

# JUDITH HOFFMAN

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## Earpost rivets

**Safety:** To avoid injury be sure to observe safety rules. When drilling, wear eye protection. Never hammer the end of a screw driver or wooden handled tool to make holes. Be aware of the safety precautions necessary for the tools you use.

You can make small rivets with commercial ear posts purchased from jewelry supply stores. There is a flat end that is meant to have an earring soldered to it. This flat end becomes one end of the rivet. So you only have to assemble the objects you want to rivet together and form a head on the remaining end. Both sterling silver and gold-filled ear posts make great rivets. I order my ear posts from Rio Grande. ([riogrande.com](http://riogrande.com)) You may find other sources you like better. They probably aren't the cheapest place, but I find them convenient because they carry lots of tools, also sterling silver and other metals. The sterling posts I buy have 1.5 mm pads, the gold-filled ones have 1 mm pads.

Be aware that some earposts have almost no head. These won't work for the rivets I'm describing here, because you would have to form the head on both ends of the post.

I frequently use rivets in my work. You can fabricate several parts, and when you're happy with the look, rivet them together. They make metal working feel much like collage to me.



**Above:** Unwatched Lights © 1989, 3 x 2-3/4 x 3/4 inches. This book cover was made by riveting found objects to a piece of formica. The brown material is the back side of the formica, sanded until it was smooth, probably with about 400 grit wet-or-dry sand paper and some water. I cut the rocket body from some old brass material a friend gave me, the rocket "flames" are a tree shaped Christmas ornament. The brass strips that frame the rocket were from a hobby store. Some hobby stores sell brass in narrow strips, flat sheets, rods and tubes.

## Tools and supplies to make ear post rivets:

- ☆ your book pages or a piece of brass or copper.
- ☆ an object you want to attach to your page. It must be drillable.
- ☆ ear posts
- ☆ flush cut nippers
- ☆ #69 or 70 wire drill bit
- ☆ 2 or 4 ounce ball peen hammer
- ☆ punch
- ☆ dremel moto tool, household drill if it accepts tiny wire drill bits, or a jeweler's flex shaft.
- ☆ 3/16" nail set
- ☆ a steel block, or old iron (the kind with no holes for steam. Take the handle off carefully. You may see mica inside, don't crumble and breathe it, it's bad for your lungs.)



**Above:** some of the tools used to make ear post rivets. Left to right they are: lid for the small drill stand where I keep my tiny drill bits, the base of an old iron. Lying on the iron base, the drill bit stand, which holds #80 to #61 drill bits and a tiny #69 drill bit (it looks like a piece of wire). Next, a 4 ounce ball peen hammer, a packet of drill bits, a steel block. Just below the block there is a punch and a nail set. The dark grey punch has a very sharp point that doesn't show well in the photo. The shiny nail set appears blunt and has a slightly concave shape in the tip.



Most jewelry supply places would have the ear posts, flush cut nippers, wire drill bits, ball peen hammers, steel blocks and the flex shaft. Larger hardware stores usually have the small ball peen hammers, nail sets, punches, household drills and dremel moto tools. Check thrift stores for old irons – these seem to be getting hard to find.

**Left:** The dremel moto tool in a stand that makes it into a drill press. There is a ball point pen on the base. I usually lay a scrap piece of wood on the base to raise the platform a little higher. You could drill holes for rivets by holding the dremel in your hand. I just keep it on the stand and keep a drill bit in it, so I can easily come over and drill a hole quickly.

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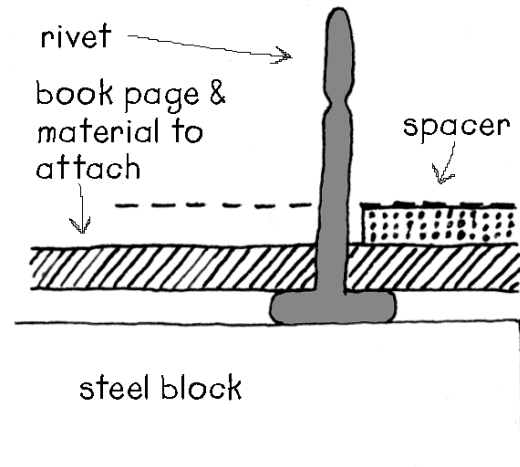
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The first step is to drill a hole where you want your rivet, and a hole in the object you want to attach to your book. Before drilling the hole, use a punch to make a small dent in your metal. This helps to hold the drill bit tip in place while drilling. To make the dent, place the punch tip where you want it, and tap lightly with a hammer. You won't need to use the punch to make a dent in your object if it is fairly soft, the drill bit will grip as you begin to drill.

