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AMERICAN SOCKET BAYONETS, 1717-1873.

by

DONALD B. WEBSTER, Jr.



MUSEUM RESTORATION SERVICE

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FOREWORD

Bayonets — and bayonets. We are all familiar with them, but how much do we really know about them? Even the stoutest of collectors might well quail before the task of identifying a half-hundred angular bayonets, all generally similar, yet each one different in its details. Where to start? We might know a few of them, and make educated guesses about more, but on the whole our box score wouldn't be too impressive.

The identification of arms accessories is, on the whole, rather more difficult than that of the weapons themselves; most accessories are unmarked, and all too often no really adequate description from which they can be recognized was made during their period of use. For many years, the primary emphasis in arms study has been quite properly directed toward the major problem presented by the arms themselves, while the study of their accessories has generally remained quite incidental; thus our knowledge of these interesting items has accumulated in a piecemeal, hit-or-miss fashion. Bayonets, like other accessories, have been described in more or less detail in books and articles on long arms, but never, before this, as far as I know, have socket or angular bayonets, been given the attention and study they deserve.

The trouble with the musket-and-bayonet approach is that the development of bayonets and other accessories did not necessarily parallel the development of the arms with which they were associated. An older model bayonet may be retained in use, or a new pattern developed from it, or an entirely new type of bayonet may be introduced or adopted from a foreign type, all without much regard to the basic arm. The determining factors in the selection of a bayonet have very little in common with those affecting the choice of a firearm; rather, they reflect the prevalent military opinion of the purpose and value of a bayonet.

As a case in point, let us take the Model 1903 Springfield rifle. Originally designed with a rod-bayonet, the direct descendant of a similar bayonet on the last model .45-70 Springfield, this rifle received a new bayonet — the Model 1905 bayonet — as a result of Theodore Roosevelt's objections. This same Model 1905 bayonet was retained in use in 1936 on the Springfield's entirely different successor, the M.1 (Garand) rifle. But the Garand's successor, the closely similar M.14, takes an altogether different bayonet; actually a beefed-up utility knife.

From this it is clear that the conclusions drawn from a study of arms are not at all applicable to their bayonets. These must be studied as a separate field, whose only points of contact with the arms involved are the relationship of the

length of the bayonet to the overall length of the arm, and hence its reach; and the dimensions of the bayonet that enable it to fit the arm for which it was designed. In all other points — design, material, and method of manufacture — bayonets are properly studied as a separate class of weapon.

Recognizing that the identification of bayonets is complicated by their close similarity and the wide range of interchangeability on early model muskets, arms students will welcome this pioneer work as an addition to our knowledge that fills a distinct need. Such a booklet as this, is historical research at its best — the collection of accurate data not readily available to the layman, and its interpretation and presentation in a readily useful manner. Beside the essential 'vital statistics,' there is a short sketch providing the historical background for each bayonet, and showing its relationship to earlier types. The result is a reference work that will enhance collector interest in bayonets, as Harold Peterson did for swords, and provide a basis for evaluating and perhaps eventually identifying the more esoteric 'unknowns' in our collections.

Roy T. Huntington, Lt.-Col. AUS, Ret'd

INTRODUCTION

The bayonet is one of the simplest of weapons, yet one of fairly recent origin in the long history of military hardware. As we know it today the bayonet is a knife — attachable to a rifle muzzle for use as a pike or cutting weapon, but handy as well for everything from digging holes to opening cans. The mid-20th century bayonet, however, is a subsidiary weapon, a far cry from the very basic piece of equipment it once was.

The earliest type was the plug bayonet — a knife with a thin and tapering hilt that fitted into the muzzle of a musket. Introduced about 1660 in England and France, the plug bayonet made every musketeer a pikeman, and soon every pikeman a musket and bayonet armed infantryman. The plug bayonet, though, had a critical limitation — with the bayonet fixed in the muzzle, a musket could not be fired. So too, the plug bayonet often fitted too loosely, and readily fell out, or got wedged so tightly that it could not be withdrawn.

By 1690 or 1700 necessity had bred the offset-blade socket bayonet, which was to remain the basic pattern in all the world's armies for two centuries. Even today such rifles as the Russian Nagant and the British No. 4 mount socket bayonets.

Socket bayonets overcame the deficiencies of plug bayonets by the simple cylindrical socket, which fitted around a musket barrel rather than into the bore. Thus the musket could be both a firearm and a polearm simultaneously. The definition "angular bayonet" refers to the shank, at a right angle to the socket, which held the blade sufficiently offset from the barrel to permit loading with the bayonet fixed, and "socket bayonet" refers, of course, to the socket which fitted around the musket barrel.

Blade styles varied, but the style which came into general use was a spear rather than a knife — a long sharply pointed spike intended only as a thrusting or stabbing weapon. The blade was usually triangular in cross section, with the top flat of the blade, or the flat facing the socket, the longest leg of the triangle. Blades, too, at the height of their development, usually had concave flutes ground in at least two surfaces, and generally all three.

When the socket bayonet was mounted and locked, the blade was invariably offset to the right of the musket, or on the same side as the lock. Bayonet studs varied, being brazed or welded to either the top or bottom of the barrel. Thus, always assuming mounting with the elbow and blade to the right, the arrangement of a bayonet's mounting slots may be an important factor in identification.

Until the establishment of U.S. armories in 1796, American bayonets were those for European muskets, primarily British and French, which had been used in America. Post-1795 U.S. bayonets, like muskets, artillery, and even uniforms, were patterned on French designs, but not until 1840 did U.S. bayonets incorporate the clasp ring which had first appeared on the M.1777 French bayonet.

In the United States, the angular bayonet was last used on the M.1879 Spring-field rifle, though this rifle remained in at least secondary use until the First World War. The angular bayonet was succeeded first by integral rod bayonets, and finally, on the M.1892 caliber .30 Krag and successive rifles, by knife bayonets.

In identifying any given bayonet, construction details and configuration characteristics, both mechanical and stylistic, are of foremost importance. Comparison of dimensions is also essential. In considering what dimensions should be listed here, identification value was the deciding factor. Thus blade length and maximum width, and socket and elbow length, are prime quides. Several conferees felt socket diameters, outside and inside, would be useful. Other measurements, such as blade depth, mounting slot lengths, and clasp ring widths, were for a time recorded, but while they offered greater detail, they added nothing for puposes of basic identification, and were abandoned.

Though short, this project has been the product of several minds. For the great gathering of bayonets, mostly other peoples', which has filled a table beside my drawing board, I am indebted to Col. Frederick P. Todd and Gerald Stowe of the West Point Museum, and to Willis Barshied of Palatine Bridge, N.Y. Equally important, Dr. Rollin Davis, S. James Gooding, Albert N. Hardin, Lt. Col. R. T. Huntington, Harold L. Peterson, Jeremiah Reen, Robert Reilly, Gerald Stowe, Col. Todd, and Hermann W. Williams have contributed time and effort in supplying data, making valuable comments, aiding my quest for information, and checking both manuscript and drawings.

