

Pick-up Tongs

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The tongs you see in figure 1 are designed to pick up pieces accidentally dropped on the floor. Despite my best intentions and some kick-ass tongs I purchased and built over the years, there are times when a piece just slips. The tongs I have do a very good job at holding stock, but to pick up materials from the floor, they do not do that well. Many times, I find myself doing acrobatics picking up a hot piece of steel off the floor.



Figure 1: The modified tongs.



Figure 2: Off-Center brand V-bit tongs

After a good amount of trial and error, I decided to modify some tongs I already had. I rather much like the Off-Center brand V-bit tongs (see Figure 2). They are light-weight tongs with an additional V-notch to hold pieces perpendicular to the bits. These tongs do a fine job handling materials and they are somewhat of a workhorse in my shop. However, they are not made to pick-up stock off the floor.

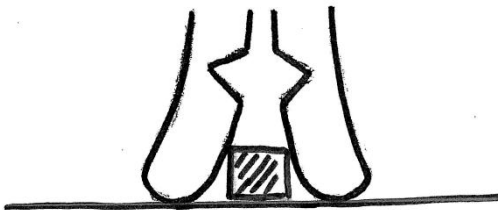


Figure 3: Stock V-bit tongs grab poorly



Figure 4: When tilted, the tongs will lift

Consider figures 3 and 4. In those figures, the shapes of the bits are exaggerated to make a point. In figure 3, notice that a square piece would be held at its top-edges. Any slight wiggle and the piece you are holding will drop to the floor again. Trying to pick up flat stock or round stock is nearly impossible. Furthermore, if you were to tilt the tongs a little bit, as shown in figure 4, one bit will lift naturally. However, due to the straight end of the bits, both bits will be further lifted off the floor. This makes it almost impossible to pick up anything.

As it turns out, the solution to both of these problems is very straightforward and easy to accomplish. Consider figures 5 and 6. In order to avoid that the tongs lift off the ground when tilting them, simply grind the bit ends to about a 75 degree angle. To ensure that a piece is securely held, extend the lower portion of the V to the end of the bits so that the bit ends come to a fairly sharp point.

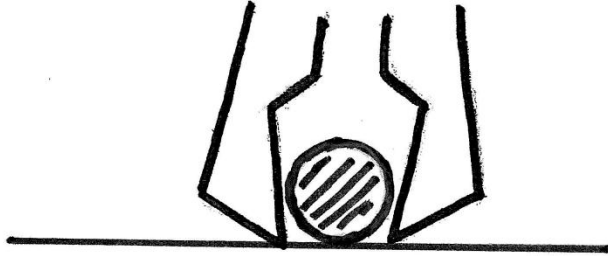


Figure 5: Points partially enclose the piece

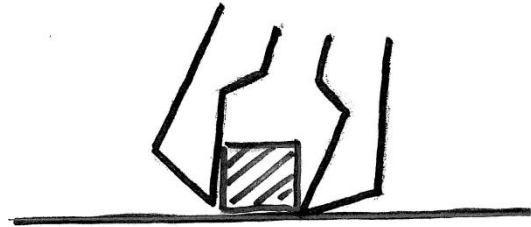


Figure 6: Tilting will not lift tongs

As shown in figure 5, the bit ends will partially enclose the lower portion of round stock, thereby holding it very securely. When it comes to square or flat stock, if your ground is uneven or more likely, if the piece is not entirely straight, you will again be able to grab the piece in a manner where the bits will partially enclose the lower portion. If the piece and your floor are flat, then the force exerted by the points will hold square and flat pieces fairly securely. Alternatively, when tilting the tongs, the bit on the ground may just slide underneath the piece.