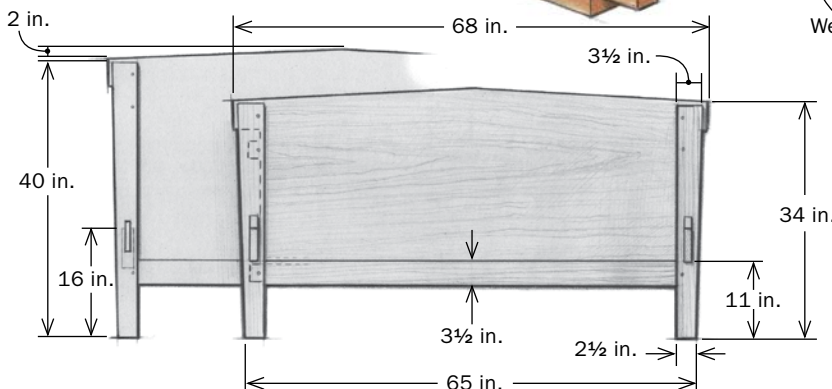
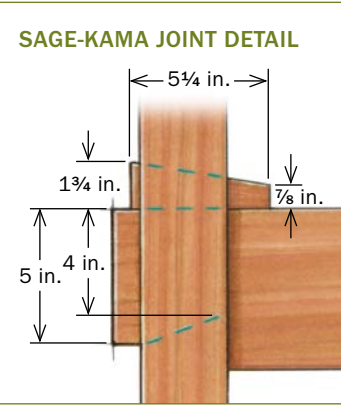
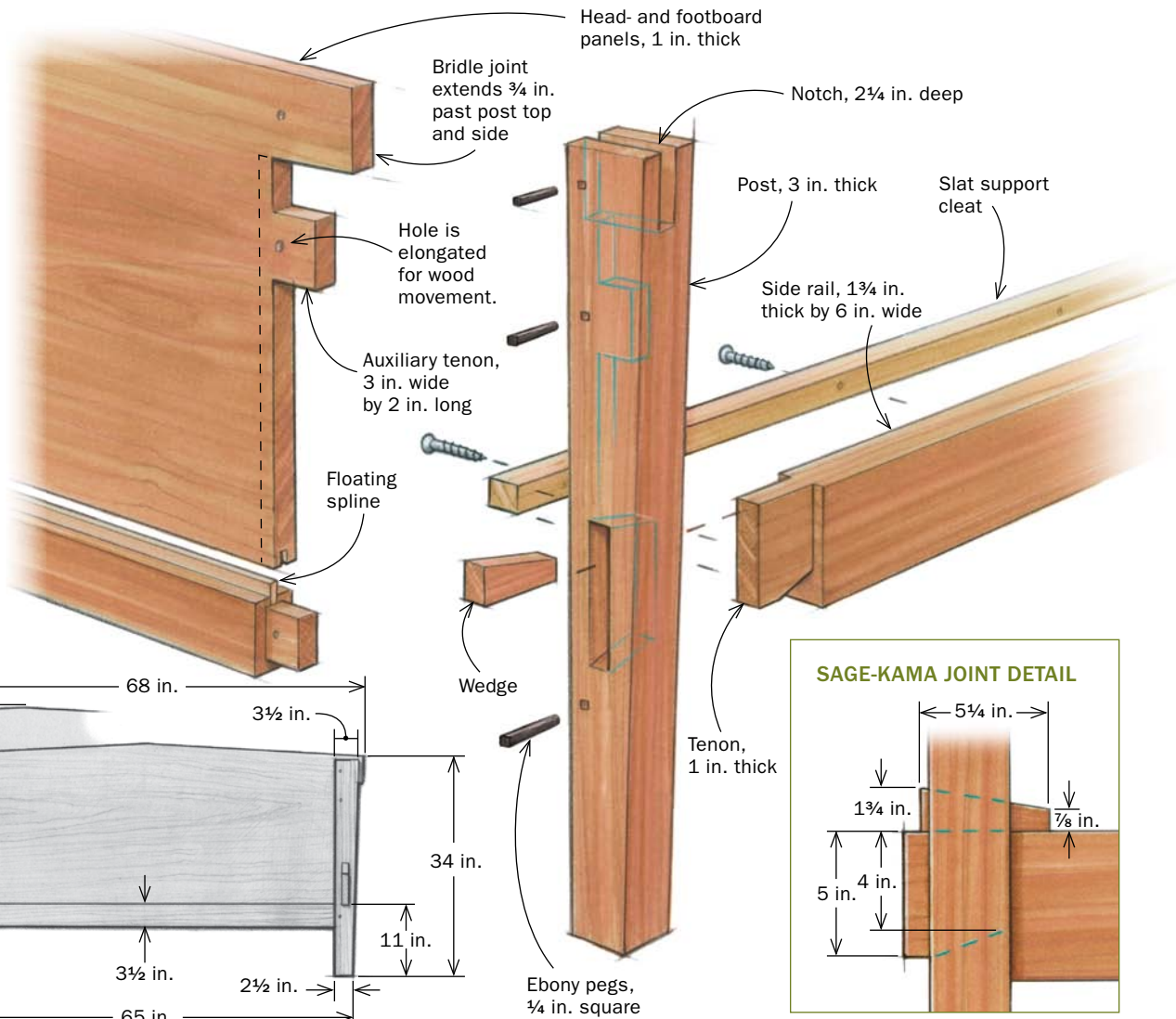
Perfect together. Strong joinery, elegant lines, and beautiful boards: Fay’s Rockwell bed shows off all three.

