

Tuning the Uberti Open Top Revolvers

By

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Part 2

We are going to do some modifications to our frame that will allow the use of a coil hand spring and plunger – thereby eliminating hand spring breakage and help smooth up the action – and modify the arbor to eliminate wedge problems and cylinder binding. In order to do this, we need to drill some precisely located holes in our frame. Whenever a hole has to be drilled or a part modified, the first thing to do is look for any reference point on the work piece that will facilitate getting the job done as easily as possible. On our frame, if it is lying down in its normal shooting position all the machined surfaces are angled. Photo 20.



Photo 20

It would be very hard to locate or drill a hole in these angled surfaces. However, if we stand the frame on end everything changes. First, we can see that the arbor is parallel to the top of the cylinder window. Photo 21 at “X”.



Photo 21

Second, we can see that the arbor and the back strap area of the frame are set at 90 degrees to each other. Photo 21 at “Y”. We can use these surfaces to accurately guide the location of our holes. Our first task will be to drill the hole for our new hand plunger and coil spring.

The first thing we need to determine is where the hole has to be located. We start by measuring the thickness of the hand. Photo 22.



Photo 22

In this case the hand in our gun is .140" thick. Ideally, the plunger should ride in the center of the hand, so half the thickness of the hand would be .070". However, many hands, including our Uberti hand, have a boss at the bottom of the hand to space it out from the hammer. To find the thickness of this boss simply measure across the bottom of the hand, including the boss, and then subtract the dimension we got in Photo 22 from the total hand thickness. Photo 23.



Photo 23

In this case the bottom of the hand, including the boss, is $.170''$. Thus, in order to get the plunger to ride in the center of the hand we take half the thickness of the hand and add the TOTAL thickness of the boss; in other words, $.070'' + .030''$ which gives us a total of $.100''$. In order to locate this dimension on our frame set your dial calipers to $.100''$. On the opposite end of the caliper there will be a tab sticking out $.100''$. Photo 24.



Photo 24

Take a black magic marker and blacken the frame above the left grip frame screw hole. Photo 25.



Photo 25

Then set your calipers up against the frame and scribe a line along the end of the tab. Photo 26.



Photo 26

Remember to angle your scribe like that shown in Photo 14 in order to get an accurately scribed line. The distance in from the side of the hammer channel is fairly critical. However, the location of the hole between the top of the frame and the screw hole is less critical. You just need to make sure the drilled hole will not extend above the top of the frame or into the screw

hole. Take your punch and tilt it sideways so you can see that the point is on your scribed line and about equal distance between the top of the frame and the grip screw hole. Photo 27.



Photo 27

Tilt the punch up and when you are sure the tip has not moved and is still on your scribed line tap the punch with a hammer and center punch the location of the plunger hole. Photo 28.

