THOMPSON CENTER LONG RANGE RIFLE TRIGGER ISSUE

PREFACE

I purchased my TC LRR from Bass Pro several years ago. Shortly after I got it I had the trigger lock up on me. My mistake was to pull a harder on the trigger which only served to bend the spring for the trigger safety lever. Not wanting to send it off to TC to take who knows how long to fix it I opted to "void the warranty" and fix it myself. I was able to bend the spring back into proper shape but I still had the occasional trigger lockup occur. Like many of you I discovered that just cycling the bolt would correct it but I was not satisfied with that solution. So… I decided to make sure I really voided my warranty and opened it up again to do a thorough analysis of what was wrong. This write up explains what I found and my solution to the issue and includes pictures to help you understand how it works and what the issue is. If you find a better solution please share it with the community.

Note: Thompson Center WILL NOT sell you any parts for the trigger. They want you to send your rifle back to them to fix. Then, as many of you have reported, it comes back not repaired, more scratches on it, and less money in your wallet which you could have spent on other fun toys.

Here Goes…

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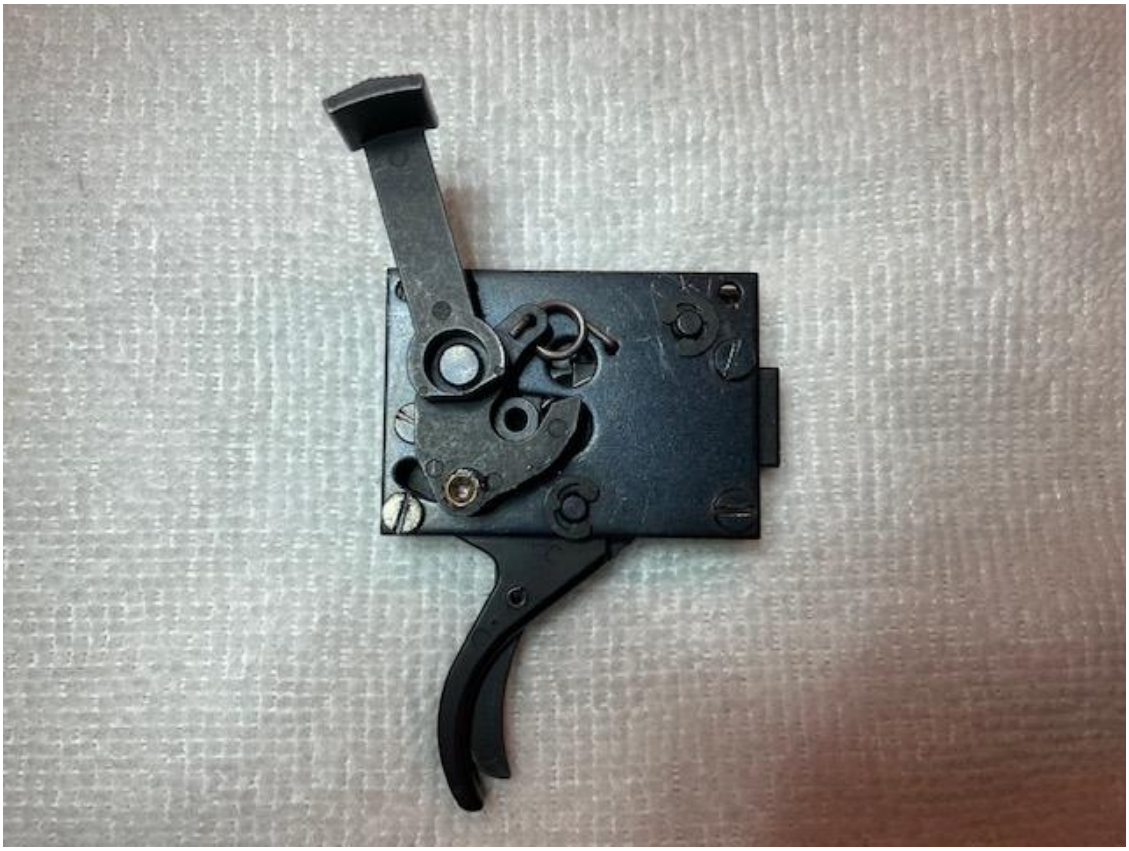
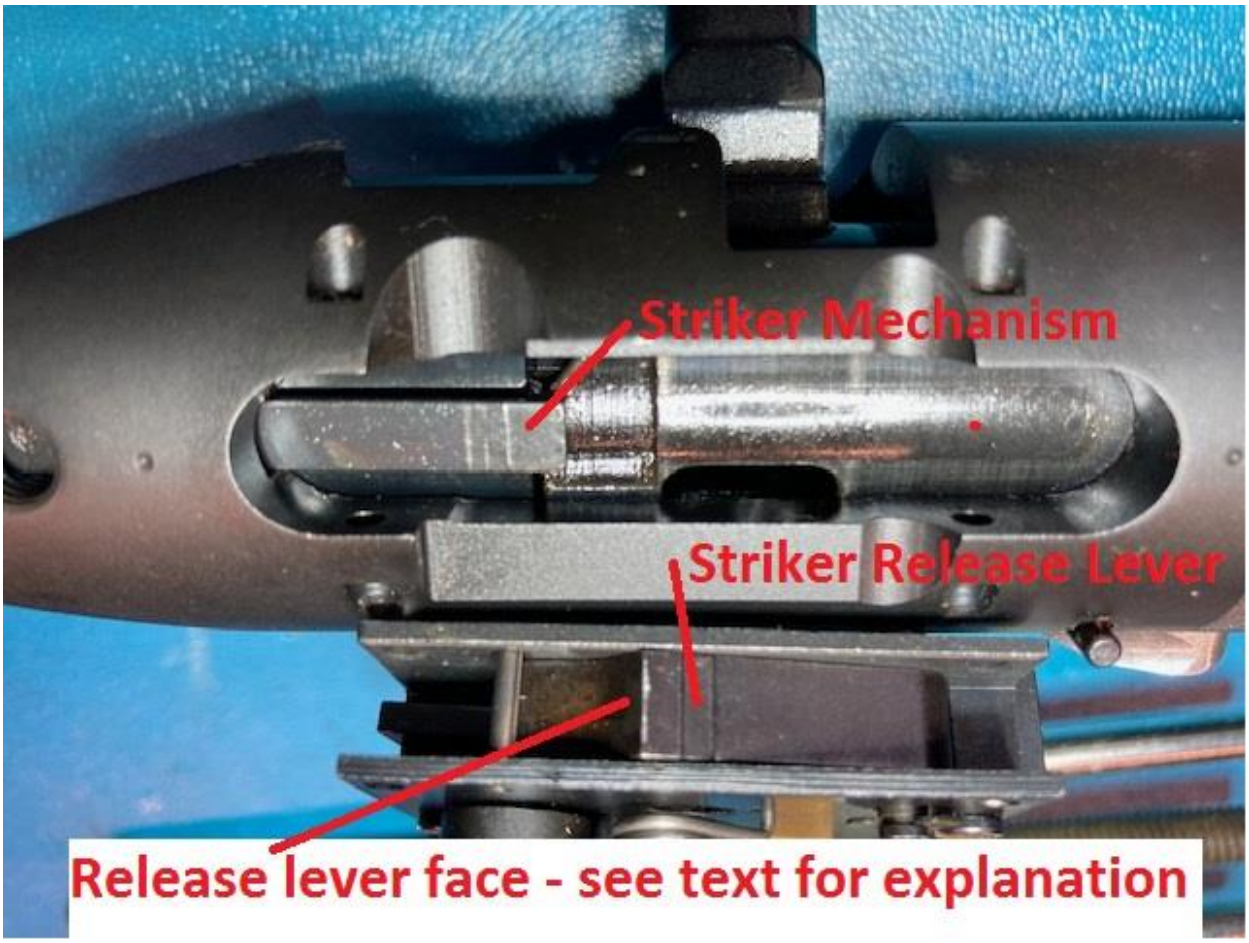
This is what the trigger group looks like when it is removed from the rifle.

