

Dear Fellow Trapdoor Collector:

Many of us have extensive libraries covering our collecting specialties, but we all know there are many questions that still need to be answered. Quite often book explanations or their associated graphics lack the necessary detail. Now two additional technical resources are available, the <u>Trapdoor Springfield Newsletter</u> and the extensive and interactive Web Site, http://www.trapdoorcollector.com. The web site allows collectors to browse through ads, trapdoor model descriptions, photographs, related web sites, books, news and ask questions on the bulletin board. The newsletter will present new trapdoor material, ask and answer questions, clarify details, correct book errors and supply good quality photographs for future reference. It is hoped that a number of collectors will get involved and share technical information and quality photographs of rare trapdoor militaria for the newsletter and the web site.

You are receiving the first issue of the newsletter as a THANK YOU for buying *The .45-70 Springfield* • *Book II* • *1865-1893.* If you would like to continue receiving the newsletter, please subscribe. The ten page *Trapdoor Springfield Newsletter* will be published four times per year at a cost of \$20.00 (\$5.00 per issue). If after the first year, the volume of reportable material changes, then the number of issues will reflect that change and the subscription will be priced accordingly.

The newsletter is designed for insertion into a ring binder with each page clearly marked and numbered. An index will be printed with the last issue of each billing year. It will encompass all the newsletter material published up to that time, and provide the reader with a fast and accurate way of finding topics of interest.

Subscription: \$20.00 for 4 issues { Fall '98, Winter '99, Spring '99 & Summer '99 }

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Trapdoor Springfield Newsletter

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National Armory

Report of Arms Manufactured, Repaired, Issued, and Ready for Issue for the week ending January 6, 1883

	Mfd.	Cleaned &	Total	Issued	Read	y for Issue
Kind of Arms	during	Repaired	Mfd.	during	New	Cleaned &
Time of Time	week	during week	[to date]	week		Repaired
Spfd. B.L.R. Musket, Cal.50, Model 1866		Ü			27	1338
Spfd. B.L.R. Musket, Cal.50, Model 1866 (Short)						1019
Spfd. B.L.R. Musket, Cal.50, Model 1868					11	2
Spfd. B.L.R. Musket, Cal.50, Model 1870						6
Spfd. Rifles, Cal.45, (Triangular Bayonets)	720		141198		46708	9535
Spfd. Rifles (Long Range) Cal.45			183			
Spfd. Rifles, Cal.45, (Ramrod Bayonets)			1014		10	
Spfd. Shotguns			620		370	
Marksman's Rifles, Cal.45			9			
Spfd. Officer's Rifles, Cal.45			50		16	
Spfd. Cadet Rifles, Cal.45			1021		673	472
Spfd. Cadet Rifles, Cal.50					1	20
Hotchkiss Rifles, Cal.45						
Hotchkiss Navy Rifles, Cal.45					1	
Springfield Carbines, Cal.45					557	32
Springfield Carbines, Cal.45, Model 1877			20065		6533	7095
Hotchkiss Carbines, Cal.45			572			
Infantry & Cav. Rifle 28" Brl. with Triangular Bay			26		1	
Infantry & Cav. Rifle 28" Brl. with Ramrod Bay			26		1	
Colt's Revolvers, Cal.45			4000		2	3
Schofield-Smith & Wesson Revolvers, Cal.45			1000			2
Officer's Swords, Pattern 1872	36		54	36		
Cavalry and Field Officers' Sabers			100		91	
Cleaning Materials, Boxes of, Complete			210		18	
Intrenching Tools					73	
Hunting Knives			1002			
Steel Bayonet-scabbard Bodies, for Rifles, Cal.45	1000		74610	1000	317	
Steel Bayscabbard Bodies, for Cadet Rifles, Cal.45			2665		165	
Cavalry Curb-bits, No.1						
Cavalry Curb-bits, No.2	450		2300	500	50	
Cavalry Curb-bits, No.3						

A.R. Buffington Lt. Col. of Ordnance, Commanding

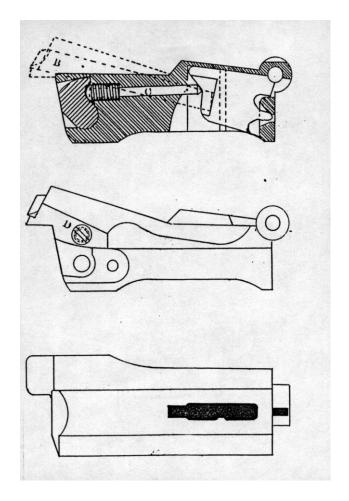
From: *National Armory Report of Manufacture, Repair & Cleaning*, January 6, 1883 to December 25, 1886. Located in the National Archives, Record Group RG156, Entry 1389 (Stack Area 7W2, Row 35).

