



"The musquet is to be used in respect, it carries a double bullet and is more weightie. The souldier uses a staffe breast high, in the one end a pike to pitch on the ground, and in the other an iron forke to reste his peere upon, and a hole a little beneath same in the staffe; whereunto he doth add a string, which tied and wrapped around his wrist, yealdes him commoditie to train his forke of staffe after him, whilst he in skirmish doth charge his musquet afresh with powder and bullet."

Military Treatise 1619

UNITED STATES MUSKETS, RIFLES AND CARBINES

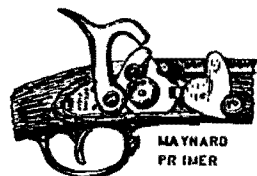
BY
ARCADI GLUCKMAN
COLONEL INFANTRY
U. S. ARMY



THE STACKPOLE COMPANY
Harrisburg, Pennsylvania

1959

MAYNARD



One of Early Forms, Gate Open

The Maynard tape primer was the invention of Edward Maynard, a dental surgeon of Washington, D. C.

It consisted of a narrow strip of varnished paper of double thickness having deposits of fulminating compound between the two strips, at equal distances apart. The strip was coiled in a recessed magazine in the lock plate of the arm, and was pushed up by a toothed wheel when the hammer was cocked, so as to bring a fulminate cap up on the cone and at the same time cut off the paper behind the exploded cap. Otherwise the functioning of the primer was the same as that of the copper percussion cap; the flash of the explosion being conducted through the hollow cone to the main charge in the breech and discharging the arm. The Maynard tape primer ignition system was applied not only to the manufacture of new arms, but to the modification of old as well. The following contracts are recorded:

On March 20, 1845, the government contracted to pay Dr. Maynard the sum of \$4,000 for the rights to apply his tape primer device to 4,000 muskets. February 9, 1848, Daniel Nippes contracted to modify 1,000 muskets to the Maynard system at \$4.00 each and on November 22, 1848, an additional 1,000 at \$3.00 per musket. The magazine cover of these arms is marked "EDWARD MAYNARD PATENTEE 1845" or "MAYNARD'S PATENT WASHINGTON 1845." The hammer of these arms had a straight shank to fit the protruding, straight, upper left edge surface of the magazine cover.

On February 3, 1854, for a consideration of \$50,000 to be paid in three installments of \$16,666.66 each, Dr. Maynard sold the government Maynard primer rights, permitting unreserved use of the device for the Army and Navy. September 9, 1854, Remington received a contract to alter 20,000 flintlock muskets to the Maynard tape primer system at \$3.15 per musket. In these alterations, to what was sometimes called "REMINGTON PRIMER LOCKS," the spring activating the mechanism was slightly different from the Maynard construction. The alteration included the inletting of a new lock, marked on the plate "REMINGTON'S," "ILION, N. Y." "1857" and "US" in four lines behind the hammer.

While the mechanism functioned well under favorable conditions, in inclement weather it did not possess the reliability of the metallic percussion cap and so was not adopted for the hundreds of thousands of rifle-muskets produced during the Civil War.

BUTTERFIELD

The Butterfield disc primer feed system was patented by Jesse S. Butterfield, of Philadelphia, Pa., December 11, 1855, and consisted of a disc primer magazine inserted into a tube attached



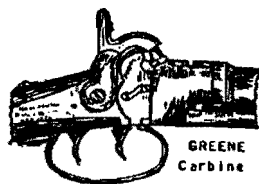
to the lock plate between the hammer and the cone. By removing a thumb-screw, a tube of disc primers could be inserted. These were fed automatically to the cone by the action of cocking the hammer.

In a specimen known, of a flintlock musket converted to

GREENE BREECH-LOADING PERCUSSION CARBINE

Illustrated — Fig. 6, Plate 13.