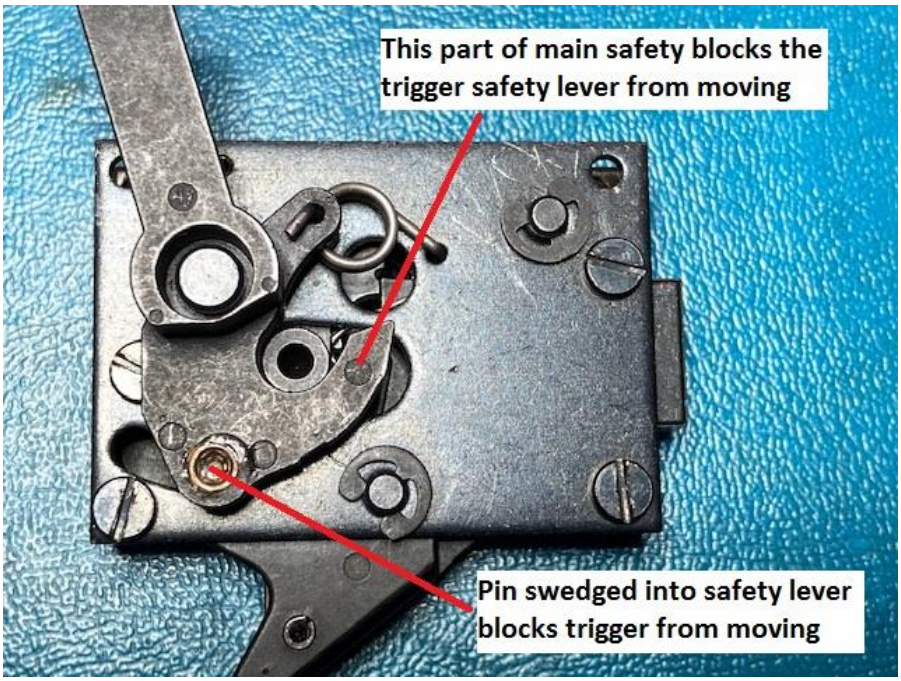


This is a trigger group top view next to the receiver with a couple of items pointed out.



Once the bolt is cycled the front edge of the striker mechanism pushes forward against the release lever face. When the trigger is pulled, the sear will release allowing the striker release lever to drop down out of the way immediately allowing the striker to move forward and hit the primer and make the BOOM we love to hear.

Closer views of trigger group with explanation of safety lever. First picture is in the “safe” position.



