

GUNS DICTIONARY

a guide to firearms, airguns,
inventors, patentees, manufacturers,
distributors, brand names, trademarks
and military-unit markings

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WX
YZ

THE DIRECTORY: W-WYOMING

Last update: May 2018

- W** *beneath a star, sometimes in an oval cartouche.* Found on British rifle barrels worn by Cordite erosion.
- W** *beneath a distinctive squared crown.* Found on weapons issued to the navy and colonial-protection forces of the German Empire: the mark of Kaisers Wilhelm I (1871–88) and Wilhelm II (1888–1918). See also ‘Cyphers, imperial and royal’.
- W** *sometimes cursive, beneath a crown.* Found on weapons issued in the Netherlands: the marks of King Willem III (1849–90) and Queen Wilhelmina (1890–1948). See also ‘Cyphers, imperial and royal’
- W** *beneath a crown.* Found on Prussian weapons: the mark of Kings Wilhelm I (1861–88) and Wilhelm II (1888–1918). See also ‘Cyphers, imperial and royal’.
- W** *Roman oraktur, beneath a crown.* Found on the weapons of Württemberg: the mark of King Wilhelm (1891–1918). See also ‘Cyphers, imperial and royal’.
- W** **A** →headstamp mark applied to cartridges made by, and sometimes also on behalf of the →Winchester Repeating Arms Company. It may found on .41 rimfire cartridges, →Flobert primer-propelled ammunition, and industrial-tool blanks.
- WA, wa** Usually as ‘WA’; associated with →Lee Enfield rifle and a few other small arms components made by the Australian government ‘feeder factory’ in →Wellington.
- wa** Allocated in 1940 to the Leipzig lamp making factory of Hugo →Schneider AG (later ‘Hasag Eisen und Metallwerke GmbH’) for use on signal pistols, small arms and ammunition components supplied to the German armed forces.
- WA** *monogram with an angular ‘A’ superimposed on ‘W’.* Found on revolvers made in the U.S.A. by Dan →Wesson Arms.
- WA** or **W.A.** Usually as ‘W.A.’: found in the headstamps of ammunition sold in the USA by →Western Auto Stores.
- WAC** A concentric-type monogram with all three letters equally dominant. Found on semi-automatic pistols made by the →Warner Arms Company.
- WACD** A concentric-type monogram with all four letters of equal significance. Correctly ‘WDAC’ (q.v.); used by the →Warner-Davis Arms Corporation.
- Wackerhagen.** Edward R. Wackerhagen. Founder of →Sheridan Products, Inc., and co-designer, with Irwin →Krause, of the Sheridan pneumatic rifle.
- Wackes.** Hugo Wackes; Suhl in Thüringen, Germany. Listed in 1930 and 1939 as a gunsmith.
- Wackrow.** Roger David Wackrow. An employee of →BSA, associated with the company in development work undertaken on sights, airguns and automatic rifles. Much of Wackrow’s earliest work was done in collusion first with Claude Perry and then with Josef →Veselý. Typical of Wackrow’s British airgun patents are 1219302, sought on 18th March 1968 to protect the forged

air cylinder of the →Mercury, and 1423153 (sought 1st December 1972 with Roger Cranston and Harold Jones) for the mechanism of the Scorpion pistol. British Patent no. 1428027 was sought on 6th April 1973 to protect the ill-fated BSA recoilless air rifle.

Waco. A Spanish 6.35mm calibre Browning type pistol made in Eibar by Sociedad Española de Armas y Municiones (*SEAM); 6.35mm Auto. Made for Tomás de →Urizar.

‘WADC’: see ‘WACD’.

Wade: see ‘Boult & Wade’.

Wadsworth. Henry C. Wadsworth. Co designer with Sullivan →Forehand of the revolvers protected by US Patents 162162 of April 1875 and 193367 of 24th July 1877. See ‘Forehand & Wadsworth’.

Waffen Frankonia; Würzburg, Germany. This wholesaler has handled large numbers of Mauser pattern sporting rifles, usually built on refurbished military actions. In 1965, therefore, the company was advertising the →Favorit (standard and de luxe) and the →Favorit Safari.

Waffen Glaser: see ‘Walter →Glaser’.

Waffen-Schmidt A wholesaling business active in Suhl in 1935–45, handling, among other things, sporting guns and shooting accessories.

Waffen-Versand-Haus A wholesale agency founded in the 1930s by Karl Menz, specialising in guns, ammunition and accessories. Listed in 1941 at Schleusinger Strasse 122, it ceased trading in 1945.