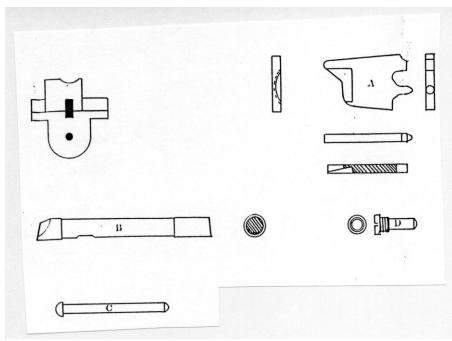
NEW POSITIVE CAM INFORMATION

In 1883, Colonel A.R. Buffington developed a very complex modification of the trapdoor breech block. Its primary objectives were to keep the firing pin retracted when the block is open, and to keep a broken firing pin from causing premature cartridge detonation. For details of the plan, see page 285 in *The .45-70 Springfield • Book II • 1865-1893*.

How many of these experimental breech blocks were made is not known. However, to make a series of tests with them implies several were produced. Buffington's basic design is shown below. From the complexity of the design, the machine shop probably made a number of modifications before it was ready for testing. For example, the large sliding surfaces were prone to dirt and corrosion which would have disabled their operation.

The figure on the right clearly illustrates how the firing mechanism is assembled in the block. However, the rotating mechanism is not retained by the hinge pin, which seems odd. Consider the machining problems involved in making the narrow slot and curvatures inside the block. Springfield Armory does not have a sample of this breech block, or any variation of the plan, which is unfortunate. It would have been interesting to see how they made it. Evidently the tests were negative because Buffington did not apply for a patent.





Colonel A.R. Buffington's experimental breech block with each of the parts displayed. From the National Archives; RG 156, File 282 of 1883.

At the same time as Buffington was developing his system, General Kelton was developing his own breech block modification for the Springfield rifle which would eliminate the external hammer. The spring loaded mechanism resides inside the breech block as shown on page 287 of *The .45-70 Springfield* • Book II • 1865-1893. The firing pin resides at the end of a spring-loaded tube which is thrust into the primer by releasing the spring with the trigger. The idea was simple and interesting, but there were concerns about the safety and durability of the mechanism. Again, the mechanism would be very vulnerable to dirt and corrosion.

As mentioned before, it is not clear if these mechanisms were produced exactly as shown. However, Mr. Tom Trevor, has in his collection, a breech block which seems to have merged some of the basic ideas associated with the above mentioned designs. Look carefully at the outside design of the breech block. It is apparent that it was fabricated from a new forging and not by reworking an existing block because the arch under the block is shorter than normal, and the firing pin retainer hole is missing.

The firing pin tip design seems to come from Kelton's plan and the activation system seems to be Buffington's. Obviously, this plan circumvented the difficult machining involved with the original Buffington design. This device required only straight drillings and threading operations.

The threaded face plate retains the lower mechanism within the block and affords access if repair is necessary. The upper portion of the firing pin for this block and that which Buffington proposed are very similar. When the hammer engages the top of the firing pin, it is driven against the spring loaded horizontal section. This action moves the tip forward into the cartridge primer, resulting in detonation.

Obviously, this breech block would have been expensive to produce. Also, the lower portion of the firing pin would probably have had a serious breakage problem since it was thin, struck with an angled blow, and the mechanism was susceptible to dirt and corrosion. Remember, troopers had problems keeping corrosion out of their service breech blocks.



LEFT: Experimental Block. RIGHT: Service Block. Both blocks are stamped "U S /MODEL /1873." In each case, the "3" is stamped deep enough to look like an "8" which was common for blocks found on trapdoors produced in the 1882-1885 period. The top view does not indicate any apparent differences. Breech blocks from the Tom Trevor collection. Photographs by Don Harpold.



