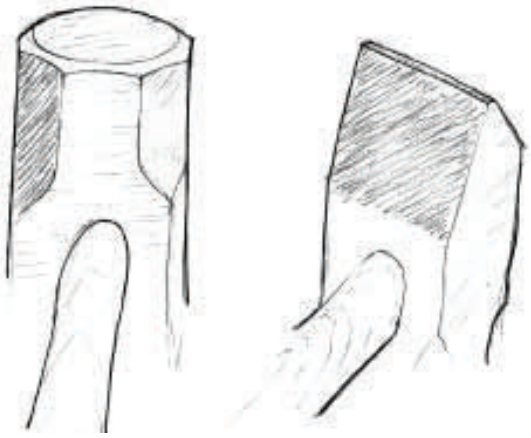
APPRENTICE NOTEBOOK

Dressing A Hammer By Brian Gilbert

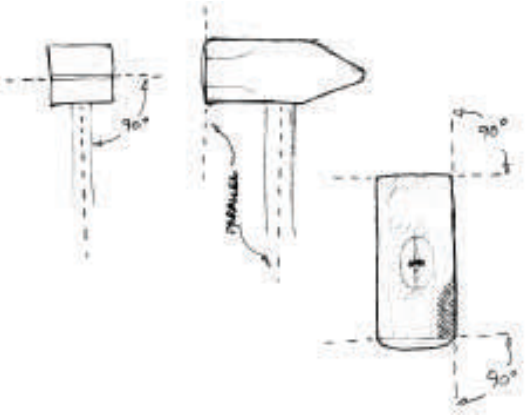
One of the first things that every blacksmith should learn is how to dress tools. It's almost impossible to do good work without properly dressed tools, especially your hammers. The hammer is one of the most important and basic tools in the shop, and most are not ready to use as soon as they're bought. New hammers are almost always crudely ground and too sharp, and used hammers are more often abused and/or rusted.

Many blacksmiths have developed their own personal preferences for dressing their tools, and that's the way it should be… they should be dressed in a way that works best for you. I'm going to explain the way I like my tools. Use this as a starting point and develop your own style. A cross peen often starts out looking like this.



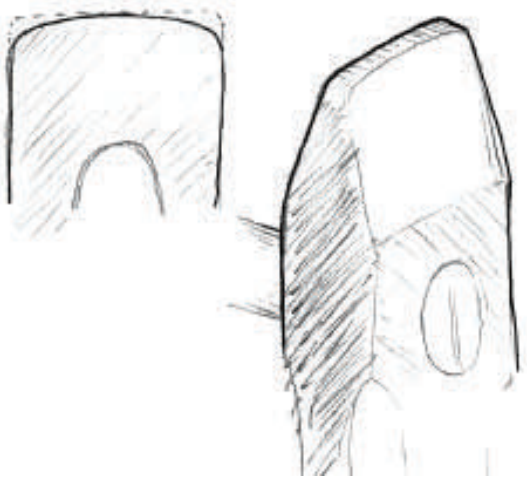
A cross peen often starts out looking like this

As an example, I recently dressed a two pound cross peen hammer… one of the cheap Chinese variety. Not my first choice for tools, but until I make my first million by blacksmithing, they'll do. It's a fairly low quality tool, but perfectly serviceable with a little attention. The price is right… around four bucks from Harbor Freight Tools. If you look carefully at a new hammer, you'll notice a couple of things. The peen end is often ground sharp and square, and the hammer face is usually flat or slightly crowned, with a sharp 45 degree bevel ground around the edge. You may have heard me say this before, but in blacksmithing there should be NO SHARP EDGES. Except maybe on your chisels, hardies, punches, and your pocketknife, but that's about it Everything else should have some kind of radius ground or sanded into it's edge, even if only a slight one. Even a set hammer (which is not really a hammer at all, but a square block of steel punched for a handle used to set shoulders) should have a very small radius ground into the corners.