Waffenfabrik Neuhausen: see ‘SIG’.

Waffenfabrik von Dreyse: see ‘Rheinische Metallwaren & Maschinenfabrik’.

Waffenwerke Mehlis; Mehlis and Zella-Mehlis in Thüringen, Germany. Listed in 1914 as a gunmaker, owned by Valentin →Bader.

Wagner A. Wagner; Zella Mehlis in Thüringen, Germany. Listed in 1930 as a maker of weapons. Possibly the same as ‘August Wagner’, below.

Wagner August Wagner; Zella Mehlis in Thüringen. Listed in Germany in 1920–30 as a gun barrel maker.

Wagner Edmund Wagner; Zella Mehlis in Thüringen, Germany. Listed in 1939 as a master gunsmith.

Wagner Ernst Fritz Wagner & Co.; Suhl in Thüringen. A maker (wholesaler?) of weapons and ammunition listed in the 1930 edition of the *Deutsches Reichs Adressbuch*.

Wagner Franz Wagner; Zella Mehlis in Thüringen, Germany. Listed in 1930 as a master gunsmith and gun-stocker.

Wagner Fritz Wagner; Suhl in Thüringen. Listed as a weapons maker, Germany, 1930.

Wagner Wilhelm Wagner; Zella Mehlis in Thüringen, Germany. Listed in 1930 as a gun-stock maker.

Wagonmaster Slide Action A name given by →AMAC to an →Erma lever-action rifle imported into the U.S.A. from Germany.

Wagria A brand name found on spring-air guns made in Germany in 1954–9 by

Maschinen- und Apparatebau '→Wagria' GmbH & Co. of Ascheberg/Holstein. See 'Aerosport', 'Rapid' and 'Scout'.

Wah arms factory: see 'Heckler & Koch'.

Wahl Albin Wahl; Zella-Mehlis, Thüringen. This gunsmith, active in Germany in the 1920s, was responsible for the 6.35mm →Stern or 'AWZ' pistols. He was still listed in 1939, but as a gun barrel drawer.

Wahl E. Wahl; Zella St Blasii in Thüringen, Germany. Listed in 1900 as a gunmaker.

Wahl Kurt & Kuno Wahl; Zella Mehliis in Thüringen. Listed in Germany in 1939 as master gunsmiths.

Wahl Wilhelm Wahl; Zella St Blasii and Zella Mehliis in Thüringen, Germany. Listed in 1914–20 as a gun stock maker and wholesaler.

Walam Associated with an automatic pistol made by →FÉG of Budapest.

Walch John Walch and the Walch Fire Arms Company; New York City. Inventor and manufacturer of →cap-lock revolvers protected by US Patent 22905 of 8th February 1859. The guns were made in 10- and 12-shot guise, with two charges in each chamber. Each was activated by a separate hammer.

Waldheil This brand name will be found on shotgun cartridges made in Germany by →Munitionswerke Schönebeck prior to 1914.

Waldman A Spanish Browning type pocket automatic made in Eibar by F. →Arizmendi y Goenaga: either 6.35mm, six rounds, striker-fired, or 7.65mm, seven rounds, hammer-fired. These guns may also be marked MODEL 1913.

Walker George A. Walker; Boston, Massachusetts. Patentee of the breech mechanism incorporated in the →Bedford & Walker air pistol. See also Augustus →Bedford; the basic pistol appears to have been a →Quackenbush design.

Walker Henry Walker (sometimes listed as 'Walke'), a commander in the US Navy, accepted single-shot →Remington pistols in the years immediately after the end of the American Civil War. They bore simple 'HW' stamps. See also "U.S. arms inspectors' marks".

Walker Linus Walker. A gun designer employed by the →Remington Arms Company, responsible for modifying the action of the Remington Hepburn rifle.

Walker Michael Walker. A designer employed by the →Remington Arms Company, credited with much of the development work on the 720-series bolt-action rifles introduced shortly after the end of the Second World War.

Walker W.A. Walker Jr, a government arms inspector working in 1905, accepted .38 →Colt revolvers and other ordnance stores marked 'WAW'. See also "U.S. arms inspectors' marks".

Walker Colt This was a large and cumbersome six shot cap lock revolver, made for Samuel →Colt by Eli →Whitney in 1847–8. The name commemorated Captain Samuel Walker of the US Army, who had played a vital role in its promotion but was killed in the Mexican–American War.