**Please note:** be sure to wear a dust mask anytime you're not sure about the material you're working with. Also, objects that are brittle aren't good candidates for riveting. They are too likely to break with the pressure that a rivet head places on them.

To drill the hole try a #69 drill bit for the sterling ear post, and a #70 drill bit for the gold-filled one. You should make a test on a scrap to make sure the ear post is a firm fit in the hole you drill. Put a little beeswax or similar lubricant on the drill bit. Experiment with your brand, you may need a different drill bit size. Some household drills will take the tiny wire drill bits. Some require a special colette. It can be tricky to use such a tiny bit on a large drill. If you have a stand for it, that would help a lot. Or you could use a Dremel Moto Tool or a jeweler's flex shaft.

After drilling the hole through the page and the object you want to attach, put the ear post through the holes. Set it on the steel block and cut it off, leaving slightly more than the diameter of the post sticking up. Use a flush cut nipper or file the end of the post flat after cutting with a wire cutter. A scrap of 20 gauge brass works as a measuring device. Lay it on the surface of your work and use it to set the height of your flush cut nippers. In the picture at the right, the dotted line indicates where the flush cut nippers rest against the top of the brass spacer. If you cut your earpost off here you will have a good amount of material to form the rivet head.



Above: Flush cut nippers are laid along the top of the 20 gauge brass spacer. The rivet is cut off along the dotted line. This leaves a stub that can be hammered down to form a rivet head. I didn't draw in the second layer (the diagonal slashes would normally be two pieces of material) which would be the object you're attaching to your book.

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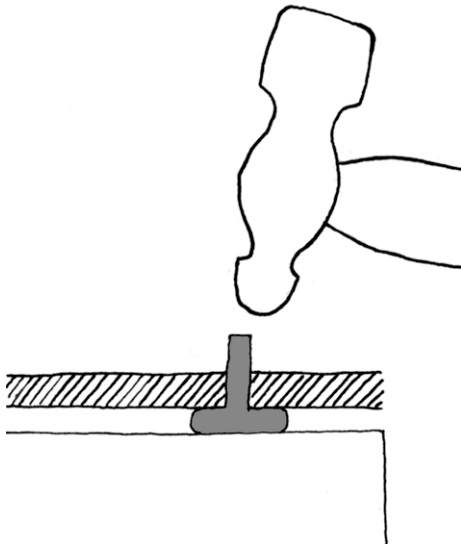
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Next you need to form the rivet head. The easiest way to do this is to use a 3/16" nail set. It has a small depression in the face that will dome over your rivet. Hold the nail set straight up on the stub of the rivet, and tap it lightly with the flat face of the ball peen hammer. When the rivet head is partially formed you should stop using the nail set. It will appear domed, as in the sketch below.



Allowing it to go too low will mar the metal. Instead, remove the nail set and tap lightly directly on the rivet head, working around the top of the head in a tiny circle. If possible you should turn your work as you hammer.



An alternate way to form your rivet head would be to just tap lightly with the round face of a 2 or 4 ounce ball peen hammer. Work around the top of the cut-off post in a little circle, striking the edge, not the center (figure 1). As the rivet domes over, (figure 2) it will begin to flatten onto the metal surface. You can make it almost disappear with

enough hammering. If you want your rivet head really flat, turn the hammer over and use the flat face when the head is a dome and has touched the metal. If you are using rivet heads for texture you could just hammer them enough to form a visible rivet head. Then turn the piece over and hammer the ear post pad slightly to give it some texture and disguise its machine made origin.

To avoid marring your metal with hammer blows you can punch a small hole in a piece of cardstock or file folder. Position the hole over your rivet and hammer the rivet down. (You will only see the rivet head in the small hole, the card stock will be protecting the rest of the book page.)

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