

File it away

With **minimal**
equipment and
no prior experience,
you can create this
notched
cuff bracelet.



The cuff bracelet is 3 in. (76mm)
across the top of the wrist, and
 $\frac{3}{16}$ in. (5mm) wide.

by Karen J. Lauseng

A

deply using a file is one of the most basic and versatile
metalsmithing skills. In making this bracelet, you'll increase your
filing skills by working with different types of files. The bracelet
is extremely comfortable to wear and has a unisex appeal.

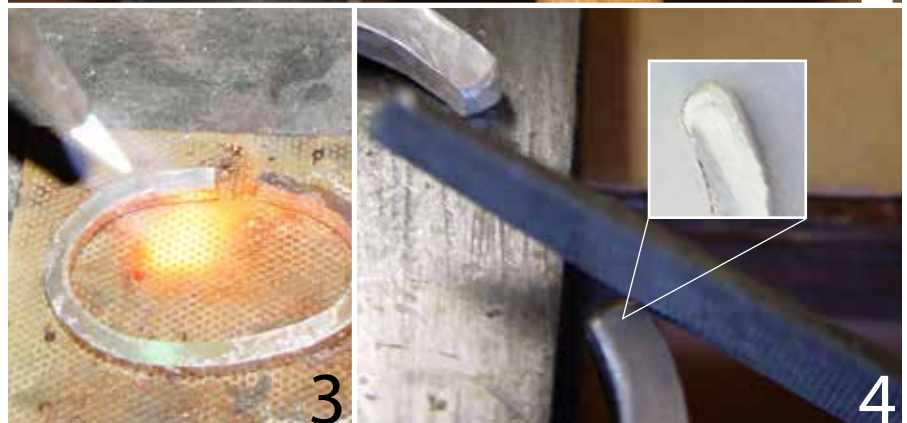


materials

- Sterling silver wire:
4-gauge (6mm), square,
dead-soft, 7 in. (17.8cm)

tools & supplies

- Jeweler's saw, #2 blade
- Rawhide mallet
- Oval bracelet mandrel
- Soldering station:
medium-tip torch, fire-
resistant surface (soldering
pad, firebrick, or charcoal
block), pickle pot with
pickle, paste flux, copper
tongs
- Hand files: #2-cut barrette;
#0- and #2-cut flat; #2-cut
half-round; #2-cut three-
square
- Needle files: #2- and #4-cut
barrette; #2- and #4-cut
flat or pillar
- Sandpaper: 220, 380, 400,
600 grit
- Sanding stick
- Masking tape
- Permanent marker: fine
point, black
- Metal gauge or brass slide
gauge
- Finishing items:
 - Buffing wheel, polishing
machine, and/or flex
shaft; tripoli and rouge
polishing compounds;
stitched cotton and
muslin buffs (optional)
 - Steel wool or brass brush
(optional)
- File card
- Bench pin, workbench, or
solid surface
- Anvil (optional)
- Hallmark stamps (optional)
- Hammer (optional)



[1] Measure and cut the wire. For a medium-sized woman's cuff bracelet, cut a 6½-in. (16.5cm) piece of 4-gauge (6mm), square, dead-soft, sterling silver wire. This will yield an internal perimeter of approximately 5¾ in. (14.6cm) with a 1¼-in. (32mm) gap. Or, if you have a cuff bracelet that fits you comfortably, measure the inside perimeter of that bracelet and adjust your length accordingly.

[2] Form the wire. Use a rawhide mallet to form the wire around an oval bracelet mandrel. Because the wire is of a heavy gauge, it may become work-hardened and difficult to bend. You'll need to anneal (heat) the metal to restore its flexibility.

[3] Anneal the wire. Coat the surface of the wire with flux to prevent oxidation.

Use a medium-tip torch to heat the wire. The metal will turn a dull red and the flux will turn clear when the metal has reached the correct temperature. At that point, quench the wire in water, and then pickle it. Rinse it thoroughly, dry it completely, and finish forming the bracelet.

[4] Round the wire ends. Use a coarse (#0-cut) flat hand file. Hold the file at an angle to the end of the wire, and circle the file around the tip of the wire to round the edges. When the wire ends are rounded (see inset), move to a slightly finer (#2-cut) flat hand file, and sand the ends with 220-grit sandpaper on a sanding stick. Make a sanding stick by wrapping the sandpaper sheet over a craft stick and securing the ends of the sandpaper with masking tape. Try the bracelet on for size,



and make adjustments to the bracelet on the mandrel.

