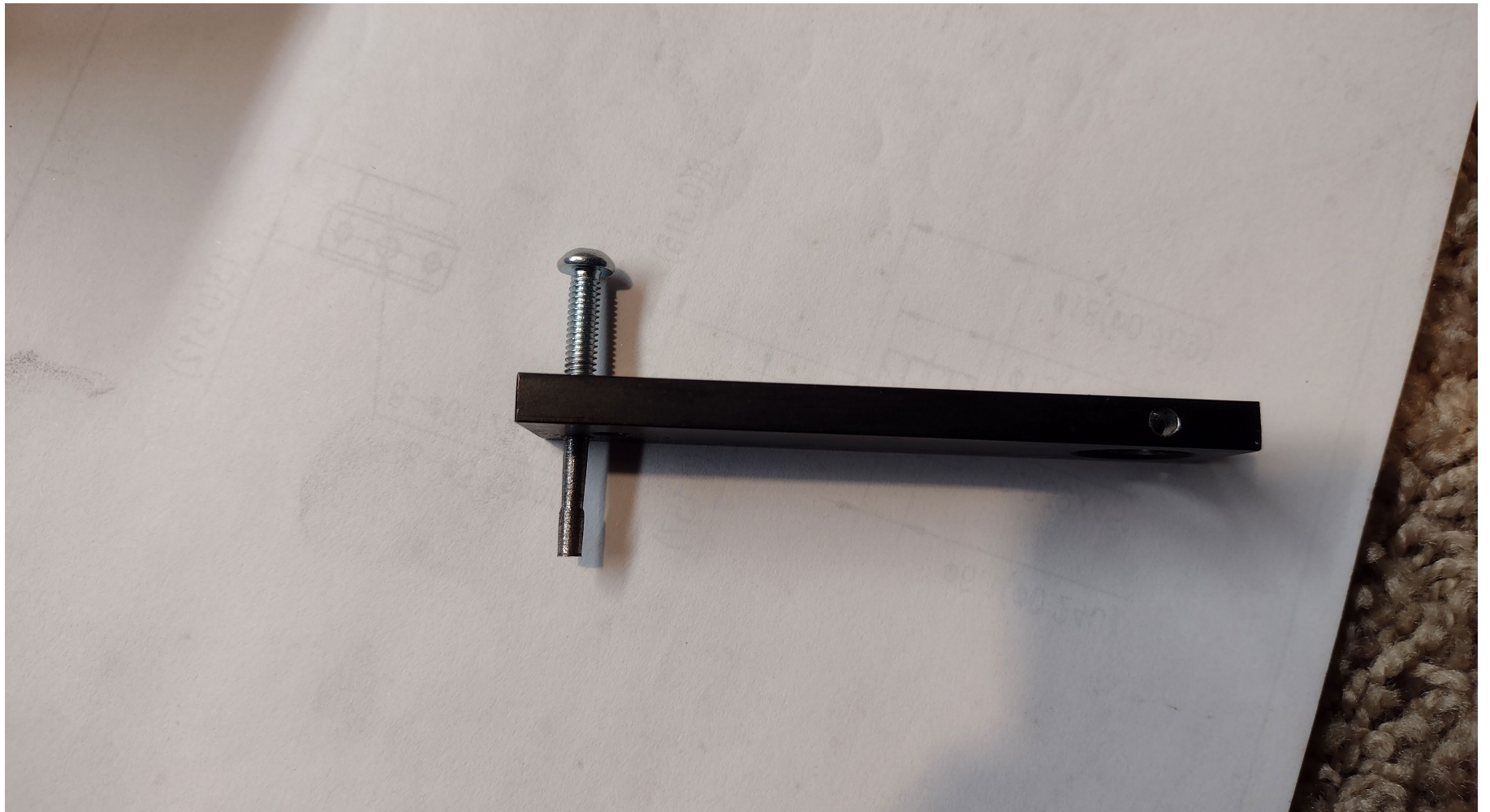


GCA Tool building contest entry

H&M Gunsmith

Who am I? I am a mostly retired Quality Engineer with a wide manufacturing background. I own and use a lathe/mill machine to make all manner of useful items. I am an amateur welder with decent skills. I have made and remade parts for my own guns for decades. Just a couple of years back, I read a book on DIY gunsmithing, and I already knew how to do most of what was in the book at a basic level. I'm still learning particulars, of course. We all are. But the concepts of levers, pivots, and springs are quite familiar to me. I decided that if I was going to do this professionally, I should get training. Enter AGI. For the money, and the time invested, the lessons and the training are the best I could find. So here I am. I've passed the Introduction, and the Handgun courses. I've completed the Shotgun course, but I still need to test. I have all but the last few centerfire rifle disks already, and they have proved useful. The first thing I did was get my FFL, which was easy because I followed the AGI instructions for doing so. The ATF agent who came to my house for the inspection was impressed that I seemed to know the answers before he asked the questions. I told him that was AGI talking. My business officially began on January 1 of 2022. I haven't made a lot of money yet, but things are slowly picking up. And here we are with the tool building contest. So, let's get started, shall we?