Fix your Bayonet, 3. Motion begun.



Of all the early manuals devoted to military drill, William Windham's *Plan of Discipline for the Use of the Norfolk Militia* was the most widely used. It was first printed in 1759 in England and in Boston in 1774. This illustration is from the 1768 Edition.

NOMENCLATURE

The following page offers a diagramatic explanation of bayonet parts nomenclature and measurements. All dimensions in the text are in inches and fractions, and are defined as follows:

BLADE LENGTH — measured from the front edge of the socket, as a horizontal line, to a vertical projection from the tip of the blade. An accurately marked carpenter's square is the best device for determining this and other measurements. BLADE WIDTH — measured across the most extreme width of the top flat of the blade, generally the sharp or rounded blade shoulders. A simple and inexpensive vernier caliper will be useful.

SOCKET LENGTH — measured from the rear to the front edge of the socket. A plain ruler is good; the simple vernier caliper better.

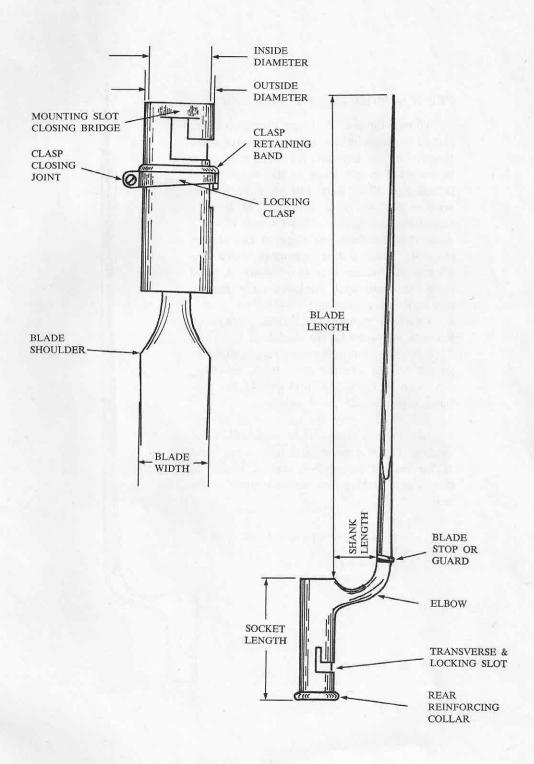
SHANK LENGTH — measured as a vertical line from the outside bottom wall of the socket (where the elbow joins) to the top flat of the blade. This may often be a difficult measurement to take accurately, and is most easily done with a marked carpenter's square.

SOCKET FRONT OUTSIDE DIAMETER (OD) — measured with a caliper, preferably horizontally, across the outside diameter of the socket at the forward end. A flat-jawed caliper is essential; the edges of a socket are often slightly worn, resulting in an inaccurate ruler measurement.

SOCKET FRONT INSIDE DIAMETER (ID) — measured with a vernier caliper's inside measuring jaws across the extreme inside diameter at the front of the socket. Note that bayonet sockets are sometimes slightly out of round, so that a true dimension will be halfway between the maximum and minimum diameter measurements.

NOTE — that many measurements in the text are followed by \pm (plus or minus), indicating observed variation in several similar bayonets. If the variation was over $\frac{1}{32}$ inch, the range of variation is so indicated.

ILLUSTRATIONS — The decision to use drawings rather than photographs to illustrate American Socket Bayonets was made to facilitate identification. In most cases, the full length view of the bayonet is $\frac{1}{3}$ the size of the original, while the sockets are $\frac{1}{2}$ of original size. The exception to this will be found in the Model 1873 Trowel bayonet, where the outline of the blade was not made to any particular scale.



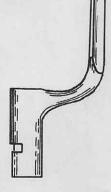
FRENCH MODELS 1717 AND 1746

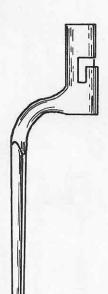
Though the pre-1763 type French muskets played a rather minor role in the American Revolution, the bayonets for these arms must be included in any study of this nature. The colonies in 1775 were full of early French arms — pickups from hundreds of frontier skirmishes during the 1703-13 and 1744-48 wars; captures from the siege of Louisbourg in 1745, and militia gleanings from the French and Indian War of 1754-63. A good many of these aged firelocks were carried into battle once again in 1775-76-77.

Two basic patterns of bayonets, with many variants, appeared for the models of 1717 and 1746. Neither was sufficiently standardized to permit instant identification. Both, however, can often be discerned from certain key features, together with the dimensions.

The M.1717 bayonet has a single mounting slot, with a simple right angle offset for locking. There is no integral reinforcing band at the rear of the socket, and no bridge to close the mounting slot, which is open at the rear.

Dimensions, Blade length, $14\frac{1}{2}''$, \pm Socket length, $2\frac{3}{4}''$ Blade width, $1\frac{1}{8} - 1\frac{3}{16}''$ Shank length, $1\frac{7}{16}''$





FRENCH MODEL 1746

The Model 1746 bayonet, an improvement over the Model 1717, typically had double and parallel mounting and locking slots, connected by a right angle offset. The socket, however, was still inherently weak, with neither a rear reinforcing band nor a mounting slot closing bridge.

Dimensions:

Blade length, 14"
Socket length, 2\frac{3}{4}"
Blade width, 1\frac{1}{8}"
Shank length, 1\frac{1}{4}"

BRITISH BROWN BESS, LONG LAND, SHORT LAND, AND INDIA PATTERNS.

The Short and Long Land pattern British musket was a standard arm in North America during the later French wars and the Revolution, and its bayonet is one of the most instantly recognizable of all types.

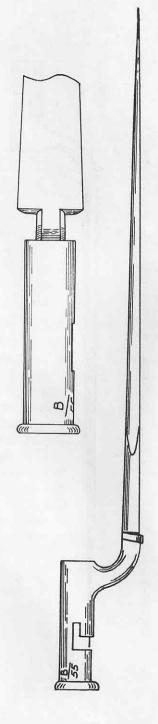
The socket is distinguished by its unusual length, heavy integral rear reinforcing band, and double and parallel mounting and locking slots. There is no locking clasp ring.

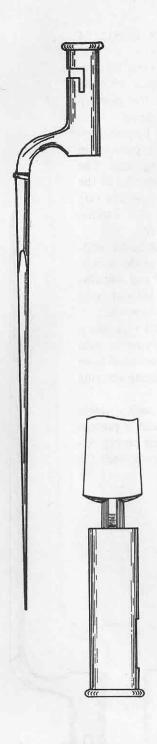
The blade is triangular in cross section, with a flat top surface and a rudimentary stop or guard at the juncture of blade and elbow. Since the elbow forms a rapid, nearly elliptical curve, the blade stop is well forward of the front of the socket.

