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History of the Savage Revolving Firearms Company

By Ken Thomsen

As with many companies of the period, the formation of the Savage Revolving Firearms Company was the result of a series of historically significant events. The origin of the company actually begins with Simeon North, America's first pistol maker. Simeon along with his brother-in-law Elisha Cheney received the first contract for a military pistol in 1799. After 500 were manufactured, a second contract was awarded for 1,500 in 1800. The North and Cheney as it became known was almost an exact copy of the French 1777 military pistol. Subsequent contracts were granted to North for other designs in 1808 and 1811. All were produced in North's Berlin CT factory and each represented an increase in sophistication and engineering.

When North was granted what would become known as the 1813 contract for 20,000 .69 caliber flintlocks pistols, he knew he needed a larger facility with a more reliable water source to meet production deadlines. He found both the property and the water source in Middletown, CT. To construct a building to meet the company's immediate and future needs was a huge undertaking. In order to accomplish this he sought financial help from Josiah Savage, a relative.

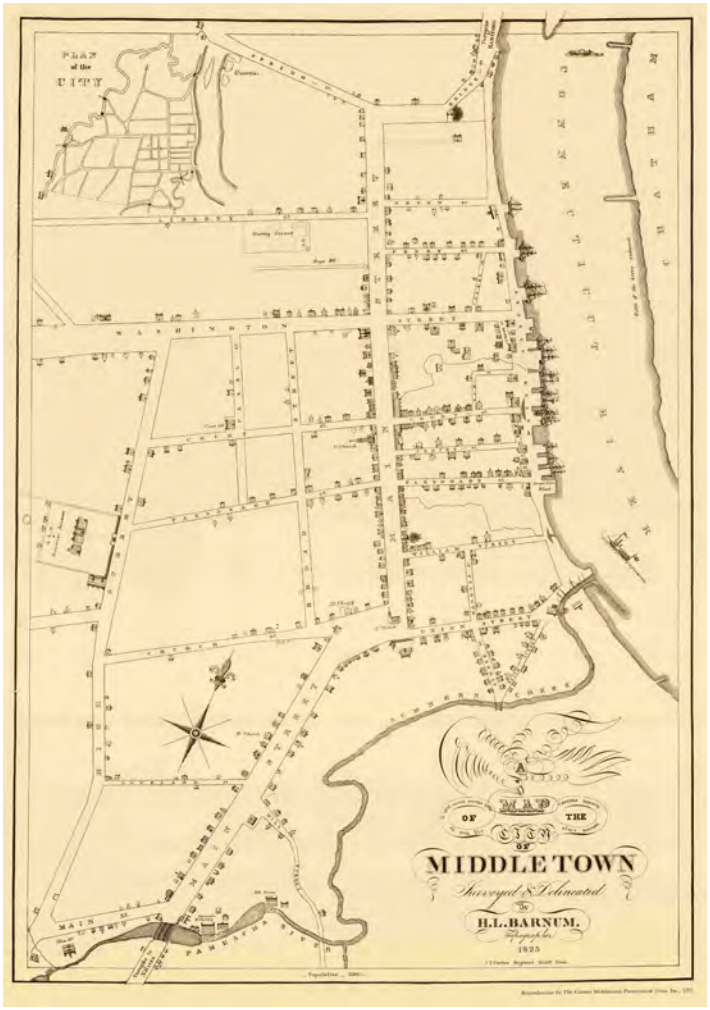

Fig. 1 – 1824 H. L. Barnum map of Middletown, Connecticut

The Savage family had settled in Middletown, CT in the mid 1600s and had a long legacy in the shipping trade. In the late 1600's and 1700's, Middletown CT, with its' large harbor on a bend in the Connecticut River, had become a thriving port. Agricultural products were being exported to Barbados and schooners were returning loaded with cargo from the West Indies. Middletown had become the largest seagoing port between New York and Boston.(Figure 1)

By 1750 Middletown was the largest and richest colony in Connecticut. The Barnum map of 1824 shows the port of Middletown at its zenith when the maritime district comprised much of the downtown, a 47 acre area extending from Ferry Street six blocks south to Union Street and east of Main Street down to the Connecticut River. In this seafaring community stood 200 houses, including elegant mansions of merchants and sea captains. A score of warehouses lined the waterfront, and pushing out into the wide river a dozen wharves from which sailed full rigged ships and schooners West Indies bound. [1]

Fig. 2 – West Indies sugar Plantation

Typical exports were barrels of pork and beef, corn, potatoes and oats. (Figure 2) Cattle and horses were a staple of Yankee exports. The animals offered cheap motive power for the cane mills where there was no

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waterpower or windmills. Food had to be imported to the islands to feed slave labor because every inch of tillable land was given over to sugar cane production. On the return trip, Middletown bound vessels carried pimento (allspice), sugar, molasses, mahogany, satinwood, ginger, indigo, cotton, cacao, coffee and fruit. By far, rum was the largest cargo, lots of rum.

Letter of Marque

James Madison, PRESIDENT OF THE UNITED STATES OF AMERICA

TO ALL WHO SHALL SEE THESE PRESENTS, GREETINGS:

Be it known, that in pursuance of an act of congress passed on the twenty-sixth day of June one thousand eight hundred and twelve I have commissioned, and by these presents do commission, the private armed Brig called the Prince of Neufchatel of the burthen of Three hundred and nineteen tons, or thereabouts, owned by John Ordronaux & Peter E. Trevall of the city and state of New York and Joseph Beyelle of Philadelphia in the state of Pennsylvania Mounting eighteen carriage guns, and navigated by one hundred and twenty-nine men, hereby authorizing Nicholas Millin Captain, and William Stetson Lieutenant of the said Brig and the other officers and crew thereof to

Subdue, seize and take any armed or unarmed British vessel, public or private

which shall be found within the jurisdictional limits of the United States or elsewhere on the high seas, or within the waters of the British dominions, and such captured vessel with her apparel, guns and appurtenances, and the goods or effects which shall be found on board the same, together with all the British persons and others who shall be found acting on board, to bring within some port of the United States, and also to make any vessel, goods or effects of the people of the United States, which may have been captured by any British armed vessel, to be restored to the owners, in order that proceedings may be had concerning such capture or recapture in due form of law, and as to right and justice shall appertain. The said John Lawton is further authorized to detain, seize and take all vessels and effects, to whomsoever belonging, which shall be liable thereto according to the law of Nations and the rights of the United States as a power at war, and to bring the same within some port of the United States in order that due proceedings may be had thereon. This commission to continue in force during the pleasure of the President of the United States for the time being.

GIVEN under my hand and the seal of the United States of America at the city of Washington, the twenty second day of December in the year of our Lord, one thousand eight hundred and fourteen and the Independence of the said states the thirty ninth.

By the President JAMES MADISON

JAMES MONROE Secretary of State

Fig. 3 – Letter of Marque permitting Privateers to take British vessels

Josiah Savage was born in 1761. As a teenager he enlisted in the Revolutionary Army. With the Continental Navy only having 31 vessels. The Colonies issued Letters of Marque permitting private vessels to prey on enemy merchant ships (Figure 3). While serving as a privateer, Savage was captured but escaped. He then pursued trading in the West Indies. He gained substantial wealth and purchased a mansion in Middletown. He also acquired two wharfs and a warehouse on the Connecticut River. As with many American merchants the Embargo Act 0f 1807, which prohibited trade with foreign nations, coupled with the War of 1812, forced him to turn to other investment opportunities as opposed to import/export.

Simeon North partnered with Josiah Savage in 1813 in order to raise capital for his new factory.

