

# Sign your work—in brass etching



Make a round nameplate from brass, drill a shallow recess with a Forstner bit to house it, and you've added a real touch of class to your project.

You've just built a fine piece of furniture, you're proud of it, and you want to put your name on it. You could grab an ink pen and sign your autograph or buy a custom-made branding iron, but we have another suggestion. Let us show you how to create a maker's mark that will add a distinctive touch of quality to your best projects.

With a sheet of brass and readily available chemicals, you can produce truly handsome nameplates in an endless variety of designs. Personalize them however you please. For example, you might choose your initials, your name, or the name of your business, and spruce it up with the image of a woodworking tool or any shape that strikes your fancy.

## It's easy to learn



We picked up the process from Ron Coleman, a woodworker in Columbus, Ohio. It's only one of many ways to etch brass, copper, and other soft metals. We like this one because it's effective, anyone can learn to do it, and the results look great.

You'll need a small, brass sheet of whatever thickness you prefer. We used brass about .05" thick, which is available at hobby stores and some home centers, and is easy to work with. You'll also need transparency film, available at office supply stores; access to a printer; photo emulsion, which is carried by art stores (we used Hunt Speedball Screen Printing Photo Emulsion); ferric chloride etchant, available [here](#); a small pane of glass in any thickness; a plastic or glass tray; and a 300-watt light

bulb. Smaller bulbs will do the job, too, but the process takes longer. Artwork holds the key to a nice nameplate, and it's easy to produce with a computer, clip-art software, and a laserjet or ink-jet printer. We located woodworking images on our software, blended them with lettering to make designs that look good on our woodworking projects, and printed the results on transparency film.

Make your design in the standard black-on-white format, then print it out as a reversed negative. That means the letters are printed backwards, all letters and objects are clear, and the background is black. Because the image is reversed, the printed side will go against the brass during the next step. This gives you the sharpest possible results.

A raised lip around the background adds a nice framing effect for most designs. Make the lip at least one full point wide.

Set your printer for transparency film, and load it with film that's made for printers. Print it out and check for crisp edges and dense black areas.

Put a fine jeweler's blade in your scrollsaw, and cut the brass slightly bigger than the image you've created. Or, if you know you're going to want several nameplates, save time by printing them on one piece of film, and size the brass to match.

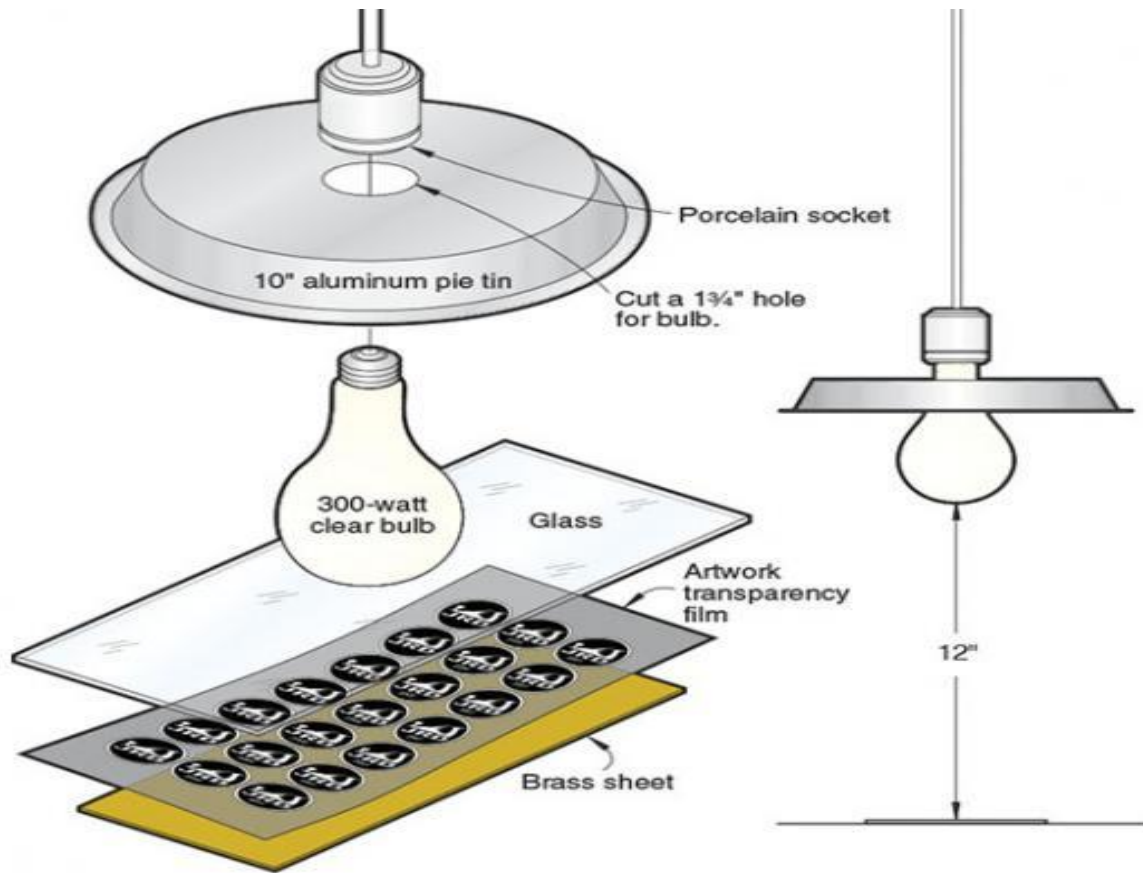
Now, clean the brass thoroughly with water and 400-grit wet/dry sandpaper. Hold the workpiece by the edges, to keep oily fingerprints off the flat surface. Dry it with a lint-free towel.