Dimensions:

Blade length, $16\frac{3}{4}''$ Socket length, 4''Blade width, $1\frac{1}{8} - 1\frac{1}{4}''$ Shank length, $\frac{7}{8} - 1''$ Socket front OD, $1 - 1\frac{1}{16}''$ Socket front ID, $\frac{7}{8} - \frac{15}{16}''$ Barrel stud, Top

The Brown Bess bayonet was often marked with company initials and what were probably rack numbers, though the figure markings are sometimes said to be regimental designations. While easy to identify, Brown Bess bayonets are difficult to date, since the same type was used on the India pattern musket, used in the U.S. during the War of 1812, and by Mexico in the Mexican War of 1846-48.





BRITISH LIGHT INFANTRY OR DRAGOON FUSIL

The British carbine-bore musket, essentially a scaled-down Brown Bess, was used in American wars in bewildering variation, both as an issue weapon, and as privately purchased arms.

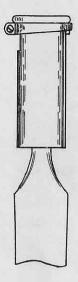
The special bayonets for these light weapons are as varied as the muskets themselves, but in general are simply reduced versions of the Brown Bess bayonet.

Dimensions:

Blade length, $11^{\prime\prime}-14^{\prime\prime}$ Socket length, $3\frac{5}{8}^{\prime\prime}$ Blade width, $1\frac{3}{16}^{\prime\prime}\pm$ Shank length, $1^{\prime\prime}\pm$ Barrel stud, usually top, but occasionally bottom.

Since carbine-bore fusils were often made as complete arms by contractors or private makers, the bayonets for these arms will be found to vary much more widely, in all dimensions, than does the Brown Bess bayonet.

FRENCH MODEL 1763 AND 1763/1774



The French M.1763 musket and its later variations, through French alliance with the revolutionary colonies, became the primary infantry arm of the Continental Army.

The bayonet for the M.1763 French musket was a departure from earlier patterns in being the first type to have a ring clasp. The mounting slot was again single, similar to the M.1717, and in the later 1774 type, the ring clasp was eliminated in favor of a locking spring attached to the musket itself.

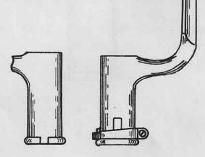
The M.1763 pattern bayonet had a reinforcing ring at the extreme rear of the socket. In cases of doubt, this integral band will distinguish M.1763/1774 types without ring clasps from the similar M.1717 bayonet.

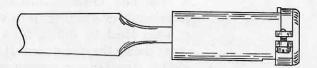
The ring clasp of the M.1763 type has a distinctly formed bridge in the ring to pass over the mounting stud, as differentiated from later types in which the joint closing the ring is cut to serve also as a bridge.

The 1774 type is often cut with a single mounting slot, though often no slot is present at all. In such cases, the locking spring, attached to the musket, simply clipped over the socket's rear reinforcing band.

Dimensions:

Blade length, $14\frac{3}{16}$ " Socket length, $2\frac{3}{4}$ " Blade width, $1\frac{1}{8}$ " Shank length, $1\frac{1}{2}$ " Socket front OD, 1" Socket front ID, $\frac{7}{8}$ " Barrel stud, Top





FRENCH MODEL 1763, VARIANT

A second type of bayonet for the M.1763 musket has been observed in several collections. This has a ring clasp with a straight rather than beveled forward contact surface, and may have been for non-standard arms. The primary divergence from standard bayonets is provision for mounting to a stud on the bottom of the musket barrel, while the standard M.1763 musket, of course has a bayonet stud mounted on top of the barrel.

As in the standard pattern, the ring clasp has a mounting stud bridge formed in the body of the ring, rather than as a cut at the closing joint.

Dimensions:

Blade length, 14¼"
Socket length, 25½"
Blade width, 25½"
Shank length, 156
Socket front OD, 1"
Socket front ID, 5½"
Barrel stud, Bottom

GERMAN, AMERICAN REVOLUTION

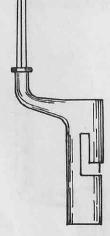
The only German muskets that figured prominently in American Wars were the arms of units hired by Britain from the German states during the Revolution. It is difficult to identify these German muskets or bayonets as to precise origin or date, but certain characteristics make possible rapid identification.

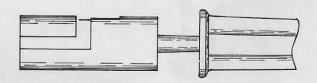
The typical Revolutionary period German bayonet has a flat, horizontally mounted blade, usually with both edges sharp. Cross section is a very flattened hexagon. Occasionally blades are encountered with a narrowly rectangular cross section, and with squared rather than beveled and sharpened edges.

A well defined guard at the base of the blade seems to be a constant characteristic. The socket is straight, with double and parallel mounting and locking slots, but no locking ring clasp. Usually there is no rear reinforcing collar. though a few German bayonets have been observed with a Brown Bess type collar.

Dimensions:

Blade length, $13'' - 13\frac{1}{2}''$ Socket length, $2\frac{7}{3}''$ Blade width, $1\frac{1}{16}'' \pm$ Shank length, $1\frac{1}{4}''$ Barrel stud, Bottom





AMERICAN, c.1775-1777

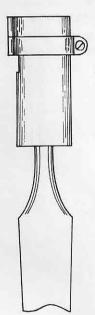
This bayonet, hand forged by a blacksmith who was not particularly skilled at his craft, is in the West Point Museum collection. It most probably represents attempts to overcome by local production the extreme shortage of bayonets in the Continental Army up to 1778.

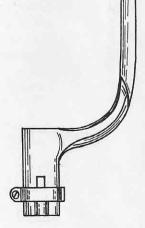
Though evidently made for a bayonet-less M.1763 musket, it could as well have been patterned on the M.1763 but fitted to an earlier model musket. In any event, such crudely fashioned pieces are illustrative of American home-workshop production to overcome critical shortages.

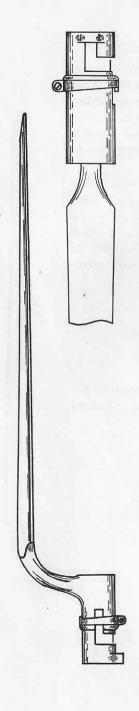
Dimensions:

Blade length, $19\frac{3}{4}''$ Socket length, $2\frac{11}{16}''$ Blade width, $1\frac{1}{8}''$ Shank length, 2''Barrel stud, Top

Like the French M.1763 bayonet, the clasp ring has a mounting stud bridge formed in the body of the clasp.







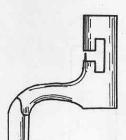
FRENCH MODEL 1777

Carried to America with the French troops that arrived in 1778, the M.1777 musket was greatly changed from the M.1763, the outstanding feature probably being the detachable brass priming pan.