[5] Use the bracelet to make a template. Trace the outline of the bracelet onto a piece of paper. Think about how you want your bracelet to look. Balancing the raised areas with the filed-out areas will provide an even distribution of weight. The edge shape affects the way the finished piece reflects light. Curved surfaces reflect light differently than flat surfaces, and you can achieve more dramatic reflections by varying shapes, surfaces, and edges.

Sketch your design onto the template, darkening the areas where the metal will be removed. For a beginner, it is easier to file an asymmetrical design. Use a black permanent marker to transfer the design

to all three exterior sides of the bracelet, leaving the inner surface unmarked. Don't worry if the lines do not match exactly; you can correct the design as you begin to file.

[6] Rough out the design. Use a coarse (#0-cut) set of files to begin roughing out the design, but be careful not to file too deeply. Round off the curved areas with a flat hand file, and use the edge of a three-square file or a half-round file to remove notches of material according to the pattern. Use an efficient cutting stroke, filing from the tip of the file to the handle, or tang. Lift the file and begin at the tip of the file again for the next stroke. File at a diagonal to the

wire- thickness options

The featured cuff was made from 4-gauge (6mm) square wire, which seems to be the perfect weight for an average-sized wrist. For a daintier, lighter-weight bracelet, use 6-gauge (4mm) square wire. For a larger, more masculine piece, 2-gauge (7mm) square wire can be used. It is much heavier to wear, but you can achieve a greater variety of depths.

An average-sized bangle can be made from 9 in. (22.9cm) of square wire. Gauges heavier than 4 gauge (6mm) are not recommended for a bangle bracelet.



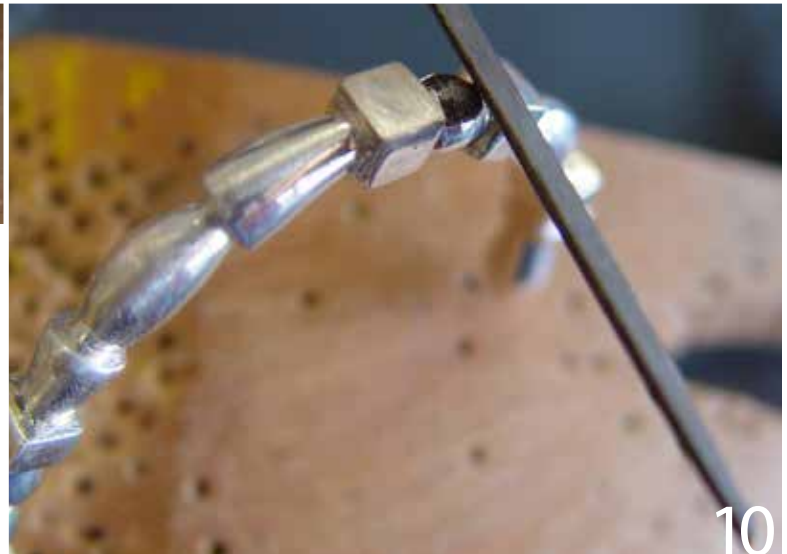
7



8



9



10

filing tips

- Having a handle on your file is mostly for comfort during use, but it may help you to avoid cuts, scrapes, or strain-related injuries.
- Pay close attention to the filing process, and check your work constantly to avoid removing more metal than desired.
- Clean your files regularly using a file card.
- Brace your work against a bench pin, workbench, or solid surface.
- Use a firm stroke. It is not necessary to press hard; the file will do the work for you if you press firmly and evenly on it.
- Save your silver dust! With this project there will be plenty of silver filings, which can be sent to a refinery for recycling. If you don't have a workbench with a lap pan, you can place a large metal baking pan on your lap directly under the bench pin to catch the silver filings.

surface with the longest and smoothest stroke possible. Reapply the permanent marker when necessary.

[7] Check the metal gauge as you work.

Use a brass slide gauge or an American standard wire/sheet gauge (pictured) to check the thickness of the wire as you begin to file deeper grooves. To avoid weak points that might cause unwanted

bending, do not reduce the wire to less than 10 gauge (2.6mm) at any point along the bracelet.