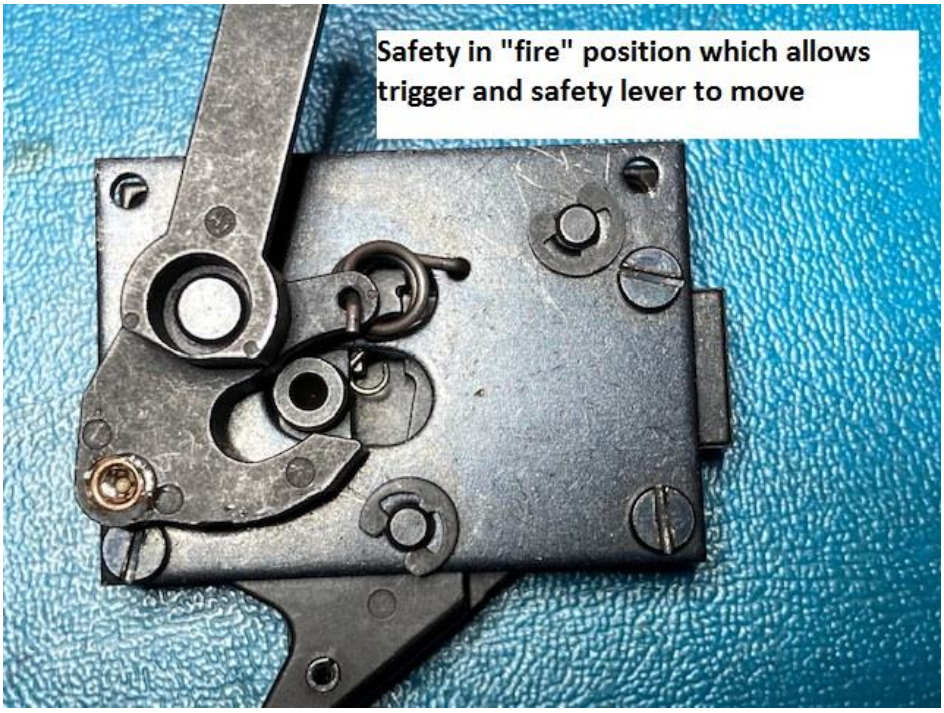
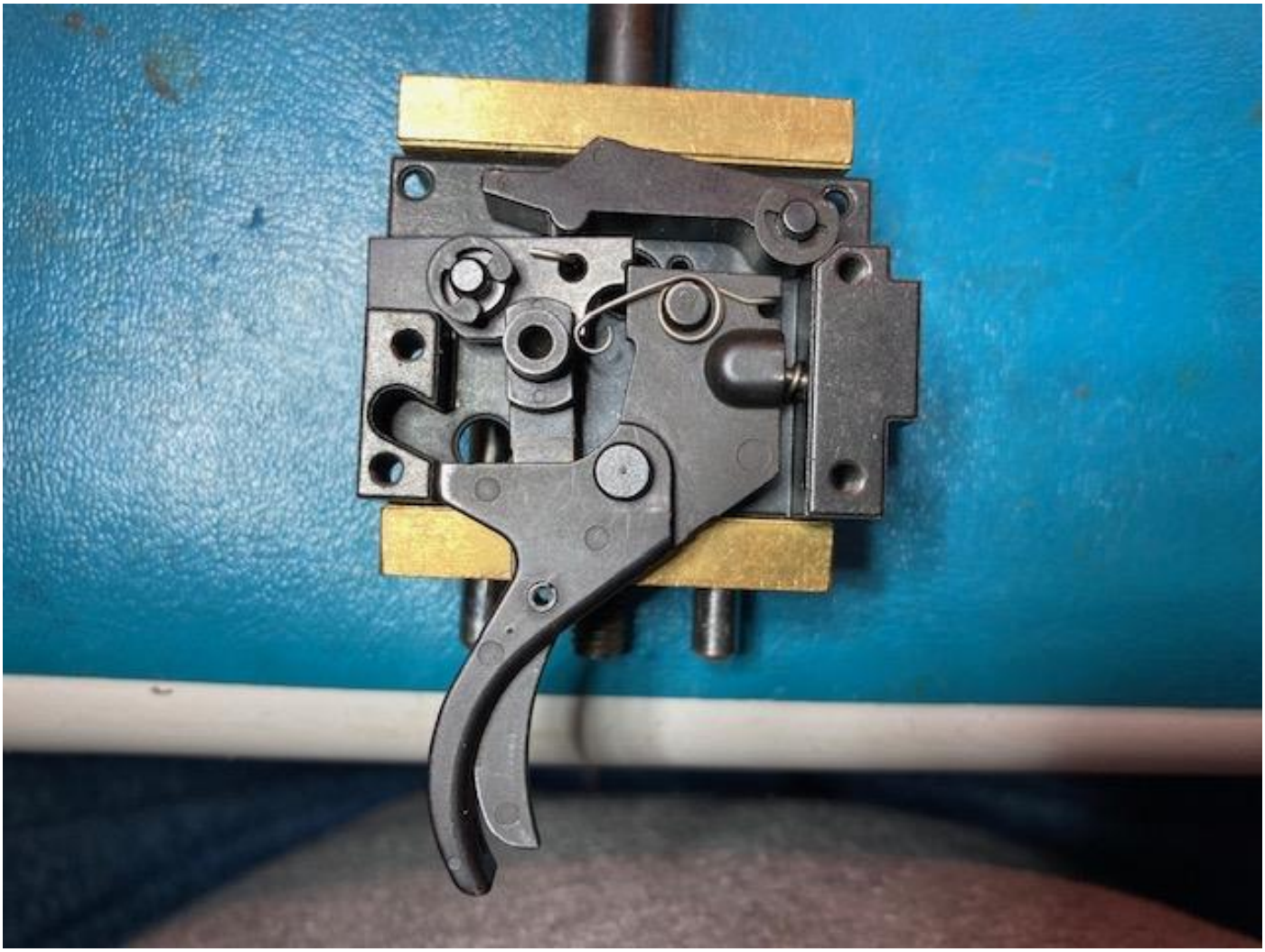
