



Clamping up a large carcass is much easier with the author's carcass-press clamping system than with ordinary pipe or bar clamps. The press consists of two units, each of which is made of four veneer-press screws, a couple of lengths of heavy metal strapping, a few boardfeet of hardwood and a handful of nuts, bolts and washers.

Dovetailing Large Carcases

Dedicated bench and clamping system simplify and square the work

by Charles Durham, Jr.

I made my first dovetailed carcass with wide pine boards salvaged from the original kitchen in my first house. Dry, flat and wide, those boards became a wonderful blanket chest. Since then, much of the lumber I've used on large-carcass projects has been less than ideal. Wide, flat and dry are more the exceptions than the rule, whether you use naturally wide boards or glue narrower stock to width. When wide boards are cupped, twisted or both—even a little—making dovetails that fit well is tough. Yet accurately fitted and squared dovetail corners are crucial to the success of large projects like blanket chests, highboy tops and slant-front desks.

The other problem with large-carcass projects is the glue-up. Even if you've cut good, accurate dovetails, gluing and clamping big boards can be a real headache or, worse, result in a flawed project—especially if you work alone, as I usually do. Having the pipe clamp I just tightened fall off and dent the carcass as I tighten the next clamp is just one more hassle than I need.

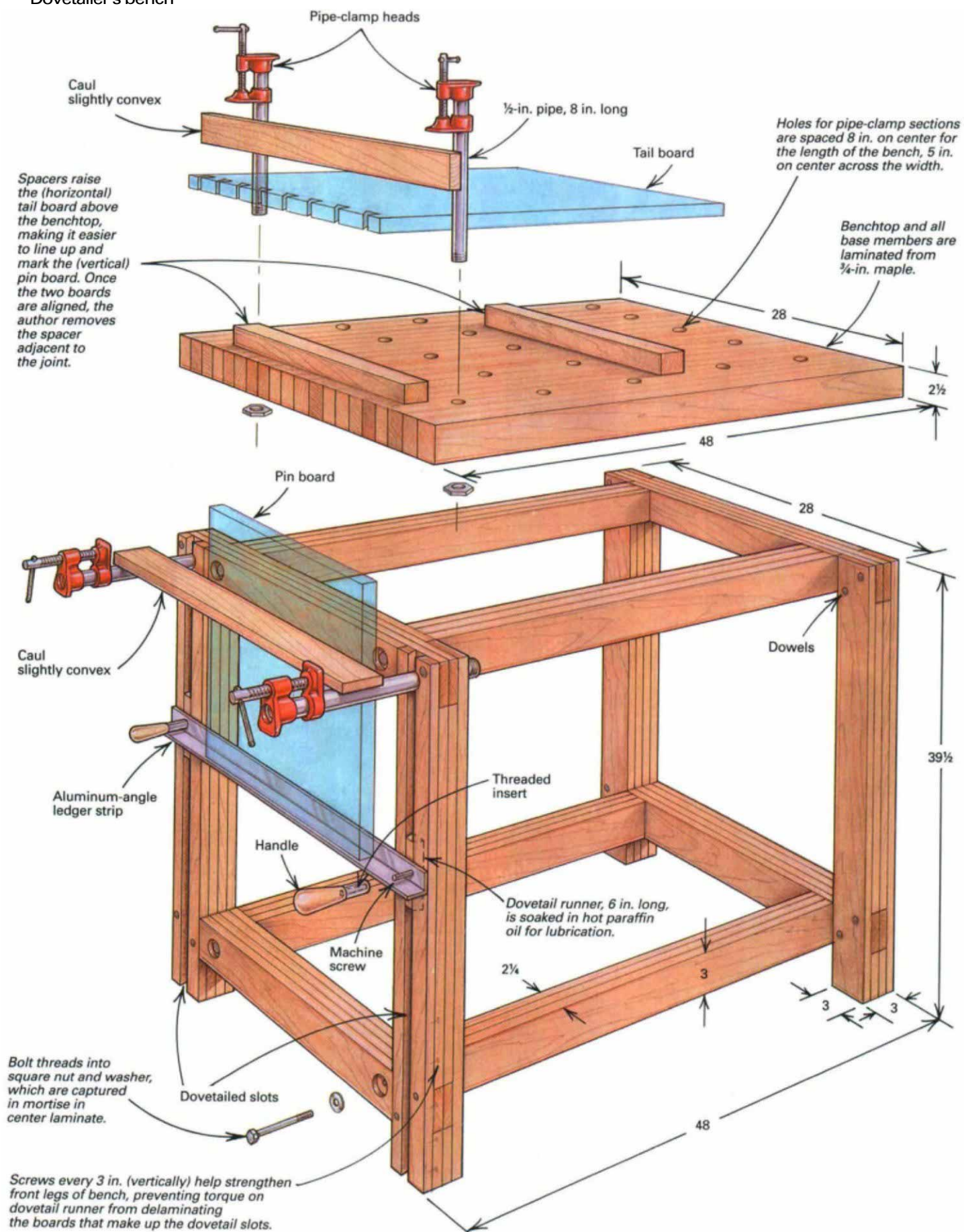
I solved both problems by building two assemblies: a dovetailer's bench to hold the boards flat, secure and indexed for accurate layout and cutting (see the drawing on the facing page and the

photos on p. 52) and a carcass-press clamping system to help me close wide joints with uniform pressure, without having to wrestle an armload of clamps (see the photo above). Material for both is available at any good lumberyard, and you'll find all the hardware you need either at your local hardware store or through mail order. Total cost for materials was about \$300, with lumber being the most expensive item. By substituting construction lumber for the hard maple I used, you could halve that amount.