## See what develops

Putting an image onto the surface of brass is similar to developing a photograph on paper. As in a photo darkroom, you'll work in subdued lighting.

Following the manufacturer's directions, mix the two-part photo emulsion. Brush an even, fairly thick layer onto the brass. Place the workpiece in a drawer and let it dry in darkness for an hour. Check it for a uniform, hole-free coating.

Now, let's make the exposure. Place the brass on a flat surface, put the transparency film on top so that it reads correctly, and lay a clean pane of glass on the film. Position your light bulb, equipped with a reflector, about 12 inches above the glass. We used a 300-watt bulb that cost about \$5, and made the reflector by cutting a hole in an aluminum pie pan, as shown in the drawing, *below*.



Turn on the light and let it shine on the workpiece for 45 minutes. Ultraviolet light from the bulb will reach the emulsion through the clear areas and cause it to harden. The emulsion under the black areas will remain soft enough to wash off.

Take the brass to a sink, and rinse it in room temperature tap water, as shown in Photo *below*. The uncured areas will wash away, leaving the desired image behind in the form of a chemical-proof “resist.” Set the brass aside for an hour to dry and to let the resist harden.

Rinse off all of the photo emulsion after an adequate exposure to light. Use a soft brush, if necessary, but be careful not to damage the hardened resist.

## Move some metal

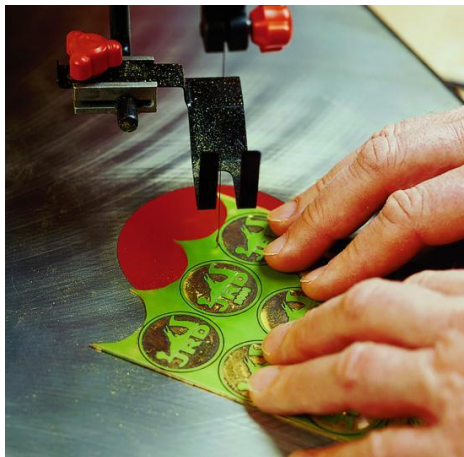
You don’t want to etch the back of the nameplate, so seal it with packing tape. Or, you can apply a coat of clear lacquer on the back. Now, it’s time for the ferric chloride. Wear old clothes,

rubber gloves, and safety glasses. This brown liquid permanently stains just about anything it contacts, such as skin and clothes, and etches most metals, including stainless steel.



Put the brass sheet in the tray, then pour in enough ferric chloride to cover it. You can accelerate the process slightly if you warm the ferric chloride to about 100° F. before starting to etch. Agitate the liquid by rocking the tray gently in every direction. We found that nearly constant motion produces the best results. As you keep the ferric chloride moving, it eats into the brass and washes away the residue at the same time. The process moves even faster when you brush the surface occasionally with an inexpensive paint brush, as shown in Photo *left*.

Some patience is required for the actual etching. You'll start to see results quickly, though, as dark lines of sediment flow away from the unprotected areas. Stay at it for about 45 minutes. Check the nameplate occasionally by lifting it out of the ferric chloride with your gloved hands or plastic tongs. When the etching looks right, remove the nameplate and rinse it with water. Be sure to follow the directions on the container to dispose of the used ferric chloride.



Remove the tape from the back and edges, or clean the brass with lacquer thinner if you used lacquer. Wash the face of the workpiece with bleach to remove the photo resist, or simply peel it off. Cut out the nameplates with a jeweler's blade on your scroll saw, as shown in Photo *below*, and file or sand the edges smooth.

With a very fine jeweler's blade in our scroll saw, and good lighting, we were able to cut out our round nameplates smoothly and accurately.

## Choose a background

Brass looks great with no embellishment, but a dark or rich color makes a striking background for your design. For a nicely weathered look, we brushed on a coating of brass darkening solution, and rinsed it off with water about a minute later. You can buy this solution [here](#).

If you'd rather have some other color, spray the entire face of the nameplate with the appropriate enamel paint. After the paint dries, or after you've rinsed off the darkening solution, place a sheet of 600-grit, wet/dry sandpaper on a flat surface, such as the glass you used above. Lay the nameplate face-down on the sandpaper and rub it lightly, as shown in Photo *below*, to remove the paint from the raised areas.





Tape 600-grit wet/dry sandpaper onto the piece of glass used earlier. A rolled-up piece of tape on the back of the nameplate keeps your finger from slipping.

Roll a piece of tape, sticky side out, and put it on the back of the nameplate if you find the brass slipping away from you. Work slowly and carefully, to avoid removing color from the recessed areas.

For a higher polish, repeat the sanding process with 1,000-grit paper. When you're satisfied with the nameplate's appearance, dry it off, and coat it with clear lacquer to prevent tarnishing.

We made our nameplates to a  $1\frac{1}{4}$ " diameter, matching the size of a Forstner bit. Drill a shallow hole in the bottom or back of a project, apply epoxy, and fit the nameplate into place. Or, include blank spaces in your design, where you can drill holes for small, brass screws.