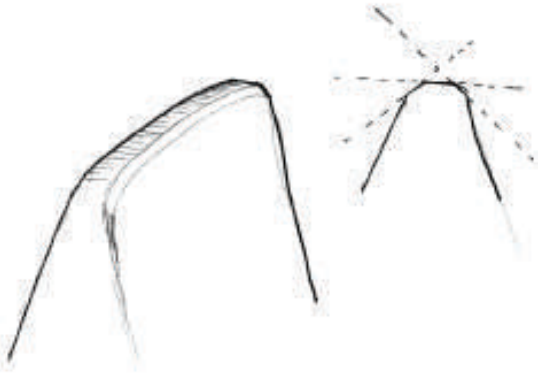


Check the angles with the handle in before you start

Check the angles with the handle in before you start If the hammer you're planning to dress still has the handle in it, take a moment to look at the working surfaces in relation to the handle. The peen should be perpendicular to the handle, and the face should be parallel. If either of these surfaces



Grinding the profile of the peen



Soften the edge of the peen with a secondary grind

are out, it'll be easier to correctly grind the hammer with the handle in place, but otherwise I like to remove the handle. OK, back to our Chinese two-pounder. First we need to decide what this tool will be used for. I usually grind hammers one of two ways, either for roughing or for finishing.

A roughing hammer is more rounded… it's radiused surfaces are designed to penetrate deeply into the steel and move as much metal as possible. It tends to leave a lot of hammer marks, though. To get rid of the marks left by a roughing hammer, I'll switch to a smoothing or finishing hammer. All the edges are radiused like a roughing hammer, but the curves on the face and the peen are generally flatter.

As always there are a few exceptions. I have one cross peen that I use just for veining leaves. It has a peen that's too sharp for anything else. Another would be a hammer that's reserved just for striking chisels and other tools. Once you've put the time in polishing your hammer faces, you won't want to mark them up by bashing on a cold chisel.

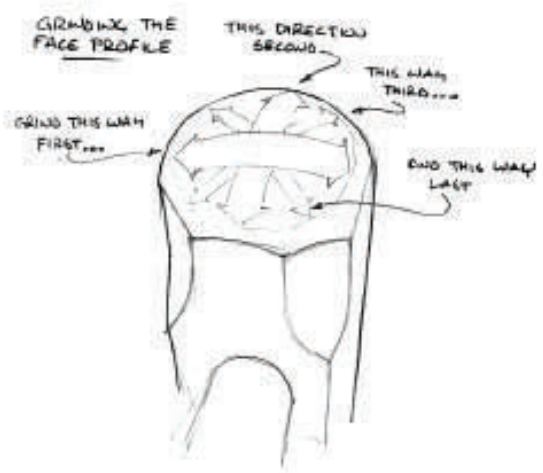
The sanded peen before polishing

Since our hammer only weighs two pounds, I'll dress this as a roughing hammer. I start with the peen end and grind the outline of the profile I want. I'm looking for a gentle curve, with nice rounded corners, perpendicular to the body of the hammer head. It's easier to grind the head if the handle is removed, but this isn't absolutely necessary. The handles that come with these handles are usually low quality and poorly fitted anyway.

Next I'll make a secondary grind to soften the peen. It helps to see this grind by changing the direction of the scratch marks. I try to make the secondary grind at about 45 degrees to the first grind. After these two grinds are made, I'll switch to a belt grinder to finish, blending the grinds together until smooth.

This is tough to do if you don't have a belt grinder. Neither do I, but you can do a passable job with a flap sanding disc on a disc grinder. Compared to a belt grinder, a flap wheel is somewhat stiff and doesn't blend the grinds as well… it tends to make new bevels. Just take it slow and lightly stroke the piece until everything looks smooth. Now switch back to the grinding wheel to profile the face of the hammer. Look carefully at the face… most new hammers have a sharp ring near the edge, where the hammer was ground at the factory. That edge has to go. I grind the profile first on axis with the eye, then perpendicular to the eye, and then at 45 degrees. The profile curve of the hammer's face needs to be carefully ground… it should have the same curve all around, as even as possible. After the profile looks good from all these angles, I switch to the flap wheel and blend them together.