There's the tool. Doesn't look like much does it. It's a bar of aluminum alloy (6000 series, I think) with a threaded hole through it. I turned down the end of a #8-32 screw to use as a press through the gap between the receiver and stock on the family heirloom L.C. Smith shotgun, ca. 1896

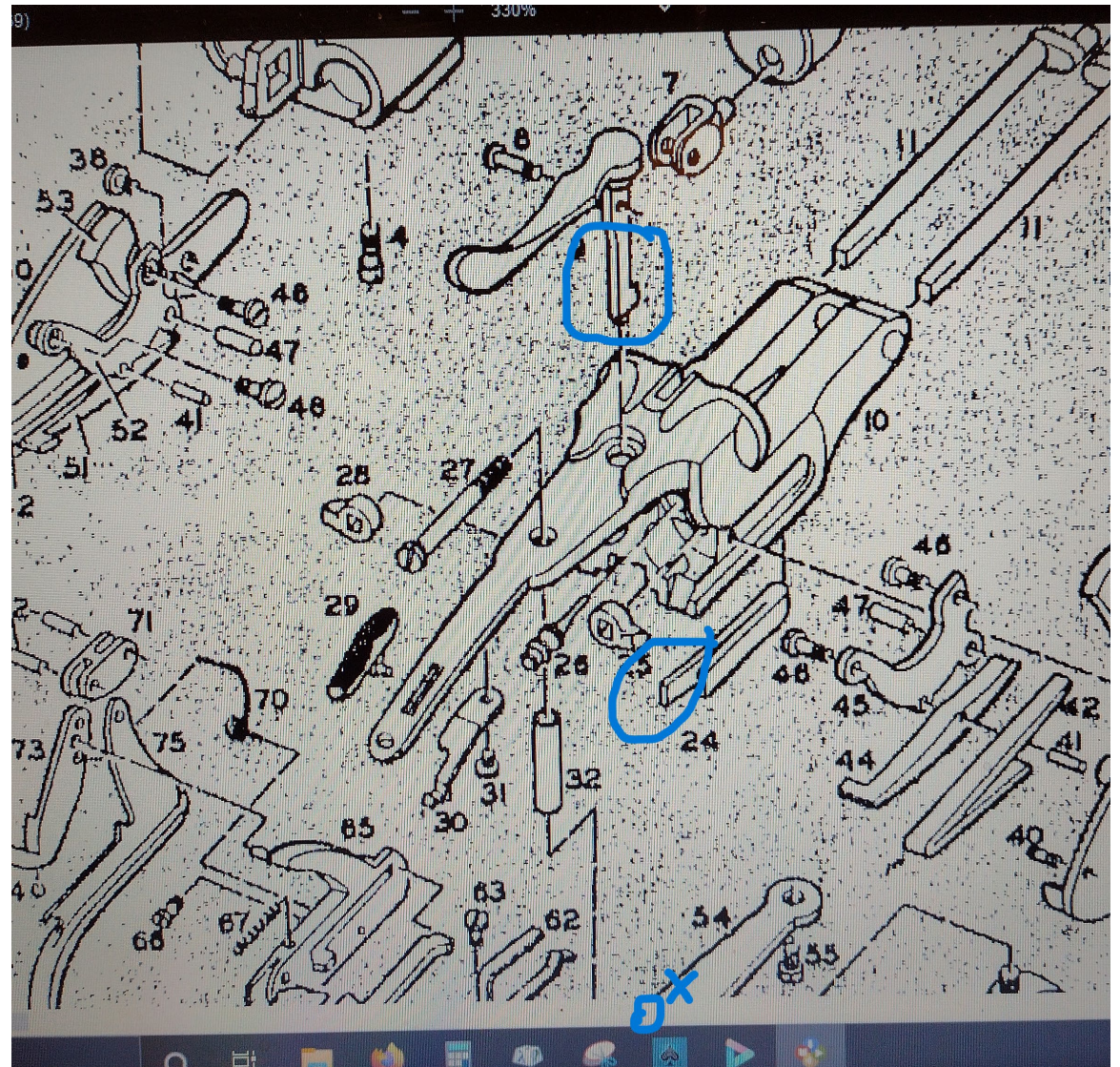


It's difficult to get a good picture of the gun, but you can see it's a beauty. I have no way of knowing how many shells have gone through those barrels. I can tell you that I'll be remaking the firing pins in the not too distant future. They were a mess. The bushings need work, too, and that is another task down the road. For now, it was enough to remachine the pins and bushings sufficiently to restore proper function. I did have to replace the springs because the originals came out in pieces.

