

The Holtzapffel Workbench

This 19th-century design is a bit German, a bit French and entirely ingenious.

Plus, we came up with a way around the typical sagging tail vise.

The Industrial Revolution did as much harm as it did good to the world of woodworking and workbenches. The Industrial Revolution created machines that could make metal handplanes and handsaws in tremendous numbers, and it also created the woodworking machinery that made those hand tools obsolete.

The Industrial Revolution created the manual training movement when good-minded people

thought that children should learn to do something with their hands (what with the entire world becoming automatic and mechanical). And the Industrial Revolution created both the market for and ability to manufacture workbenches to encourage the spread of the manual training movement.

And this, in my opinion, changed the course of workbench design in the 19th and 20th cen-

turies. The old-style craftsman-made benches were displaced by the modern manufactured form, which is dominant still today.

But in 1875, when the world was balanced on a precipice with its rural past behind it and the modern age spread before it, this bench was published in an English book: "Holtzapffel's Construction, Action and Application of Cutting Tools Volume II" by Charles Holtzapffel.



This 19th-century workbench can be built to be knocked down with bolts, or it can be built as a permanent addition to your shop, as shown here.

It's a tremendous book even today and is crammed with details on working wood and metal with both hand and power tools.

The author was the head of Holtzapffel & Co. of London, a tool-making enterprise that is best known for its line of elaborate lathes but also manufactured everything from scissors to gardening equipment to exquisite miter planes.

I have doubts that Charles Holtzapffel actually designed or even advocated this particular bench. He died in 1849, and the edition of my book came out in 1875. I really should scare up an earlier edition of the book and see what sort of bench might be lurking there. Perhaps I'll be able to afford that old tome after I finally go back to school and get a law degree like my parents wanted.

Why Build the Holtzapffel?

The Holtzapffel workbench is the third archaic workbench that I've built and put to use in a modern shop. Each of the three benches had a deep connection to the culture that developed it. The bench from A.J. Roubo's 18th-century books is as French as béarnaise, strong coffee and berets. The bench from Peter Nicholson's 19th-century "Mechanical Exercises" is entirely British. The only other place this English bench shows up with any regularity is in the Colonies.

The Holtzapffel is a cultural mongrel. The Holtzapffels were Germans who settled in England. And the bench has features of both cultures that, in my opinion, create a bench that is outstanding for cabinetmaking.

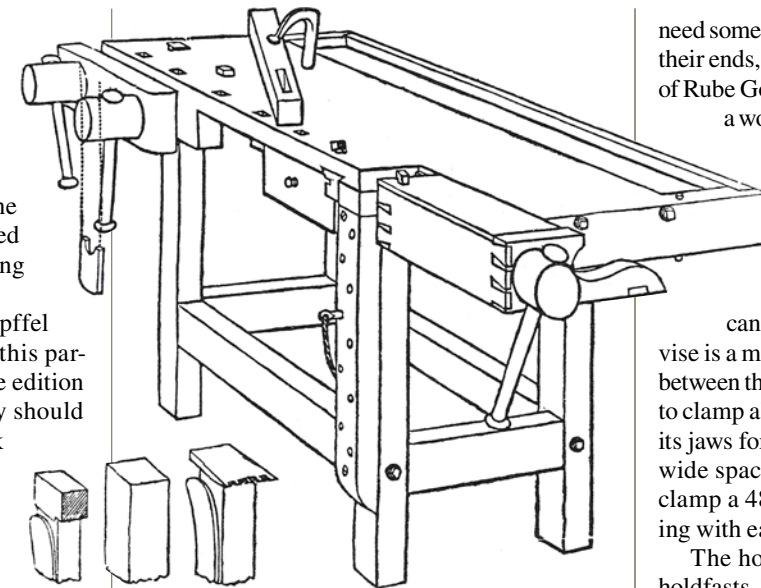
From the Germanic tradition, the Holtzapffel has a traditional tail vise on the right side that most English cabinetmakers and joiners would sniff at as unnecessary. The skeleton of the bench – its base and top – are equal drams German and French. The massive legs are Gallic. The tool tray and knockdown bolts are more common on German benches.