Now take one last look at the head, and examine it closely for any sharp edges or facets left over from the grinding and flap sanding. Hopefully there won't be any, but if there are blend them in. A roughing hammer is useable at this point, but I like to take the extra step of polishing the head. It doesn't take long. I use a sewn cotton buffing



Grinding the face profile

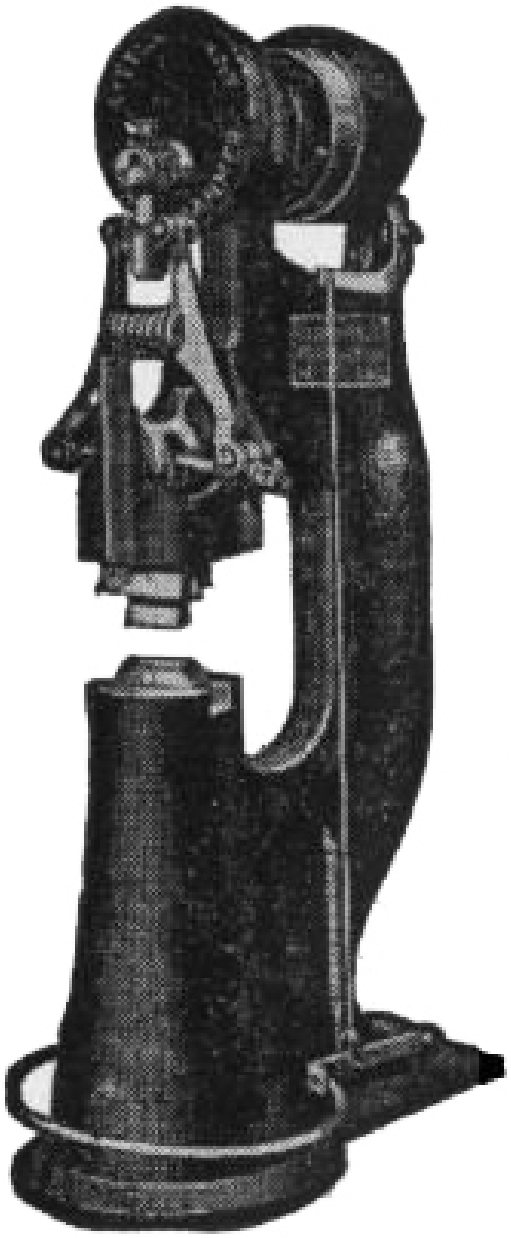
wheel mounted to 6" 1750 rpm grinder. Charge the wheel with a little bit of grey or red rouge buffing compound. I've found compound available in three colors, grey, red, or white. The coarsest is the grey and cuts fairly fast, the red is finer and removes the scratches from the grey, and white compound is finest of all. It works slowly and leaves a bright mirror finish. You should use a separate buffing wheel for each color. I usually buff a hammer head with a red or grey to shine it up and leave it at that.

There's a good bit more to buffing than I've described… I've got an entire book on the subject… but I don't get too crazy when buffing hammers. Just a little polishing is all you need.

Now turn your attention to the handle. They always come varnished… I imagine that this is to keep them from warping. The varnish makes the handles slippery when using gloves, and kind of sticky when I'm using bare, sweaty hands. I don't usually get blisters from varnished handles, but it seems to irritate and redden my palms. I have small hands, so almost all the handles I find are too fat. I also forge with gloves, which makes the handles seem fatter still. So for all these reasons, I take the time to dress the handles of my hammers.

The shape of your handles is a matter of personal preference. Some like handles that keep the factory oval shape. Jerry Darnell likes handles that are short, and cuts off his ends. Uri Hofi's hammer handles have two flats parallel to the head. This is to prevent the hammer from rotating in your hand, and to give you a tactile clue about the orientation of your hammer head. Donald Streeter suggested placing the thumb on top of the hammer handle for straight blows, and some folks like to put a single flat along the top of the handle for this reason.