> *North began the erection of a larger plant in Middletown, Conn. in 1813 and placed his son Reuben in charge of the Berlin shop which continued until 1843. The enumerator's report, Fourth Census (1820) of the U.S. states, North had $75,000 in a pistol manufactory in the First Parish, Middletown, and employed from 50 to 70 hands. Nine water wheels driving three trip hammers; two lathes; boring, drilling, polishing, turning, and milling machines, as well a grindstones. Produced pistols of different descriptions and quality which sold at $12 a pair and upwards.* [2]

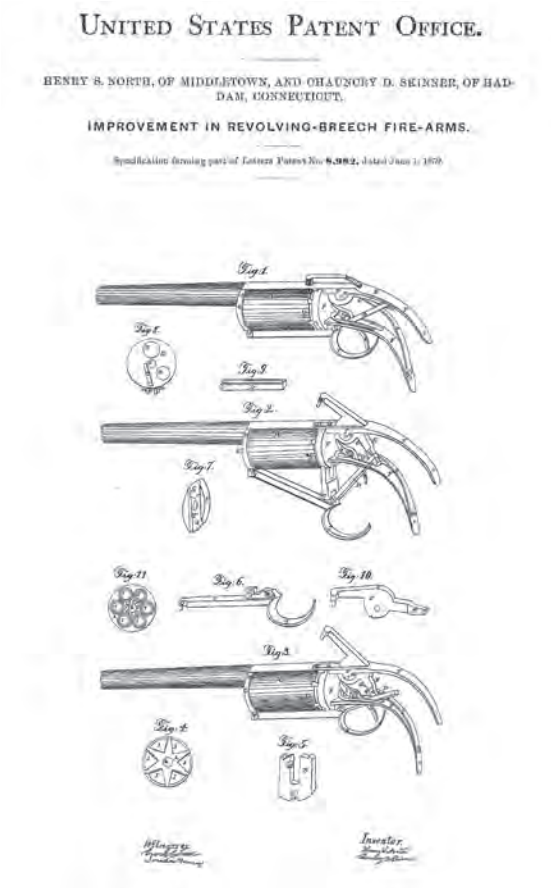
Only about 1,100 .69-caliber flintlock pistols were produced under the 1813 contract when (Figure 4)

Fig. 4 – 1813 North (top), 1816 North (bottom) pistols

Fig. 5 – .69 caliber 1813 (left) and .54 caliber 1816 (right) barrels

complaints from the field regarding the severe recoil caused the government to reduce the caliber to .54. (Figure 5) The delays caused by redesign and retooling resulted in a new contract being issued known as the 1816 contract for 20,000 .54-caliber flintlock pistols. Subsequent contracts for pistols were obtained in 1819 and 1826. North had also produced common rifles and the Hall carbine. In 1828, at the government's request, all the company's efforts were directed to Hall production. Firearms produced during this period carried only the name of S. North. Following Josiah Savage's death in 1831, his son Edward took over the family interest in the firm. Almost simultaneously, North's son James took over Simeon's interest and the name of the firm was changed to North & Savage. On July 30, 1844 Edward Savage and Henry S. North (James' son) were granted patent # 3686, again in 1847 the pair was granted patent # 5141 for improvements to the Hall.

James North continued with the company until the time of his death in 1856. At which time Edward Savage became the sole owner. It is important to note that even though North's son Henry had been involved with the firm for many years and appears to be the creative inspiration behind many patents he was never made a partner. In June 1852 Henry S. North together with Chaucey D. Skinner (who starting as a boy had worked for Simeon North) patented a revolving breech #8,952, which was incorporated into the North& Skinner revolving rifles and shotguns all manufactured by North & Savage (Figure 6). North &



UNITED STATES PATENT OFFICE.

HENRY S. NORTH, OF MIDDLETOWN, AND CHAUNCEY D. SKINNER, OF HADDAM, CONNECTICUT.

IMPROVEMENT IN REVOLVING-BREECH FIRE-ARMS.

Fig. 6 – 1852 Patent of the revolving breech (North and Skinner)

Fig. 7 – North and Skinner rifle with revolving breech (mfg. by North and Savage)

Fig. 8 – Lever partially opened, cylinder starts rotation

Fig. 9 – Lever down, cylinder rotated, fully cocked, cylinder wedge down

Savage produced about 700 firearms in total under the 1852 patent. These "North & Skinner" rifle mechanisms were complex. (Figure 7) To operate it you pulled downward on the trigger guard. One end of the guard was a pivot point. (Figure 8) The center of the guard was attached to a wedge that rested behind the cylinder. As the wedge was pulled downward a spring in front of the cylinder forced it rearward. At the same time a link attached to the rear of (Figure 9) the trigger guard cocked the hammer. The downward movement of the wedge rotated the cylinder. Lifting the trigger guard upward pushed the wedge upward, which in turn forced the (Figure 10) cylinder against the barrel. At this time, one needed only to pull the trigger to fire it.

Fig. 10 – Lever up, wedge has pushed cylinder forward, ready to fire

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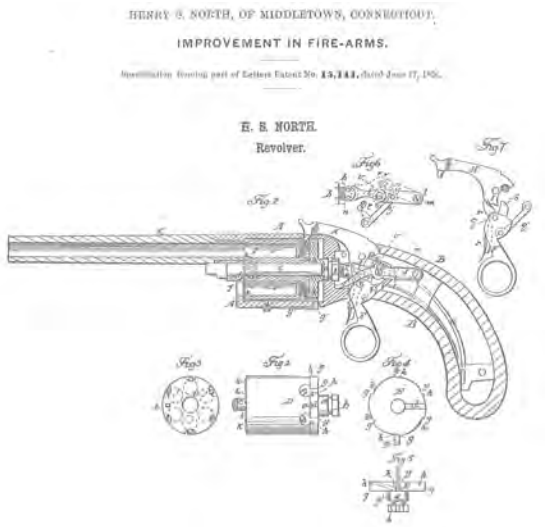
HENRY S. NORTH, OF MIDDLETOWN, CONNECTICUT.

IMPROVEMENT IN FIRE-ARMS.

H. S. NORTH.
Revolver.

Fig. 11 – 1856 Patent, North replaces cylinder wedge with toggle link.

In 1856 Henry was granted a patent, which was an improvement on the 1852 North & Skinner 1852 patent (Figure 11). It removed the wedge behind the cylinder and replaced it with a toggle link. North patent #15,144 claim states in part:

The first feature of my invention consists in the employment of a toggle-connection between the cylinder or the rotating-shield and the stock, for the purpose of effecting a longitudinal movement of the cylinder to make it clear the barrel in rotating, and to force it up into a tight connection therewith, after the rotating movement has been effected, said toggle-connection being operated by means of a finger-lever under the stock.

The second feature of my invention consists of placing a regulating- screw between the forward end of the above-mentioned toggle and the rotating recoil-shield or cylinder, for forward the purpose of adjusting the connection between the cylinder and the barrel.

The third feature of my invention consists in combining the dog by which the rotation of the recoil-shield and cylinder is effected with the toggle in such a manner that it is operated by bending of the toggle to let the cylinder move back. [3]

Fig. 12 – Savage Figure Eight Revolver, first model

This early revolver patent formed the platform on which the first of the Figure Eight revolvers were designed and built (Figure 12). The first prototype of the Figure Eight pistol was delivered to Washington and tested in June 1856. The testing was done by Major Bell at the Washington Arsenal resulting in the ordering of 100 .36-caliber pistols. The term 'Figure Eight' comes from the unusual trigger arrangement where one trigger is located above the other giving the appearance of an 8. As the lower trigger is pulled back, the cylinder moves away from the barrel, rotates and the hammer cocks. Releasing the lower trigger lets the cylinder move forward where the chamfered recess in the cylinder accepts the chamfer on the rear edge of the barrel. Pulling the top trigger fires the weapon.

It was hoped that the chamfer arrangement on the barrel and cylinder would result in a positive gas seal. The early revolving rifles and first pistols had machined round projections at the front of the cylinder that were meant to fit over the barrel as the cylinder was cycled. (Figure 13)

The 1858 patent was an improvement of the 1856 patent. It was the first to incorporate a moveable link. This was then incorporated into the succession of Figure Eight pistols to follow. In 1859, Henry North and Edward Savage were issued patent #22,666 – a further improvement of the revolving cylinder design.