LEFT: Experimental Block. RIGHT: Service Block. The bottom view shows a number of differences. First, the crowned head of the retaining cap screw is clearly seen. Second, the hole for the firing pin retaining screw is missing. Third, the arch of the experimental block is much shorter, but deeper than the service block.



TOP: The experimental block and associated parts are clearly displayed. The firing pin tip is retained by the spring that resides against the inside of the block's detachable face plate. The upper portion of the firing pin is retained like that of the service block except the side of the screw shaft does the retaining. MIDDLE: The block recess for the spring and firing pin tip is visible. BOTTOM: The height difference in the underside arch is clearly visible and the face plate, spring and firing pin tip have been inserted into the block. Breech block is from the Tom Trevor collection. Photographs by Don Harpold.

OFFICIAL ARMORY STAMPS & SHIPPING DOCUMENTATION FOR ARMS & CHESTS

The following information about federal stamps on Springfield Armory products was found a number of years ago by the late Robert Hill. Unfortunately, the document is not dated which offers a number of problems for the researcher. We know the "V/P/Eagle" stamping was used during the Civil War and is found on many of the arms produced after the War. However, the stamping was not used on the earliest Model 1873 arms. It is believed the document was written to reintroduce the V/P/Eagle proof and possibly justify the need for serial numbering Model 1873 arms. However, the author [Chief of Ordnance?] describes the barrel stamping as "Eagle/U.S." which was not used. there were further changes and modifications to this document. In any case, the statements made are

very interesting and if some of the other stampings have ever been seen, this author would like to have photographs for the newsletter.

The article starts out with a partial page of printed material outlining a number of procedural steps relating to Armory production identification. Then it explains how the various products and shipping chests should be marked for One paragraph was crossed out, shipment. presumably by Col. J.G. Benton, Commander at Springfield Armory. The concluding statements were handwritten by J.G. Benton at the bottom of the printed list along with several attached handwritten pages. At the end of the article there is a sample invoice form and a packing list for an arms chest. The two items would be attached to a shipping chest in the manner discussed.

I. Hereafter all rifles, carbines, revolvers, swords and sabers, manufactured or procured by the Ordnance Department and those now in store, will have stamped upon them the eagle's head surmounting the letters U.S., in positions as follows, vis:

Upon rifles and carbines, on the left-hand side of the barrel, just in front of the receiver.

Upon revolvers, on the left side of the frame, to the rear and below the cylinder. Upon swords and sabers, on the right side of the blade close to the hilt.

- II. When arms are issued to the States and Territories under section 1661, revised statutes, each piece will be stamped by the issuing officer with the letter M, the number of the order for supply and the year, all in one continuous line parallel to the axis of the bore if rifles, carbines and revolvers, on the right side of the barrel in front of the receiver or cylinder an the ???? may be and on swords and sabers, on the guard. (Example, M, 103, 78.)
- **III.** When arms are sold, upon them, near the eagle's head, will be stamped the letter S inside a circle.
- **IV.** The stamps used will be those furnished from the National Armory, or facsimiles of them and to avoid injury to the arms the stamping will only be done by skillful workmen.
- **V.** All ordnance and ordnance stores, other than those above enumerated, including tools, will, before issue or use, be indelibly marked with the letters U.S., and, when possible, the word ORDNANCE, or an abbreviation, thereof, and sold, or issued under section 1001, Revised Statutes, stamped, as provided in paragraphs II and III.
- **VI.** Hereafter there will be kept at each ordnance establishment a correct list of the numbers of all arms issued or sold, and upon all invoices will appear the number of each and every arm covered by it.
- VII. In addition to the marks now placed upon shipping boxes, there will hereafter be stenciled upon them a list of the contents, when the size of the box and the character of the stores will permit.

The marks then will be the address, the name of the ordnance establishment from whence shipped, the number of the box, (all constituting one invoice being numbered consecutively from one upwards;) the date of the invoice, the contents, and the gross weight of the box.

[Handwritten on the bottom of the document along with several additional pages are the following proposed changes.]

Monday- Please examine this carefully and suggest modifications. Sections V, VI and VII seem impracticable. The first [two] sections can be easily carried out by the Armory, but may prove very troublesome.