The workholding is also a melting pot of Stilton, Camembert and Butterkase. The bench shows holdfasts (tres French), a variety of planing stops (English and French), a twin-screw vise (quite British), and a leg pieced with holes for supporting long stock (fairly standard pan-European fare).

Usually when you start mixing and matching bits and pieces like this, you end up with something along the lines of catfish pizza. But all the parts of the Holtzapffel work together like, well, I'll spare you any more food metaphors.

About the Bench's Framework

The original bench has a French undercarriage that is joined using bolts in some places. The legs and stretchers of the benches are – for the most



The Holtzapffel has old-world features, such as its tree-trunk legs. And it has elaborate workholding, such as its sexy-looking tail vise. Unlike some other benches of this era, the Holtzapffel blends several traditions to create an effective bench.

part – pushed out so they are flush with the front edge of the benchtop. This arrangement allows you to use the legs and stretchers as clamping surfaces, which is handy when working long boards and large frame assemblies.

I've built five or so benches using a bolt system and find it great for benches that will have to travel on occasion. For homebody benches, drawbored mortise-and-tenon joints are just as good. If you go with the bolt system, you can shorten the tenon on the stretchers to 1" long if you like. Leave it unglued, obviously.

If you go with the bolt system, you'll also want to modify the way the top of the bench attaches to the base. I went with the permanent old-school French method: drawbored mortise-and-tenon joints. If you want to knock down your bench, I suggest you add a second rail to the top of your end assemblies then use lag bolts (in slotted holes) to secure the top.

My base is built using hard maple, though any heavy wood that is inexpensive and plentiful will do just as well. Yellow pine, Douglas fir and white oak are excellent choices.

About the Bench's Workholding

The top is made using some figured ash that was exquisitely dry, a bargain and easy to work with. Those three traits – and ash's weight and stiffness – made it an ideal choice for this benchtop. I implore you, however, to use what you have on hand. There is little magic in choosing a wood for a workbench, just go for stiff, heavy and cheap.

Far more important than the species of the wood is the selection of vises. All workbenches

need some way to hold boards so you can work on their ends, long edges and faces with a minimum of Rube Goldberg. This bench is designed for a woodworker who builds typical furniture using both hand and power tools.

It excels for working on panels with planes or sanders. And it is the best bench I have ever used for hand dovetailing.

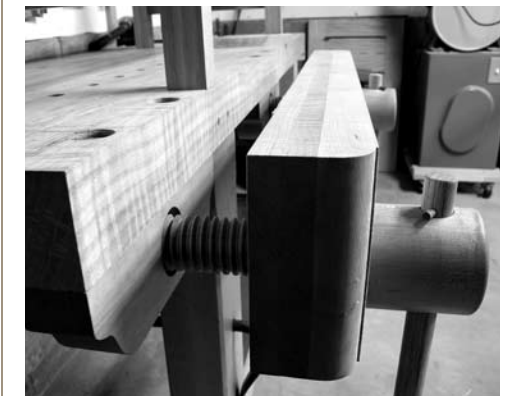
Here are the details so you can decide if this setup is for you. The face vise is a massive twin-screw vise that offers 24" between the screws. This ensures you will be able to clamp almost any case side, door or drawer in its jaws for dovetailing, sawing or planing. The wide spacing of the screws also allows you to clamp a 48"-long board on edge for handplaning with ease.

The holes in the leg under the vise are for holdfasts. These support your work from below and even allow you to clamp the work to the leg if the need arises. You can use two metal screws to make this vise, or you can use the commercial Veritas Twin-Screw vise for this bench. (I used wooden screws that I had been saving for some time.) Each strategy has pluses and minuses.

The wooden screws are more fragile than iron, though they are durable enough for normal workshop tasks. I like how they don't mark your work with grease, which is a common problem with metal screws. The wooden screws operate independently – this allows you to easily clamp tapered and odd-shaped pieces, but it forces you to pay more attention to advancing and retracting the screws in tandem and with two hands.

Using two independent metal screws is also a fine choice (see the Supplies box for a source for metal screws). You'll be able to clamp tapers, plus the mechanism is easy to install and inexpensive. But you can mark your work with oil.