For the first model, the initial 10 had brass frames, external gas rings on the cylinder, link type loading levers and a round cross section. The next model Figure Eight produced was actually a variation of Model 1. (Figure 14) It was essentially the same except the cylinder was chamfered to receive the end of the barrel. It is estimated that about 250 in total of this first model (Figure 15) were produced with 100 of these going to the Ordnance Department for testing. The 100 pistols were delivered in June 1857 and by June 1858 all but one were in service with the Calvary. In April 1858, Henry North received patent # 19,868 for a creeping style loading lever.(Figure 16) That lever

Fig. 13 – First Model Figure Eight Revolver cylinder (only 10 known)

Fig. 14 – First Model Figure Eight variation with chamfered cylinder

Fig. 15 – First Model Figure Eight variation, link style loading lever

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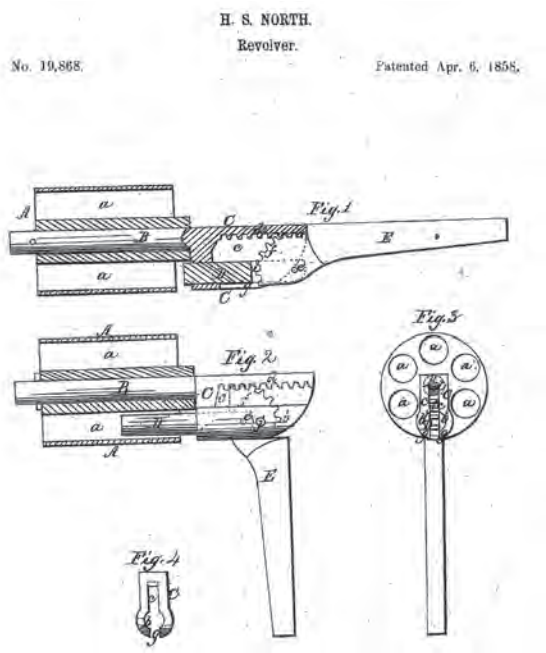
H. S. NORTH.
Revolver.
No. 19,868. Patented Apr. 6, 1858.
Fig. 1
Fig. 2
Fig. 3
Fig. 4

Fig. 16 – Creeping Lever patent

was immediately incorporated into what became the Figure Eight Model 2 – steel frame,(Figure 17) round profile, creeping loading lever, marked H. S. North. Patented April 16, 1858. About 100 were produced. The third model was produced with flat sides to the brass frame and a round recoil shield with a total production estimated at 100 to 200. (Figure 18) The fourth model resembled the third but has an iron frame and, like the third model, a more graceful hump on the back of the grip. (Figure 19) The fourth model had a short production run with only 50 known to exist. It is estimated that total production of all models of the Figure Eight was less than 700. It is fair to say that the design of the Figure Eight was evolutionary leading up to the well-known Savage Navy. In January 1859 Henry North and Edward Savage patented an improved revolving rifle also including a toggle link. (Figure 20)

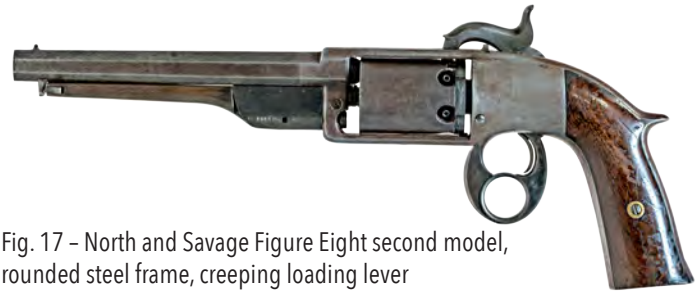

Fig. 17 – North and Savage Figure Eight second model, rounded steel frame, creeping loading lever

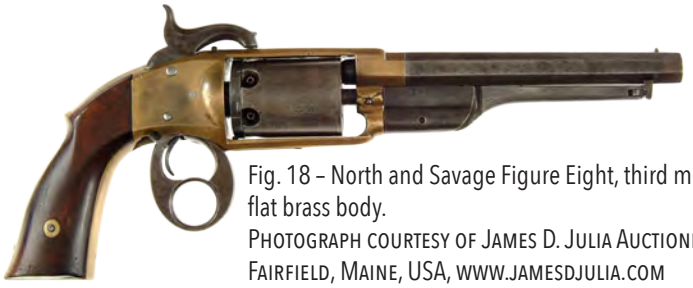

Fig. 18 – North and Savage Figure Eight, third model, flat brass body.
Photograph courtesy of James D. Julia Auctioneers, Fairfield, Maine, USA, www.jamesdjulia.com

Fig. 19 – North and Savage Figure Eight, fourth model, flat steel body

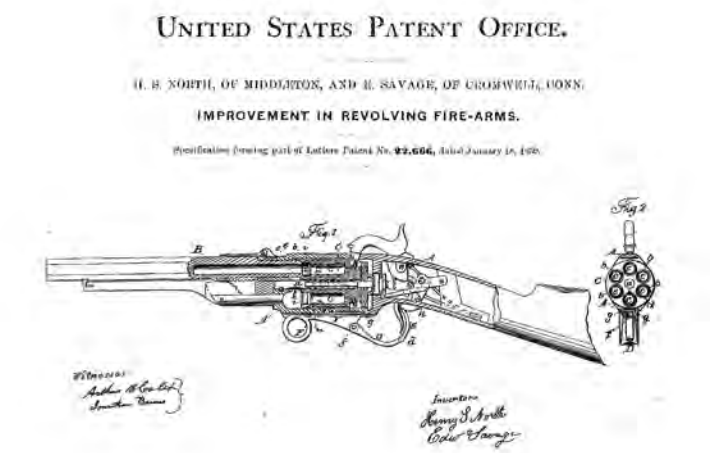
UNITED STATES PATENT OFFICE.
H. S. NORTH, OF MIDDLETOWN, AND E. SAVAGE, OF CROMWELL, CONN.
IMPROVEMENT IN REVOLVING FIRE-ARMS.

Fig. 20 - Henry North Patent of 1859 for improved revolving rifle

Colonel Robert E. Gardner in his book *Small Arms Makers* states North and Savage also made trap pistols designed by Henry North and John D. Couch patent of June 28, 1859. These were (Figure 21) small pistols designed to hang from a branch with chain or rope and attached by means of an eye in the grip. This

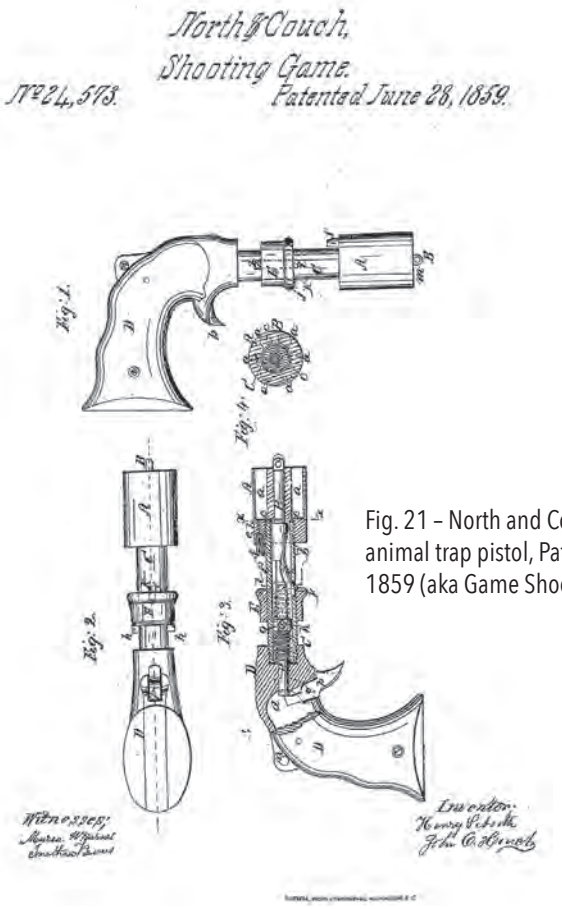
North & Couch.
Shooting Game.
No. 24,573. Patented June 28, 1859.