Having considered this subject more carefully I have come to the conclusion that paragraph VI may be carried out in such a way as to render the marking called for by paragraph II unnecessary. So far as rifles, carbines and pistols are concerned. For this purpose it is proposed to print a list of the [serial] numbers of the arms in each chest as enclosed. One copy on and to be nailed to the inside of the cover. A copy to be attached to each invoice. Several copies to be placed inside the chest for use of the receiving officer [in charge]. One copy to be retained by the Armory with the number of the order for supplies noted on it. In this way the history of long arms can be easily traced. I am afraid that the stamping of the order for supplies on each arm cannot be done without special fixtures for holding the type and that may delay issues.

I see no other changes to propose.

J.G.B.

The following are reworked copies of the enclosed invoice form and shipping label. The Xerox copy of the original was badly done and not

very clear. Also, the shipping label covered part of the list of items found on the invoice form.

		to			
at		on the	day of		, 187,
	(S	ee notes on outside)			
NO. OF BOXES	MARKS	CONTENTS	}	WEIGHT	VALUE per piece or lb.
		Colt's Revolvers, Cal.45 Screw Drivers			
		Main Spring Screws Sear and Stop Bolt Spring Screws (combi Firing Pin Rivets Arms Chest	ined)		
I certify that the	e above is a co	orrect Invoice of Ordnance and Ordnan	ce Stores turned over	by me	
this d	av of	, 187, to			

InvoiceOrder for Supplies, No.

20

SPRINGFIELD RIFLES, CAL. .45,

Marked with the following Numbers:

95210	97220	98750	94183
96531	96853	96868	95837
96616	96618	97240	96610
96808	97020	96670	96668
96986	96919	96995	96662

NATIONAL ARMORY, Nov. 6, 1878

Using Frank Mallory's reference volumes, *Serial Numbers of U.S. Martial Arms I, II, III, and IV,* to check the above list of serial numbers shows many of the numbers being within a few digits of cadet rifles in one volume and within a few digits of regular rifles in another. Evidently, cadet rifles and regular

rifles were assembled at the same time using the same batch of serial numbered receivers.

Below are three additional arms chest labels from a much later time period. However, the basic style is the same. In all cases, note the wide range of serial numbers within the same chest.

Invoice______188
Order for Supplies, No.

National Armory Number.

16490.

SPRINGFIELD RIFLES, Model 1884,

Marked with the following Numbers:

477521×	477502 ×	477522×	477572
477677	477541 ×	477577	477405
477411	477554	477506	477594
477501	477557 ×	477413	477580×
477534	477414×	477409	477578

NATIONAL ARMORY, December 21, 1889.

Invoice 188 Order for Supplies, No.

National Armory Number. 16499.

SPRINGFIELD RIFLES, Model 1884,

Marked with the following Numbers:

477439/ 477923/ 477922/ 477630/ 477937/ 477938/ 477924/ 477612/ 477925/ 477902/ 477920/ 477634/ 477659/ 477910/ 477642/ 477663/ 477942/ 477903/ 477650/ 477621/

NATIONAL ARMORY, December 23, 1889.

Invoice 188 Order for Supplies, No.

National Armory Number.

16475.

SPRINGFIELD RIFLES, Model 1884,

Marked with the following Numbers:

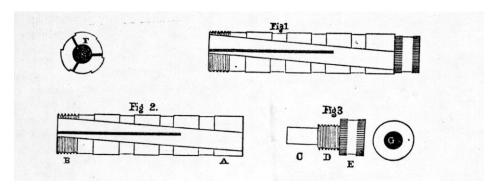
477289 / 477208 / 477389 / 477372 / 477241 / 477224 / 477124 / 477377 / 477244 / 477230 / 477380 / 477387 / 477219 / 477209 / 477392 / 477386 / 477236 / 477136 / 477684 / 477371 /

NATIONAL ARMORY, December 19, 1889.

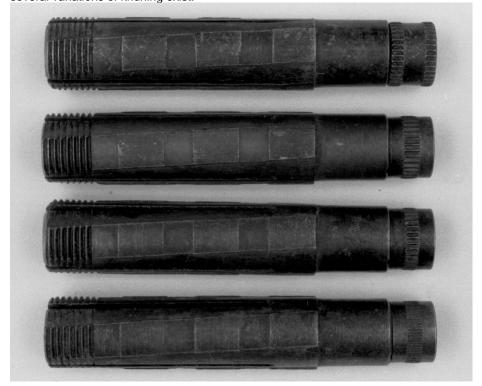
The above three photographs were taken many years ago by Robert Hill. They are from original Springfield rifle chests opened sometime in the 1920s, and used by Stembridge Gun Rental.