Walking Beam A nickname applied by the →Whitney Arms Company to a ring-

trigger revolver designed by Fordyce →Beals. Patented in 1856, this used an oscillating bar to rotate the cylinder.

Walking-stick guns: see 'Cane guns'.

Wall Howard Wall Ltd; Hackney Road, London E2. Made box magazines for the British .303 →Bren Gun during the Second World War, often marking them with the code 'S 123' instead of the company name. See also "British military manufacturers' marks".

Wallace John Stewart Wallace, resident in Cliftonville Avenue, Belfast, where he earned his living as a 'Timber Merchant', seems to have been a shareholder and one time director of the →Giffard Gun & Ordnance Company. He became a Member of Parliament in 1892 and his interest in firearms then ceased. See British Patents 10456/90 of 1890, 4205/91 of 1891 and 1724/92 of 1892, the last two being obtained in collusion with →Benjamin Thomas Lindsay Thomson.

Wallenberg H.E. Wallenberg, using an 'HEW' mark, accepted equipment for the US Army c. 1905. See also "U.S. arms inspectors' marks".

Wallis John Wallis. Son of W.R. Wallis, owner of 'Manton & Co. of Calcutta', John Wallis began trading on his own account in 1859. Trading was based on 116 Jermyn Street, London SW, until 1864. See also 'Samuel →Nock'.

Wallis R.J. Wallis. Recorded as a gunmaker, Wallis could be found at 3 Waterloo Road, London, from 1892 onward, trading as 'R.J. Wallis & Co.' after 1893.

Walls, Ltd; Birmingham. A maker of magazines for the British 9mm →Sten Gun during the Second World War. The regional code 'M 260' may have been used instead of the company name. See also "British military manufacturers' marks".

Walman A compact automatic pistol, based on the 1910 type →FN Browning, made in Spain by F. →Arizmendi y Goenaga of Eibar: 6.35mm, six rounds, striker fired; or 7.65mm, seven rounds, striker fired, often marked MODEL 1914; or 7.65mm, nine rounds, striker fired.

Walnut Hill This was a famous American rifle range, and also used as a brand name by the →Stevens Arms & Tool Company.

Walsh John Walsh, U.S. engineer: see 'Winchester'.

Walsrode A brand name associated with →Walsrode Pulverfabriken.

Walter or **Walters** George Walter, also known as 'Walters'. A gunmaker recorded at 7 Guildford Place, Spitalfields, London, in 1836–57.

Walter William Walter, using a 'WW' mark, accepted →Remington and →Pettengill →cap-lock revolvers during the Civil War. See also 'Wallace →Whitney' and "U.S. arms inspectors' marks".

Walters: see 'Weatherhead, Walters & Company'.

Waltham ["The..."]. This name will be encountered on shotgun cartridges made by F. →Joyce & Co. Ltd of London prior to 1907.

Walther Carl Walther (1860–1915) was apprenticed to a gunsmith before founding a gunmaking business of his own in Zella St Blasii in 1886, initially making target rifles. However, the success of the Browning-designed blowback pistols being made by →Fabrique Nationale d'Armes de Guerre

inspired Walther to design a rival, but his first attempt, the →Venus-Pistole, was a failure. Not until Walther had been joined by his eldest son, Fritz (1889–1966), was progress made.

Walther Carl Walther Waffenfabrik, Zella St Blasii and Zella-Mehlis in Thuringen. Founded in 1886, this was listed in 1914 as a gun- and weapon-maker, and in 1920–39 as a gunmaker under the ownership of Fritz, Georg and Erich Walther. Maker of a range of pistols, described below; rifles and shotguns were also made prior to 1945.

Walther Carl Walther Sportwaffenfabrik; Ulm/Donau, Germany. Walther offered bolt-action sporting rifles built on refurbished →Mauser actions in 1955–74, before they were replaced by the 'JR' pattern. The *Model A* had a double set trigger; the *Model B* was similar, but had a single trigger. Chamberings ranged from 6.5×57mm to .375 H&H Magnum. The only pocket pistols produced since the end of the Second World War have been the TP and the TPH, each made in .22 or 6.35mm, but a range of target pistols (OSP, GSP) has been offered alongside the P1, P88 and their derivatives. Walther has also become known for airguns, ranging from simple barrel-cockers made in the early 1950s to the most sophisticated recoilless target guns of the 1990s.