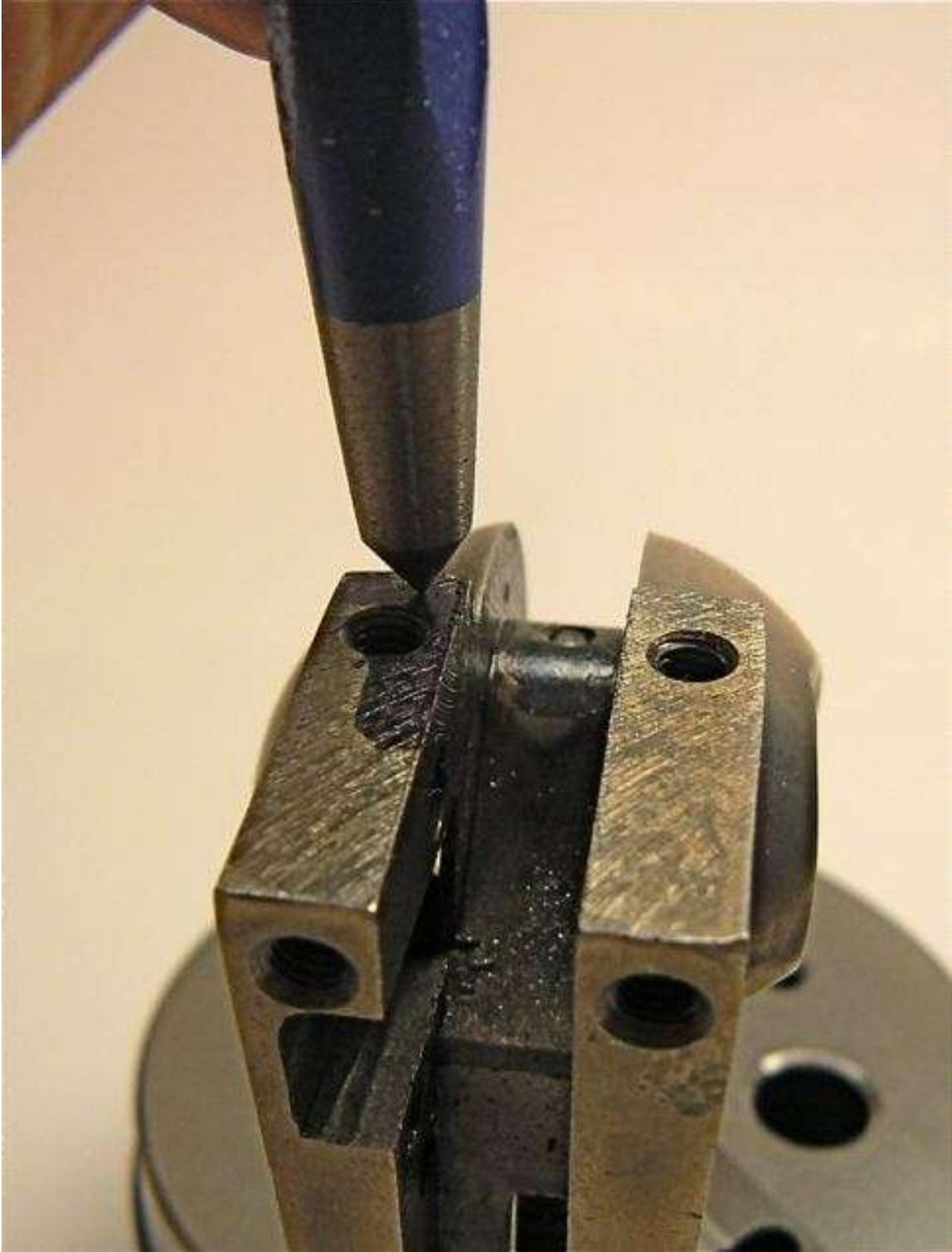


Photo 28

The best way to get a firm hit is to put the arbor in a vise (make sure you pad the jaws) with the arbor facing down and the recoil shield resting on top of the vise jaws.

Now that our holes location has been established on the back of the frame, we need to set it up so the hole can be drilled. On the drill press vise in Photo 11, the jaws are relatively deep and the sides of the jaws are perpendicular to the top of the vise. One way to set the frame up so that it is square is to put the arbor in the vise jaws and then firmly press the frame up to the sides of the jaws. Photo 29.

