

Inside the Ruger

Photo Essay

Ruger Disassembly

Spring Kit Installation

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The following is a photo documentation of the procedure that I followed while preparing my Ruger for my personal use in Cowboy Action Shooting. I am not a gunsmith. If you make any attempt to follow or duplicate the steps I have taken you do so at your own risk.

Figure 1: Tools I used for disassembly and smoothing of the Ruger Vaquero. These include a screw driver set from Brownell's, a set of curved needle-nose pliers, a set of punches, a set of stones made for working on single action revolvers (also from Brownell's), a paper clip, Rem oil, and a Wolf Spring Kit consisting of a 17 lbs. hammer spring, a 30 oz. trigger spring, and an extra power base pin latch spring. Not shown: bench vise, bench grinder, Dremmel tool and kitchen fork.



Figure 2: Note: If you are unfamiliar with the part names of the Ruger Vaquero, I would suggest you print the [schematic](#) on the Brownell's site. I will use their numbers when referring to parts.



I removed the grips (23) by removing the screw (27) in the center of the grips. I removed the ejector assembly by removing the ejector housing screw (10) located at the front of the ejector housing (9). I removed the cylinder (60) and base pin (1) by depressing the base pin latch (3).

Figure 3: Replacing the base pin latch spring (4) with the Wolfe replacement requires unscrewing removing the base pin latch from the base pin screw. Although it is a simple matter of unscrewing one from the other, a special tool is required. I made that tool by filing a screwdriver tip as shown.



Figure 4: To retain tension of the mainspring (34) on the hammer strut (33), I cock the hammer to expose a small hole in the base of the hammer strut. Into this hole I insert a paper clip (or nail, etc.) and release the trigger.

Figure 5: To remove the grip frame (18) from the cylinder frame (61) you must remove 5 screws. Three (19, 20, 22) are located on the bottom of the gun near the trigger guard.



Figure 7: Located on the grip frame is the cylinder latch spring (6) and cylinder latch plunger (7). These parts are small and the plunger is fragile. I keep several of these on hand as I have 4 Vaqueros that I work on from time to time. I pull them and set them in a safe location.

Figure 6: The other two screws (21) are located on either side of the hammer. When the 5 screws are removed, I gently pull back on the hammer and the grip frame separates from the cylinder frame.



Figure 8: Located on the back of the cylinder frame is the pawl plunger and spring assembly (38). I also keep some spares of these on hand. I remove them and place them in a safe place.

Figure 9: Removing the trigger assembly requires two punches and it seems at first, three hands. But after you've done it a couple times it becomes second nature. I use a punch to depress the the gate detent spring (17) while simultaneously pushing the trigger pivot pin (56) with a second punch. Once the spring is out of the grove in the trigger pivot pin, the pin taps out easily.



Figure 10: Clockwise from top: gate detent spring (17), cylinder latch (5), trigger (55), trigger pivot pin (56)

Figure 11: The hammer assembly comes out easily by tapping out the hammer pivot pin (29).



Figure 12: Clockwise from top: hammer (31), pawl (36), hammer pivot pin (29), and transfer bar (54)

Figure 13: When stoning the cylinder frame I concentrate on 6 areas: the two channels where the pawl and the transfer bar slide, the areas where the trigger and hammer pivot, and the openings where the pawl and cylinder stop pass through the frame. Shown here I am stoning the pawl channel.

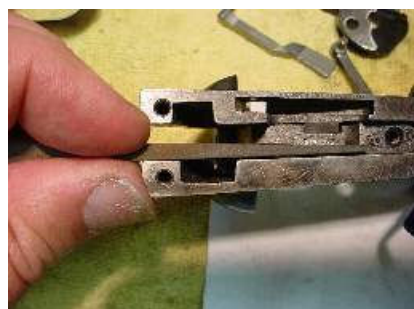


Figure 14: On a well shot gun it is easy to see where parts rub. I concentrate on these areas. Here I am stoning where the trigger contacts the frame.

Figure 15: I am stoning the transfer bar channel. Notice the holes where the hammer and trigger pivot pins pass through. I smooth along these areas as well. On the holes where the pawl and cylinder latch pass through the frame my goal is to remove burrs and sharp edges where the moving parts might hang.



