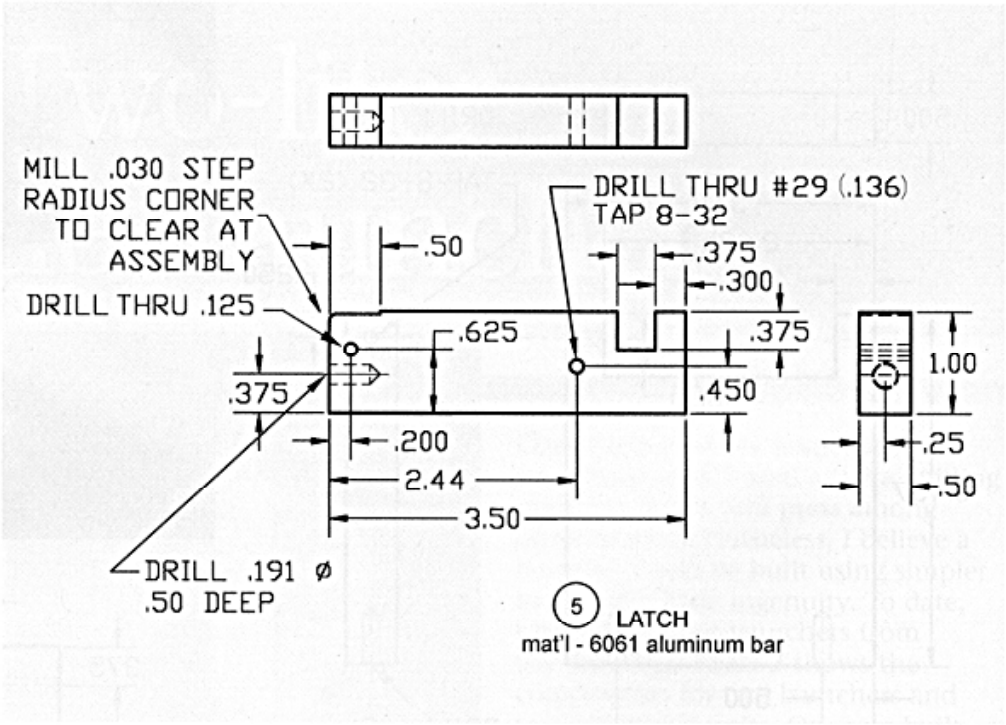
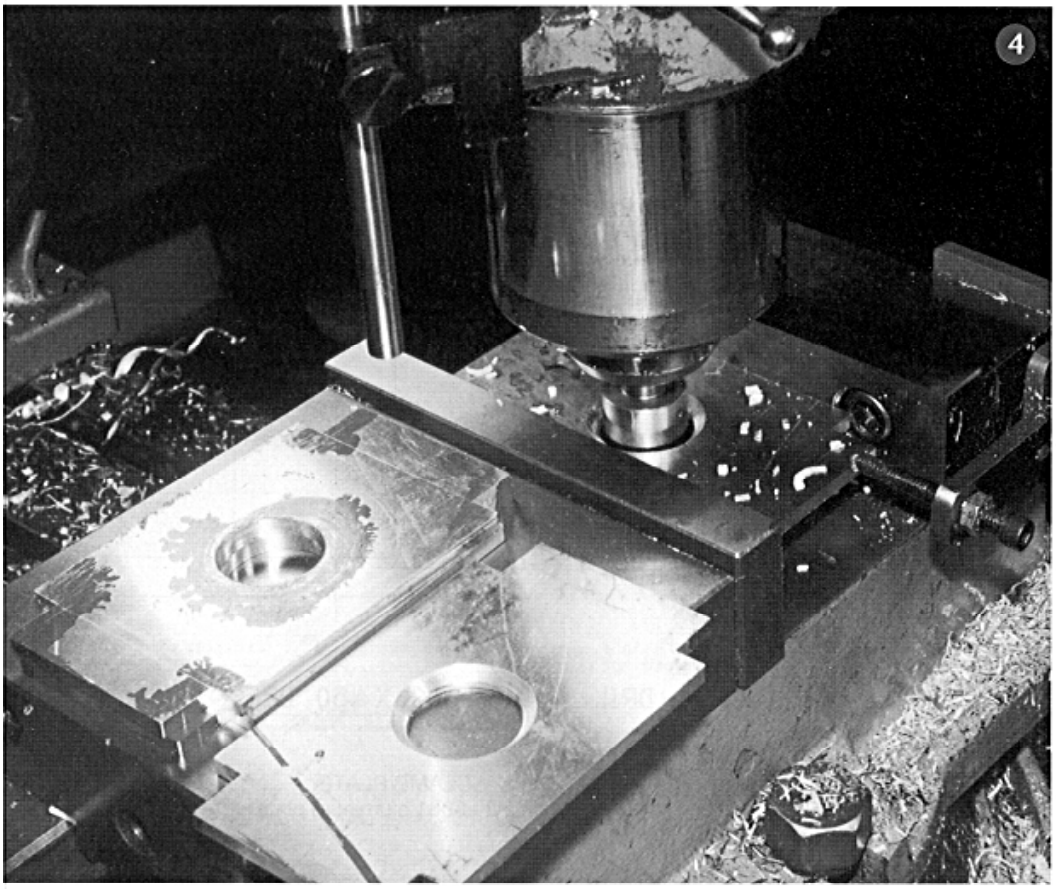
latch (*Detail 5*) and trip (*Detail 6*) were drilled on the drill press. All of the tapping was completed on the drill press (*Photo 3*).

While speaking of tapping, better than 90% of the tapping in my shop – for both through and blind holes – is normally accomplished on the drill press or milling machine under power or with a battery-powered hand drill. I use two- and three-flute gun taps, which includes all sizes from 4-40 to 5/8-18. My drill press is equipped with a foot control switch for on-and-off and a reversing switch. My milling machine uses three-phase power and reverses very quickly. I have broken very few taps in the last 50 years.

Here are some machining suggestions. When making the clamp (Detail 4), set the plate in the mill and step drill the center hole to 1-1/16" diameter, and then bore it to finished size of 1.125" followed by cutting the chamfer (*Photo 4*). When I performed this operation, the chamfer was cut using a tool I had made several years ago to cut valve seats in a model engine. However, a large countersink or fly cutter could also be used for this task. The corner notches were then cut followed by drilling the four pivot holes (*Photo 5*).



The last operation on the plate was to cut it in half with a band saw. The raw edges were then finished on the milling machine. When assembled, this machining provided a 1/8" gap between the two halves of the clamping plate.



The center hole in the receiver (*Detail 3*) was step drilled and then bored to its final size of 1.010". The 45° × .090 chamfer is not critical. It does, however, make it a little easier to insert the jet assembly when using the launcher. After machining all of the parts, knock off the sharp edges with a file or abrasive paper. Assemble the parts using *Photo 6* (front view) and *Photo 7* (rear view) as a reference.

The air jet body (*Detail 8*) was made from 416 stainless steel. It could be made from 6061 aluminum or any other material that does not rust.

The copper tubing nozzle (*Part 9*) was cut to length and assembled to the jet body with *Loctite*. I used *Loctite 609* as I had it on my bench. Other grades would, no doubt, work just as well. The rubber stopper (*Part 10*) was very carefully drilled through end-to-end with a new 1/4" twist drill. This provides a snug fit on the copper tube when assembled. *Photo 8* shows the air jet components ready for assembly. To complete the air jet launch hose assembly, follow the assembly drawing.

Mount the assembled launcher (*Photo 9*) to an appropriate base (*Photo 10*): a short piece of 1" × 8" served me quite well.