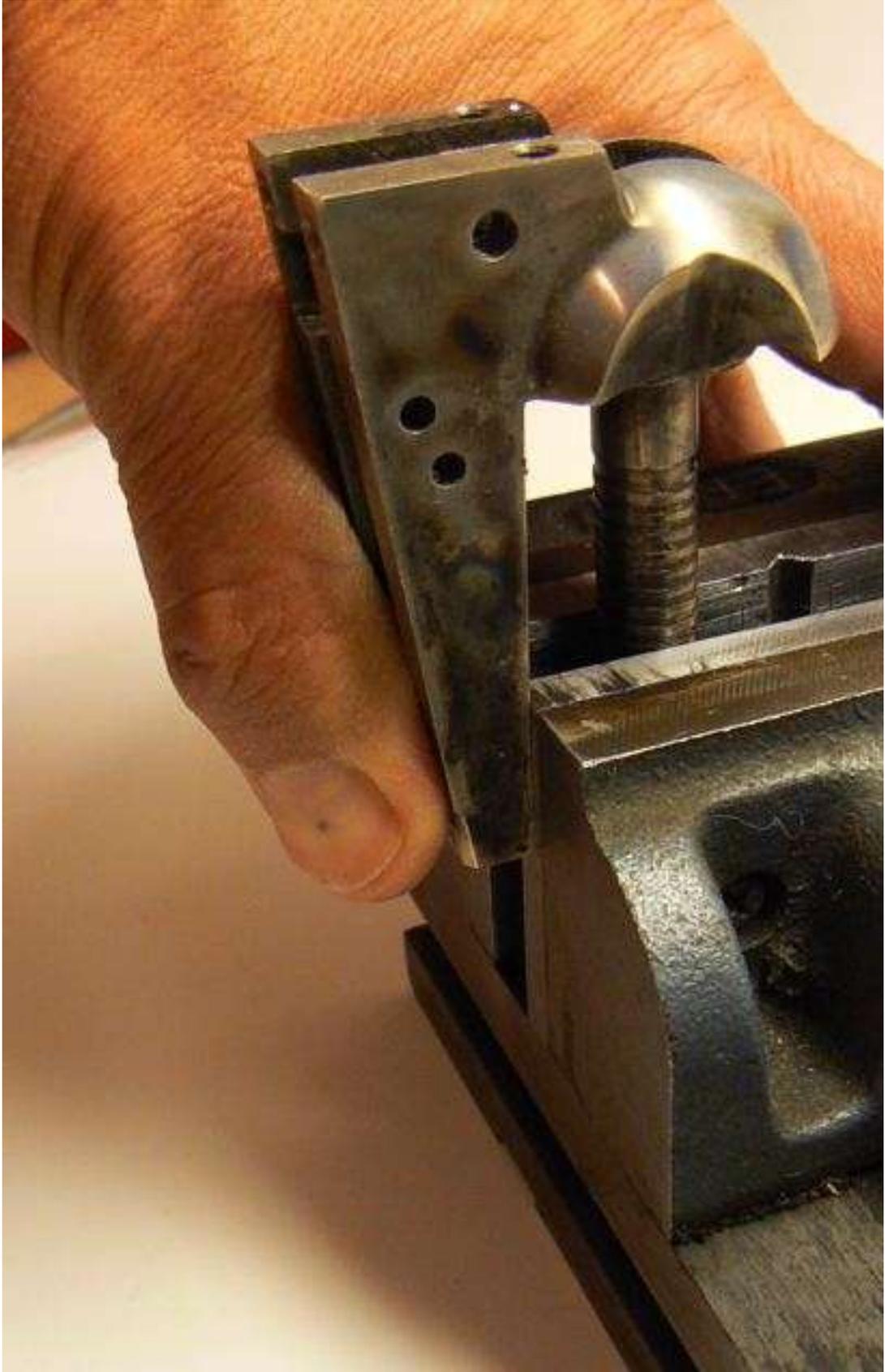


Photo 29

Since the top of the cylinder window is parallel to the arbor and the arbor is set at 90 degrees to the bottom of the frame (Photo 21) this will give us the proper 90-degree angle to drill our hole. Depending on how your drill press vise is configured, you may have to try different ways of securing the frame in the vise. For example the jaws in the drill press vise shown in Photo 30 are too short to allow using the cylinder window to square the arbor. So, we can turn the frame around and use the arbor to square the frame. In Photo 30 the frame is now held in the vise.



Photo 30

The sides of the vise jaws are square, but they don't extend down far enough and the arbor hits the base of the vise below the arbor and will tilt the frame. Again, as long as we keep everything parallel we can space the arbor out from the frame and still keep the base of the frame square. In Photo 30 a piece of flat steel stock is placed between the arbor and vise jaws and then everything is pressed against the vise jaws. This will maintain the relationship between the arbor and cylinder window. (Before tightening the vise jaws on the frame make sure to insert some shim stock to keep from marring the frame.) You simply need to look at your particular vise and

determine how to best secure the frame to get the base of the frame perpendicular to your drill bit.

Once your frame is properly secured, put a number 35 drill in your drill press and move the vise under the drill. (Number drills can be obtained from most hardware stores, hobby shops or Brownell's.) With the drill press NOT running, slowly lower the drill bit and watch the tip of the drill VERY carefully. As it hits the center punch dimple it will deflect if it is not centered exactly. Keep moving the vise (VERY small movements) until when you lower the drill it hits the center punch dimple and does not deflect. At that point it should be centered fairly well and you can turn on the drill press and drill your hole. Photo 31.