The above two first model headless shell extractors were made in slightly different ways. In one case, the four cuts in the side of the barrel terminate with a drilled hole. In the other, the cut was made with a shallow tool which left a tapered cut. Ordnance Note 60 shows the extractor as having the drilled hole at the end of the cut. The two extractors were supplied by Edward Knisely.



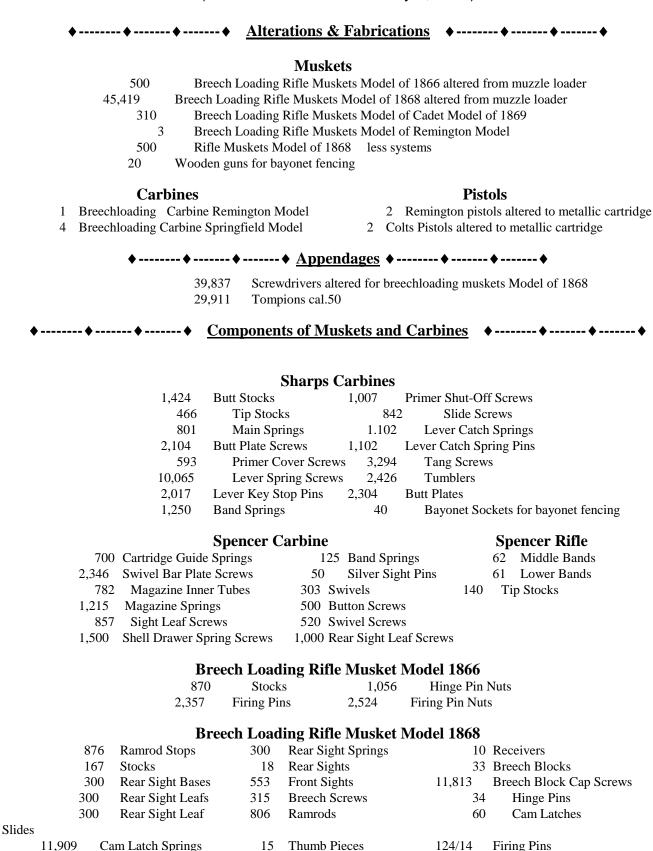
The headless shell extractor drawing is from Ordnance Note 311 dated July 3, 1883. The so-called Model 1882 headless shell extractor was devised by Lt. Colonel A.R. Buffington. The original plan was for two knurled bands on the screw head and four sets of lands and grooves. However, they were not made that way, see below. Also, several variations of knurling exist.



The four headless shell extractors were supplied by Edward Knisely and Albert Frasca.

Report of Operations at the Springfield Armory for the Year Ending 30th June 1870

(Fiscal Year 1870 started July 1, 1869)



11,756 Firing Pin Screws 13,201 Ejector Springs 12,106 Firing Pin Springs 60 Ejector Spring Spindles 4,703 Extractors
10 Ejector Studs

♦------♦-----• <u>Repairs</u> **♦-----•♦-----•**

Muskets

36,266 Enfield Rifle Muskets

31,300 Rifle Muskets 1st Quality Various Models 28,240 Rifle Muskets 2nd Quality Various Models

100 Rifle Muskets Cadet Model Maynard Primed

Sabers & Swords

301 Artillery Sabers890 Cavalry Sabers

230 Non Commissioned Officers Swords2,122 Non Commissioned Officers Blades

283 Musicians Swords

Appendages

1,410 Wipers 3,318 Screwdrivers 310 Spring Vices 282 Ball Screws



Two sets of officers quarters completed.

Guarding and policing grounds and buildings.

Boilers for steam heating buildings repaired and enlarged.

Lightening rods and water and gas pipe repaired.

961 feet of cement water pipe laid for drainage.

New road laid out and completed on south and east side of public grounds.

Built 150 feet of picket fence in front of store house.

Frame cartridge shop, moved repaired and painted.

Shelter for hay scales made into house for steam engine and painted.

90 feet of brick wall built - 30 tons of hay cut on public grounds and stored.

Painting and repairing buildings, shop fixtures, tools, machinery and etc.

Tools, gauges, machines and machine fixtures for fabrication of breechloading rifle muskets Model 1868 completed.