[8–9] Add detail to the bracelet. Once

you have roughed out the basic design, use a slightly finer (#2-cut) barrette or flat hand file to create smooth arches [8]. Use the narrow edge of a flat or pillar needle file to create narrow squared channels [9]. Put away your sketch, and change or adjust certain areas, using the shapes of the files to add detail. Feel free to change the original design as you think of ideas for detailing your bracelet.

[10] Give the bracelet definition.

After the design is established and shaped the way you like it, use the finer needle files to smooth each surface and add fine detail. Let the piece rest overnight, and then reexamine your work. Make any final adjustments to the bracelet's design in preparation for the finishing process. Use finishing needle files (#4-cut) to refine edges and surfaces.

[11] Complete the bracelet. Use 380-grit



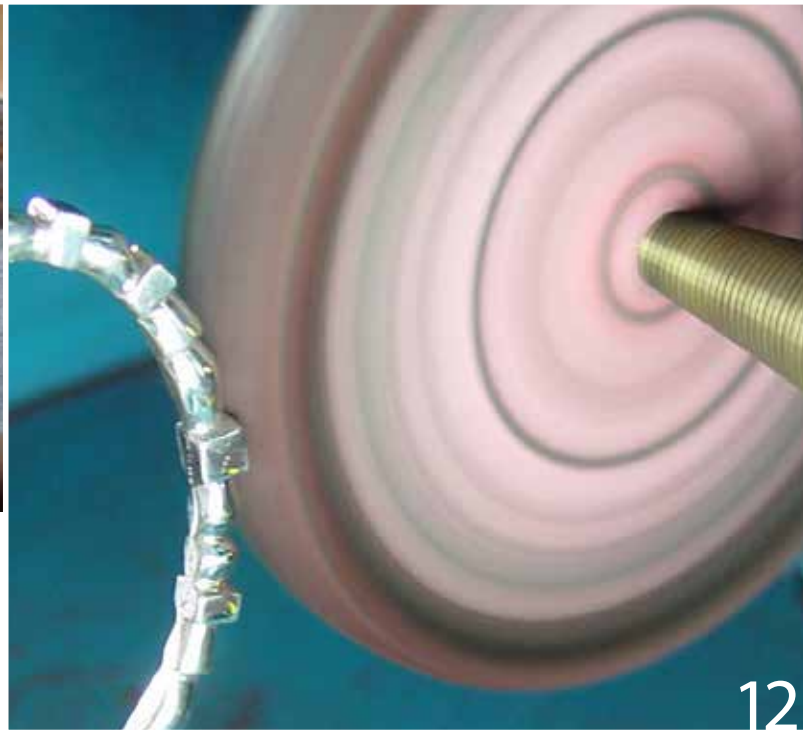
sandpaper to smooth as much of the surface as possible. Use a 2-in. (51mm) square piece of sandpaper folded in half to sand into grooves and other tight areas. Pay attention to all sides of the bracelet, and change sanding directions often to get an even finish. Continue to sand the bracelet, moving through progressively finer sandpapers up to 600 grit.

[12] Finish the bracelet to a bright polish. Once you complete the hand sanding, move to the buffing wheel. First, use tripoli polishing compound to remove the remaining scratches. Apply the compound to a firm, stitched cotton buff dedicated to use with tripoli.

Do not hold the bracelet in any one position for too long, and do not press too hard against the buff. The bracelet should not become too hot to hold with your bare hands. Keep square corners of the design crisp by moving the bracelet so that only one face of the design touches the buff at a time.

Clean the bracelet thoroughly with soap and water to remove polishing-compound residue before using rouge, the final polishing compound. Apply the rouge compound to a dedicated muslin buff, and continue buffing to achieve a bright polished finish.

Alternatively, lightly rub the piece with steel wool or use a brass brush with soapy water for a matte shine.



Process photos by Karen Lauseng.

stamp the metal with hallmarks

As a beginning metalsmith, you may not have a “.925” or “sterling” hallmark stamp, but if you plan to sell your work, federal law requires that you stamp the metal with an identifying hallmark.

“Sterling” and other metal-identification stamps are available from jewelry-tool suppliers. Signature hallmarks must be registered, are primarily for trade manufacturers (they cost \$50–\$250), and can be ordered from specialty stamp makers.

To stamp the wire with a hallmark, place the wire on a hard metal surface, such as an anvil, and align the stamp in the center of the wire. Hold the stamp firmly in place, and use a heavy hammer to strike the stamp once. The stamp should make a clear, single impression with an even depth all over. If you’re using a signature hallmark, repeat the procedure with that stamp.

