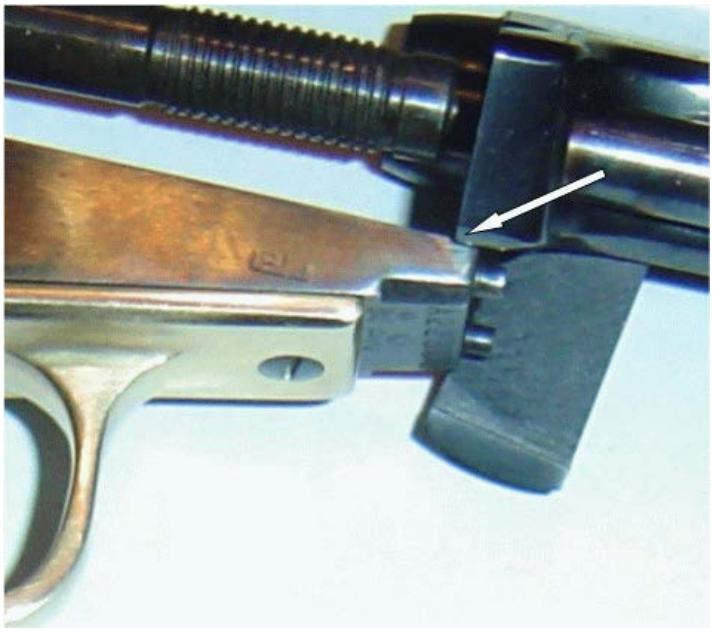
Proper Wedge Adjustment and Function for Colt Black Powder Revolvers

By Roy L. Oak

On many new revolvers, especially those made by Pietta, the wedge is hammered into the barrel so tightly that it can even have a raised bump on the side of the barrel. The wedge should be able to be inserted and removed from the barrel with strong thumb pressure or a light tap from a screwdriver handle, nylon hammer head, wooden clothespin half or some other non-metallic object.

For Uberti made revolvers, we may have another issue. Some, if not many, of the Uberti revolvers suffer from what is called the "short arbor" issue. Uberti has seemingly made some revolvers where the arbor does not seat itself completely flush with the arbor slot in the barrel lug. The arbor simply does not bottom out in the slot. When this happens, as the wedge is inserted and locked into the wedge slot, the cylinder gap can be closed so tight the cylinder may rub the forcing cone of the barrel or not turn at all.

If you have one of these Uberti revolvers, before adjusting the wedge, you must adjust the short arbor. To determine if you have a short arbor, refer to the section, "Short Arbor Repair" at the end of this section to evaluate your arbor and repair the short arbor before proceeding with any wedge adjustment.



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If the wedge is so tight that additional force is needed to remove it, the wedge will need to be adjusted. Begin by setting your revolver on two blocks of wood or on a padded vise to remove the wedge, so there is ample air space below the wedge. In order to keep from damaging the wedge or barrel frame during initial removal of the wedge, use a rubber or nylon tipped, flat head punch and a gunsmith hammer or a medium size ball-peen hammer to punch the wedge out. Or you can use a wooden or plastic clothespin half to punch out the wedge to keep from damaging the wedge or barrel frame.

Once the wedge is removed, you can begin the honing (filing) down process on the left side (pressure side which comes in contact with the arbor) of the wedge with a honing file or fine-tooth file.

You will note that the left side of the wedge is generally narrower than the right side. It is the left side of the wedge that comes into contact with the arbor as it is inserted into the barrel opening and into the arbor wedge opening. This is the side we want to thin down.

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After initial filing, put the wedge on a stone and polish that side until it is smooth. Only if necessary, repeat the process on the right side of the wedge, testing frequently, until the tip of the wedge spring just sticks out of the barrel with thumb pressure on the wedge.

Notice that the wedge retention spring is sticking just above the wedge opening of the barrel in the photo above. It is this spring that keeps the wedge from coming out of the opening as it hooks itself to the wedge opening in the barrel. Make sure this spring is protruding above the opening as the photo shows. It is the wedge retention screw that keeps the wedge from falling out of the barrel when the barrel is removed, and the wedge retention spring that keeps the wedge from coming out of the barrel and arbor opening under normal firing. When the gun is shot, the wedge may loosen a little more causing the wedge to go a little further into the barrel. But, as long as the wedge is tight, and the lip of the wedge spring is past the edge of the barrel, the wedge will be fine. Again, the primary purpose of the wedge retention spring is to lock the wedge into the barrel and, upon barrel removal, to catch on the wedge screw and keep the wedge from falling out of the barrel when as it is pulled loose to remove the barrel for cleaning.