Fig. 21 – North and Couch animal trap pistol, Patent 1859 (aka Game Shooter)

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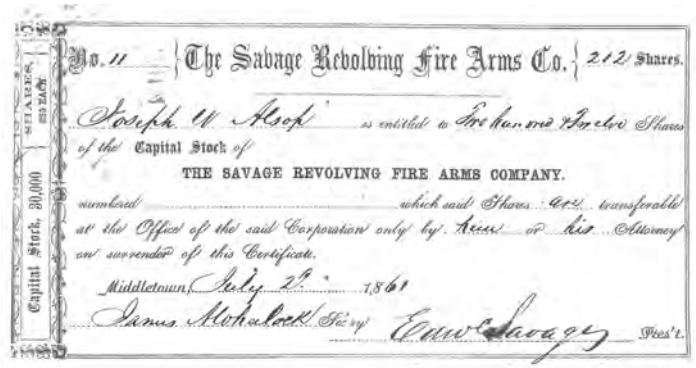
Fig. 22 – North and Couch "patent style" first model

animal trap gun came in two basic designs. The first or patent model had a round barrel with six cylinders, appearing like a knuckle-duster (Figure 22). There was a round disk on the barrel shaft which when pulled back towards the grip locked in place and cocked the weapon. It was equipped with one nipple, which discharged all cylinders simultaneously. The method of firing could be accomplished by either pulling a conventional spur trigger or by pulling a pin in the center of the six barrels. This pin had a hole through it to which a baited line could be attached. With the grip of the pistol attached to a branch or tree any animal unfortunate enough to tug on the bait would aim the barrels in its direction and fire all six barrels in a single volley. The second version of these pistols made in smaller numbers was referred to as the Spur Hammer North & Couch. That version came in both a steel and brass frame and had the appearance of a normal pepperbox. It varied however in function. Like its predecessor it could be attached to a branch, baited with a string attached and all six barrels fired simultaneously. It also had a conventional trigger (Figure 23) and after the spur hammer was cocked, pulling the trigger resulted in the discharge of all six barrels. It has been reported that these weapons found great acceptance in Australia dispatching unwanted kangaroos. In Mel Flanagan's article on trap pistols, which he wrote some years ago for the ASAC, he concluded that based on known serial numbers less than 100 of each model were actually produced.

Fig. 23 – North and Couch second model



No. 11 The Savage Revolving Fire Arms Co. 212 Shares.

Joseph W Alsop is entitled to Five hundred & Twelve Shares of the Capital Stock of THE SAVAGE REVOLVING FIRE ARMS COMPANY. numbered ... which said Shares are transferable at the Office of the said Corporation only by Him or his Attorney on surrender of this Certificate.

Middletown July 2d 1861

James Mohrlock Secy Edwd Savage Pres't.

Capital Stock, 30,000 SHARES $100 EACH

Fig. 24 – Savage Revolving Firearm Stock Certificate

During this period of development the structure of the company had changed. From the formation of North and Savage in 1831, the firm became the North and Savage Company. In 1860 the company was reorganized as the Savage Revolving Firearms Company (Figure 24). Joseph W. Alsop Jr., Charles Alsop and Joseph W. Alsop Sr. are listed as being on the Board of Directors in the incorporation papers. Charles Alsop Sr. was a wealthy Middletown businessman who, like Josiah Savage, had become involved in the West Indies trade and he held no less than 7 firearm patents and 1 cartridge and 1 primer patent. He also held a patent for a detachable stock for the Savage Figure 8. The Alsop family produced 3 models of the Alsop revolver - the .31-caliber pocket model with a production run of about 300 (Figure 25) and 2 Navy versions with production runs of about 400 total (Figure 26). They were intended for the civilian market and were well made, but expensive to produce. I am sure their price contributed to their demise. It is no coincidence that their appearance resembles a small Savage. Other noteworthy individuals who were financially involved in the Savage Revolving Firearms Company include Julius Hotchkiss, Samuel Warner and E.W. N. Star. James A. Wheelock married Harriet White Savage and became secretary.

Fig. 25 – Alsop Pocket Revolver - .31 caliber

Fig. 26 – Alsop Navy Revolver -.36 caliber

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In 1860 Patent #28,331 was issued to H. North and E. Savage. (Figure 27) This was the last improvement patent prior to the production of the wartime Navy version. All pistols produced at the time in .36 caliber were referred to as 'Navy' because of the caliber even in the absence of a Navy contract.


UNITED STATES PATENT OFFICE.

EDW. SAVAGE, OF CROMWELL, AND H. S. NORTH, OF MIDDLETOWN, ASSIGNORS TO SAVAGE REVOLVING FIRE ARMS COMPANY, OF MIDDLETOWN, CONNECTICUT.

IMPROVEMENT IN REVOLVING FIRE-ARMS.

Fig. 27 – 1860 Patent for improved loading lever

The Savage Navy, produced by the new Savage Revolving Firearms Co., was very unique in appearance. It retained the double trigger of the early Figure Eights while surrounding them with a large heart shape trigger guard. (Figure 28)

Fig. 28 – Savage Navy Revolver

Although both the Army and the Navy had tested the early Figure Eight revolvers, contracts for this gun had been slow to materialize. As early as January 1858 *Commander John Dahlgren in charge of Naval Ordnance had test fired a Figure Eight North-Savage. It was fired 102 times without exerting the least effect on the working parts. Dahlgren recommended that they be tested in actual Naval service. The order was placed six months later on July 20,1858 for 300 of North's patent pistols at $20 each.*[4] Deliveries were to commence within eight months. After several extensions, the pistols were delivered in December 1860 as the standard wartime model revolver. The Savage Navy was the improved version of the one that had been tested. Edward Savage received payment on February 12,1861 in the amount of $6,037.50. Only one formal contract was entered with the Navy during the Civil War. This order of May 7, 1861 called for the Savage Revolving Firearms Co. of Middletown CT to supply the Navy with 800 pistol revolvers of North Savage patent at $20 each. The deliveries took place as follows: 300 in May, 200 in June, 100 in July, 100 in August and the last 100 in September.

When the finished pistols were shipped a cone wrench (Figure 29) and screwdriver combination was included for each one. The large screwdriver blade adjusted the screw in the center of the recoil shield, which set clearance between the barrel and cylinder. One bullet mold (Figure 30) was provided

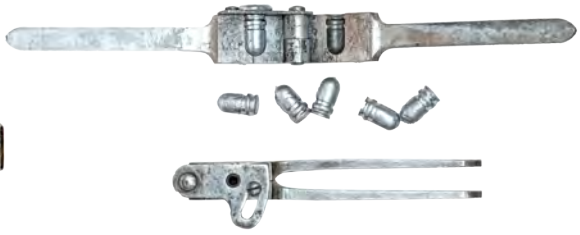

Fig. 29 – Combination tool for Savage Navy

Fig. 30 – Bullet Molds for Savage Navy

for every two pistols. The pistols were all .36 caliber, 6 shot round cylinders, 7 1/8 inch octagon barrel with a hinged style loading level and a heart shaped trigger guard. The pistols had rather distinctive walnut grips. The offset hammer was casehardened as was the lever triggers and trigger guard. The revolvers were stamped on the top frame strap above the cylinder:

Savage R.F.A. Co. Middletown CT
H.S. North PATENTED June 17 1858
January 18, 1859 - May 15, 1860

Fig. 31 – Anchor stamp on barrel, Savage Navy Revolver

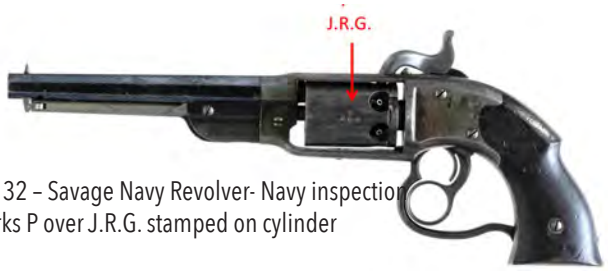

Fig. 32 – Savage Navy Revolver- Navy inspection marks P over J.R.G. stamped on cylinder

The 800 pistols purchased by the Navy during the war are distinctive in that they are marked with small anchor stamped at the top of the barrel just ahead of the frame (Figure 31) and inspector markings P (proved) over J.R.G. (Figure 32) the initials of the Navy inspector, Commodore John R. Goldsborough in the center of the cylinder. Commodore Goldsborough (Figure 33) came from a naval family and had a distinguished naval career. He fought against the Barbary pirates, commanded half a dozen different vessels, and participated in the Atlantic blockade capturing

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Fig. 33 –Commodore J. R. Goldsborough

many vessels. He is also known for instituting the American buoyage system of 'red right returning', which is still in use today.