Tools, gauges, machines and machine fixtures for fabrication of breechloading Cadet rifle musket Model of 1869 and Remington rifle for Navy Department in progress.

Experiments with Henry Martini rifle barrel and other small arms and metallic cartridges.

Built 10 gun racks for Main Arsenal.

Arms chests altered for packing breechloading rifle muskets of Model 1868.

Arms chests repaired for packing repaired muskets.

115,932 muskets and carbines received from other posts.

99,780 muskets and carbines issued.

170,038 muskets oiled and replaced in racks in Main Arsenal and packed.

413 packing boxes made for miscellaneous use.

From: National Archives Record Group RG156-1354, Letters Sent to Chief of Ordnance, January, 1869 to December, 1876, pages 239-241.

Corrections

To:

The .45-70 Springfield

By: Frasca & Hill

- Pg. 67 Caption, top figure:#33,941 and is stamped on tang of breech screw butt plate, "August 15, 1876."
- Pg. 82 First paragraph: Mr. Allin did not retire, he died September 11, 1879.
- Pg. 91 Production data: 183 Long Range rifles were produced, not 151. Also, two experimental shotguns were
- Pa. 95 Second paragraph: "The stock recess for the thumb and the modified trigger are shown in Appendix D." Actually, the modifications were cropped out of the photograph.
- Lowest caption: change 2.4" to 2.1". Pg. 101
- First paragraph: The working rack and pinion sight was not on the Model 1884 Rod Bayonet rifle. In the Pg. 149 caption to the picture, the rack and pinion was not on this gun.
- First paragraph: The two experimental carbines are found on page 67, not appendix D. Pg. 151
- Pg. 183 Lower right portion of page, Item #1: 1. Stock inspector's stamp [script T in oval].

 Pg. 211 Caption for lower photograph should read: "Two .30 caliber rifles at.....years; top, marked (according to Army card) U.S. Model 1888 on breech block with SN 415616."
- Pg. 291 Top caption, add to the No. 577 description: The gun was used as defendant exhibit No. 15 in the Milbank vs. Porter trial.
- Pg. 293 Top caption: No. 578 is .58 caliber center-fire, not rimfire.
- Pg. 294 Top caption: No. 2345 is .50 caliber center-fire, not rimfire.
- Pg. 294 Bottom caption: No. 2250 is marked on the receiver .58/.50, not 88/80.
- Pg. 296 Photograph caption: No. 2346 is .50/70 rimfire, not center-fire.
- Pg. 299 Top caption: No. 575 is a Colt contract musket modified by Col. Hiram Berdan.
- "Another interesting.....by Army personnel." this paragraph should be with gun No. 1185 Pg. 316 Top caption: on page 315.
- Pg. 320 Top caption: No. 2382 is SN 157223. This gun is chambered for .45-80, has a six groove barrel and a long range stock.
- Pg. 321 Lower caption: No. 1159 is SN 75565. The modification was designed by H.T. Hare for holding back hammer until the thumb piece is closed.
- Pg. 324 Exchange the upper two photographs. The upper caption should have SN 15,591. The middle caption should state SN 18,187.
- Pg. 327 Add to upper caption: The SN is 276,745.
- Add to middle caption: the SN is 105,058. Add to caption: SN is 107567. Pg. 328
- Pg. 378 Lower right column of numbers: For the year 1892, the last SN for that year should be 558,074, not 588,074.

Corrections

To:

The .45-70 Springfield • Book II • 1865-1893

By: Frasca

- 1. All .45 caliber carbine and cadet rifle cartridges are .45-55-405. On pages 273 and 277 they are incorrectly marked .45-55-500.
- There is a mistake related to the tube bayonet section that starts on page 350. Frank Mallory reported the tube bayonet shown, should be credited to Col. J.G. Benton, Commander of the Armory. The bayonet submitted by Lt. Ed Zalinski was a reversible type rod bayonet which is to be reported in the Journal of the Society of American Bayonet Collectors.
- 3. There is a recording error on pages 206 and 262. The triangular bayonet rifle SN 157748 does not have a "starred" receiver. This was reported by Joe Wanemaker who owns the gun.
- On page 76, regarding the sale of parts to W.H. Jackson, the Jackson referred to was the president of the Oriental Powder Company and not associated with the Hayden Expedition. The information was located by Dr. Vance Haynes.