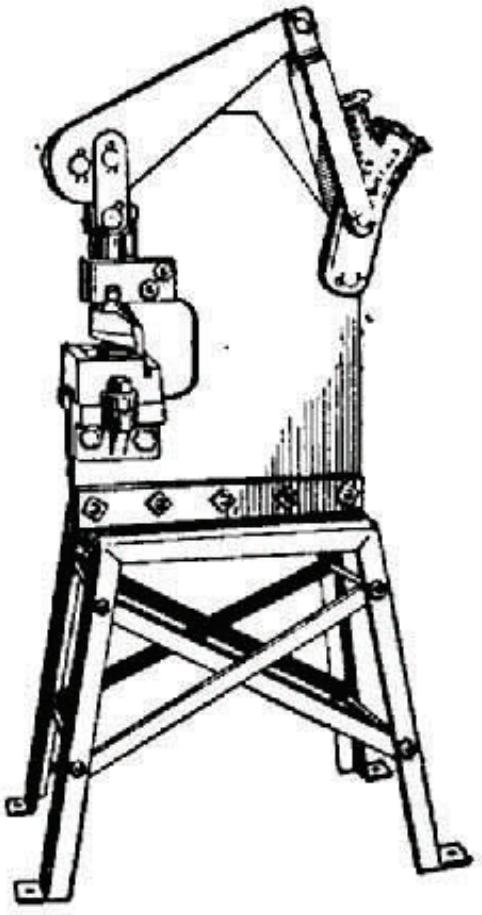
So there are lots of variations in handle dressing for you to choose from. It's like the old joke… ask five blacksmiths the best way to dress hammer



handles, and you'll come up with six different answers.

Try them all, and go with what you like best. My personal favorite is octagonal handles, cut thin for flexibility and to compensate for the gloves, finished with linseed oil. Robb Gunter says that hammer handles should fill your hand… if your fingers touch when holding the hammer, the handle is too small. Linseed oil leaves a nice, satiny finish that grips reasonably well under gloves or bare skin, and it wears well under use.

I start off by scraping the handle. I use an old knife, but a real scraper blade would work better. You'll be tempted to sand the varnish off with your flap wheel, but don't give in to temptation! The varnish will melt and hopelessly clog your flap wheel. Scrape the varnish off of eight sides, then hand sand the rest until the handle is about the shape that you want. If the handle is really thick, or you want to do some drastic thinning, you can use a spokeshave to shave things down a bit. The spokeshave will leave an irregular surface, but you can sand this out.



Finish the handle with a couple of coats of linseed oil. Thin the first coat a bit with thinner, to help the oil penetrate deeply, then finish off with a full strength coat. You'll need to give the handle a coat every six months or so, especially if you don't use the hammer much.

Take care when fitting the handle to the head… a loose hammer head is dangerous. I like to replace the handles with new ones, especially if the tool will see a lot of use. A new handle is only a couple bucks, so treat yourself. Fit the handle by coating the inside bottom of the eye with ink, then set the hammer down on the handle. Remove it, and carve away the marks left by the ink. Repeat this until the handle goes deeply into the head, and sticks out about a half inch on the top. Leave room for the wedge… if the head compresses and closes the wedge slot, then you won't get a good fit. When you set the head for the final fit, make sure you can't see the cut for the wedge at the bottom of the hammer head… this area should be solid wood.

Drive the wood wedge in first, then follow up with one or two steel wedges across the wood. Some folks like to cap the whole thing off with epoxy to seal the handle, but I've never tried it. If your head does become loose, an old trick is to soak your handle in water. The water swells the wood, tightening the head. It works, but the drawback is that once you do this, you need to keep the hammer in water. If it dries out, the head will be looser than before. I've heard that soaking in antifreeze swells the handle without drying out the wood, but I haven't tried it. Antifreeze does work as a wood preservative, though.

That's one way to dress a cross peen hammer. A straight peen or ball peen is dressed pretty much the same way. Even if you use different techniques than these, take the time to dress your hammers.

Your forging will be cleaner and easier with dressed tools, and folks won't think you a beginner if your toolbox is full of nicely polished, rounded hammer heads. There is another option to dressing up cheap, used hammers, and that is to make your own from scratch.

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