Walther E. Walther; Heidersbach bei Suhl in Thüringen. Listed as a maker of hunting weapons (*Jagdwaffenfabrikation*), probably in the early 1920s.

Walther Fritz Walther (1889–1966), son of Carl →Walther, was the presiding genius behind the success of the Walther firearms firm, responsible for pistols such as the PP/PPK and the P. 38 in addition to many of the post-war airguns and target guns.

Walther Lothar K. Walther; Zella Mehlis in Thüringen. Founded in 1925, listed in 1930 as a precision gunmaker (*Feinwerkbau*) and in 1939 as a weapon maker. Subsequently specialised in barrel inserts for the Luger and other pistols.

Walther firearms The *Selbstladepistole Modell 1* was patented on 22nd November 1911 (DRP 256606), although introduction dates as early as 1908 have been misleadingly claimed in Walther's sales literature. About 31,000 of these little pistols had been sold when the First World War began. DRP 271863, granted in January 1913, protected a variety of loaded chamber indicators, but neither the 6.35mm *Modell 2* nor the 7.65mm *Modell 3* pistols had been made in quantity before the Walther company outgrew its facilities in 1915. The factory was apparently sold to Oscar →Will.

¶ The 7.65mm *Modell 4* →blowback, introduced in 1915, was one of the most popular →*Behelfspistolen*; about 75,000 were supplied to the armed forces in 1915–16 and many others were sold privately during the First World War. The most obvious feature was a light sheet-steel extension attached inside the front of the slide with a bayonet joint, though ejection port was on the left side of the slide. The 9mm *Modell 6* was an enlarged *Modell 4* chambering the 9mm Parabellum cartridge, but the absence of a mechanical breech-lock was a poor feature and only about a thousand guns were made in 1916.

¶ The 1918 Armistice stopped pistol production in Zella St Blasii—where a

workforce of 75 in 1915 had grown to nearly 500. Walther subsequently made optical-instrument components until production of the Models 4, 5 and 7 resumed in 1920/21. During the intervening period, the villages of Zella St Blasii and Mehliß had united, forming the town of Zella-Mehliß.

¶ German Patent 365265 of May 1921 protected an improved striker mechanism 'for guns with closed frames', resulting in the 6.35mm *Modell 9*, the first successful → *Westentaschenpistole*. The advent of the 7.65mm *Modell 8* allowed work on pre-war designs to stop in the mid 1920s. A toggle-lock shotgun, subsequently licensed to Heinrich → Ortgies, dated from this era; and an experimental toggle-lock pistol was made in accordance with patents granted in 1916–19 to August → Menz. The *Heeresmodell* signal pistol was patented on 22nd December 1926 (DRP 506,011).

¶ Fritz Walther had taken the first steps to perfecting a new double-action blowback pistol by 1927, though it has been alleged (but never proved) that he had purchased the rights to the Alois → Tomiška's Little Tom pistol simply to allow the patents to elapse. The single-action *Sportpistole*, derived from the Model 8, appeared in 1926/7, but then came the *Polizei Pistole* ('PP') protected by DRP 578765 of 7th November 1930. The compact *Kriminalpolizei Pistole* ('PPK')—perhaps initially known as the 'Polizei-Pistole, Kurz'—made its debut in the early 1930s, eventually being selected as the *Ehrenwaffe des Politischen Leiters* ('honour weapon of the political leadership'). Made in several guises, the .22 rimfire *Olympia Pistole* not only helped gain all the medals in the 1936 Olympic Standard Pistol competition but also, in its post-war → Hämmerli-modified forms, was still winning trophies in the 1980s.

¶ The success of the PP/PPK series encouraged Walther to enter the military market. The first stage was the *Militärische Pistole* of 1934, an enlarged PP chambering the 9mm Parabellum cartridge, but this was soon replaced by a locked-breech design. The development history of the latter remains obscure, but most of the work seems to have been undertaken by Fritz → Barthelmes. Patents were sought in the mid 1930s—e.g., DRP 72102 of 27 October 1936 for the locking block and actuator pin—and enclosed-hammer *Armee Pistolen* were made in small numbers before a much modified exposed-hammer Walther was accepted by the Heereswaffenamt on 26 February 1940. Production of the *Pistole 38* ('P. 38') began immediately in Zella-Mehliß, to be followed by duplicated production lines installed by Waffenfabrik → Mauser and Spreerwerke of Berlin. German-occupied facilities in Belgium and Czechoslovakia contributed many of the parts.