ornamentation. At the tops of both the headboard and footboard are wide bridle joints

where the bookmatched Narra panels are let into mortises in the posts. The rest of the panel, including an auxiliary tenon, is also mortised into the post. Only the top of its joinery is pegged, forcing wood movement toward the bottom, where an unglued spline can accommodate it.

EXPOSED JOINERY ATTACHES RAILS AND STABILIZES SOLID PANELS

When Fay decided to showcase the joinery in his Rockwell bed, he realized that the joint had to be simple, attractive—and bombproof. The wedged half-dovetail *sage-kama* uses the same forces that bear on the bed to keep the joint tight. On the head- and footboards, pinned tenons and bridle joints create solid assemblies, while a long floating spline keeps the wide planks in line with the rails.



Platform with thick timbers

Robert Spangler's inclination toward Asian design ties in well with a renewed interest in platform beds. This low-slung platform bed is an evolution of earlier designs. "I've always really liked the wide rails around the side," says Spangler, "because it accentuates the horizontal lines in the furniture."

Spangler's design is easily the least traditional of the lot. Not only is it a platform design, it also features a headboard that doesn't run all the way to the floor but instead appears to float. The headboard is tenoned into an angled riser block on the bed frame, which tilts it backward about 11° to make it comfortable when sitting up in bed.

While many platform beds are built so that the mattress slides around on top, Spangler set his inside the frame, with 1x4 slats resting on angle brackets. This not only allows the mattress to sit lower, but it also locks it into place.



Graceful curves crown strong, solid-wood construction. Asian elements in the headboard work well with thick timbers that cradle a low-slung, futon-like mattress.

Another interesting joinery detail is in the feet, which are simply blocks of wood that are joined in pairs by a simple rail, and notched to hug the frame above. The frame is joined with shop-made bed bolts let into the horizontal members, and a pair of alignment dowels. The bed bolts are nothing more than a 5-in. length of threaded rod outfitted with a nut and washer on each end.

PHYSICS KEEP HEAVY PLATFORM IN PLACE

There's little mystery to the L-shaped frame geometry that defines Spangler's Port Blakely bed. What might seem more mysterious is how the bed attaches to its pylon-like feet, but the answer is strikingly simple. Gravity and the sheer weight of the bed help keep it in place; the only additional locator is a ¼-in.-deep notch at the top of the foot blocks that keeps the frame from sliding sideways.