Photo 31

Keep drilling until the bit goes through the frame into the hand channel. Once the hole is drilled it should look like the one in Photo 32.



Photo 32

Take the frame out of the vise and insert a standard Ruger plunger and spring. Photo 33.



Photo 33

(Brownell's part numbers 780-012-104 or 780-012-105. Midway also carries Ruger parts although it will have a different part number.) This plunger and spring is found in virtually all Ruger single actions. If it drags in the frame at all, take the number 35 drill between your fingers and spin it back and forth while moving it in and out of the hole. Photo 34.



Photo 34

This should remove any burrs that might have been left in the hole.

Uberti hands are usually smooth on their backside so little polishing is needed. On the percussion hand (Photo 6, left hand) simply pull the old handspring down and it will break off. (See the Pietta article for more detailed instructions and photos.) Put the hand on the hammer and install it in the frame and then put in the plunger and spring. Put on the back strap (to compress the spring) and cycle the hammer. Without the cylinder, sometimes the hand won't move smoothly since it is going further forward than it would with the cylinder in place and will jam or drag in the hand slot. Simply take a screwdriver tip and push the hand back a little. At this point, all we are checking is to see if the plunger is too short. These guns vary a bit from gun to gun and sometimes the plunger will be too short. If the plunger drops through the frame hole into the hand channel don't worry there's a simple fix. Simply cut a piece off the end of the number 35 drill you used to drill the plunger hole and use that as a new plunger. Photo 35.



Photo 35

The conversions and 72's hands are two-tooth. Photo 6, right hand. (The hand in the photo is out of a conversion.) The 72 hands generally fit into the gun about the same as the percussion

models and you can use the same standard Ruger plunger and spring set-up. The conversions, however, take a little more work.

As shown in Photo 3, the conversion plate extends forward from the recoil shield. On the stock hand, the handspring sticks back from the hand to take up this extra space. Photo 6, right hand. Because the hand sits further forward in the frame, the Ruger plunger and spring are too short. So short, in fact, that even making a longer plunger out of the end of our number 35 drill won't work. Again, a little work will solve the problem. Break off the hand spring and work the back of the hand on a stone until you have two small flat spots stoned on the back of the hand. Photo 36.



Photo 36

Then go to your local friendly hardware store and buy a piece of 1/8th inch square keyway stock. They are generally an inch long and this will work about perfect. If your keyway is bright and shiny it is probably plated with a coating to make sure it doesn't rust. Put the keyway on a stone and work it back and forth a few times to remove the coating. Photo 37.



Photo 37

While it's on the stone, mark the top of the keyway with a little black mark from your magic marker and place the keyway on top of the hand. Photo 38.



Photo 38

Once the keyway has been stoned, the stoned surface will also be bright and hard to tell from the coated surfaces. The black mark will help identify which side goes down in case you drop the keyway while working with it. Next solder the keyway to the back of the hand. (Put the end of the keyway right above where the old hand spring was broken off.) Photo 39.



Photo 39

Cut the keyway off just below the top of the hand. A Dremel with a cutoff wheel works well for this. And, round off the bottom of the keyway. See photo 39 again.

Put the hand on the hammer and install it in your frame. One thing that makes installing even the original hand and spring difficult at times is that the hand channel on most Uberti's is oval shaped at the bottom and the sharp edges of the hand or the flat leaf spring hang up going over this oval portion of the hand channel. You can see the oval shape in Photo 40.

