

# Master Class

## A new breed of shaving horse

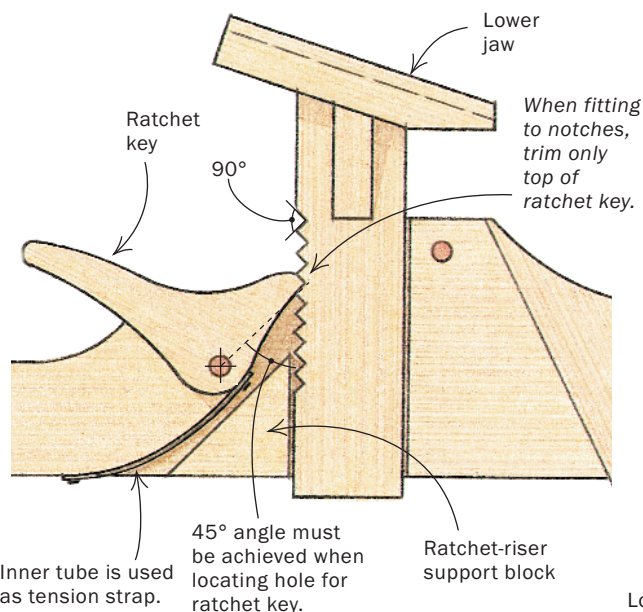
BY BRIAN BOGGS



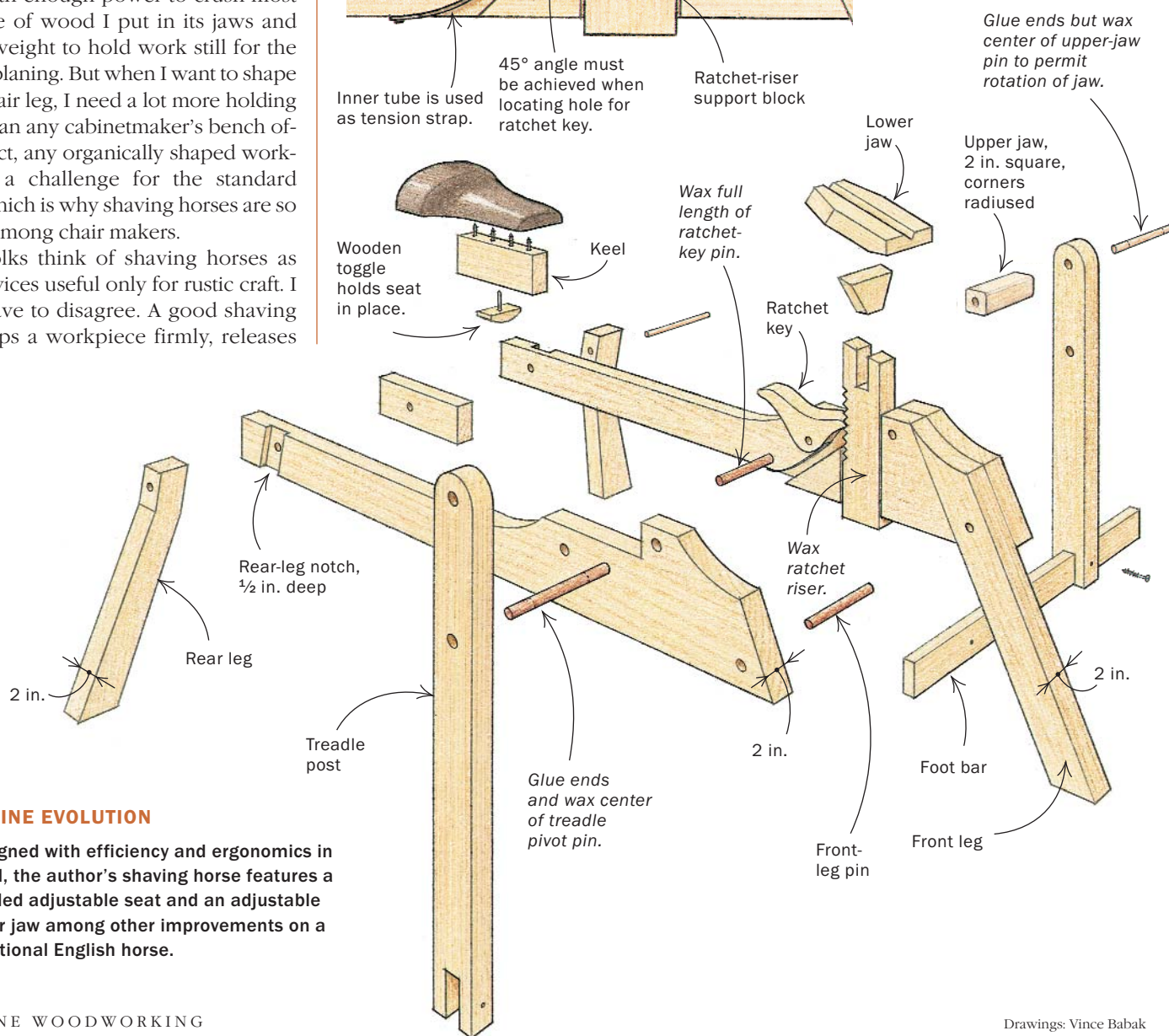
For 15 years I have enjoyed excellent service from my Ulmia cabinetmaker's workbench. It is a massive piece of European beech with enough power to crush most any piece of wood I put in its jaws and enough weight to hold work still for the heaviest planing. But when I want to shape a bent chair leg, I need a lot more holding finesse than any cabinetmaker's bench offers. In fact, any organically shaped workpiece is a challenge for the standard bench, which is why shaving horses are so popular among chair makers.