The most famous vessel to have had Savage revolvers on board was the frigate Constitution. At the start of the war, she was the practice ship for the Naval Academy. On February 16, the Boston Naval Yard sent to the academy 50 Savage revolvers. These revolvers would have been on board the Constitution when she left with the midshipmen for their new home in Newport, Rhode Island, on April 24, 1861. [5]

Fig. 34 – Typical Inspector mark location – Savage Navy Revolver

As the conflict deepened, the need for small arms became more apparent. The Savage RFA received a contract from the Army for 5,000 revolvers. Private firms like Schuyler, Hartley & Graham of N.Y. and William J. Sym and Bros. of N.Y. supplied the Army with Savage Navys as well. In total the 11,284 were purchased for Army use. The sub inspectors' stamps on major parts as well as cartouches on the left hand grip and occasionally both grips can identify them (Figure 34). It is estimated the Navy purchased 1,126 revolvers in total. Savage had produced 20,000 Navy pistols hoping to secure more government contracts. The 8,000 or so un-inspected remaining pistols were purchased privately with many ending up in Confederate units. During the war the Savage Navy saw considerable field service. They were issued to at least 26 U.S. Union Calvary regiments and no less than 5 Confederate units.

The mechanics of these pistols were refined but similar to the early Figure 8s. The hammer had four

Fig. 35 – Hammer just off nipple

Fig. 36 –Hammer at half-cock

Fig. 37 – Hammer at full-cock

Fig. 38 – Hammer in fired position

Fig. 39 – Savage Navy disassembled

positions. One was just off the nipple, so the pistol could be transported fully loaded without fear of discharging if it was dropped (Figure 35). Position 2 was half cocked (Figure 36), position 3 full cock (Figure 37), position 4 (Figure 38) in contact with the nipple or fired. The entire loading lever and cylinder arbor could be removed by turning the special retaining screw a little over 90 degrees. Note: on many pistols this screw head is distressed from the false assumption it needs o be fully removed to remove the loading lever. The cylinder arbor (Figure 39) also supports

Fig. 40 – Savage Navy Revolver, toggle link starts to rise, the hand is down

Fig. 41 – As trigger is pulled, the hammer lifts and the hand engages the ratchet

Fig. 42 –Toggle link is up and cylinder moves rearward.

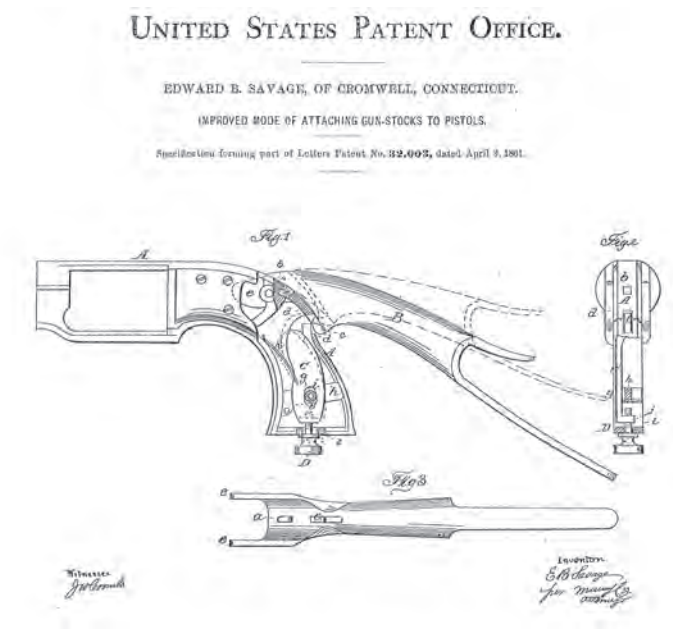
Fig. 43 – The revolver is at full cock, releasing the lower trigger allows the cylinder to move forward sealing against the barrel.

Fig. 44 – After firing

the spring that pushes the cylinder rearward when pressure is released on the back of the recoil shield. A clever device, H. North called a toggle link, exerts the pressure on the recoil shield (Figure 40). The pistol functions as follows: as the lower trigger is pulled, the toggle link rises and the cylinder is pushed rearward, simultaneously the hand engages a ratchet on the back of the recoil shield and rotates the cylinder to the next firing position (Figure 41). As this is occurring the hammer is being raised to the full cock position (Figure 42). Releasing the lower trigger allows the cylinder to move forward where a recess in the cylinder will align perfectly with the chamfer on the barrel (Figure 43). Pulling the top trigger fires the weapon (Figure 44).

During the Civil War there were a number of companies, including Sage of Middletown, CT, that started making animal skin/intestine cartridges for the Savages that were packed in groups of six, in small paper covered wooden containers that enhanced the ability to reload more quickly. (Figure 45)

Fig. 45 – Rare packets of skin cartridges



UNITED STATES PATENT OFFICE.

EDWARD B. SAVAGE, OF CROMWELL, CONNECTICUT.

IMPROVED MODE OF ATTACHING GUN-STOCKS TO PISTOLS.

Specification forming part of Letters Patent No. 32,003, dated April 9, 1861.

Fig. 46- Detachable stock for Savage Navy

Edward Savage's last firearms patent was for a detachable gunstock patented July 1861 for the Navy pistol. (Figure 46)

With no new orders for the Navy pistol on the horizon, James A. Wheelock sought additional work to help the firm remain solvent. In September 1863 he negotiated a transfer of a contract that had been awarded to Parker, Snow, Brooks & Company for 25,000 Model 1861 Springfield Pattern (Figure 47) muskets. Parker, Snow, Brooks & Company were heavily involved in the manufacture of machinery and glad to rid themselves of the burden of the musket

Fig. 47 – Model 1861 Rifles Musket by Savage

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contract. The completion of the contract required an extension. The first 13,500 were delivered by February 24,1864 at the agreed price of $18 each (Figures 48, 49, 50, 51, 52, 53). The remaining 12,000 muskets were delivered at a re-negotiated lower price. George Moller in Volume III of *American Shoulder Arms* notes that Federal inspectors condemned 8,000 of the last 12,000 and that several thousand were most likely sold to the state of New Jersey through agents Perkins and Livingstone. (This could not have helped Savages's bottom line.)

Fig. 48 – Lockplate Savage Rifled Musket

Fig. 49 – Barrel marking, Savage Rifled Musket

Fig. 50 – Cartouche – Savage Rifled Musket

Fig. 51 – Buttplate –Savage Rifled Musket

Fig. 52 – Barrel Band – Savage Rifled Musket

Fig. 53 – Subinspector marking

The Remington Connection

By the early 1860's the government started experimenting with breech-loading carbines that would use a metallic cartridge. Leonard Gieger was awarded a patent in January 1863 for a split breech carbine. Joseph Rider, who had become the chief designer for Remington recognized the value of the innovative design and hired Gieger to work for Remington. Rider made improvements to the design and was granted a patent in December 1863. Samuel Remington took the .46-caliber split (Figure 54) breech prototype to Washington seeking a contract. The government ordered 1,000 pieces for testing. The Remington Co. at the time was overburdened with filling wartime contracts it already had. A wealthy Springfield businessman named Samuel Norris had seen the prototype split breech in Washington and had been very impressed. Being aware of Remington's other contractual obligations, he made an agreement with Sam Remington to enter into a two-year contract to produce the carbine under the Remington name. He would pay Remington $3 each for use of the manufacturing rights.

Fig. 54 – Remington Split Breech Carbine - .46 Caliber (small frame)

Norris approached Savage with the request to manufacture 1,000 carbines. Edward Savage agreed in concept, but only if given a contract for 10,000 or more to justify the necessary tooling. Norris must have had tremendous faith in the design to personally execute a contract to take on that obligation. Savage began production of the .46 caliber carbines in March 1864. As per the agreement, they were all stamped:

Remington Illion NY

Pat. Dec. 23, 1863 Nov. 16 1864

During production of the initial 1,000 .46 caliber carbines the order was increased to 5,000 small frame carbines. All of the .46 caliber carbines were delivered between March 30th and June 30th 1865 at $17 each. By September 1864, the Ordnance Department made the decision that all future carbines supplied to the Calvary should be in the Springfield .50 rim fire caliber (Figure 55), collectors refer to this as the 50-56 Spencer. (Figure 56) However, the need for Calvary carbines was great enough that they let Savage continue production of the small frame carbines. On October 24, 1864 The Ordnance Department offered Remington a contract for 15,000 of the type 2 so-called 'large frame split breech carbines'.(Figure 57) By this time Remington had purchased an interest in both Rider and Gieger patents to avoid infringement issues. Once Savage was done

Fig. 55 – Comparison - .46 and .50 Caliber Cartridges

Fig. 56 – Headstamp – 56-50 Cartridge

Fig. 57 – Remington Split Breech Carbine .50 Caliber (large frame)

with the 5,000 small frame carbines they immediately retooled for the production of the 15,000 large frame carbines (Figures 58, 59, 60, 61). The last of which was produced in May 1866. Neither type 1or type 2 was issued for service in the war. Eventually, Remington bought back 3,500 of the .46 caliber carbines, which had been declared surplus by the government and resold them to the French government. This is one reason why these small frame carbines are rarely seen. Following Savage's fulfillment of the contract with Norris, Remington took over full production of the carbines, which with additional patented improvements became the the famous Remington Rolling Block, the most successful firearm action of the 19th century. Remington produced approximately 1.6 million. An estimated 70 million Rolling Blocks were produced under licensing agreements worldwide in 101 countries.