Figures 16-22: I stone parts where they move against the frame. I don't try to get an exactly smooth surface rather I try to get the high spots smooth so the parts will smoothly slide along the frame.



Figure 23: To replace the trigger spring (57) with the lighter Wolf spring I first remove the legs from the trigger spring retaining pin (58)

Figure 24: Then I use a punch to remove the trigger spring pivot pin (8). I then pull the trigger spring out the back of the grip frame.



Figure 25: To insert the new spring, I reverse the processes of Figure 23 and 24. I reinsert the trigger spring pivot pin

Figure 26: I reload the spring legs on the trigger spring retaining pin.



Figure 28: I grind the cut spring flat so that it squarely contacts the mainspring seat (35). If I let it get too hot, I ruin the temper of the spring.

Figure 27: I like the hammer pull lighter than the 17 lb spring in the Wolf kit. I counted out 25 coils and cut it off at that point with a Dremmel tool. Many people skip this step.



Figure 29: A trick I learned in replacing the mainspring is to use a kitchen fork. The center tongs of the fork fit nicely into the mainspring seat(5) and allow hammer strut(33) to pass through the center of the fork. With the hammer strut secured in the vise, I depress the fork and remove the paper clip. I gently back pressure off the fork as to control the spring. I then place the new spring on the hammer strut reapply pressure to the main spring seat with the fork and insert the paper clip back into the hole.

Figure 30: One of the keys to understanding the assembly of the Vaquero is that the hammer pivot pin (29) is held in place when the longer of the two grip frame screws passes through the groove in the pivot pin. When I insert the hammer pivot pin. I note which side of the gun the groove is on.





Figure 32: With the pawl attached to the hammer, I slide them past the transfer bar making sure the pawl slides along its channel and the transfer bar slides along its channel.



Figure 33: I add a drop of Rem oil to the hammer pivot pin, just before I tap it into place. At this point I note the side the groove is on. I add a drop of oil the area where the pawl rides on the hammer.



Figure 34: I attach the trigger to the transfer bar and rotate it into place in the cylinder frame.



Figure 35: With the loading gate (16) in place and closed, I insert the gate detent spring (17).



Figure 36: I then lift the gate detent spring slightly to allow the protrusion from the gate latch (5) to enter the center of the spring, then I slip the gate latch down beside the trigger.





Figure 37: I add a drop of Rem oil to the trigger pivot pin before I insert it.

Figure 38: I depress the gate detent spring with a punch and slide trigger pivot pin in until it lodged in the center section of the cylinder frame.



Figure 39: Using the punch as a guide I move the trigger pivot pin past each part until it clicks into place--the gate detent spring with the notch in the trigger pivot pin. At this pint I check to see if the gate detent spring is in place tight against the base of the loading gate. If not, I use a punch to push it into place

Figure 40: I place the main spring assembly into the grip frame making sure the "hump" is up.



Figure 41: I replace the cylinder latch spring (6) and plunger (7) into the grip frame. On two of my four rugers, I found burrs in the holes where the spring sits. I had to remove these burrs with a round file in order to get the plunger to move in and out freely.

Figure 42: I replace the pawl spring and plunger assembly (88) into the cylinder frame. I make sure it goes into the top hole and not a screw hole.



Figure 43: Fitting the grip frame to the cylinder frame is a matter of watching several things at once. I check to see that the hammer strut sits in the groove on the back of the hammer. That grip frame is on top of the pawl spring and not pushing it to the side. And that the cylinder latch plunger is contacting the cylinder latch. As I ease the grip frame into place against the cylinder frame, I push the trigger spring under the trigger with a punch. At this point the screw holes line up and I insert the small screw (20) into the screw hole in front of the trigger guard. Before I go further, I depress the cylinder latch and see if it springs back. If it doesn't, it means that the cylinder latch plunger has slipped off the cylinder latch and I have to pull the grip frame off and try again.



Figure 44: The rest of the assembly is just a matter of replacing the screws. I first replace the two back screws (21) then the two lower screws (19,22) making sure the longer one fits the groove of the hammer pivot pin. I then cock the hammer and pull out the paper clip. I replace the cylinder and base pin and screw in the ejector housing and grips. Done!