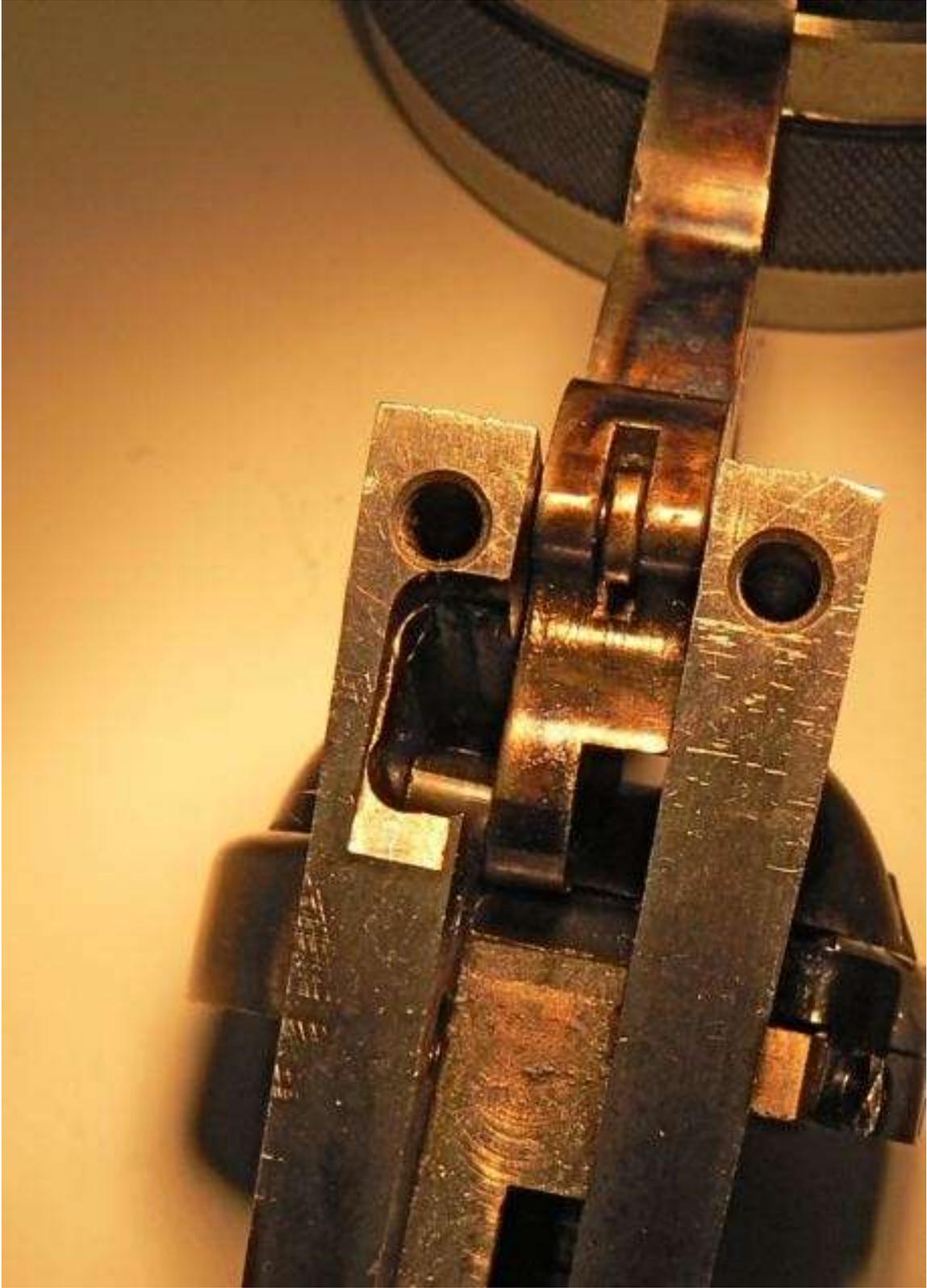


Photo 40

Carefully work your new hand up into the channel looking at it with the little flashlight shown in the Pietta article. Sometimes a little material has to be removed from the outside corners of

the keyway to get it to slide past the oval part of the frame. Once the hand is inside the hand channel, and the hammer screw is installed, gently cock the hammer and with your little flashback look for any interference between the bottom of the hand and the hand channel. (Especially in the oval area of the hand channel.) Stone a little material at a time at the bottom of the piece of keyway we soldered to the hand until the hammer comes back almost to the full cock position. Install the back strap and keep stoning the keyway until the hammer goes to the full cock position. Photo 41.



Photo 41

When you are finished, the hand should look something like the hand shown in Photo 42.



Photo 42

We are now halfway through our Uberti modifications. In part 3 we will begin fixing the wedge/arbor fit.