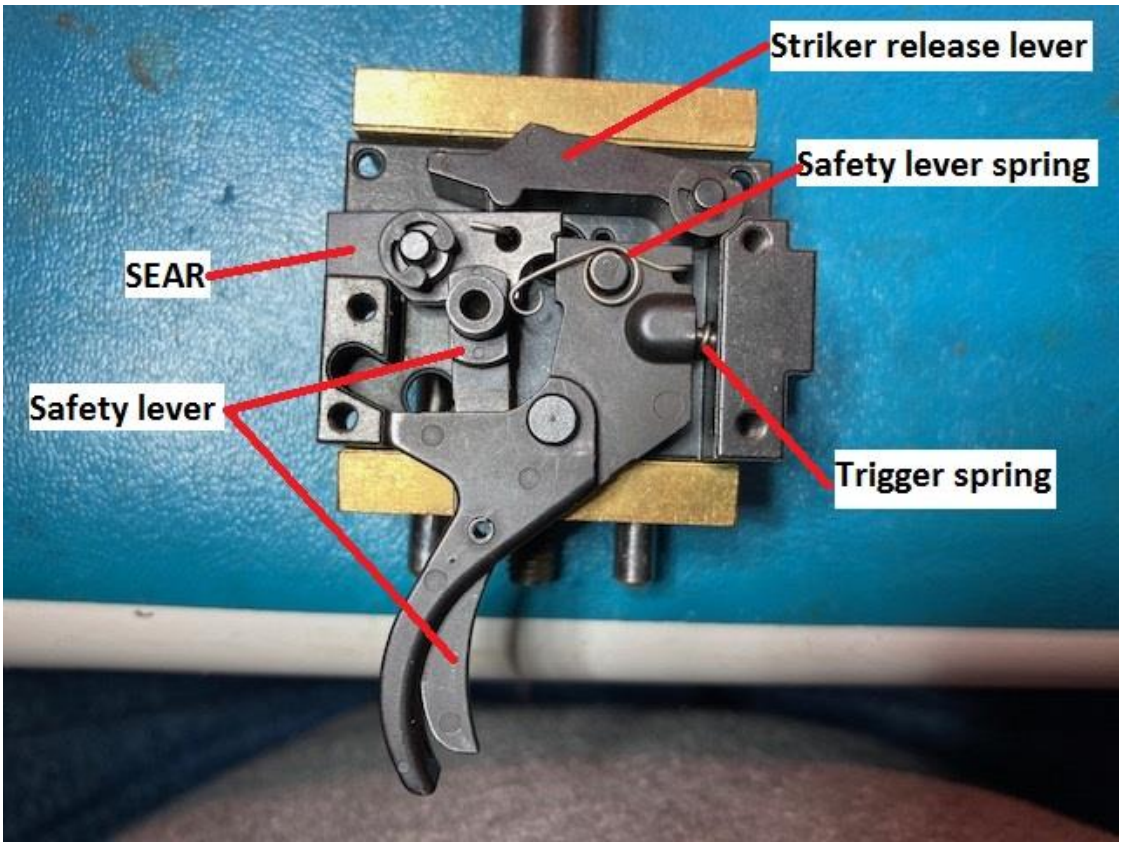