Fig. 58 – Hammer back, breech open, .46 Caliber Carbine

Fig. 59 – .50 Caliber Carbine, breech open, hammer back

Fig. 60 – Hammer cocked Split Breech closed

Fig. 61 – After firing

The unparallel success of the rolling block action saved Remington from the fate of so many other firearms companies. Following the end of hostilities many government contracts for firearms ceased to exist as did many of the firearms companies that produced them. The Savage Revolving Firearms Co. was not immune to this fate. The doors were closed forever in 1866. There was some discussion of entering the expanding sewing machine business, but the board of directors voted against this option.

Although historically the Savage Revolving Firearms Company produced more 1861 pattern muskets, and at least as many carbines with the Remington name on them as they did pistols, the name Savage Revolving Firearms Co. will forever be associated with the uniquely shaped revolver whose innovative design permitted a relatively positive seal between a revolving cylinder and the barrel. (Figure 62)

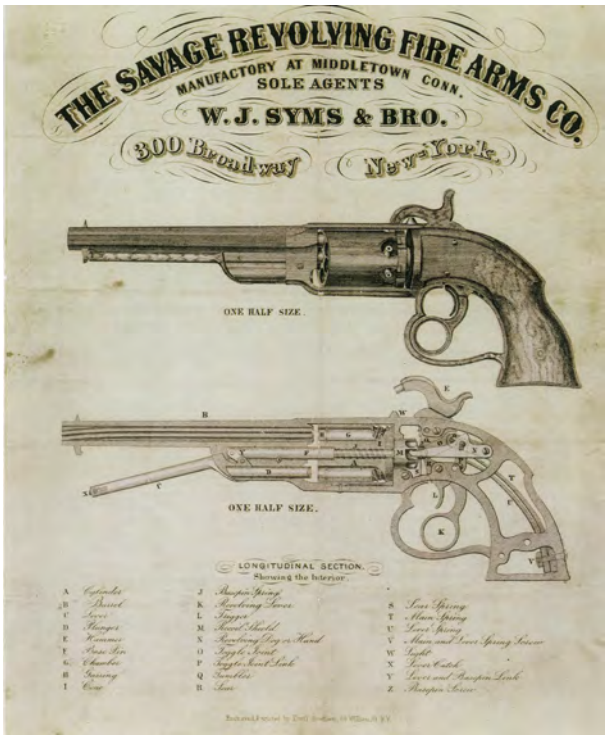

Fig. 62 - Savage Instruction Sheet

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A special thanks to Debbie Shapiro of the Middlesex, CT Historical Society for allowing me access to their archives.

Paul Tortora, friend and patient photographer

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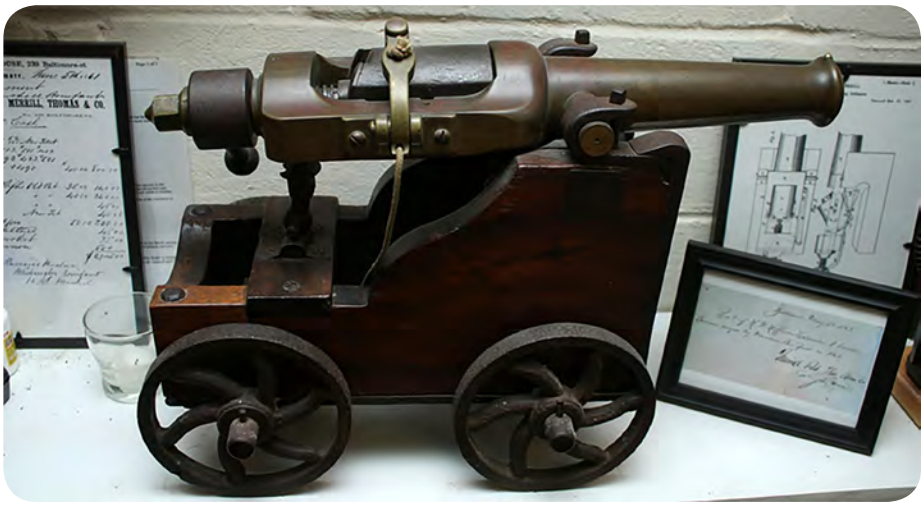
James H. Merrill and the Cannon by the Door

Richard L. Berglund and Frank S. Harrington



During the spring of 1861, the state of Maryland and the City of Baltimore were in turmoil. The election of Abraham Lincoln brought forth the secessionist movement in Baltimore that culminated in the April 19th riot caused by the passage of Union troops through the city of Baltimore.

There are considerable contemporary accounts of this volatile period of the city's history. Prominent citizens and members of the State Legislature were arrested and held without charges in the military prison at Fort McHenry. The owners of Baltimore newspapers with pro Southern leanings were arrested and their newspapers were closed. Baltimore became the first occupied city in the war. It was held by U.S. Army troops and the guns placed on Federal Hill by Benjamin Butler.

James H. Merrill was a prominent citizen of Baltimore. He was an inventor, a firearms manufacturer, and a business man. Merrill held a number of patents for improvements in breech loading small arms, artillery projectiles, and breech loading cannons. He had a shop at 239 West Baltimore Street and a manufacturing facility on the 4th and 5th floors of the Sun Iron Building.

Merrill had previous contracts with the U.S. Ordnance Department for the Merrill, Latrobe and Thomas carbine, and alteration of the Model 1841 Rifle, Model 1842 Musket, and 1847 Musketoon to the Merrill Breech Loading System. He altered 300 Jenks Carbines to breech loaders. He spent a year in Russia at the Sestroretsk Armory working on firearms development in the late 1850's.

Merrill had solicited the Ordnance Department in 1861 for a contract to provide the army with his New Model Patent Carbine. As the war drums sounded many of the arms manufacturers, including Merrill, were actively selling arms to private individuals and militia groups.

This all changed on April 19, 1861 when the citizens of Baltimore clashed with the Sixth Massachusetts Infantry as they marched through the streets of Baltimore on the way to the President Street Railroad Station. The mob uprising injured and killed both soldiers and rioters and began a chain of events that brought Baltimore under martial law.

Figure 1 April 19, 1861, Baltimore Riot, the 6th Massachusetts attacked as they march to the President's Street Railroad Station, Currier & Ives lithograph

On June 5, 1861, by order of Secretary of War Cameron, U.S Marshal Washington Bonifant went to Merrill, Thomas & Co. and seized a number of Merrill's arms and a patent model cannon that stood near the door. On the same day, a large quantity of gun pow-

