Breaking Down the Ethan Allen Double-Action Pistol

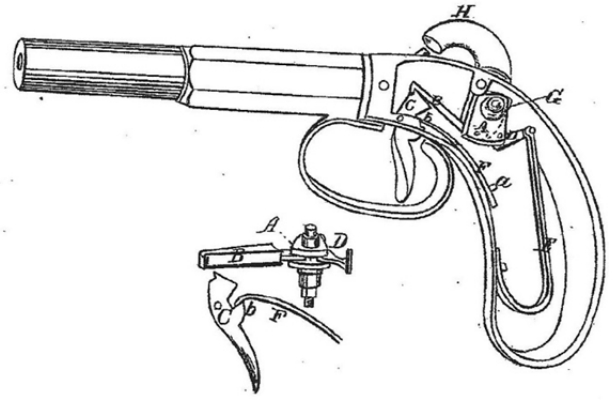
By David Weston

The Ethan Allen Double-Action Pistol

A while back I dropped by Clark Brothers gun shop near Warrenton, Virginia, to see if they had something I couldn't live without. Then I saw this Ethan Allen pistol. It is a small, minimalist handgun with one of the simplest actions ever produced. I didn't have the time, the lighting or my reading glasses to do a fair appraisal at the shop, but the price was reasonable. I bought it with cash on the spot. I know Clark's Brothers is a good, trustworthy shop and I was intrigued with this graceful antique pistol.

The gun is rather heavy for its size. The main spring is strong and it snaps a #10 cap well. The trigger pull is heavy and similar to a modern double-action revolver. It has no sights and the bar-hammer on top of the frame would prevent their normal use in any case. It is more of a point and shoot type of gun. It has no half cock or safety and it is not safe to carry this gun loaded and capped. I certainly would not consider carrying it loaded & capped in my coat pocket or in a boot. Instead it would find utility if kept under the bar near the cash register as an emergency measure.

The little pistol has the number "258" stamped on a barrel flat by the trigger guard. I assume this is a serial number. However, at the time serial numbers were not required and often inconsistently used. The only other marking is, "ALLENS PATENT" stamped on the left side of the hammer. Ethan Allen's patent for this pistol is Patent Number 461 "IMPROVEMENT IN THE METHOD OF CONSTRUCTING LOCKS FOR FIRE-ARMS" patented November 11, 1837, Grafton, Massachusetts. The innovation that Ethan Allen patented was that the firearm is cocked and discharged by a single, continuous pull of the trigger. This concept therefore, is a forerunner of the double-action only guns in use today, hence the strong trigger pull referenced above. The drawings in the patent match my pistol. Based on this patent reference and the relatively low serial number, I can assume that this pistol was manufactured in the late 1830's.



Ethan Allen's patent drawing

The 1830s was an interesting time in America. The percussion cap was a new invention. It was patented by Rev. Alexander John Forsyth in London in 1807, 30 years before Allen's patent. It wasn't produced prodigiously in America until the late 1820's after the Forsyth patent expired. Until then, flintlocks were still widely available in the civilian market. On March 4, 1837 Martin Van Buren succeeded Andrew Jackson as President of the United States and the country was hit by a deep economic depression due to real estate speculation. Texas was a new, independent country and the war with Mexico was still a decade away. Customers for this gun were looking for a cheap, self defense pistol during hard times. This simple, innovative, easily mass produced gun would fit their need. The very popular single action cap-lock Derringer was the standard, single shot self defense gun of the time. The Colt Paterson revolver was a brand new, hard to acquire and much more expensive competitor. By 1840 Allen's patented double-action mechanism evolved into the pepperbox pistol.

This gun points well for me. The bag grip fits smaller hands and feels comparable to a S&W Chief's Special revolver, but the similarity ends there. The barrel lies along the line of the meat of my palm rather than over it like all modern pistols. It sits so low in my grip that if it had a front sight I could use the web of my hand between thumb and forefinger as the rear sight. It is not a gun for someone with big hands.