Dovetailer's bench

The problem with laying out and cutting dovetails on a typical cabinetmaker's bench is that most benches are about 32 in. off the floor, which constrains you to narrower carcass work. To do bigger jobs on an ordinary bench, you have to jury-rig a support and clamp system to hold things flat and steady at the right height while you mark, saw and chop. My bench is a large, elevated clamping device that lets me overcome warp on wide boards, allowing me to dovetail the largest boards with ease and precision. The bench's working surface is at elbow height: 42 in. off the floor, which is long enough for the longest pin member I'm likely to encounter.

Dovetailer's bench



The deepest carcass I would ever dovetail is about 25 in. So I added space for the clamp heads (see the drawing) to establish the benchtop's width of 28 in. A 72-in.-wide breakfront was the longest project on which I saw myself using the bench, so I decided to make it a bit more than half that length (48 in.) to keep that breakfront's top and bottom from falling off.

I use pipe-clamp heads to hold boards in place (see the top photo on this page) and cauls extending across the bench's width to take out any warp in either board. An aluminum angle that raises, lowers and locks with a twist of the wooden handles serves as a



Marking tails—The author uses an aluminum template to mark out the tails on the side board of what will be a mahogany blanket chest. The short sections of pipe clamp at the front of the dovetailer's bench ensure the board remains flat for an accurate layout.



Marking pins from tails is more certain with a chisel than with a knife because there's no danger of the chisel following the grain. It's important, though, to make sure the chisel is absolutely perpendicular to the surface of the board you're dovetailing.

ledger strip for the pin member (see the drawing on p. 51).

I cut dovetails in a fairly conventional manner, but with a couple of twists. I lay out the tails first, using a sheet aluminum template I made for the purpose. Then I saw to the line with a Bosch barrel-grip jigsaw and chop the waste out on my dovetailer's bench. The jigsaw is so much faster and is at least as accurate (probably more so) as cutting with a backsaw. I mark the pins from the tails, aligning the tail board on the benchtop with the pin board on the aluminum ledger, using a chisel and mallet to transfer lines (see the bottom photo on this page). A light, clean rap ensures a sharp line with no chance of following the grain, which can happen when marking with a knife. Again, I use the jigsaw, this time with its base set at approximately 14° (from a bevel-square set on the tail board) to cut to the line and then chop out the waste on the bench. The fit I get with this system is nearly perfect.

Carcass press

My carcass press will close any size project I'll ever build and will do it in much less time than it takes with loose clamps. With the time saved, I can close the joints correctly before the glue grabs. The only fixed dimension is its internal working height—enough to take those 25-in. boards I produced on the bench. The carcass press consists of a pair of clamping frames made of maple laminations and pre-punched, galvanized steel strapping. The head member of each is fixed and has veneer-press screws mounted to it. (Veneer-press screws are available from Constantine, 2050 Eastchester Road, Bronx, NY. 10461; 800-223-8087.) A foot member moves along the galvanized strapping to accommodate carcasses of various widths. The clamping frames can themselves be positioned as near or far from one another as need be (see the photo on p. 50).

At each end of the maple laminations, I made a sawcut precisely as deep as the strapping is wide and drilled holes for the bolts that connect the wooden end pieces to the metal strapping. The straps I use are 60 in. long, but they're available in virtually any length. Smaller wooden cauls ride on the strapping to transfer the clamping force from the press screws to the carcass. Ideally, the clamping force should bear directly on the corner of the carcass, but I find that placing the force just inside the joint, right on the baseline, works just as well. With the 8-in. press screws and this setup, there's a range of about 4 in., fully opened to fully closed.

The elimination of loose clamps is the major benefit provided by the carcass press. Instead of watching and worrying about clamps falling off, I can monitor the joint. But there's another advantage. Quite often, clamping a project together forces it out of square in one plane or another. With loose clamps, the unending adjustment required to restore squareness can be maddening. None of that has been necessary since I began using the carcass press.

Moreover, when using loose clamps, if a carcass winds (so that diagonal corners are high), there's nothing you can do with ordinary clamps. With the carcass press, I just wedge shims between press and carcass in the high corners, and it's flat again.

In using the carcass press, I work at table height on a sheet of laminate-covered particleboard. Because the bottoms of both clamping frames that make up the press are square, they stand upright on their own, making it easy to slide the carcass into the press. I get the joints just started outside the press and then place it inside and dry-assemble the carcass. Only after checking to see that everything's going to close up properly do I apply glue and clamp the carcass for good. □

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