¶ Production of pistols and rifles continued throughout the Second World War, though external finish of the guns declined. The company developed simplified guns during this period, including a sophisticated rotary-barrel locked breech pistol and a stamped metal version of the *Polizei Pistole*. Post-1940 Walther products may be identified by the letter codes 'ac' or 'qve', the latter dating only from the end of 1944.

¶ The period immediately before the Second World War was thus the apogee

of the Walther operations in Zella-Mehlis. Walther also made small quantities of →Bergmann-system submachine-guns, the sophisticated SLD signal pistol for the Kriegsmarine, and a series of semi-experimental military rifles. The unsuccessful *Gew. 41 (W)*, with a →Bang-type muzzle cup actuator, eventually gave way to the crude-but-efficient *Gew. 43*; the latter was still being made when the fighting ceased, production totalling at least 400,000. However, Walther's entrant in the →*Maschinenkarabiner* competition of 1940–2 was overlooked in favour of the rival →Haenel submission.

¶ The U.S. Army reached Zella-Mehlis on 12th April 1945, and work in the Walther factory ceased. Shortly afterward, Fritz Walther and his family transferred to the American occupation zone and work on mechanical calculators began again in Heidenheim an der Brenz, a small village in Württemberg. Small factories had soon been built in Niederstötzingen and Gerstetten; the Olympia Pistole was licensed to →Hämmerli on 31st March 1950 to provide a small royalty income; and rights to the Polizei Pistolen were sold to Manufacture de Machines du Haut Rhin ('Manurhin') in France.

¶ Eventually, in 1950, Walther purchased an old cavalry barracks in Ulm/Donau and—with a work-force of just six men—began to make the air rifles protected by DRP 824160 of 4th July 1950. The success of the *LG51* (rifle) and the *LP53* (pistol) led to the *LG55* and the *LGV*, spring-piston designs that were eventually superseded by a recoilless single-stroke pneumatic designated *LGR*. The pneumatic was based on German Patent 1164279 of July 1961, which protected the *Präzisions-Luftpistole Modell 2*. The *LGR* was the prototype for a range of similar rifles, but has now been overtaken by pre-charged pneumatic and gas-powered designs.

¶ The Allies allowed work to recommence on the P. 38 in 1954, and a starting pistol—the *Übungspistole 1* (UP 1)—appeared in 1955. The first new Pistolen 38 left the Ulm production line in 1957, though Manurhin assembled a few thousand guns for export to Portugal in the same era. Renamed 'Pistole 1' in 1963, the P. 38 has provided the basis for a series of successful commercial variants. The P38k and the P4 are conventional-looking guns, identical with the P. 38/P1 apart from the shorter barrels, but the P5 and the P5A1 have barrel-enveloping slides.

¶ However, difficulties encountered in mass-producing a pre-war design, together with the preference of German police for →Heckler & Koch designs and the Austrian-developed →Glock, forced Walther to develop the Pistole 88 ('P88'), with a Browning-style tipping barrel instead of the Barthelmes block. This gun became just one of many similar designs competing in the military/police market, never encountering the runaway success of the P. 38/P1 series.

¶ The firearms business continued to grow rapidly throughout the 1960s. Though the TP pocket pistol was comparatively unsuccessful, the PP, PPK, PPK/S and the perfected TPH sold surprisingly well. Walther then perfected two rapid-fire pistols (the OSP and GSP), successfully re-entering international competition.

¶ Walther's pistol exploits have rather overshadowed the successful production of full-bore and rimfire rifles. During the Zella-Mehlis days, Walther had made a range of rimfire rifles, including an effective semi-automatic rifle introduced in the early 1930s. Production of the *Kleinkalibergewehre* ('KK' series) began again in the mid 1950s, the range being extended to include the KJS, KKJ, KKM, KKS and other sub-variants. Some of these guns were sporters chambering .22 Hornet or 5.6×45 Vierling ammunition, whereas others were destined for specialist UIT/ISU competitions. The target shooting adaptations of the rimfire system were very successful, though encountering much opposition in Germany from the similar products of J.G. →Anschütz and latterly →Feinwerkbau-Westinger & Altenburger. The .22 rimfire UIT-BV (*Blockverschluss*, 'block-lock') rifle of 1986 was touted as a replacement for the bolt-action Walthers, but lasted in production for just four years.