The angular bayonet for the M.1777 was the first of the familiar and what we might call modern types. It was the first with a clasp ring using a mortised closing joint as the mounting stud bridge; it was the first to have the locking clasp mounted and retained by an integral collar forward of the offset or transverse mounting slot, and it was the first to have an integral raised bridge to close the mounting slot and strengthen the rear of the socket. Thus the M.1777 bayonet was more rigidly mounted than earlier single-mounting-slot types, and much more strongly than non-French claspless bayonets.

Dimensions:

Blade length, $14\frac{3}{16}''$ Socket length, $2\frac{3}{4}''$ Blade width, $1\frac{1}{8}''$ Shank length, $1\frac{1}{2}''$ Barrel stud, Bottom



U.S., MODEL 1795

For over fifteen years the U.S. Army, following the Revolution, was equipped with M.1763 French muskets, until in the late 1790's the U.S. armories were established at Springfield and Harper's Ferry.

The first U.S. musket produced, the Model 1795. was patterned directly on the familiar M.1763 French musket, rather than the improved 1777 model.

Until 1801 the M.1795 musket had an integral and permanently fixed bayonet—a blade attached to a one inch socket that was brazed directly to the barrel. After 1801 these integral bayonets were removed by cutting back the musket barrels. Subsequent production muskets, and pre-1801 contractor muskets, mounted standard bayonets.

The M.1795 bayonet ignored the French bayonets' best feature — the locking clasp ring. Instead the M.1795, and all models until 1840, had the double and parallel mounting and locking slots, but no clasp. Thus the first U.S. bayonet was, in many ways, similar to the French M.1746 pattern.

Dimensions:

Blade length, 13-15''Socket length, $2\frac{1}{2}-2\frac{7}{8}''$ Blade width, $1\frac{1}{8}'' \pm$ Shank length, $1\frac{5}{16}'' \pm$ Socket front OD, $\frac{15}{16}-1''$ Socket front ID, $\frac{7}{8}''$ Barrel stud, Top



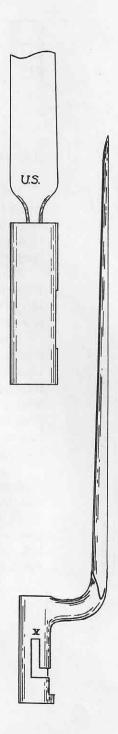
MODEL 1795, VARIANT

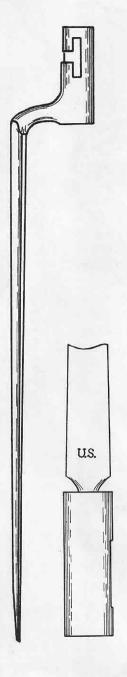
Model 1795 bayonets, produced with contractor-made muskets, were subject to substantial variation. Earlier types were made without a mounting slot closing bridge at the rear of the socket; later types often had a bridge, always on the side toward the blade, which greatly strengthened the socket cylinder. Practically all blades were marked U.S., often with inspector's initials as well.

Dimensions:

Blade length, $15\frac{1}{16}''$ Socket length, $3\frac{13}{22}''$ Blade width, 1''Shank length, $1\frac{1}{4}'' \pm$ Socket front OD, $\frac{31}{32}''$ Socket front ID, $\frac{7}{3}''$ Barrel stud, Top

In spite of confusion, many M.1795 bayonets can be identified by their relatively short blades, and a blade width of 1 inch or more. Like muskets, which appear in 1795-1808 and 1808-1812 transitional types, many bayonets exist in the 1795 to 1812 group which resist all attempts at positive model identification.





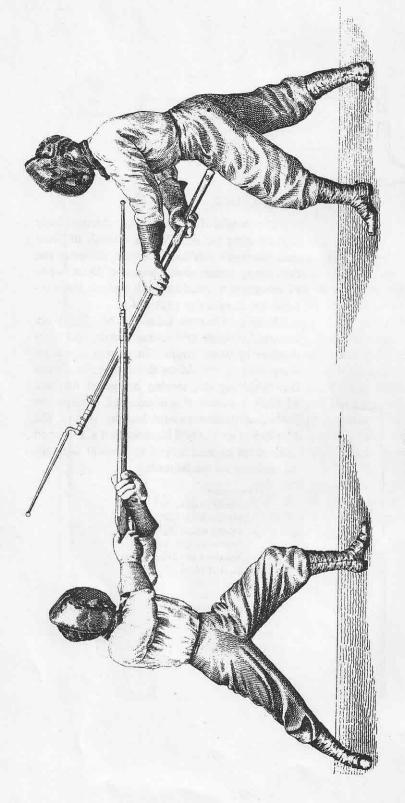
MODEL 1808

The Model 1808 muskets, changed only slightly from the M.1795, as a result of more detailed contractor specifications, mounted the first really standardized bayonet. Dimensions of contractors' products still varied, but perhaps not as much as previously.

Primary changes from the M.1795 were increase in blade and socket length, and a reduction in blade width. There was again no clasp ring on the M.1808 bayonet, and even the mounting slot closing bridge of the late M.1795 bayonets was eliminated. Unlike the L-shaped transverse and locking slot of the M.1795. The M.1808 bayonet had a T-shaped slot, which at least helped to prevent accidental unfixing of the bayonet.

Dimensions:

Blade length, $16'' \pm$ Socket length, 3''Blade width, $\frac{15}{16}''$ Shank length, $1\frac{1}{16}''$ Socket front OD, $\frac{15}{16}'' - 1''$ Socket front ID, $\frac{7}{8}'' \pm$



The assault.

Bayonet practice or fencing called for special bayonets mounted on training muskets without locks. Fencing bayonets had light spring steel blades, usually leather covered, and tipped with padded leather balls. Like most opponents in fencing, trainees

wore protective jackets and masks while practicing a series of thrusts, parrys, and ripostes fully as elaborate as any exercises taught by foil and epee masters. From Kelton's New Manual of the Bayonet, New York, 1861.



MODEL 1812

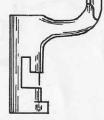
The bayonet for the M.1812 musket was changed again from the M.1808, with blade length reduced, and width increased, until the result, with one difference, appeared much like the M.1795. The inherent weaknesses in a bayonet socket cut by an open slot at the rear were finally recognized, so that in the M.1812 bayonet, a mounting slot closing bridge became standard.

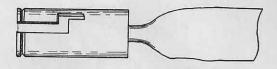
Like the M.1795 bayonet, the M.1812 had an L-shaped transverse and locking slot, though some are encountered with the 1808 type T-shaped slots.