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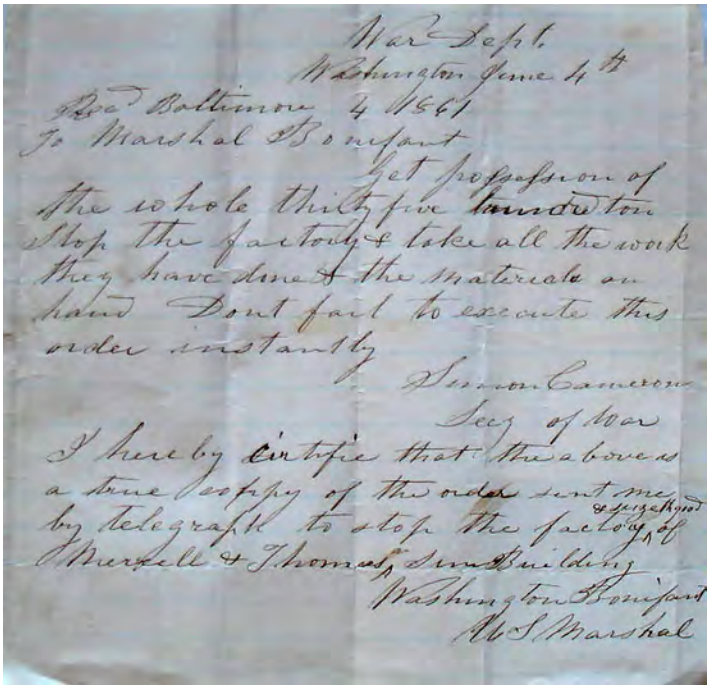
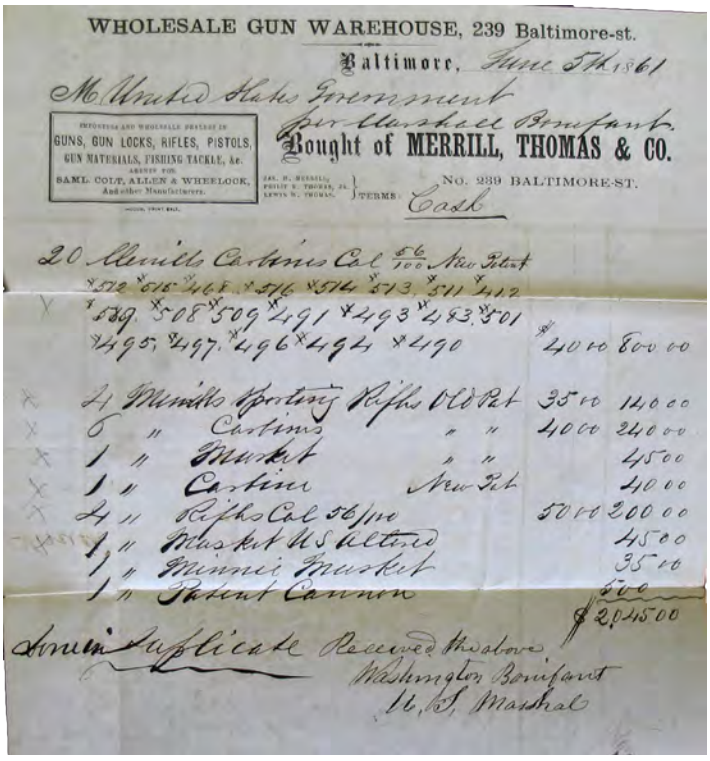
der (60,000 pounds) was seized from Daniel J. Foley & Bro. under the same authority.



War Dept.
Washington June 4th
Re Baltimore 4 1861
To Marshal Bonifant
Get possession of
the whole thirty five hundred tons
Stop the factory & take all the work
they have done & the materials on
hand Dont fail to execute this
order instantly
Simon Cameron
Secy of War
I hereby certify that the above is
a true copy of the order sent me
by telegraph to stop the factory of
Merrill & Thomas, Iron Building
Washington Bonifant
U.S. Marshal

Figure 2 Secretary of War Cameron orders Marshal Bonifant to seize arms at the Merrill, Thomas establishment. [1]

The bill of sale listing the arms seized is located at the National Archives. It details the description, serial number, and value of the arms confiscated from Merrill's establishment by Marshal Bonifant. The guns were placed in care of Henry W. Hoffman, the Collector for the Port of Baltimore at the Baltimore Customs House.



WHOLESALE GUN WAREHOUSE, 239 Baltimore-st.
Baltimore, June 5th 1861
M. United States Government
for Marshal Bonifant.
GUNS, GUN LOCKS, RIFLES, PISTOLS, GUN MATERIALS, FISHING TACKLE, &c. AGENTS FOR SAML. COLT, ALLEN & WHEELOCK, And other Manufacturers.
Bought of MERRILL, THOMAS & CO.
No. 239 BALTIMORE-ST.
TERMS Cash
20 Merrills Carbines Cal 56/100 New Pat
$512 $515 $468 $516 $514 $513 $511 $412
$489 $508 $509 $491 $493 $483 $501
$495 $497 $496 $494 $490 $40 00 800 00
4 Merrills Sporting Rifles Old Pat 35 00 140 00
6 " Carbines " " 40 00 240 00
1 " Musket " " 45 00
1 " Carbine New Pat 40 00
4 " Rifles Cal 56/100 50 00 200 00
1 " Musket U.S. altered 45 00
1 " Mummi Musket 35 00
1 " Patent Cannon 500
$2,045 00
Amin Duplicate Received the above
Washington Bonifant
U.S. Marshal

Figure 3 Bill of Sale listing arms seized from Merrill by Marshal Bonifant [1]

Why Secretary of War Cameron directed the seizure of the Merrill, Thomas arms is unknown. This action may have been precipitated by notices in the newspaper indicating that perhaps Merrill or his agents were providing arms to the South. The Baltimore Sun on April 21st noted that Merrill, Thomas distributed revolvers "to the officers of volunteers and the First Light Division." Additionally, a notice in The Richmond Dispatch read: "A number of Merrill's patent rifles, a destructive and much admired weapon, were this morning received from the manufactories of Merrill & Thomas, by the city authorities, for whom they were expressly manufactured."

Merrill, Thomas sought payment for the seized arms from the Ordnance Department. This proved to be a long and convoluted process.

On September 10th, General Ripley, Chief of Ordnance, wrote to the Secretary of War that Marshal Bonifant was not authorized to purchase arms and that the cost of the arms was too high. "As for the Patent Cannon the charge is too indefinite, it was not stated what kind of cannon it is, whether bronze, iron or steel nor what its' (sic) caliber or weight. It is therefore impossible to say whether price charged is fair or otherwise. This office has no other knowledge of the transaction than what is derived from the face of the bill."

Ripley received a reply from Thomas Scott, Assistant Paymaster, War Department on September 19th. Scott informed Ripley that the arms were in the Customs House in Baltimore and that Ripley should "send an Officer of your Department to examine - inspect and report upon them…." Ripley dispatched Capt. James G. Benton to Baltimore to examine the arms and report back to him.

Benton reported on the 23rd of September "that the 20 cavalry carbines appear new and of the breech loading principle be a good one. I have no doubt would be serviceable arms for cavalry. ... the price charged in the accompanying account, is too high. I think $35 - sufficient…. the remaining arms charged for ... are unsuitable to the Military Service & the prices charged are too high. I would recommend that they be returned to the owners."

Benton explained further that "the Patent Cannon referred to is a small bronze piece about 15 inches long, with a bore, one inch, or an inch and half diameter, and mounted on a block of wood which rests on four wooden wheels. It is not of the slightest value for military purposes and should be returned to the owners, as it never can be used injuriously against the Government of the U. States."

On September 24, 1861, General Ripley forwarded the information obtained by Benton to the Secretary of War. He added that the 20 carbines were kept loaded in defense of the Custom House. Ripley "recommended that the articles be returned to the owners, and I think that the exorbitance of their charges against the U.S. Government merits a serious rebuke."

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Ripley on October 1,1861, notified Merrill, Thomas that the Secretary of War had approved the recommendation and that the materials should be returned to Merrill upon their application. [2]

The next communication found in the National Archives Records is from Merrill to General Ripley, on September 11, 1862. "We beg leave respectfully to call your attention to the invoice of guns taken by Marshal Bonifant nearly a year ago and put in the Custom amounting to $2045, as we found an application there as directed in your favor of Oct 5 last that they had been put into service, we presume therefore there can be no difficulty in your passing the bill which we shall be greatly rejoiced to hear you have done. Your early reply will much oblige."