Most folks think of shaving horses as crude devices useful only for rustic craft. I would have to disagree. A good shaving horse grips a workpiece firmly, releases

### Ratcheting head is at the heart of this horse



Cover both jaws with leather after assembly.



### EQUINE EVOLUTION

Designed with efficiency and ergonomics in mind, the author's shaving horse features a padded adjustable seat and an adjustable lower jaw among other improvements on a traditional English horse.



# Master Class (continued)

and readjusts its grip as quickly as you can move your foot and allows more control and sensitivity for holding parts without bruising them than any other clamping system I know.

A shaving horse is basically a foot-operated clamp. The lower jaw supports the workpiece while the upper jaw presses down on it in response to foot pressure. This is an ideal arrangement for working with spokeshaves and drawknives because the harder you pull with the tool, the more pressure you naturally exert with your feet to maintain your balance. And the more pressure you exert with your feet, the more clamping force you exert on the workpiece.

The first horse I made was nailed together from fence planks and modeled on traditional English horses. I've gone through four more since then, modifying the design each time to increase leverage, comfort and versatility. When I injured my back several years ago, the ergonomics and efficiency of the horse became especially important. I researched and experimented with different working positions to find the optimum seat height, seat angle and workpiece elevation, then designed the horse around them.

I ended up with a horse that makes several departures from its old English predecessors. I built it taller and added a tilted, padded and leather-upholstered bicycle-type seat that can be adjusted forward and back. I cut back the front of the horse to allow more clearance forward of the treadle so that curved workpieces could be rotated freely. And I replaced the traditional lower clamping surface with a jaw on a ratchet assembly, which permits quick adjustment of the opening and allows me to keep the work angle constant.

While I think this horse is just right for chair making and suits my frame, you may want to make adjustments to fit you and your work. Start by building the base and saddle. Try getting on and off the horse, and see how it feels. I think the tallest horse you can mount easily is your best height. The taller the horse, the more open the angle of your thigh to your back while you are working, and the less strain on your back. Err on the tall side—you can always shorten the legs.

Next, find the best spot for the clamping treadle. It should swing from a pivot point



**Don't glue me in.** The whole length of the ratchet-key pivot pin is waxed before assembly. If the rubber tension strap ever breaks, the pin can be knocked out and the key removed for the repair.



**Go deep.** Be sure the screws through the lower jaw are amply countersunk.



**Delicate drill work.** If the hole for the treadle pivot pin is not accurately drilled, the whole clamping system can be thrown off. Drill by hand from both sides or set up an extension table and use a drill press.



**Watch that squeeze-out.** Glue the ends of the treadle pivot pin but not the middle. Minimize squeeze-out and thoroughly wax the center portion of the pin.



**Wax and rap.** With the ratchet riser in place and well waxed, coat the sides of the riser support block with glue and tap it up against the riser.

# Master Class (continued)

directly above the most comfortable position for your feet, just a little ahead of your knees. You don't want to have your legs fully extended while you are working. When you find the right spot, drill the hole for the treadle pivot pin. Don't cut the treadle to length yet, but fit it temporarily with the foot bar attached. You want the treadle's foot bar to be as low as is comfortable and still clear the floor by about 1 in.

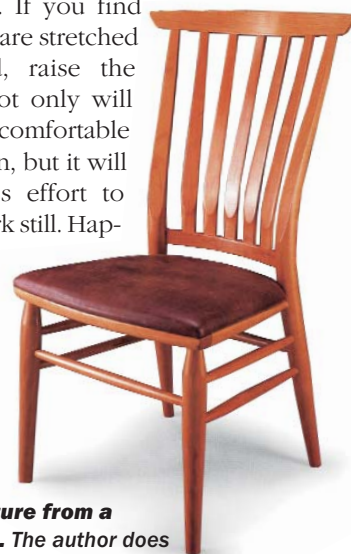
To determine where to locate the upper jaw, you first need to build the ratchet assembly for raising the lower jaw. This mechanism must operate very smoothly and hold securely to be worthwhile, so pay close attention to the alignment of the ratchet key to the ratchet-riser notches. The riser should slide up like a well-made drawer—no resistance but no slop, either. You'll need to plane or scrape the sides of the riser carefully. Wax is helpful, too.

Once you have the ratchet riser in place and working well, it's time to determine the optimal position for the upper jaw. The

position of the upper jaw determines the height at which you'll be cutting and therefore the comfort and efficiency of the horse (the lower jaw simply adjusts to accommodate the thickness of the workpiece). The upper jaw is a square piece of stock with rounded corners that is drilled through to accept a pin. For fitting, cut the jaw overlength by  $\frac{1}{4}$  in. so it sits tightly between the treadle posts. Clamp it in place (without the pin) between the treadle posts at about the height of your elbow as you sit on the horse. With a piece of soft wood in the jaws, apply light foot pressure, and take a few practice cuts with a drawknife. Raise or lower the jaw until the cutting action feels natural. Your elbows should be in line with your shoulders, and your shoulders should be relaxed. Then mark and drill the treadle posts for the upper-jaw pin and cut the jaw to its correct length.

When using this horse, keep the lower jaw in the highest position that will ac-

commodate the workpiece. For best leverage and leg position, the clamping treadle should not need to travel far from the vertical position. If you find that your legs are stretched way forward, raise the lower jaw. Not only will you be more comfortable in this position, but it will also take less effort to hold your work still. Happy trails!



**Shapely furniture from a shaving horse.** The author does all of the drawknifing and spoke-shaving for his chairs while seated on his shaving horse.

## The essential dimensions of a domesticated horse



For a more ergonomic seat, you can glue wedges to the underside that raise the back 1 in.