When the wedge is inserted through the barrel assembly, that is, inserted left to right as seen from the back of the gun, depending on the model, the wedge retention screw head depresses the spring so that the lip of the spring is lowered and does not interfere or contact the barrel assembly as the wedge is being inserted or removed

With the wedge fully inserted the spring is still depressed such that the lip on the spring is below the outer mold line of the wedge and thus fully within the channel in the wedge. It does not protrude above the wedge and cannot contact the barrel assembly or interfere with removing the wedge.

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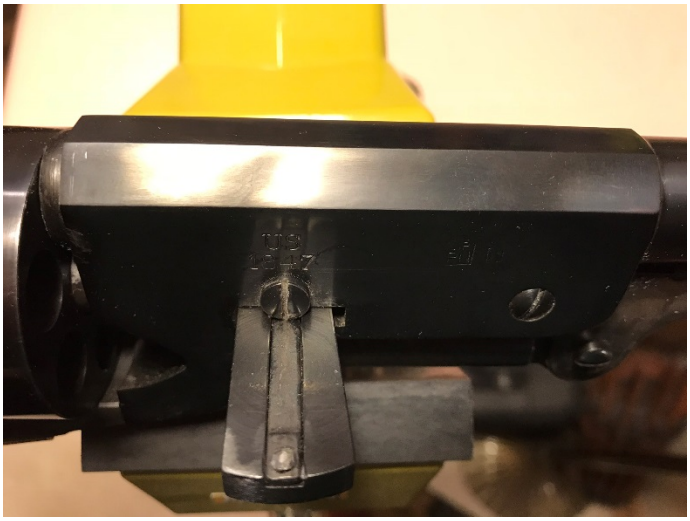
Notice that the wedge retention spring is curved upward towards the lip of the spring. Be sure this curvature remains intact at all times. Do not try to straighten the spring as that will cause the lip to not engage the barrel frame and it will become insecure.



When the wedge is being loosened, the screw head allows the spring to return to its undeflected (pushed downward into the spring channel) position as the wedge moves right to left, out of the opening. In the fully loosened position, the lip on the spring contacts the back side of the screw head and prevents the wedge from being fully removed from the barrel assembly. This is the intended purpose of the spring, the spring lip and the screw. A fully functioning wedge should be easily loosened by hand if all parts are functioning as they should.

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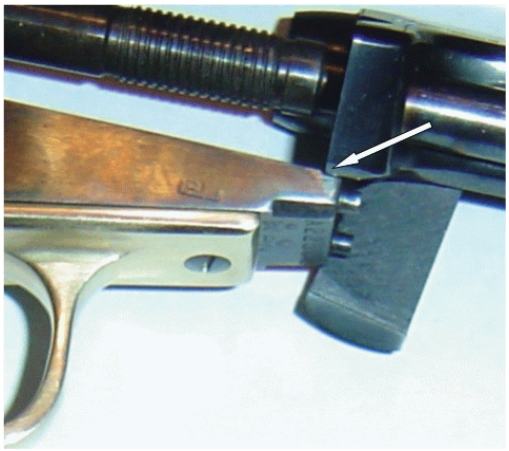
After the proper fitting of the wedge, I recommend using a Presto Gun Blue Pen to re-blue the wedge in locations that you honed it down or to remove any scratches. This will keep the wedge from rusting and help maintain its color uniformity with the revolver.

The Uberti "Short Arbor" Repair

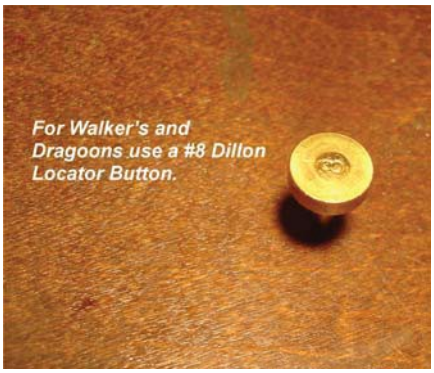
As stated earlier, for Uberti made revolvers, we may have another issue, known as the "Short Arbor". Some, if not many, of the Uberti made revolvers over the years have suffered from what is called the "short arbor" issue. Uberti has seemingly made some revolvers where the arbor does not seat itself completely flush with the arbor slot in the barrel lug. The arbor simply does not bottom out in the slot. When this happens, as the wedge is inserted and locked into the wedge slot, the cylinder gap can be closed so tight the cylinder may rub the forcing cone of the barrel or not turn at all.