¶ From the mid 1950s into the 1970s, Walther stocked and barrelled commercial Mauser-type bolt actions, offering the *Model A* sporting rifle in chamberings from 6.5×57 and .270 Winchester to .30-06 and 9.3×63. These guns are rarely seen, particularly the full-stocked *Stutzen*, and were replaced by the *Jagd-Repetier-Gewehr* or JR (1974-8) in chamberings from 7×64 to 9.3×64.

¶ The obsolescence of the P1 threw Walther's fortunes into sharp relief, and the failure of the expensive WA-2000 sniper rifle heralded a decline. The once-large and powerful gunmaking business became a shadow of its former self, greatly hindered by the early death of Karl-Heinz Walther (1922-83). Eventually, it was purchased in 1994 by Umarex Sportwaffen GmbH & Co. KG of Arnsberg; work continues today, albeit on a reduced scale.

¶ By 2001, handguns ranged from historically-significant guns such as the PP and the P38, through tried-and-tested GSP and OSP competition pistols, to the ultra-modern P99 (subsequently licensed to Smith & Wesson). However, only two rimfire rifles were being made (KK100, KK200 series), and the gas-powered competition guns had been abandoned in favour of pneumatics. This group contained the single-stroke LPM1 and LG210, alongside the pre-charged LP 300 and LG300.

¶ Surprisingly, for such a long-lived and important gunmaker, very little has been written about Walther. Outstanding among the studies of individual guns has been *The P. 38 Pistol* by Warren H. Buxton (two volumes, 1978, 1984), but most other books have been pictorial catalogues. Among the most useful are *Walther PP and PPK, 1929-1945*, and *Walther*, Volumes II and III, by Jim Rankin (privately published, 1974-81), and the 'Walther' part of W.H.B. Smith's *Mauser, Walther & Mannlicher Firearms* (combined edition, 1971). Information on specific topics can be found in a variety of articles, e.g., 'Hämmerli Walther Olympia Pistolen' by Douglas Robertson, in *Gun Collector's Digest*, IV, 1985, and 'Walther Airguns', by John Walter, in the British periodical *Guns Review* (January-March and May 1982).

Wantage ['The...']. A brand name found on shotgun cartridges sold in south-east England by →Kent & Son of Wantage.

Wänzl Franz Wänzl. A gunsmith trading in St Margarethen near Vienna, Wänzl promoted a breech-loading transformation of the Austro-Hungarian →Lorenz rifle-musket. The swinging-block breech, similar to many of its day (cf, →Snider) was fitted to a few hundred cap-lock conversions in the winter of 1866 and was officially adopted on 5th January 1867.

Wänzl rifle The Austro-Hungarian M1867 Wänzl, often known as the 'M1863/67', was made on the basis of the cap-lock Lorenz rifle musket. Wrought iron or steel barrels were used, depending on the manufacturing pattern (1854 or 1862 respectively); 1862-type guns also had smaller lock plates. Converted by gunmaking establishments in Ferlach, as well as in Werndl's factory in Steyr, the Wänzl chambered a 13.9×33mm rimfire cartridge which was originally defined as '6½ linie' or '6 linie 4 punkt'. The mechanism was operated by thumbing back the hammer to half-cock, raising the breech-block, inserting a new cartridge, and pressing the cartridge forward into the chamber. As the cocked hammer flew forward to hit the striker, it drove a sliding bar into the back face of the breech-block to lock the mechanism at the instant of discharge.

¶ Wänzl conversions were also applied to old Jäger Stutzen, creating the M1867 short rifle or *Stutzer*. These had heavy octagonal barrels, with the muzzle crowns turned down to accept a sword-bladed socket bayonet. The *Ordinäre Stutzer* of 1853 had originally been rifled with four grooves and had been sighted to 1000 schritt, while the pillar-breech *Dornstutzer* of 1854 once had a heavy ramrod and sights graduated to 1200 schritt. The guns all had key-retained barrels. Trigger guards ended in a finger spur, while the back sights were the distinctive curved-leaf 'grasshopper' patterns. The *Extra Corps Gewehre* M1854/67 and M1862/67 were Wänzl conversions of the cap-locks of 1854 and 1862. They were used by gendarmerie, sappers, pioneers and ancillary troops.

Ward Henry Ward. An English gunmaker, listed at 55 Rupert Street, Coventry Street, London W, in 1876; then, as 'Ward & Sons', at 1 Basinghall Street (1877–9) and 66 Colman Street, EC (1880). The 1880 directory notes premises 'in Birmingham', whilst those produced after 1882 name them specifically as 2 St Mary's Row and Bath Street, Birmingham.