The Veritas Twin Screw also is a good choice. It takes longer to install, but that is offset by the



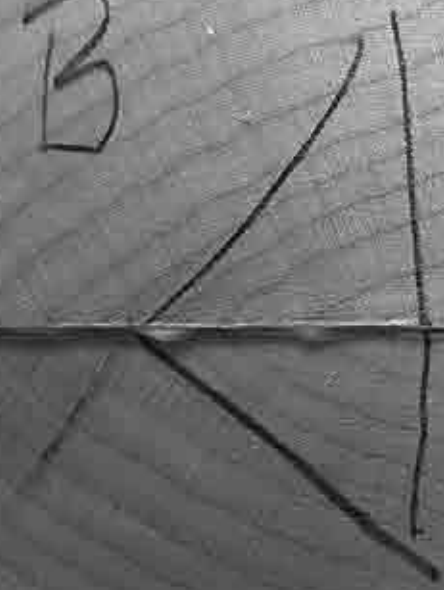
This vise has a tenacious grip. I can secure any board of any size and put my entire weight on the board without it slipping. That's good enough for me.



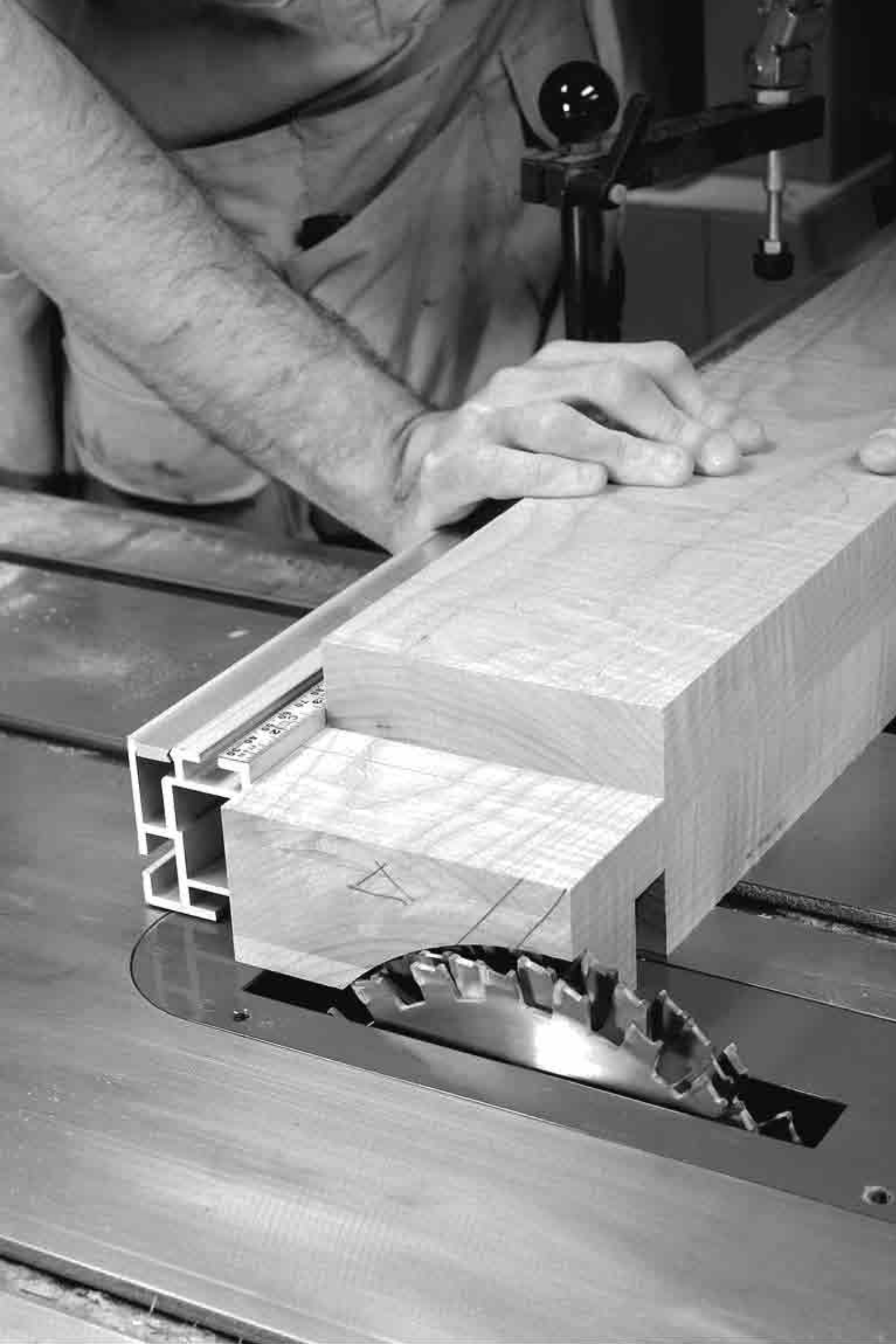