Dimensions:

Blade length, $15\frac{1}{2}^{\prime\prime}$ Socket length, $3^{\prime\prime}$ Blade width, $1\frac{1}{8}^{\prime\prime}$ \pm Shank length, $1\frac{1}{8}^{\prime\prime}$ (Socket front OD, $\frac{15}{16}^{\prime\prime}$ $-1^{\prime\prime}$ Socket front ID, $\frac{7}{8}^{\prime\prime}$ \pm Barrel stud, Top

It should be noted that, in spite of transitional types which do not conform to model specifications, and aside from the limitations of a lack of manufacturing interchangeability, any M.1795, 1808, 1812, or mixed bayonet will often fit any of the three standard or several transitional musket models.





1795 TO 1812 TYPE, UNIDENTIFIED VARIANT

This M.1795 or 1812 bayonet, in a private collection, seems to have been made in desperation. It could be any one of a number of things — perhaps the effort of an individual who didn't want to be charged by the government for a broken bayonet. It could also be a non-regulation militia bayonet; note that it mounts to a stud on the bottom of the barrel.

In any event, the socket is a simple piece of iron formed over a rod, with the resulting seam unwelded. Workmanship is crude. The blade, from a French or U.S. issue bayonet, is brazed to a separate base piece, which is then soft soldered to the socket.

This bayonet may well be earlier than 1795—it could even be of the colonial period. The dating of such home made types as this must usually be a "best guess".

Dimensions:

Blade length, $13\frac{5}{16}''$ Socket length, $2\frac{5}{16}''$ Blade width, $1\frac{3}{32}''$ Shank length, $1\frac{1}{2}''$ Socket front OD, $\frac{31}{32}''$ Socket front ID, $\frac{7}{8}''$ Barrel stud, Bottom



MODEL 1816

From the technological innovations of such contractors as Eli Whitney and Simeon North, the M.1816 musket became the first model to be manufactured more by machinery than by hand operations. So too, because of both rapid technological progress and the Ordnance Department's now rigid insistence on contractors' adherence to specifications, the M.1816 musket and bayonet conformed to standardized dimensions without the variation of previous models.

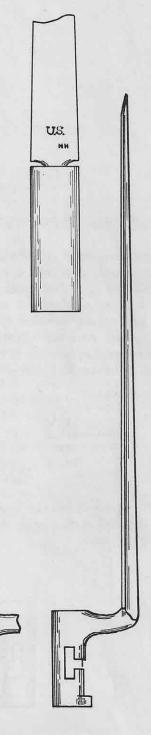
The M.1816 bayonet represented another switch, away from the relatively short wide blade of the M.1812, and back to the longer, narrower blade of the M.1808. Socket diameter was increased as well, to provide thicker and stronger socket walls.

The M.1816 bayonet, which was standard until 1840, and even later in another variant, was the last U.S. musket bayonet made without a locking clasp. The transverse and locking slot, as on the M.1808, is virtually always T-shaped, though an occasional L-shaped variety is encountered.

Dimensions:

Blade length, 16" Socket length, 3" Blade width, 1" Shank length, $1_{16}^{4"} \pm$ Socket front OD, 1_{16}^{16} " Socket front ID, $\frac{27}{32}$ " Barrel stud, Top

In some cases the M.1816 bayonet may be confused with the M.1808, but the M.1816's heavy mounting slot closing bridge, absent on the M. 1808, and the ½ socket outside diameter, will resolve most identification problems.



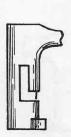
MODEL 1816, VARIANTS

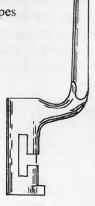
One common variant of the M.1816 bayonet, apparently standardized, may be instantly identified by its 3½ inch socket length — the longest of any standard U.S. angular bayonet. This long socket, however, fits the standard musket stud, since the mounting slots are in the same relative position to the front of the socket as the standard pattern.

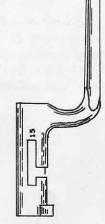
Dimensions:

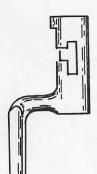
Blade length, 16''Socket length, $3\frac{1}{2}''$ Blade width, $\frac{15}{16}'' - 1''$ Shank length, 1''Socket front OD, $1'' - 1\frac{1}{32}''$ Socket front ID, $\frac{23}{32}''$ Barrel Stud, Top

The points of M.1816 bayonets vary considerably and as illustrated, three main types commonly occur.









MODEL 1816, SPECIAL TYPE FOR REMINGTON-MAYNARD CONVERSIONS

A third major type of M.1816 bayonet was produced after 1862, probably for the muskets which were converted to use Maynard tape primers, fitted with long-range rear sights, and rifled by E. Remington & Sons, and as replacement bayonets for standard M.1816 muskets converted to percussion.

The bayonet is instantly identifiable, since it conforms to M.1816 characteristics and dimensions, including the absence of a ring clasp, except that it has an 18 inch blade and the swept back blade shoulders of post-1842 bayonets rather than the squared shoulders of the original M.1816 with 16 inch blade.

Dimensions:

Blade length, 18"
Socket length, 3"
Blade width, $\frac{29}{32}$ "
Shank length, $1\frac{1}{2}$ "
Socket front OD, 1"
Socket front ID, $\frac{27}{32}$ "
Barrel stud, Top



US

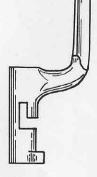
MODEL 1819, HALL RIFLE

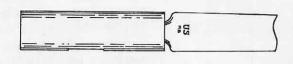
The bayonet for the first regulation breech-loading rifle, the M.1819 Hall, was patterned on the M.1816 musket bayonet. The Hall bayonet, however, while it has the T-shaped transverse and locking slot of the M.1816, can be identified by the narrower socket, reduced for the Hall barrel.

Dimensions:

Blade length, 16" Socket length, 3" Blade width, $\frac{7}{8}$ " Shank length, $1\frac{1}{8}$ " Barrel stud, Top

The Hall rifle bayonet may be superficially confused with the M.1830 Cadet bayonet, but the former's longer blade separates the two. The Hall bayonet is also instantly identifiable by the off-set cut through the mounting slot closing bridge, to accommodate the Hall rifle's off-set front sight and bayonet stud.





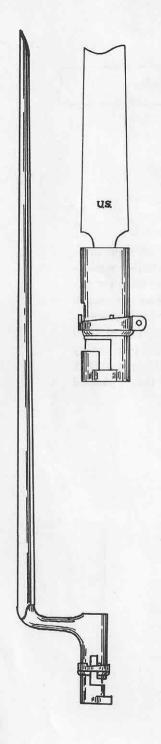
MODEL 1830, CADET

The first of the specially made light muskets for cadet use at the U.S. Military Academy, the M.1830 Cadet musket, took yet another special M.1816 type bayonet. In overall form it resembles the Hall M.1819 bayonet, and is reduced from musket size. The M.1830 Cadet musket bayonet, however, can usually be identified by its blade length, a scant 14½ inches, and its L-shaped rather than T-shaped transverse and locking slots.