Ward H.A. Ward. An English gunmaker, listed in Birmingham, Warwickshire, trading successively in Russell Street (1883–93), in Weaman Street (1894–7), and at 27 Loveday Street from 1898 onward.

Ward John Ward, U.S.A.: see 'Tiffany Grips'.

Ward Montgomery Ward & Company. This business was founded in Chicago, Illinois, in 1872 by Aaron Montgomery Ward (1844–1913), rising to become the first of the U.S.A.'s great mail-order businesses. Though Ward's partners soon withdrew, he replaced them with his brother-in-law George R. Thorne, and, in 1889, the business became a private-stock corporation. Soon overhauled

by →Sears, Roebuck & Company, thanks to the latter's advertising skills, Ward diversified into retail operations and by 1930 had 556 stores across the U.S.A. The business merged with the Container Corporation in 1968, forming 'Marcor, Inc.', and Marcor was acquired by Mobil Oil in 1974; the mail-order operations ceased in 1985, three years before Montgomery Ward & Company re-acquired the independence it still has. Ammunition sold by mail-order or through retail outlets may be marked 'EP', 'MW' or 'Cleanfire'.

Ward William Ward was co-patentee with Bethel →Burton of a bolt-action magazine rifle.

Ward Burton rifle This combined a turning-bolt action patented in 1859–68 by Bethel Burton with an extractor designed by William Ward. At least a thousand .50–70 rifles were made in →Springfield Armory in 1871–2, but the single-shot infantry rifle (despite its good features) failed to challenge the Springfield-Allin and was promptly abandoned. Ward-Burton magazine carbine 'No. 97' was tested concurrently for cavalry use, but with a similar lack of success; it had a tube magazine beneath the barrel.

Warenhaus für Armee- und Marine; Berlin and Berlin-Charlottenburg, Germany. This business was formed c. 1880 to sell uniforms and military equipment, trading until finally renamed 'Armee u. Marinehaus, Inh. Deutscher Offizier Verein' c. 1911. Its marks have been found on rifles and ammunition.

Warnant Jean Warnant; Hognée and Liège, Belgium. A maker and patentee of lockwork for revolvers active in the 1870s, Warnant received three relevant British Patents: 5031/76 of 1878 (jointly with Michael Kaufmann), plus 5504/81 and 5520/81 of 1881 (with Bled & Richoux). Also made double-barrel shotguns on the "Ch. Levé" system, said to have been patented in France c. 1926. The barrels were pushed forward when the eared top-lever was pulled upward, allowing, if the selector was set accordingly, two cartridges held in separate elevators to rise in the front of the standing breech to be chambered on the closing stroke. He also designed a lever ejector, patented in the U.S.A. on 8th July 1884 and subsequently exploited by →Colt.

Warnant L. & J. Warnant Frères; Hognée, Belgium. Makers of a 6.35mm-calibre automatic pistol.

Warnant System Applied, often generically, to low-power rimfire or →Flobert-type →saloon guns characterised by a breech-block pivoted on pins or bolts projecting laterally from the barrel. Lifting the block gave access directly to the chamber. The breeches of some guns could be locked by rotating a knob on the right side; others were retained simply by the blade of the hammer as it fell. Some guns extracted automatically, others did not. Very popular prior to 1914, the Warnant design was not suited to high-power ammunition; however, it was exceptionally easily made.

Warner Frank C. Warner, a civilian employee of the US Navy Bureau of Ordnance, accepted the so-called Plymouth →cap-lock rifles, →Remington rolling-block pistols and carbines, and →Whitney cap-lock revolvers dating from the end of the American Civil War (1865–8 only?). They were marked

‘FCW’. See also “U.S. arms inspectors’ marks”.

Warner James Warner of Springfield, Massachusetts, U.S.A., invented a ‘revolving firearm’ with a hammer-rotated cylinder, protected by U.S. Patent 8229 of 15th July 1851. Warner made about ten thousand .28- and .31-calibre pocket revolvers under his own name after the failure of the →Springfield Arms Company in the early 1860s. A .30 rimfire version of the cap-lock pocket revolver was also made in small numbers, but infringed the Rollin →White patent. However, work continued virtually until Warner died in 1870.

Warner Arms Company [“The...”]; Brooklyn, New York, and Norwich, Connecticut. This US gunmaking business, best known for the →Infallible automatic pistol, was eventually merged with N.R. →Davis in 1917. See also ‘Davis Warner Corporation’.