On September 22, 1862, Ripley responded that he had sent Merrill, Thomas instructions, as per the Secretary of War, and "You will perceive that the bill cannot be passed here as you requested." [3]

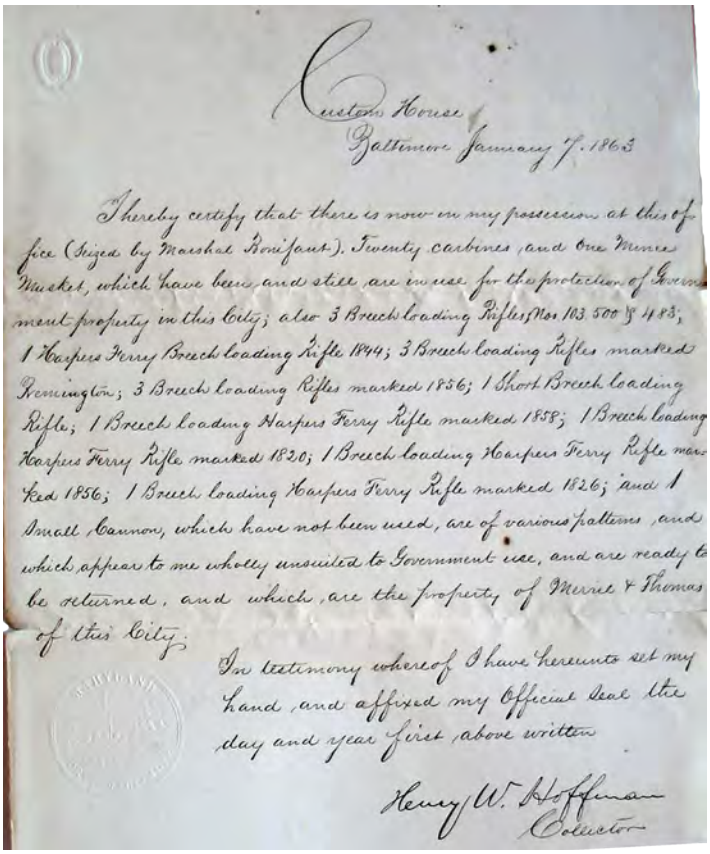
Merrill replied on September 23, 1862, "that we could have at once removed the unfavorable impression made upon your mind by the charge for the cannon by stating that we explained to Marshal Bonifant at the time that it was a model of a patent got up at a cost to us of =$500= and could be of no service to the Government urging him to leave it behind as it could not do much damage being so small, he insisted however and we of course put it in the bill, and we have now only to add that we will gladly take it back and deduct the amount from the bill ... be good enough to inform us if the bill cannot be passed by you to whom we are to apply and oblige."

Ripley's reply on September 24, 1862 read, "With regard to your account I can only say that the action upon it heretofore communicated was final so far as regard this Department."

On September 26, 1862, Merrill wrote to Congressman Reverdy Johnson, requesting his assistance, to resolve this matter.

Peter Watson, Assistant Secretary of War, wrote Merrill on December 31, 1862 about the arms seized by Marshal Bonifant. "... a letter from the Chief of Ordnance to you is found, which the return of a cannon and certain other arms not adapted to the service is recommended, and the acceptance of the remainder of the arms and payment therefore at current prices is also recommended." He noted that there was no evidence in the papers that these actions had taken place. "Neither is there any evidence that any portion of the arms were received into the service of the United States. ... it is desirable that whatever explanations can be made should be made immediately. If one of your firm acquainted with the circumstances could call in person to bring whatever additional evidence ... it would hasten the disposal of the case."

Merrill obtained a document on January 7th, 1863, from Henry Hoffman the Customs Collector, certifying that the 20 carbines and one minie musket were



Custom House
Baltimore January 7. 1863

I hereby certify that there is now in my possession at this office (Seized by Marshal Bonifant). Twenty carbines, and One Minie Musket, which have been, and still are in use for the protection of Government property in this City; also 3 Breech loading Rifles Nos 103. 500 & 483; 1 Harpers Ferry Breech loading Rifle 1844; 3 Breech loading Rifles marked Remington; 3 Breech loading Rifles marked 1856; 1 Short Breech loading Rifle; 1 Breech loading Harpers Ferry Rifle marked 1858; 1 Breech loading Harpers Ferry Rifle marked 1820; 1 Breech loading Harpers Ferry Rifle marked 1856; 1 Breech loading Harpers Ferry Rifle marked 1826; and 1 Small Cannon, which have not been used, are of various patterns, and which appear to me wholly unsuited to Government use, and are ready to be returned, and which, are the property of Merrill & Thomas of this City.

In testimony whereof I have hereunto set my hand, and affixed my Official Seal the day and year first above written

Henry W. Hoffman
Collector

Figure 4 Letter from Collector Hoffman listing the arms held in the Custom House

still in use for the protection of Government property. The inventory of arms held in the Customs House was listed on the document.

On February 3, 1863, Merrill wrote to Secretary Watson informing him that he had made his fourth visit to Watson's office to present evidence from Collector Hoffman regarding the arms seized by Bonifant. However, in each case, Secretary Watson was not available to see him.

On April 17, 1863, Ripley asked for an account of the arms seized by Marshal Bonifant as certified by Mr. Hoffman, the Collector. Merrill sent the requested materials (the list of arms seized by Marshal Bonifant) to the Chief of Ordnance, but on April 24, 1863, Ripley wrote back to Merrill: "My letter it appears was not fully understood. What I desire is an account to conform to the Certificate of the Collector." [4]

Then on May 5, 1863, Ripley contacted Merrill and informed him that Collector Hoffman had been requested to forward all small arms to the Washington Arsenal and to return the Model Cannon to Merrill. Merrill's account would be put in train for settlement.[5]

Finally, after two years, Merrill, Thomas received payment for the arms seized by Marshal Bonifant and had the Patent Model Cannon returned to its place by the door.

The seizure took place 155 years ago. Through diligent research, contacts with other collectors and a

Figure 5 Frank Harrington holding the receipt for the return of the small cannon seized by Marshal Bonifant.

lot of luck, some of the seized arms have again come together. New Model Merrill Carbines, serial number 493 and 494, and the Patent Model Cannon now have a place of prominence in the gun room of an antique arms collector with a special interest in the arms produced by James H. Merrill.

Figure 6 Merrill Carbine Serial Number 493 and 494 seized by Marshal Washington Bonifant on June 5, 1861

The Patent Model Cannon

James H. Merrill received a patent for an improvement in Breech Loading Cannon in 1859. The patent was based on a tilting wrought iron breech bored out to receive the charge. The breech has a projecting flange at the front of the bore to form a seal at the rear of the barrel.

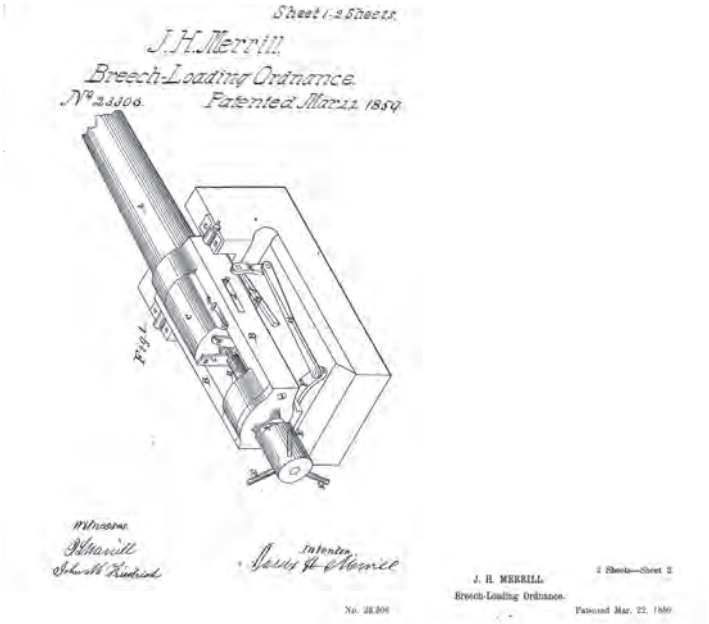


Figure 7 Patent Drawings of Cannon issued to James H. Merrill

Figure 8 Comparison of tilted breech, breech seal and linkage, between patent drawing and Model Cannon. Note the similarities between the patent drawing and the model cannon in design and function.

The breech is moved by a screw thread, as it is run back to the rear position(unsealed); a system of levers tilts the breech up for loading. As the breech is run up, the levers lower the breech into position to make a seal with the barrel.

Frank Harrington, a dedicated Merrill collector and friend to many of us, passed away in March of this year. His deep interest in Merrill firearms and research has done much to tell the story of James H. Merrill and the arms he produced.

Also thanks to Paul Davies for his assistance and guidance in obtaining the records to support this paper in the holdings of The National Archives.

Endnotes

1 National Archives and Records Administration, RG 156, E 21, Box 284, Letters Received. (All quotes other than noted are from this Letter Box)

2 National Archives and Records Administration, RG 156, E 3, Vol. 53, p. 550

3 National Archives and Records Administration, RG 156, E 3, Vol. 56, p. 223

4 National Archives and Records Administration, RG 156, E 3, Vol. 58, p. 50

5 National Archives and Records Administration, RG 156, E 3, Vol. 58, p. 92