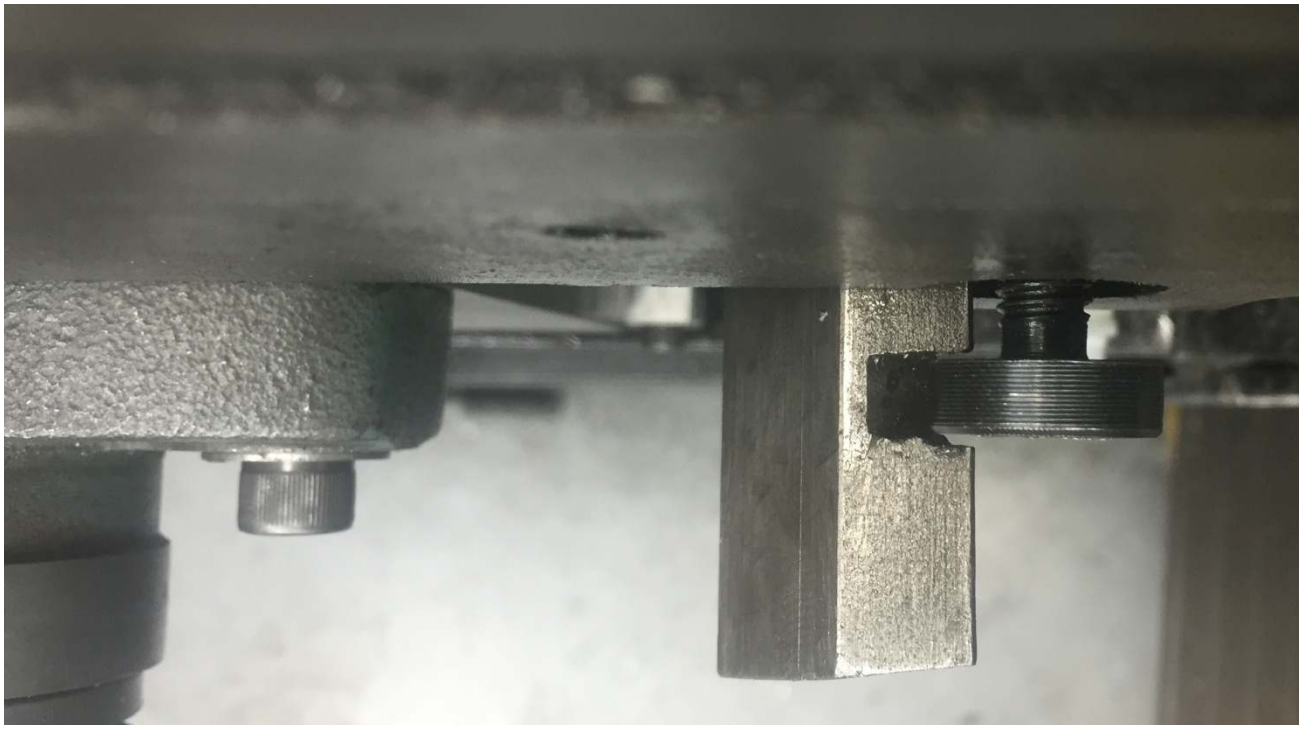
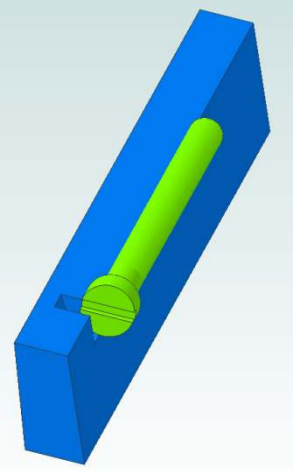
Improved RF-30 Gib Retainer, version 3.1

By R. G. Sparber





You are looking down on the Y axis gib. I have extended it from the apron so you can clearly see how the retaining screw works. Well, sort of works. Actually, barely works. The problem is that the gib can slide in and out as the apron moves. This causes the Y ways to over tighten as the apron moves away from the column and to become loose as it moves towards the column.