Caliber .53, taking a .54 caliber bullet. Massive 18 inch barrel rifled with 3 broad grooves. The barrel is round for 9-13/16 inches from the muzzle, where it enters a barrel sleeve, the first 2 inches of which is polyfaced with 16 flat surfaces to give a good hand grasp. Total length 34-3/4 inches. Weight 7-1/2 pounds. Steel blade front sight; 2 leaf rear sight, graduated to 600 yards. Walnut half-stock with blued-steel patch box and steel butt plate. There is no fore-arm. Sling ring on trigger guard extension, behind the large trigger guard bow with two triggers. All furniture steel. All metal blued except lock plate and hammer, which were case-hardened in mottled colors. Marked on the lock plate "MASS. ARMS CO," "CHICOPEE FALLS," "U.S.A. 1856"; on the breech tang "GREENE'S PATENT JUNE 27, 1854," and on tape primer magazine gate "MAYNARD'S PATENT, SEPT. 2, 1845." The specimen described is numbered 287 underneath the breech and barrel sleeve.



To load, the foremost of the two triggers was pressed to the rear, the polyfaced section of the barrel sleeve, in front of the rear sight, grasped firmly with the left hand and turned to the left one-quarter turn, disengaging the locking lugs from corresponding grooves in the breech frame. The barrel could then be pulled forward and rotated 90° to the right, exposing the breech for loading. After loading with paper cartridge the breech was swung left 90°, pulled back in the frame and rotated to the right one-quarter of a turn, lock-

ing the piece. An interesting feature was a chamber thimble in the chamber, which with its beveled edge fitting against the breech base, acted as a gas check to diminish gas escape. The piece was fired by pressing the rear trigger, a side hammer striking a tape primer, fed through a Maynard tape primer magazine mechanically, by the action of the hammer. In the base of the breech was a sharp, hollow pin, which punctured the base of the cartridge and helped to convey the fire to the powder.

The arm was patented by J. Durrell Greene, U. S. Army, November 17, 1857, Patent No. 18,634. Greene's earlier model was caliber .54, rifled with five grooves. 22 inch, round barrel swelling 14-11/16 inches towards the breech. The sling ring was riveted into the back of the trigger guard. Brass butt plate and patch box. Blade front sight and unmarked leaf rear sight.

200 Greene breech-loading carbines were purchased by the government May 24, 1855, at \$30.00 each. 170 were issued for use and test by the army in 1857. Lt. Colonel J. Durrell Greene was also the designer of the Greene bolt action, percussion rifle: — see Chapter 4, Part II.

A number of Greene carbines were purchased by Great Britain and then sold to the United States during the Civil War. These may be readily identified by the mark of the crown over "V.R." (Victoria Regina), on the lock plate immediately behind the hammer and proofmarked "Crown A-2," on barrel, breech and trigger guard. These were usually also marked with a double broad arrow and letter "S" on the left side of the barrel sleeve.

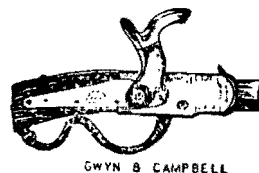
The Massachusetts Arms Company of Chicopee Falls,

was incorporated under a special action of legislature of March 5, 1850, to manufacture fire arms and machinery. The company was operated by James T. Ames, Timothy W. Carter, Benjamin F. Warner and their associates, which included heirs and kin of Edwin Wesson. In addition to the manufacture of Wesson and Leavitt revolvers, the company also manufactured small revolvers using Maynard tape lock priming system, Maynard, Smith and the Greene carbines described above. After the Civil War, with decreasing demand for fire arms, due to lack of patronage, the business failed, and the assets and stock were taken over by T. W. Carter, who had been in charge of operations. On February 1, 1876, the works were taken over by the Lamb Knitting Machine Company, who were the owners of the shops in which the Massachusetts Arms Company conducted its business. Maynard fire arms continued to be manufactured until 1890.

GWYN & CAMPBELL BREECH-LOADING PERCUSSION CARBINE

Illustrated — Fig. 7, Plate 13.

Caliber .52. The 20 inch, round barrel, octagonal for 3-1/2 inches at the breech, is rifled with 3 grooves. Total length 39-1/8 inches. Weight about 6-1/2 pounds. A conical bead, broad base front sight; sliding leaf, rear sight graduated to 700 yards. Walnut half-stock. There is no fore-arm. Steel butt plate. A sling ring slides on a 2-3/4 inch rod on the left side of the frame. Blued barrel, butt plate, breech tang. The long, flat-faced hammer, lock plate and trigger guard lever, are all case-hardened in mottled colors. The carbines were also made tinned finish, for Navy use.