So, what does the tool have to do with all of this? I'm glad you asked.



You will note that the lug on the bottom of the release lever bears against the outer side of the longer leaf of the spring, #24 in the diagram. What you can't see, indicated by the 'X' at the bottom of the schematic is the hole in the trigger plate where the end of the shaft must go. We'll get to that directly.



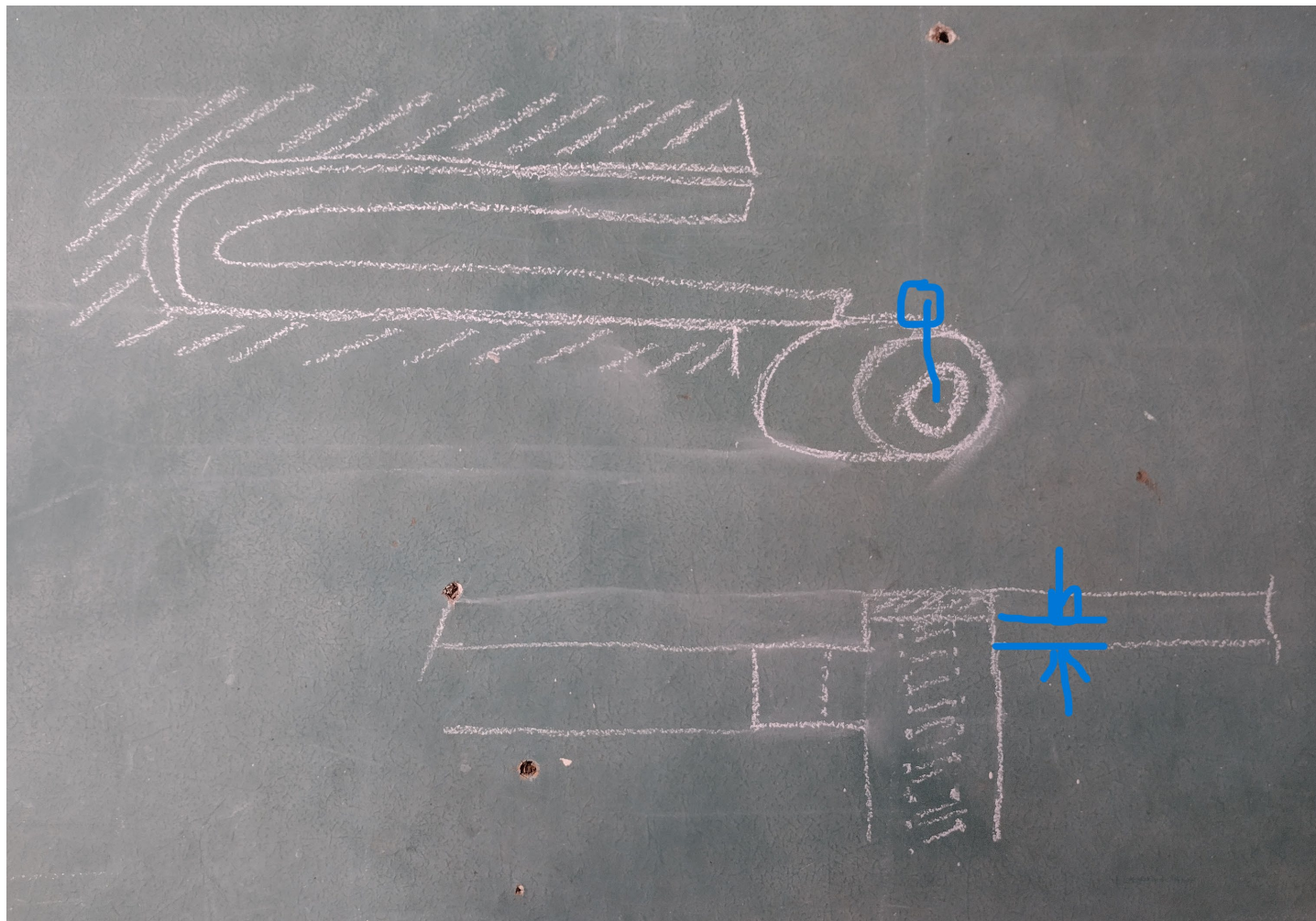
Many thanks to Jack First for the exploded view.