Dimensions:

Blade length, $14\frac{1}{2}''$ Socket length, 3''Blade width, $\frac{13}{16}''$ Shank length, $1-1\frac{1}{8}''$ Socket front OD, $\frac{13}{16}''$ Socket front ID, $\frac{23}{32}''$ Barrel stud, Top

MODEL 1840



The U.S. M.1840 musket, and its bayonet, was originally intended as the Model 1835, a few of which were made as model arms. The M.1835, however, is best considered as a prototype; with a slightly longer blade it was finally designated the Model 1840.

The M.1840 musket, the last of the U.S. flintlocks, mounted a bayonet which represented a major change — adoption of the French pattern locking clasp which had existed since 1777.

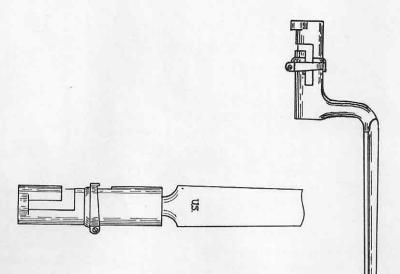
The clasp ring of the M.1840 bayonet was mounted forward of the transverse slot, and held by an integral retaining band. The ring, when turned so that its screw-closed joint was over the locking slot, permitted the bayonet stud to pass under a milled cut and be seated all the way forward in the locking slot. A quarter turn of the clasp ring to locked position then firmly secured the bayonet to the barrel and stud.

In addition to being the first U.S. bayonet with the French locking clasp ring, the M.1840 was the last standard musket bayonet to have sharp blade shoulders at the juncture with the elbow.

All previous U.S. bayonets had mounted to studs on the top of the barrel. The M.1840, M.1841 Cadet, and M.1842 were mounted to studs under the barrel; hence a different arrangement of mounting and locking slots.

Dimensions:

Blade length, 18"
Socket length, 2\frac{3}{4}"
Blade width, \frac{7}{8}"
Shank length, 1\frac{1}{4}"
Socket front OD, \frac{15}{16}"
Socket front ID, \frac{27}{32}"
Barrel stud, Bottom



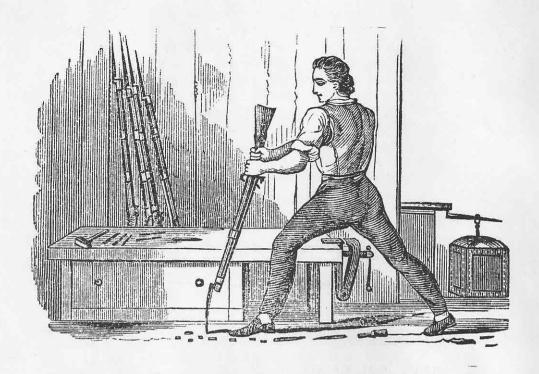
MODEL 1841, CADET

The M.1841 Cadet bayonet was again for a special Military Academy musket. Like the earlier M.1830, it also was a reduced version of the then current musket bayonet, the Model 1840.

The M.1841 Cadet musket bayonet is readily identifyable from its M.1840 characteristics, including provision for mounting to a stud on the underside of the musket barrel.

Dimensions:

Blade length, $14\frac{1}{2}$ " Socket length, 3" Blade width, $\frac{\pi}{8}$ " Shank length, $1\frac{1}{4}$ " Barrel stud, Bottom



BAYONET MANUFACTURE

In addition to visual inspection, the most grueling proving of a newly finished bayonet was the elasticity test, which made flaws in material or workmanship quite obvious.

Mounted on a musket, the point of the bayonet was placed on the floor. The inspector then applied his weight to the musket, so that the bayonet would bend an inch or an inch and a half — first up, and then down.

Broken blades or cracked sockets were a frequent cause for rejection — often because of hidden metal flaws. Any blade that remained bent after release of pressure was rejected as well. Workmen, turning out bayonets on a piecework rather than hourly basis, were docked pay for bayonets rejected because of workmanship, but not for rejects due to material flaws. This illustration is from a children's book, *Marco Paul's Adventures in Pursuit of Knowledge: Springfield Armory*, by Rev. Jacob Abbott. Hartford, 1843.

MODEL 1842

With the M.1842 musket the U.S. officially adopted the percussion system, and began a long program of converting M.1816 and M.1840 flintlocks.

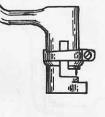
In most ways similar to the M.1840, the M.1842 bayonet eliminated the squared or sharp blade shoulders of all previous patterns. The new blade had no real shoulders, but instead was ground down and rounded back directly into the elbow. This blade form was to remain standard for the rest of the period of U.S. usage of angular bayonets.

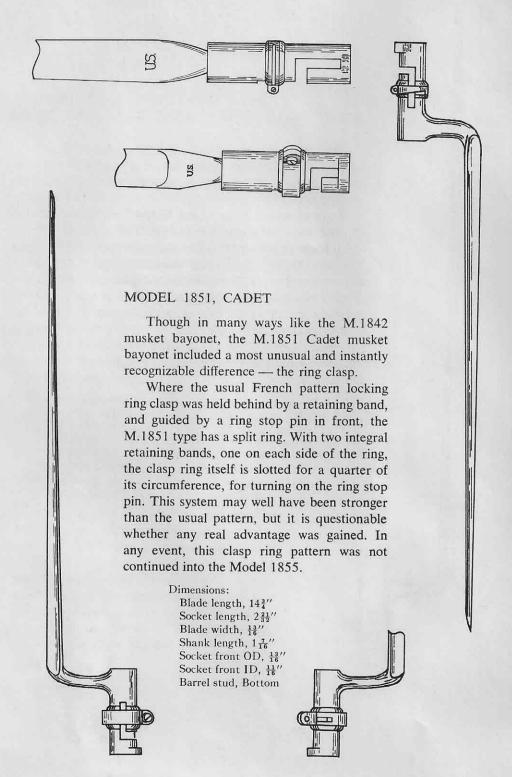
From the M.1842 on, blade width must be measured across the widest point of the blade's top surface.

Dimensions:

Blade length, 18"
Socket length, 2\frac{5}{8}"
Blade width, \frac{7}{8}"
Shank length, 1\frac{1}{2}"
Socket front OD, \frac{31}{32}"
Socket front ID, \frac{27}{22}"
Barrel stud, Bottom









MODEL 1855

The M.1855 rifled-musket represented a great change from the M.1842. The bayonet for the M.1855, however, was much like that of its immediate predecessor, with a basic change of only two major characteristics.

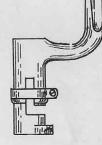
Because of the reduction from 69 to 58 caliber, the M.1855 rifled-musket had a barrel smaller in diameter than the M.1842, and consequently a narrower bayonet socket. So too, the M.1855 returned to the pre-1840 system of mounting to a sight base stud on top of the musket barrel. Thus the mounting slots were again arranged on the right (viewing from the top of the socket) as in the M.1816.