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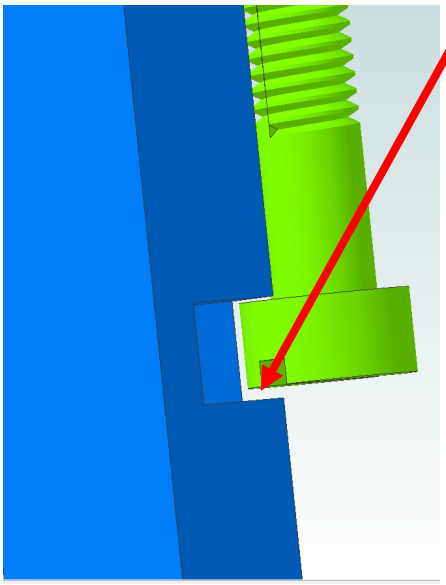
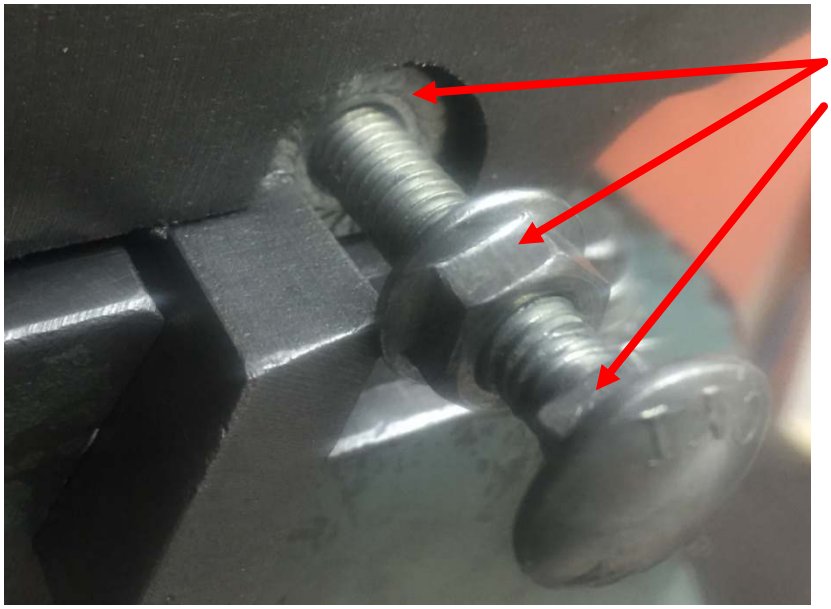


Why the variation?
The clearance between the screw and the slot in the gib is large. I tried adding a washer to close the gap and that did help a lot. However, since the screw still floats in its threaded hole, the problem was not fully resolved.

When I converted this mill to CNC, I found that I needed to precisely set the gib and could not tolerate any movement relative to the apron. My stepper motor was near its torque limit and any increase in friction caused missed steps.

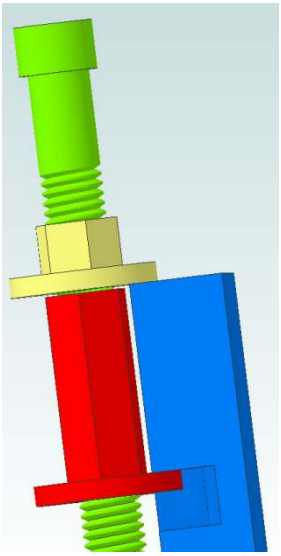


My solution consists of two flange nuts and a bolt. The bolt is first fitted with the nuts as shown. Then I screw down the bolt until it bottoms out eliminates backlash between the bolt and its threaded hole. Then the gib is positioned as the flange nut within the recess is spun out. Since this nut is not touching the gib, it is easy to turn with the end of a screwdriver. I turn until it contacts the face of the slot closest to the end of the gib. The outer flange nut is then tightened down on the end of the gib. By placing a wrench on the underside of the carriage bolt head and a second wrench on the outer nut, it can all be locked in place. Now the gib does not move at all yet can easily be repositioned if necessary.

Why a carriage bolt? Because that is what was in my junk drawer.

This approach was also be applied to the X axis gib and works fine.

Dave Kellogg suggested the following very nice improvements:



"Replace the inner nut with a fabricated part that threads onto the bolt. This part incorporates the inner flange that engages the outer edge of the notch in the gib, and has a hex that extents outward along the gib. The hex allows turning the inner flange using an end wrench, without the teasing with screwdrivers etc. in the table recess."

I welcome your comments and questions.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

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