You will note the white piece in the upper photo. That shows the path that the release lever takes through a hole in the wood. Hole, not slot. The stock must be in place before the shaft can be aligned.

The lower photo shows where the bottom of the shaft must come through the trigger plate. The lug on the shaft is resting on the end of the spring, and is not aligned with the hole.

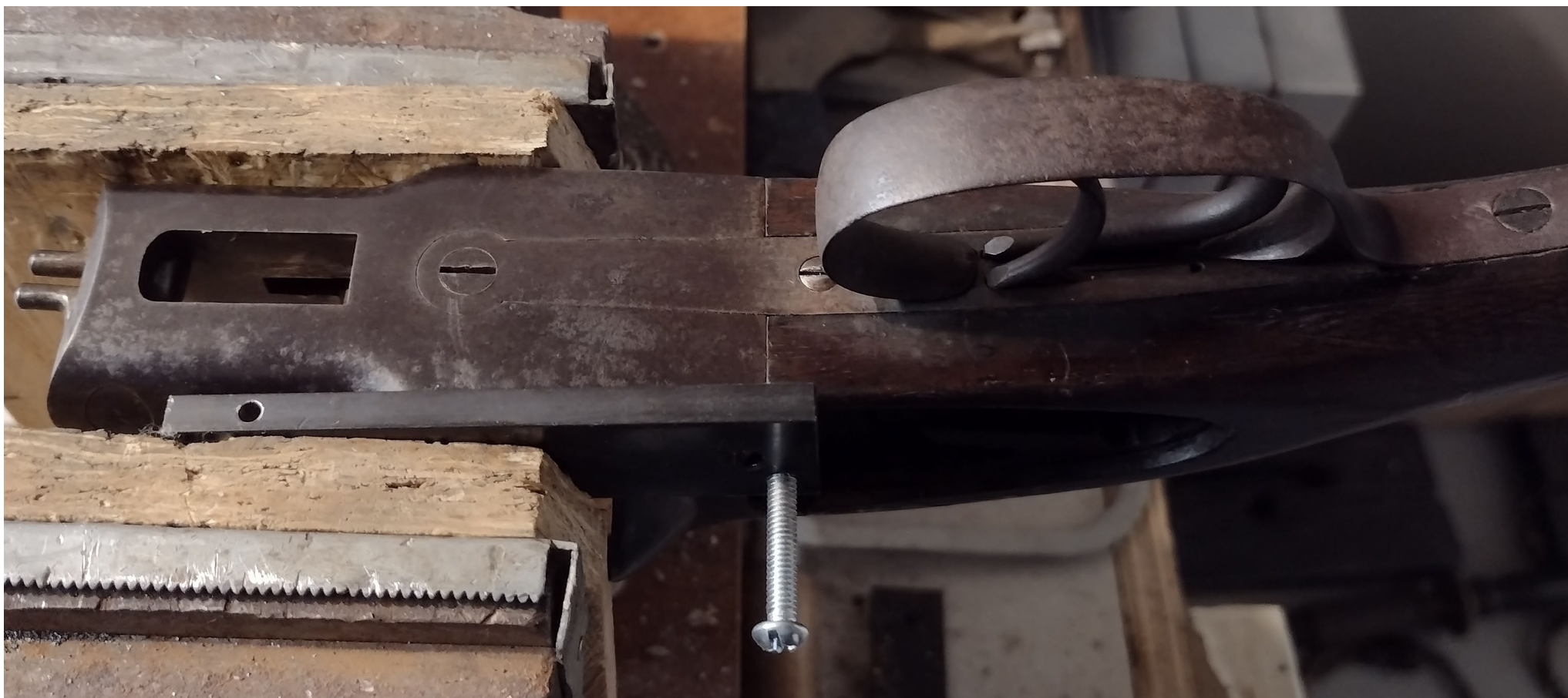


And that is where the tool comes in, I couldn't resist a bit of Bob Dunlap graphics. The upper drawing shows where the shaft end needs to go for assembly. The lower picture shows how little of the shaft is actually bearing in the trigger plate. This has to be nearly exact for it to work. Oh, and the safety system has to be aligned at the same time.



This is the tool immediately after I used it to push the spring away from this side through the tiniest of gaps between the stock and the receiver. It was actually rubbing lightly on the receiver. And NO, I'm not taking this thing apart again just to show the gap. You'll have to use your imagination.