Image of trigger group with main safety and side cover removed so you can see how everything lines up. The brass object holding it is a small vise I had. It helped keep things in place while I poked and prodded.



Same picture but with explanation of parts



What is not visible in this picture deals with the safety lever (trigger safety). At the top of the lever you can see the round boss with a hole in it. This boss sticks up through the side plate and is what the main safety engages to prevent it from moving (as seen in the first picture explaining the trigger safety). On the other side of the lever directly in line with this boss is a similar boss that sticks out that prevents the sear from dropping down. Looking at the front edge of the sear just under the safety lever spring you can see a curved cutout on the lower front edge of the sear. When the trigger safety is pulled back, the boss on the backside of the lever moves forward to line up with this cutout so when the trigger is pulled the sear will be released and can drop down and lower the striker release lever.

NOTE: If you want to check to see if the trigger safety is actually doing its job, try the following. BE SURE YOUR RIFLE IS UNLOADED AND THE MAGAZINE IS REMOVED! SAFETY FIRST!

1. Cycle the bolt and move the main safety lever to the “fire” position.
2. Without touching the trigger safety grasp the sides of the trigger and pull it back. You should hear a click when the trigger releases the sear. This small amount of movement of the trigger is enough to release the sear but the sear cannot move far enough to lower the striker release lever.

At this point the trigger safety will be very hard to pull. This is because the pressure from the striker spring is being transferred through the striker release lever and the sear directly to the top of the boss on the backside of the safety lever. All you have to do is raise the bolt straight up and back down to reset the sear. Another thing to note: if you have the trigger weight adjusted too low the trigger spring may not be able to push the top of the trigger back under the sear when the bolt is cycled. If this happens the sear will sit back on top of the trigger safety lever boss and the trigger safety will be very difficult to pull.

MOVING ON…

On the front edge of the top of the trigger safety is a groove for the trigger safety spring to ride in.

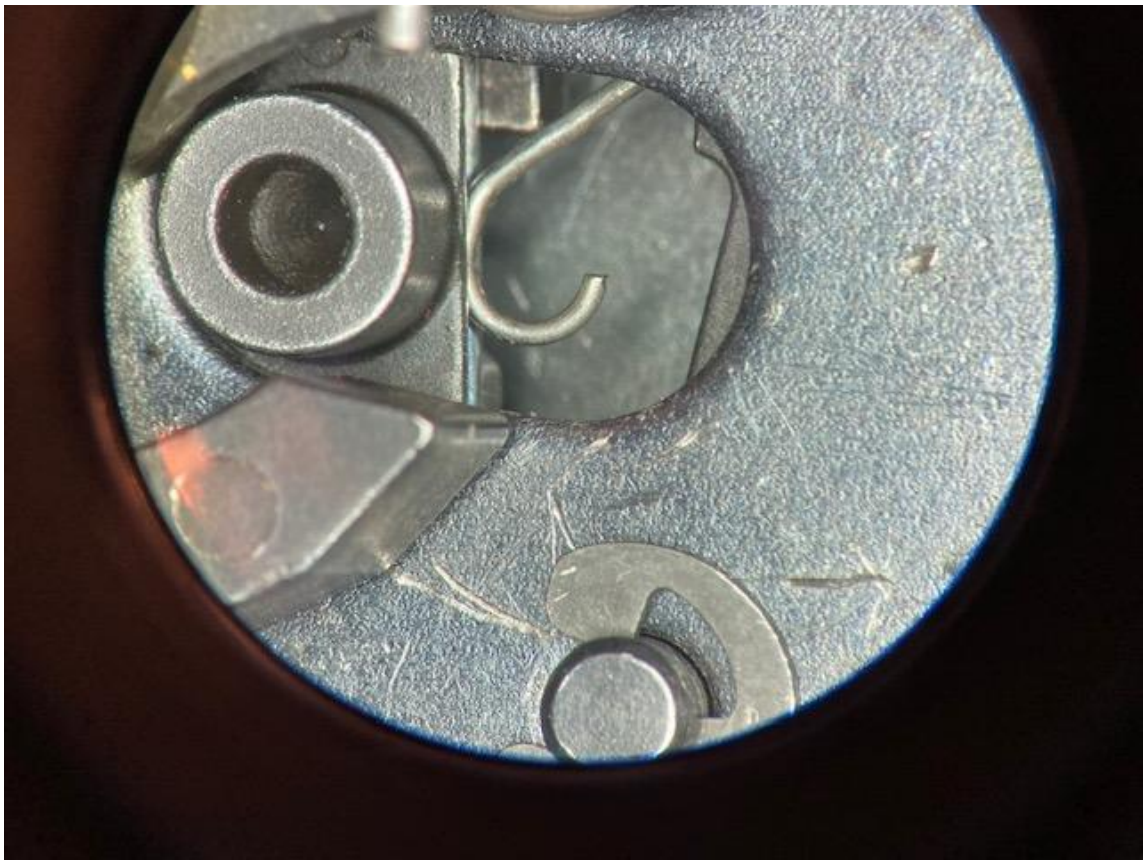
Shortly after I fixed the trigger safety spring I bent, I noticed the trigger safety felt a little bit rough when pulling it back. To fix this issue I removed it from the trigger group and used sandpaper to smooth the groove. I did this by folding a piece of sandpaper in half and used the folded edge to sand the groove. I started with 400 grit and stepped up to 2000 grit paper. (400, 800, 1000, 1500, 2000). I also used a polishing wheel in my Dremel tool and metal polish to final polish the groove and the spring where it made contact with the groove. This improved the feel quite a bit.