The carbine is marked on the right of the breech in front of the hammer, "UNION," "RIFLE," in 2 lines, and behind the hammer on the lock plate, "GWYN & CAMPBELL," "PATENTED," "1862," "HAMILTON, O," in 4 lines. The serial number of the practically new specimen described is "2385," marked underneath the barrel, the receiver and the breech-block. The stock bears inspector's initials "R.K.W." and "W.H.R." in two frames on the left side of the small of the stock.

Unlatching and lowering the trigger guard withdraws the breech-block away from the breech. The breech-block has an inside beveled shoulder, which fits tightly against the breech and acts as a gas check. The carbine used a paper or linen cartridge which was seated into the chamber by sliding it along a groove in the top of the breech-block.

The arm was invented by Edwin Gwyn and A. C. Campbell, of Hamilton, Ohio, and patented October 21, 1862, Patent No. 36,709. It was manufactured by the Cosmopolitan Arms Company of Hamilton, Ohio. Some of the earlier carbines of this model were so marked. This arm was made with slight variations, as to barrel length and hammer shape, these having been made either flat-faced or rounded.

This arm was also known as the "Cosmopolitan" carbine for the manufacturer, the "Union" from the marking, the "Grapevine" after serpentine trigger guard shape, the "Ohio" after state of manufacture, and the "Gross" after Henry Gross, who was associated with Gwyn and Campbell and patented a minor improvement on August 25, 1863, Patent No. 39,646.

The carbine is marked on top of the breech block "EDWARD LINDNER'S" "PATENTED," "MARCH 29, 1859" in 3 lines.

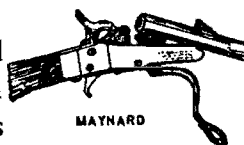
The mechanism consists of an upward tilting breech, pivoted at the right of the breech and held in place by a turning cover. The turning leftward is accomplished by a flat key or knob at the right of the cover, the breech being tilted up by a concealed spring for the insertion of a nitre treated paper cartridge. After loading, the breech is depressed with the thumb, the cover turned right to closed position, and the piece could be fired with the usual percussion cap.

892 Lindner carbines were purchased by the government during the Civil War.

Some of these carbines are marked on the lock plate with the name of the manufacturer, "AMOSKEAG MFG CO., MANCHESTER, N. H.," an eagle and are dated, such as "1864." The Amoskeag Manufacturing Company also furnished the government during the Civil War, 27,001 muzzle loading percussion muskets.

MAYNARD BREECH-LOADING PERCUSSION CARBINE

Caliber .50. The 20 inch barrel, rifled with 3 grooves, is round for 16-1/4 inches, and is octagonal for 3-3/4 inches at the breech. Total length 36-7/8 inches. Weight about 6 pounds. Blade, steel, front sight on a wide base; the rear sight is of the open 3-leaf type graduated to 500 yards. Walnut half-stock without comb. There is no fore-arm. Steel butt plate. A sling ring slides on a 2-1/8 inch rod on the left



of the frame. The barrel and hammer of the practically new specimen described, were blued; the frame and trigger guard lever were case-hardened in mottled colors.

The carbine is marked on the left side of the frame "EDWARD MAYNARD," "PATENTED," "MAY 27, 1856," "DEC. 6, 1859," in 4 lines and on the right side of the frame, "MANUFACTURED BY," "MASS. ARMS CO.," "CHICOPEE FALLS," in 3 lines.

The serial number of this specimen, 20,103, is stamped on the trigger guard extension. The left side of stock of this specimen is marked with inspector's initials "AJN" and "JM" in script, in frames.

Lowering the trigger guard, tips the breech upward for loading with a fairly thick, unprimed, brass metallic cartridge with a broad rimmed base, which, instead of a primer had a tiny hole in the center of the base to admit the flash from the percussion cap. The arm was fired by a conventional percussion cap fired by the centrally hung hammer. The broad, flat cartridge rim, projecting beyond the breech of the arm, facilitated hand extraction. The cartridge was reloadable with tools supplied by the company.