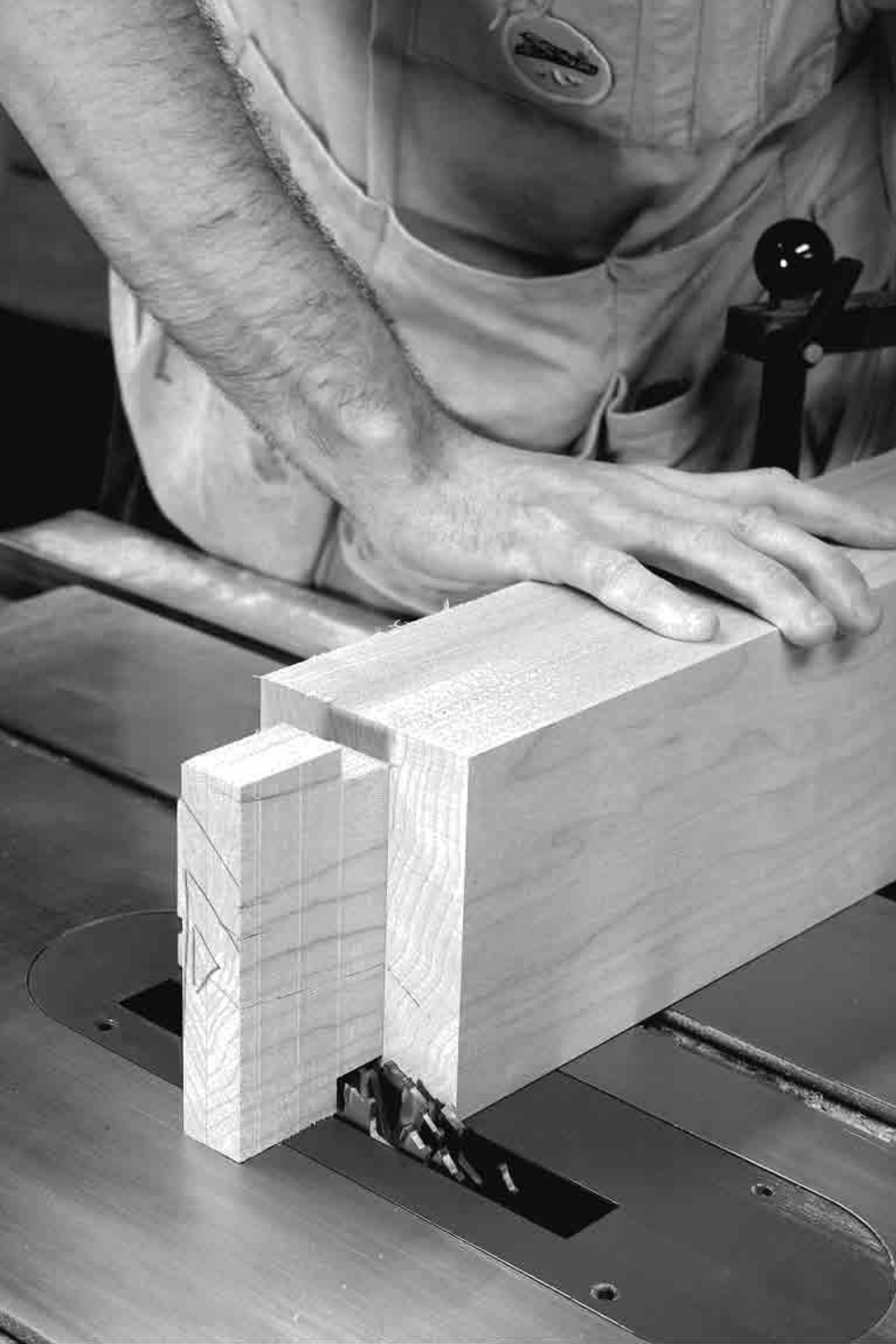
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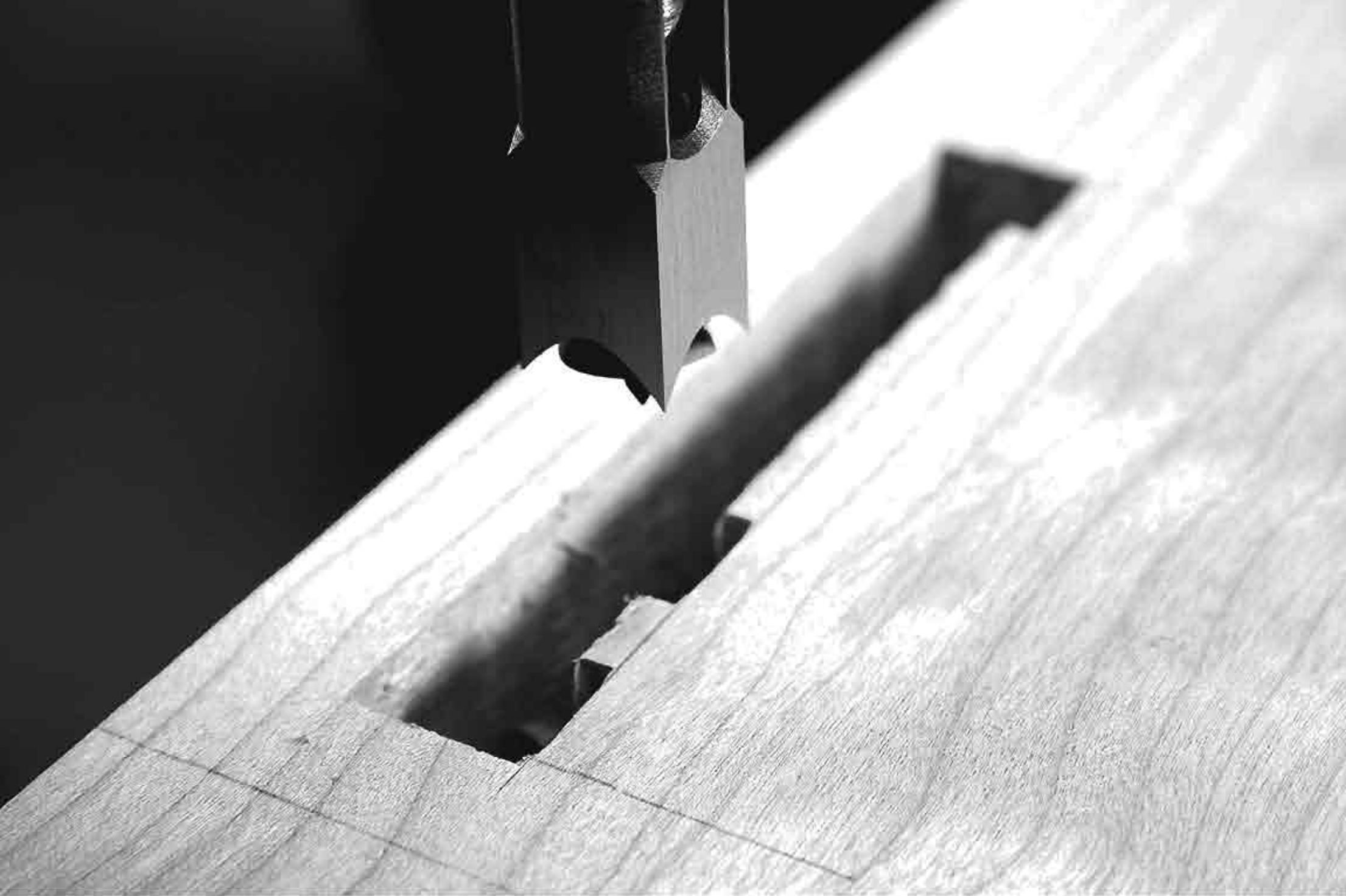