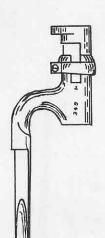
The M.1855 bayonet should really be termed the M.1855-70, for it remained standard on many successive models — the simplified M.1861 and '63, all of the post-Civil War 58 and 50 caliber conversions, and the Model 1870 .50-70 rifle, as well as many special types. It was not replaced until 1873, and then only by a reduction in caliber that necessitated a further reduction in socket diameter.

An 1855 type with 16 inch blade may have been produced for the M.1858 cadet musket; I have not personally seen such a bayonet.

Dimensions:

Blade length, 18"
Socket length, 3"
Blade width, $\frac{25}{32}$ "
Shank length, $1\frac{1}{4}$ "
Socket front OD, $\frac{29}{32}$ "
Socket front ID, $\frac{25}{32}$ "
Barrel stud, Top





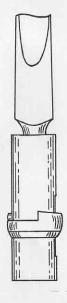
MODEL 1853 ENFIELD INFANTRY

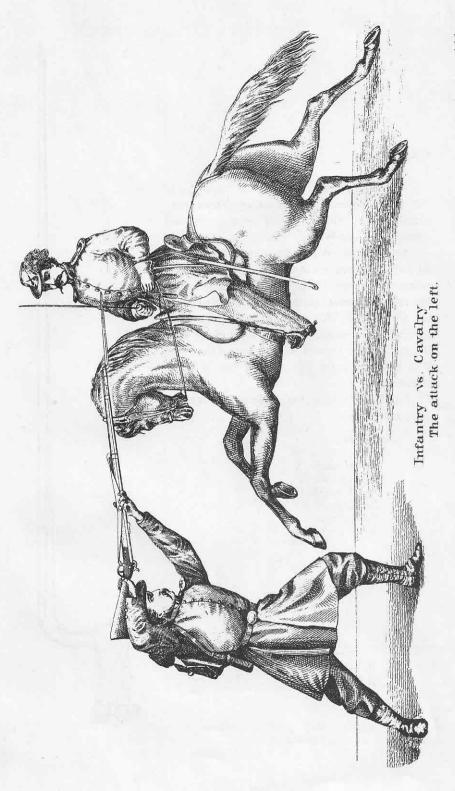
The British switch to a reduced bore size (.577) and rifled muskets was standardized slightly earlier than in the U.S. The British M.1853 or "Enfield" rifled-musket, however, did not enter the American picture until 1861. Both the Union and Confederacy imported the Enfield rifled-muskets in great number and a variety of models — the short and artillery versions of which took sword bayonets. The angular bayonet is primarily for the infantry pattern.

As the U.S. M.1855 bayonet remained standard for breechloading conversions, the M.1853 bayonet was used on the Snider conversion of the Enfield — Canada's standard arm during the U.S. based Fenian "invasions" of 1866 and 1870.

Dimensions:

Blade length, 18"
Socket length, 3"
Blade width, 13"
Shank length, 1"
Socket front OD, 15"
Socket front ID, 25"
Barrel stud, Top





As well as emphasizing the maneuvers and exercises in hand-to-thand bayonet combat between infantrymen, bayonet training attactof the 1850's and '60's included anti-cavalry exercises. With of the

the musket held either high or low, a man on horseback could be attacked either from the right or left. From Kelton, New Manual of the Bayonet, New York, 1861.

GREENE

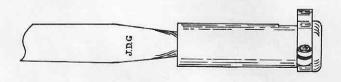
One of the lesser known U.S. bayonets is that for the Greene bolt action, oval-bore, percussion rifle, 900 of which were purchased during the Civil War.

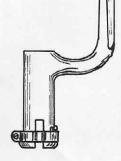
Most Civil War rifles used either the M.1855 bayonet or a sword bayonet. For some unknown reason Lt.-Col. J. Durrell Greene, the rifle's inventor, patterned his bayonet after the French M.1763, complete to a rear reinforcing collar which held a locking clasp with the stud bridge formed in the body of the ring. The blade is more like that of the M.1855 bayonet.

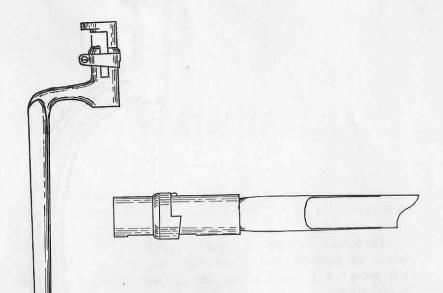
Needless to say, the Greene bayonet is quite rare today.

Dimensions:

Blade length, 18"
Socket length, 3"
Blade width, $\frac{13}{16}$ "
Shank length, $1\frac{3}{8}$ "
Socket front OD, $\frac{29}{32}$ "
Socket front ID, $\frac{25}{32}$ "
Barrel stud, Top







PEABODY

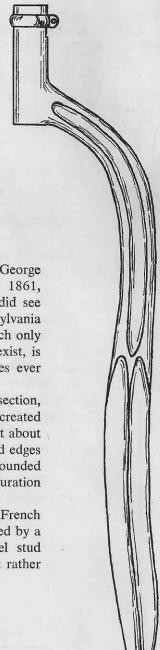
The Peabody rifle, in spite of its excellent action, can be considered a U.S. rifle only by stretching the definition; it was always more popular abroad than in the U.S.

The Peabody rifle angular bayonet, for several rifle calibers, was much like the Model 1855 bayonet with the exception of a longer blade and a somewhat wider and heavier locking clasp ring.

Dimensions:

Blade length, 21''Socket length, $2\frac{5}{8}''$ Blade width, $\frac{3}{4}''$ Shank length, $1\frac{3}{16}''$ Socket front OD, $\frac{27}{32}''$ Socket front ID, $\frac{25}{32}$ '' Barrel stud, Top

Note that the Peabody bayonet has extremely thin socket walls, $\frac{1}{32}$ or slightly less.



SCHALK

The Schalk rifled-musket, made by George Schalk of Pottsville, Pennsylvania in 1861, was never a U.S. contract arm, but did see minimal Civil War service in Pennsylvania regiments. The Schalk bayonet, of which only two or three examples are known to exist, is one of the most unusual angular types ever made.

The blade is cruciform in cross section, the forward two-thirds with four edges created by four deep concave fullers. At a point about 6 inches from the socket the fullers and edges are turned 45 degrees, and the edges rounded to the socket, giving the blade a configuration which instantly identifies it.

The socket has a modified M.1763 French type clasp ring at the rear and supported by a reinforcing band, but with the barrel stud bridge cut from the clasp closing joint rather than formed in the body of the ring.