NOW FOR THE REAL ISSUE

One thing I noticed, after cycling the bolt the trigger safety had a small amount of play in it. I could move it forward and backward ever so slightly and it didn't feel like there was any tension on it from the spring within this small amount of movement. That is when I knew what the issue was.

If you look in the picture below, the sear is set, and the trigger safety has been pulled forward just slightly (from the trigger end). At this point you can see the gap between the top front edge of the lever and the spring. THIS IS WHERE THE PROBLEM IS! There is no positive pressure from the spring against the grove in the edge of the lever. You can also see there is a lot space between the center coil of the spring and the alignment pin it rests on. Also, the rounded slot the opposite end of the spring rests in is HUGE compared to the spring thickness. All of these gaps allow the spring to move around too much which can lead to it coming out of the groove and jamming the trigger or moving up too high in the groove and then you're pressing on the end of the head of the spring instead of on the side of the head. This is what happened to me and when I pressed real hard I bent the spring. The basic problem is the head end of the spring is not long enough to apply continuous positive pressure to remain in the groove. I know I previously said I had bent and repaired this spring and I'm sure someone will try to claim I didn't get it bent back properly but I did bend it back to the factory shape as compared to the spring from an LRR that was in perfect condition. The LRR I compared it to also had a slightly loose trigger safety but I didn't want to mess with that rifle since it was not mine.

I searched around on the Internet but couldn't find an aftermarket spring that I could modify to correct the problem and, as stated above, TC won't sell trigger parts. My solution was to use a set of round nose pliers and "unwind" the head of the spring to increase its length. I kept unwinding and refitting the spring until it was just long enough to remain in contact with the groove while applying a small amount of pressure on the lever. You can see this in the picture below. In reality I had to "unwind" it a little bit more than the picture shows so it would apply slightly more pressure against the lever. The next time I took it to the range for a 200 yard steel shoot it performed flawlessly with no trigger jams at all.



Hope this helps. I'm releasing this document to the public domain. I encourage you to download it and share it with anyone that wants it. This forum may not always exists so if enough folk have it they can share it again later on other forums. If someone else performs this mod successfully or you manage to find a replacement spring that will work, please let everyone know. If someone wants to send this to Thompson Center go ahead. Maybe they will pay attention and fix the issue at the factory.

I will repeat my disclaimer here:

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Dougie G.