The first step in disassembling this pistol is removing the barrel from the frame. The thick barrel is screwed to the frame, hand tight and comes off easily. This is not a screw-barrel pistol like the Queen Anne type guns. The barrel is meant to be unscrewed for cleaning but the gun is loaded through the muzzle. This is obvious to the trained observer since there is no ball cup upon the threaded section of the frame. Also, no ramrod or accoutrements came with this gun when I bought it. The rifling is hexagonal and so deep and pronounced that the crown looks almost like an outline of the Peter and Paul Fortress in St. Petersburg, Russia. The barrel is 5 inches long and measures .36 inches land-to-land at the muzzle and .42 inches grove-to-grove. There is a ring on the rifling inside the bore about an inch up from the barrel threads. This indicates that the pistol was likely left loaded for a very long period of time (decades maybe?); long enough to produce galvanic corrosion between the lead ball and the mild steel barrel. Otherwise, the crown is in good shape and the bore has no pits. The powder chamber has some corrosion and looks eroded under the nipple.

The next step is removing the grips. The lacquered walnut grips are retained by a single flat-head screw with washers inlaid into them and then shaped to the grip contour. The screw head and end are both contoured to the butt. This tells me that during manufacture, the grips were rough shaped, screwed on, and then final shaped so that the screws and washers would not protrude

The Allen Pistol disassembled

or be felt by the user. The screw must be returned to its original position when it is reassembled and the washers are not interchangeable or even rotatable. There are linear, rough-cut saw marks on the inside face of the grips. Allen & Co. was making guns for money, so no time was wasted sanding a surface no one will see (except me, your trained observer).

The 3rd step is removing the frame cover. The frame has simple scroll-work engraving. This engraving crosses both the end and head of the retaining screw providing witness marks for its reassembly. This screw is also contoured to the curve of the frame. The interior of the pistol frame is very rough as forged. The mainspring is quite strong. With the frame cover removed the Allen Patent mechanism is easy to see. The moving parts consist of the trigger, the exposed hammer on top of the frame, and a hooked lever running between them. The mainspring, and its set screw, two pins, a retaining screw and stirrup round out the parts count.

In operation, a hooked lever runs from the trigger to the mainspring. The mainspring is attached to the rear of the lever by a stirrup. The hammer is also attached by a retaining screw and allowed to rotate. As the trigger is pulled, the hooked lever slides forward rotating the hammer upwards. At full deflection a spur milled into the trigger kicks the lever up off of its notch and the hammer falls firing the gun. The trigger is then forced to return by the shape of the spur and the pressure of the mainspring on the lever. The lock is then reset and ready for use once the pistol is reloaded. The trigger can be pulled repeatedly, snapping the hammer each time. Note that the hammer should never be allowed to fall on an uncapped nipple. This can damage the nipple and hammer. I slipped an old credit card under the hammer to protect the nipple for a repeated test. It is easy to see that this simple, double-action mechanism is wasted on a single shot pistol, hence the evolution to Allen's multi-shot variant; the pepperbox.

Clean up & reassembly is quite easy. Since the screw heads are shaped to the rounded frame and grips, they let you know when they are properly installed. Using the NRA Antique Firearm Condition Standards, this pistol is graded; FINE.

Shooting the Allen bar-lock pistol is a little different from most cap lock pistols. It loads from the muzzle, not as a screw-barrel such as many English box-lock style pistols. A normal load should take about 15 grains of 3F black powder and a .35 patched round ball, 1/10th inch thick patch, and a #10 cap. Capping is a challenge. Keep the pistol pointed in a safe direction. Squeeze the trigger half way to raise the hammer off the nipple. Hold the trigger in this position while seating the cap on the nipple then gently release the trigger until the hammer rests on the cap. Now, point the pistol at your target and squeeze the heavy, double-action trigger. It should make a very satisfying boom and a cloud of white smoke.

Ethan Allen was an American gun maker, inventor and entrepreneur in Massachusetts operating from 1831 to 1871. Patent #461 illustrated above was Allen's first of 17 patents in his lifetime and served as the foundational intellectual property for his gun making enterprises. His patents covered the double-action mechanism, various

improvements to revolvers and rifles, as well as machines for gun and cartridge manufacturing. He is unrelated to Ethan Allen, the American revolutionary hero of Green Mountain Boys fame.

Bio: David Weston became an accidental antique gun collector with the purchase of this, his second antique pistol some years ago. His interest in gun collecting is in innovations during the black powder era. He is a past member of both the Washington and Montana Historical Gunmakers Guilds and a current member of the Virginia Gun Collectors Association. David is also a proud, Life Member of the NRA.

Photos by David Weston.