The carbine was the invention of Dr. Edward Maynard, a dental surgeon of Washington, D. C., who also invented the Maynard tape primer. The Maynard carbine was one of the early, capping, metallic cartridge arms, and the first to use the expansion of the cartridge case as a gas check.

The arm described is the model used extensively during the Civil War. In all, the government purchased 20,202 Maynard carbines.

For a sketch of Massachusetts Arms Company, see Greene carbine, this chapter.

U. S. BREECH-LOADING AND MAGAZINE LONG ARMS PATENTEES

Joslyn, B. F.	33,435	Breech-loader	Oct. 8, 1861
Joslyn, B. F.	222,912	Magazine	Dec. 23, 1879
Joslyn, B. F.	109,218	Breech-loader	Nov. 15, 1870
Judd, E. M.	34,504	Magazine	Feb. 25, 1862
Kay, A. B.	109,419	Breech-loader	Nov. 22, 1870
Keene, J. W.	147,945	Magazine	Feb. 24, 1874
Keene, J. W.	147,946	Magazine	Feb. 24, 1874
Keene, J. W.	147,947	Magazine	Feb. 24, 1874
Keene, J. W.	147,948	Magazine	Feb. 24, 1874
Keene, J. W.	148,614	Magazine	March 17, 1874
Keene, J. W.	172,447	Magazine	Jan. 18, 1876
Keene, J. W.	182,583	Magazine	Sept. 26, 1876
Keene, J. W.	188,468	Magazine	Mar. 20, 1877
Kellogg, H.	35,356	Breech-loader	May 20, 1862
Kennedy, S. V.	215,227	Magazine	May 13, 1879
Kennedy, S. V.	218,462	Magazine (See Tiesing & Kennedy)	
Kennedy, S. V.	225,664	Magazine (See Tiesing & Kennedy)	
Kennedy, S. V.	235,829	Magazine (See Tiesing & Kennedy)	
King, B.	34,579	Breech-loader	Mar. 4, 1862
King, N.	55,012	Magazine	May 22, 1866
King, N.	57,636	Magazine	Aug. 28, 1866
King, N.	9,157	Magazine	Apr. 13, 1880
Kirk, J. L.	116,066	Magazine	June 20, 1871
Kirk & Sneider	66,596	Magazine	July 9, 1867
Klein, F.	12,681	Breech-loader	Apr. 10, 1855
Krafft, J.	105,093	Magazine	July 5, 1870
Laidley & Emery	54,743	Breech-loader	May 15, 1866
Lancaster, P.	14,667	Breech-loader	Apr. 15, 1856
Landfear, W. R.	44,099	Breech-loader	Sept. 6, 1864
Landfear, W. R. (r)	2,581	Breech-loader	Apr. 30, 1867
Lane, T. W.	60,910	Magazine	Jan. 1, 1867
Langdon, L. W.	155,318	Magazine	Sept. 22, 1874
Lawrence, R. S.	8,637	Breech-loader	Jan. 6, 1852
Lawrence, R. S.	26,504	Breech-loader	Dec. 20, 1859
Lawrence, R. S.	1,670	Breech-loader	May 17, 1864
Lawrence, R. S.	88,645	Breech-loader	Apr. 6, 1869
Letort & Mathews	27,723	Breech-loader	Apr. 3, 1860
Leavitt, D.	24,394	Breech-loader	June 14, 1859
Lee, J.	35,941	Breech-loader	July 22, 1862
Lee, J.	54,744	Breech-loader	May 15, 1866
Lee, J.	114,951	Breech-loader	May 16, 1871
Lee, J.	116,068	Breech-loader	June 20, 1871
Lee, J.	122,470	Breech-loader	Jan. 2, 1872
Lee, J.	122,772	Breech-loader	Jan. 16, 1872
Lee, J.	221,328	Magazine	Nov. 4, 1879
Lee, T.	20,073	Breech-loader	Apr. 27, 1858
Lee, T.	33,745	Breech-loader	Nov. 19, 1861
Lefauchaux, E.	31,809	Breech-loader	Mar. 26, 1861
Lindner, E.	14,819	Breech-loader	May 6, 1856
Lindner, E.	23,378	Breech-loader	Mar. 29, 1859
Lindner, E. (r)	1,053	Breech-loader	Oct. 2, 1860