If you have one of these Uberti revolvers you must adjust the short arbor. What follows is a "Short Arbor Repair" method that has been passed down through the ranks of cap & ball shooters for several years.

If you have a Uberti what follows is HOW TO FIX A SHORT ARBOR. With Pietta's I have NEVER HAD ONE THAT HAD A SHORT ARBOR. In one instance I had a Pietta Army 60 where the Arbor was a wee bit too LONG...Easy FIX with a Diamond Flat File. There are several ways to do this... I use Pettifogger's Method. It is the easiest to do. First you check to see if the arbor is short. Remove the barrel assembly and remove the Cylinder. Replace Barrel making sure you insert the ARBOR into the ARBOR WELL and not the barrel. Turn the barrel so that the locking lug wells are at the 4 to 5 O'clock position and SEAT THE ARBOR FULLY. IF the Arbor will not seat... CLEAN OUT THE ARBOR WELL. Use a wood dowel that is a wee bit smaller than the arbor well and wrap 120 grit sand paper around the dowel... holding the sandpaper in place, rotate the dowel to remove burrs and other garbage from the arbor well... do this until you can FULLY SEAT THE ARBOR. If your revolver looks like the picture then you know you have a SHORT ARBOR. With Uberti's the SHORT ARBOR WILL ALSO CAUSE YOU TO HAVE A CYLINDER GAP THAT LOOKS LIKE A V WHEN IT SHOULD LOOK LIKE THIS: ‖ and the Cylinder Gap should not EXCEED .010" using a feeler gauge. SHORT ARBOR'S will EFFECT the accuracy of the Revolver.



Once you have corrected the seating problem of the Arbor in the Arbor Well. We will proceed to CORRECT THE SHORT ARBOR. The first step is to locate and mark the EXACT CENTER OF THE ARBOR Once you have determined the EXACT CENTER we want to SCRIBE that position. Using a SHARP POINTED HARD METAL PUNCH we will INDENT the EXACT CENTER. If you are working on a 1847 Walker or one of the three Model 1848 Dragoons, you will use a DILLON LOCATOR BRASS BUTTON #8. If you are working with a 1849 Colt Pocket Pistol you would choose a DILLON LOCATOR BRASS BUTTON #4. For 1851 Navy in 36 Cal. / Army 1860 in 44 Cal. / For 1861 Navy 36 Cal. and the Police and Pocket Pistols 1862 choose a DILLON LOCATOR BRASS BUTTON #3.



You will need a DRILL PRESS and a DRILL PRESS VICE and a 9/64th Drill Bit and a second Drill Bit the NEXT SIZE UP. Secute the Revolver Frame inside the Drill Press Vice securely so that the frame will not move when you start to drill. Position the Drill Press Vice so that the 9/64th drill bit will align with the detent or scribe that you made in the center of the Arbor. Make sure the Revolver Frame is level in the vice. Drill the hole, go slow, the drill bit will go thru the center of the Arbor and exit into the Wedge Cut Slot of the Arbor. Change Drill Bit to the next higher drill bit and JUST KISS THE HOLE THAT YOU JUST DRILLED.

Take the Dillon Locator Button and see that it will seat fully into the hole that you just drilled in the arbor. The leg of the Locator Button will protrude in the Wedge slot.

With the Button in place push the arbor into the Arbor Well, turn the barrel so that the locking lugs in the frame are at the 4 to 5 O'Clock position when you seat the arbor. This will tell you how much of the brass Locator Button you have to remove to get the correct ARBOR LENGTH.

Take the Brass Locator Button and secure it into your hand drill. Then using your DREMEL with a 120 grit round wheel remove excess metal from the tip of the Locator Button or use a Flat Diamond File. Make sure you keep the end of the button FLAT and NOT ROUNDED. Keep removing a little at a time to get the EXACT FIT FOR THE ARBOR. Once you have the CORRECT LENGTH, using a SHARP PIN OR A SHARP #2 lead pencil...scribe a line on the Brass Button Leg where it protrudes into the Wedge Slot. Using your Dremel with with a CUTTING WHEEL shorten the Leg where you scribed the line. You do not want the Leg extending into the wedge slot. Next coat the LOCATOR LEG WITH LOCKTITE and LET IT DRY FOR 24 hours.

After the Button with the Locktite has set and dried... Place Cylinder on the Arbor and secure the barrel to the frame using the WEDGE. With the Hammer in the FIRE POSITION the CYLINDER GAP SHOULD LOOK LIKE THIS: || and when using a feeler GAUGE the GAP should not EXCEED .010".

The Short ARBOR has been fixed and it will last a lifetime.