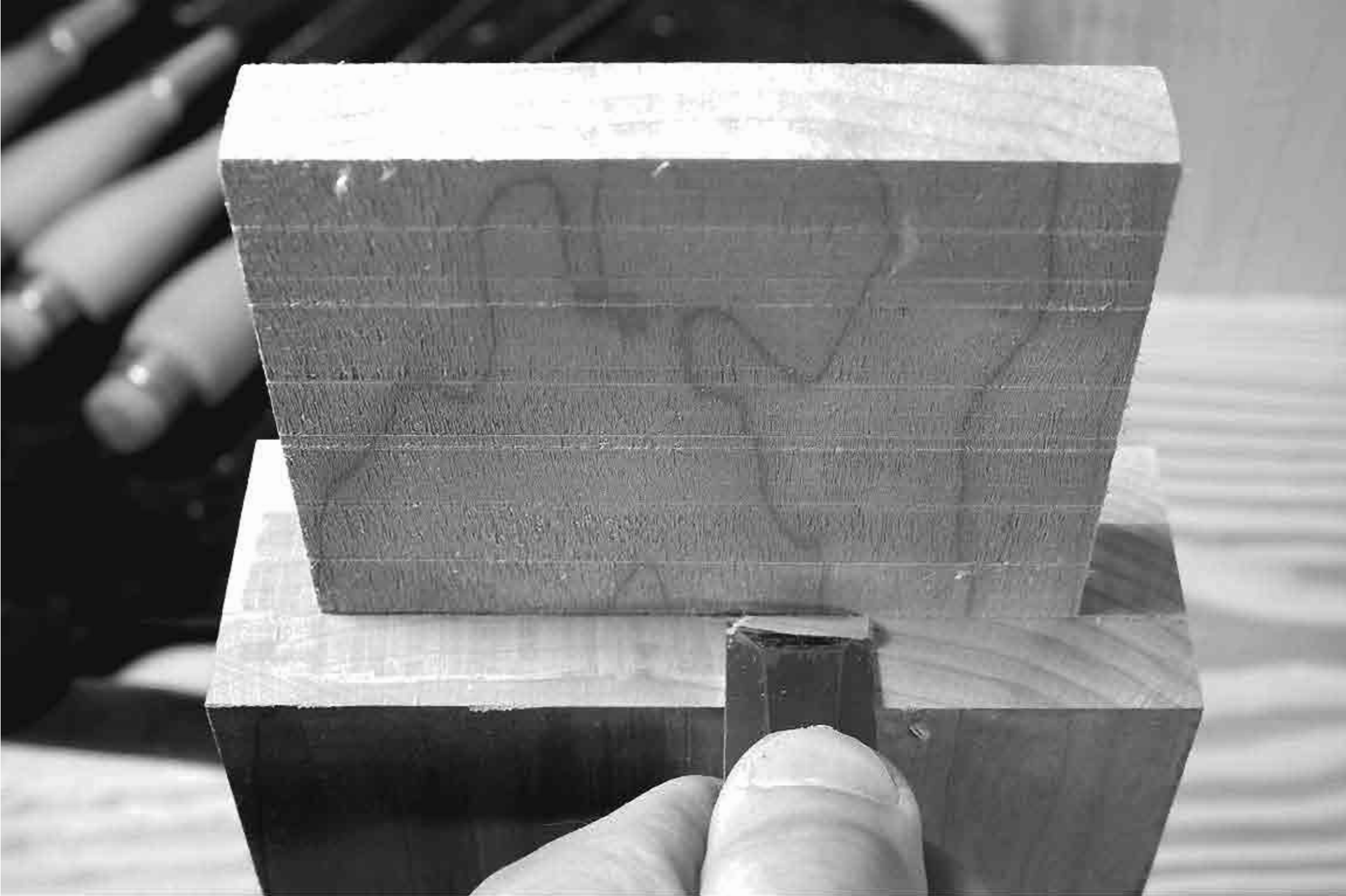










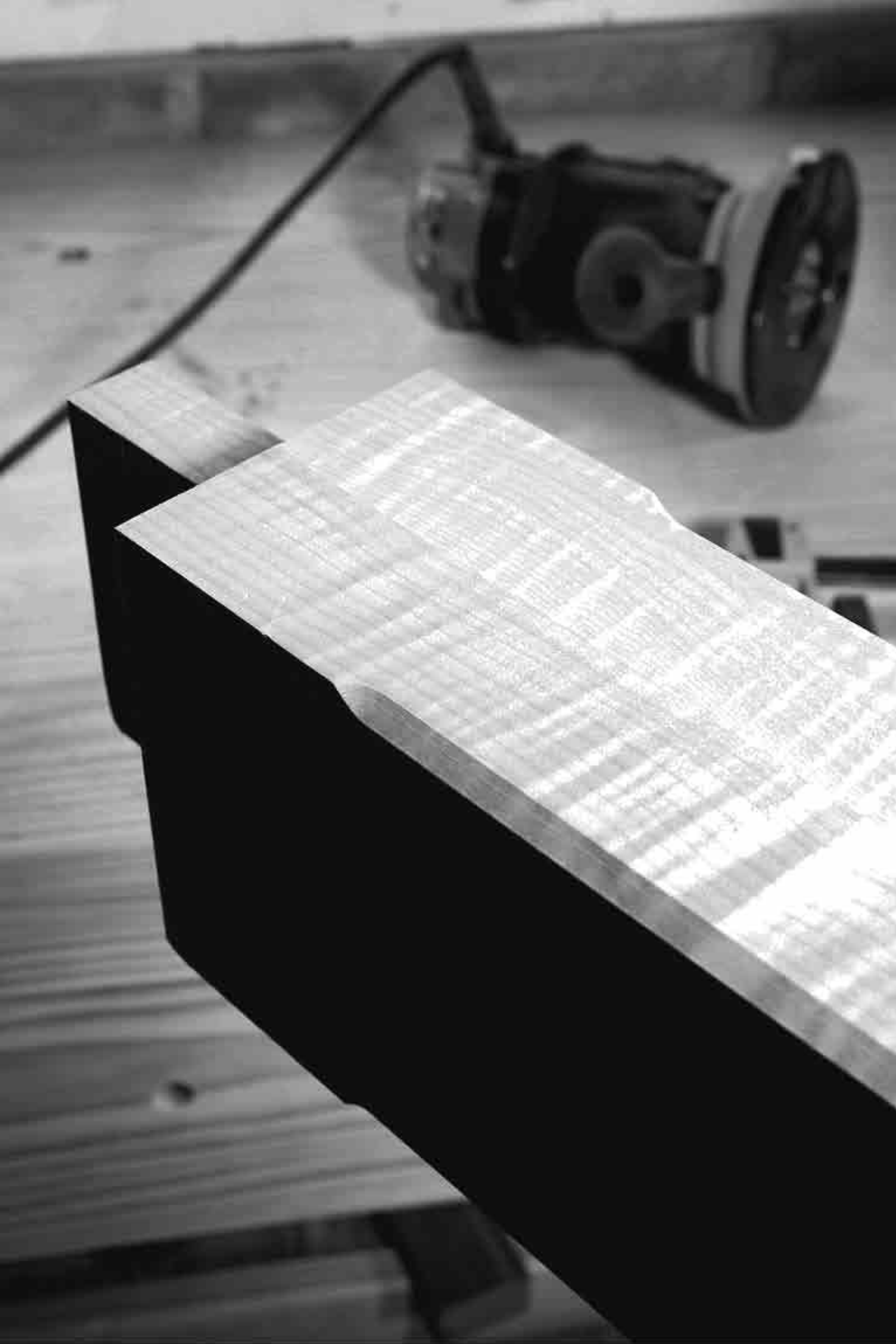




















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WARNING

For rotation the tool
or spindle, user must
read and understand
instructions manual.

AVERTISSEMENT

Avant de rotation le corps de
l'outil ou l'arbre, l'utilisateur
doit lire et comprendre
le manuel d'instructions.