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U. S. BREECH-LOADING AND MAGAZINE LONG ARMS PATENTEES

Lindner, E. (r)	1,054	Breech-loader	Oct. 2, 1860
Livermore & Russell	221,079	Magazine	Oct. 28, 1879
Lord, H.	73,351	Breech-loader	Jan. 14, 1868
Lord, H.	74,387	Breech-loader	Feb. 11, 1868
Luce, G. D.	136,660	Magazine	Mar. 11, 1873
Luce, G. D.	156,431	Magazine	Nov. 3, 1874
Lull, O. D.	38,903	Breech-loader	June 16, 1863
Manton, J.	117,552	Breech-loader	Aug. 1, 1871
Marelli, A.	139,323	Breech-loader	May 27, 1873
Marlin, J. M.	101,637	Breech-loader	Apr. 5, 1870
Marlin, J. M.	222,064	Magazine	Nov. 25, 1879
Marlin, J. M.	222,414	Magazine	Dec. 9, 1879
Marlin, J. M.	234,309	Magazine	Nov. 9, 1880
Marlin & Burgess	250,825	Magazine	Dec. 13, 1881
Marsh, S. W.	26,362	Breech-loader	Dec. 6, 1859
Marsh, S. W.	33,655	Breech-loader	Nov. 1, 1861
Marshall, J. P.	25,661	Breech-loader	Oct. 4, 1859
Marshall, J. P.	35,107	Breech-loader	Apr. 29, 1862
Marston, W. W.	7,443	Breech-loader	June 18, 1850
Mason, J. M.	112,523	Breech-loader	Mar. 7, 1871
Mason, J. M.	117,906	Breech-loader	Aug. 8, 1871
Maton, F.	11,938	Breech-loader	Nov. 14, 1854
Maynard, E.	8,126	Breech-loader	May 27, 1851
Maynard, E.	26,364	Breech-loader	Dec. 6, 1859
Maynard, E.	30,537	Breech-loader	Oct. 30, 1860
Maynard, E.	48,423	Breech-loader	June 27, 1865
Maynard, E.	48,966	Breech-loader	July 25, 1865
Maynard, E.	49,130	Breech-loader	Aug. 1, 1865
Maynard, E.	86,566	Breech-loader	Feb. 2, 1869
Maynard, E.	135,928	Breech-loader	Feb. 18, 1873
McBeth, J. E.	73,357	Breech-loader	Jan. 14, 1868
McBeth, J. E.	80,985	Breech-loader	Aug. 11, 1868
McCarty, T.	147	Breech-loader	Mar. 11, 1837
McChesney, R.	58,444	Breech-loader	Oct. 2, 1866
McChesney, R.	65,103	Breech-loader	May 28, 1867
McGovern, J.	88,890	Breech-loader	Apr. 13, 1869
Meigs, J. V.	36,721	Breech-loader	Oct. 21, 1862
Meigs, J. V.	54,934	Breech-loader	May 22, 1866
Meigs, J. V.	81,100	Breech-loader	Aug. 18, 1868
Meigs, J. V. (r)	5,433	Breech-loader	June 3, 1873
Meigs, J. V.	157,621	Magazine	Dec. 8, 1874
Meigs, J. V.	157,622	Magazine	Dec. 8, 1874
Meigs, J. V.	157,623	Magazine	Dec. 8, 1874
Mellen, D. F.	44,545	Breech-loader	Oct. 4, 1864
Merlett, J.	81,283	Breech-loader	Aug. 18, 1868
Merriam, L. A.	86,091	Breech-loader	Jan. 19, 1869
Merriam, L. A.	87,058	Breech-loader	Feb. 16, 1869
Merriam, L. A.	212,105	Magazine	Feb. 11, 1879
Merrill, J. H.	14,077	Breech-loader	Jan. 8, 1856
Merrill, J. H.	20,954	Breech-loader	July 20, 1858
Merrill, J. H. (r)	1,156	Breech-loader	Mar. 26, 1861
Merrill, J. H. (r)	1,157	Breech-loader	Mar. 26, 1861

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