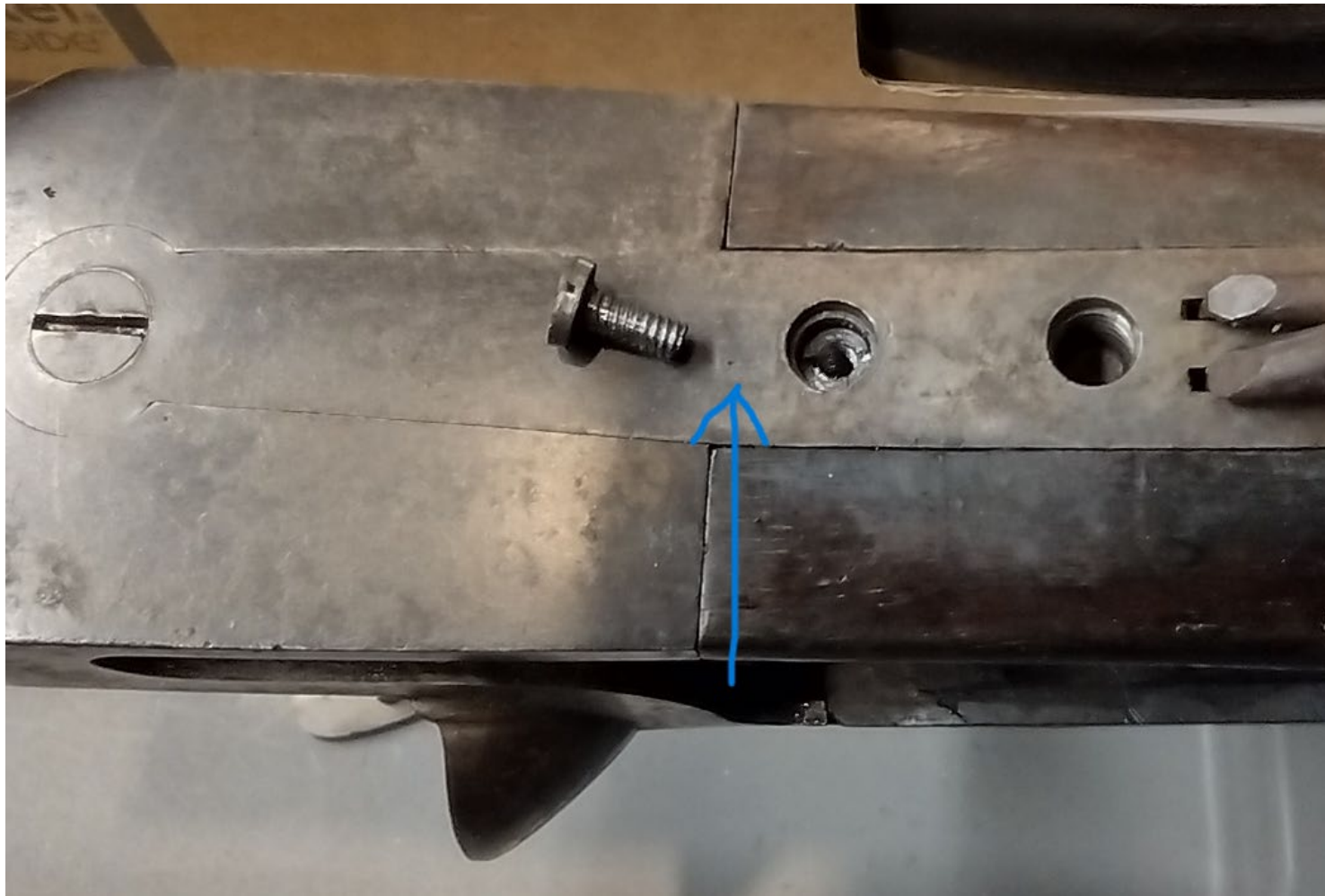
You will note the screw inserted under the front curve of the trigger guard. That's the retaining screw for the release shaft. I was successful.





The arrow shows where the screw went, just behind the receiver. The gap between the stock and the receiver was barely the diameter of a #8 screw.

I am guessing that the factory provided a tool with a thin blade to push the spring aside. I'm picturing a toggle clamp, adjusted to the exact distance required to achieve alignment. Or, they may have utilized a guide rod of hardened steel, with a #4-40 male thread on the end. Factories would, at the very least, provide fixtures to keep things in place during assembly. I have a vise. And a tool I made for this exact purpose. Will I need it again? Yes, when I replace the firing pins and bushings. Meantime, it waits.



Thank you for your time and attention. This concludes my presentation.