Dimensions:

Blade length, 17¾"
Socket length, 3¾"
Blade width, unknown
Shank length, 1¾"
Socket diameters are unknown, but probably similar to diameters for others fitting caliber .58 muskets.

MODEL 1873

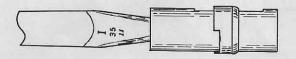
The last of the standard U.S. angular bayonets, the M.1873, replaced the M.1855 bayonet on the new .45-70 Springfield rifle adopted in 1873. The M.1873 bayonet incorporated no new features and no characteristic changes. It was simply a slightly reduced version of the M.1855 bayonet, to fit the slightly smaller barrel diameter of the M.1873 rifle. The M.1873 bayonet was, in fact, made from existing M.1855 bayonets, of which the government had a huge stock, and is thus really a conversion of the earlier bayonet.

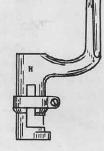
Alone, without side-by-side comparison, the M.1873 bayonet is difficult to tell from the M.1855, but its dimensions readily identify it. The M.1873 bayonet, too, was the first to be entirely blued. Previous patterns had been finished bright, or sometimes browned.

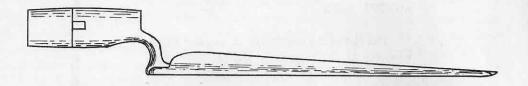
The M.1873 bayonet was used on the 1873 and 1879 models of the "trapdoor" Springfield, and on some short models. In the 1884 and subsequent models it was replaced by a rod bayonet. The change to a magazine rifle in 1892, the Krag-Jorgensen, brought with it a permanent change on standardized weapons, in the U.S. at least, to a knife bayonet.

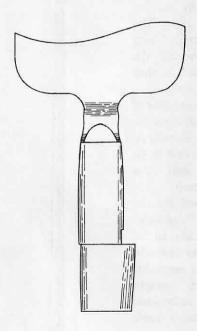
Dimensions:

Blade length, 18"
Socket length, 2\frac{5}{8}"
Blade width, \frac{3}{4}"
Shank length, 1\frac{1}{4}"
Socket front OD, \frac{7}{8}"
Socket front ID, \frac{23}{32}"
Barrel stud, Top









MODEL 1873, TROWEL

Another bayonet which must be mentioned in connection with the M.1873 Springfield is the so-called "trowel" or intrenching bayonet. With a short and very wide blade, the trowel bayonet was a shovel of sorts, to be used as an emergency intrenching tool. It was never intended to be used as a trowel fixed to the rifle. Though pointed, the trowel was not a particularly effective bayonet, nor was it exactly the ultimate in shovel design.

Though 10,000 were produced, it would seem that few trowel bayonets were actually issued, for those encountered by collectors are usually in new condition, or affected only by long storage.

The trowel bayonet is unusual in that it has a 2-piece socket, with a completely enclosed mounting slot in the form of a keyway. The rear portion of the socket turns on its own axis slightly less than 90 degrees to permit mounting, and is then turned back to lock the bayonet to the barrel stud.



Blade length, 11"
Socket length, 3½"
Blade width, 3½"
Shank length, ½"
Socket front OD, ½"
Socket front ID, ½32"
Barrel stud, Top



TABLE OF DIMENSIONS

Model	Page No.	Blade Length	Socket Length	Blade Width	Shank Length	Socket Outside Diameter	Socket Inside Diamete
French M.1717	12	14½ 土	23/4	$1\frac{1}{8} - 1\frac{3}{16}$	1 7 16		
French M.1746	13	14	$2\frac{3}{4}$	11/8	14		
British Brown Bess and India Pattern	14	1634	4	$1\frac{1}{8} - 1\frac{1}{4}$	$\frac{7}{8} - 1$	$1-1\frac{1}{16}$	$\frac{7}{8} - \frac{15}{16}$
British Light Infantry Fusil	15	11 - 14	3 5 8	$1\frac{3}{16} \pm$	1 ±		
French M.1763 and							
M.1763/1774	16	$14\frac{3}{16}$	23/4	1 1/8	$1\frac{1}{2}$	1	7 8
French M.1763, variant	17	141/4	25/8	29 32	$1\frac{5}{16}$	1	7/8
German, Amer. Revolution	18	$13-13\frac{1}{2}$	2 7/8	116 ±	11/4		
American, Fr. M.1763 type	19	193/4	211/16	1 1 8	2		
French M.1777	20	$14\frac{3}{16}$	23/4	1 1/8	1 ½	500 p	100
U.S., M.1795	21	13 - 15	$2\frac{1}{2} - 2\frac{7}{8}$	1章 土	15 土	$\frac{15}{16} - 1$	* +
M.1795 variant	22	$15\frac{1}{16}$	3 11 32	1	14 土	31 32	7 8
M.1808	23	16 ±	3	15 16	$1\frac{1}{16}$	$\frac{15}{16} - 1$	7 生
M.1812	25	15½	3	1章 土	1 3/8	$\frac{15}{16} - 1$	₹ ±
Unidentified variant,		L DOME				207	
1795 to 1812	26	13 5	2 5/16	$1\frac{3}{32}$	1 ½	$\frac{31}{32}$	7 8
M.1816	27	16	3	1	14 土	1 1/16	2 7 3 2
M.1816 variant	28	16	31/2	$\frac{15}{16} - 1$	1	$1 - 1\frac{1}{32}$	2 7 3 2
M.1816, Remington -					200	300	
Maynard	29	18	3	29 32	11/2	1	2 7 3 2
M.1819, Hall	30	16	3	7 8	1 1/8	22	
M.1830, Cadet	31	141/2	3	13	$1 - 1\frac{1}{8}$	13 16	23 32
M.1840	32	18	23/4	7 8	11/4	15 16	27 32
M.1841, Cadet	33	141/2	3	7 8 7 8 7 8	11/4		
M.1842	35	18	25/8		11/2	$\frac{31}{32}$	3 7 3 2
M.1851, Cadet	36	143	$2\frac{21}{32}$	13 16	1 7 16	13 16	11 16
M.1855	37	18	3	32	11/4	29 32	25 32
M.1853, Enfield	38	18	3	13 16	1	15	25 32
Greene	40	18	3	13	1 3 8	29 32	25 32
Peabody	41	21	25/8	3 4	$1\frac{3}{16}$	2 7 3 2	3 2
Schalk	42	173/4	3 3/4		17/8		
M.1873	43	18	25/8	3 4	11/4	7 8	332
M.1873, Trowel	44	11	31/2	3 1/2	7 8	7/8	23 32

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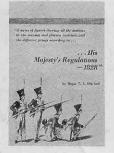
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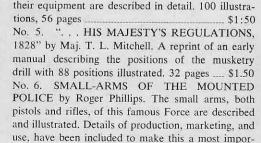


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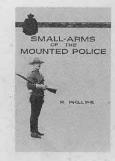
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