Warner carbine Made to James →Warner’s U.S. Patents—41732 of February 1864 and 45660 of December 1864—this embodied a breech-block swinging laterally up and to the right to expose the chamber. Four thousand brass-frame Warners were purchased on behalf of the Federal government. The original .50-calibre version had a thumb-piece adjacent to the hammer, which had to be pressed before the breech-block could be opened, whereas the later guns (mostly chambered for the .56–50 →Spencer cartridge), made by the →Greene Rifle Works, had a sliding breech-block catch on the left side of the frame.

Warner & Swasey Optical Company (“The...”) of Cleveland, Ohio, U.S.A., made the optical sights that had been adopted by the U.S. Army prior to the First World War. Ambrose Swasey of Cleveland received U.S. Patent 677288 of 25th June 1901 and 820998 of 22nd May 1906 for prismatic optical sights, assigning them to the company. The army’s first ‘telescopic musket sights’ (6× M1908, 5.2× M1913) were all made by Warner & Swasey.

Warren Arms Company A name found on shotguns handled in the U.S.A. by the H. & D. →Folsom Arms Company, possibly imported from Europe.

Warrilow J.B. Warrilow was an English ‘country gunmaker’, found in Chippenham, Wiltshire, in 1891–3.

Warrior A British sidelever-cocking spring-air pistol designed by Frank →Clarke and Edward →Anson, and the subject of British Patent 351268 of 1931; U.S. Patent 538057 was essentially similar. Several thousand pistols were made by →Accles & Shelvoke in 1932–3.

Washburn H.C. Washburn, working for the government, accepted →Colt revolvers and other ordnance stores marked ‘HCW’. See also “U.S. arms inspectors’ marks”.

Washington or Washington 38. A name associated with a revolver sold in Belgium prior to c. 1910 by Ch. →Clément.

Washington Arms Company; Washington, DC? Maker of small single-shot →cap-lock pistols and six-shot double-action →pepperboxes in the mid-nineteenth century. The “manufacturer’s name” may hide one of the better-known gunmakers trading in New England.

- Wasp** A diabolo-type airgun pellet made by the →Eley Division of Imperial Metal Industries, London. See also 'Pylarm'.
- Wassner** George W. Wassner, a government arms inspector working in 1939, accepted .45 M1911A1 pistols made by →Colt's Patent Fire Arms Mfg Co. They bore 'GWW'. See also "U.S. arms inspectors' marks".
- Wasters** ['The...']. A mark found on shotgun ammunition made, or perhaps simply assembled in Britain by the →Normal Powder Company of Hendon.
- WAT** Found on U.S. military firearms and accessories. See 'William A. →Thornton'.
- Watch pistol:** see 'Leonard →Woods'.
- Waters** Asa H. Waters & Company; Milbury, Massachusetts, USA. Active 1843–56, this gunmaking business made Joslyn rifles and carbines under sub contract to William →Freeman of New York.
- Waters** Frank Waters designed the →Sterling Automatic Rifle, eventually exploited in a modified form in Singapore—see 'Chartered Industries of Singapore'.
- Watkin** Henry S.S. Watkin, a colonel in the British Army, was the Superintendent of the →Royal Small Arms Factory, Enfield, in 1899–1905. He was the recipient of several British Patents, including 14163/01 of 11th July 1901, protecting a double pull trigger system, a bayonet attachment and a front sight protector. elements of these were subsequently incorporated in the SMLE rifle (see →Lee Enfield). Three other British Patents were granted jointly with Joseph J. →Speed: 14162/01 of 11th July 1901, for a charger-loading system with a guide on the bolt head; 6743/03 of 23rd March 1903 for a back sight; and 6744/03 of 23rd March 1903, protecting a barrel attachment method and the manual safety mechanism of the SMLE. Watkin was also renowned for his work in other fields, developing a depression rangefinder, a position finder and a clinometer for artillery use.
- Watson** James R. Watson [& Co. Ltd]. Registered in London in 1892, at 35 Queen Victoria Street, London, this company acquired the →Arms & Ammunition Mfg Co. Ltd (James Watson may have been one of its shareholders), in 1904. See also 'Argles'.
- Watson** John Watson was an English gunmaker trading from 17 Whittall Street, Birmingham, in 1900.
- Watson** Thomas W. Watson. London directories list this gunmaker at 4 Pall Mall in 1878–94 (as 'Watson Bros.' after 1885) and then at 29 Old Bond Street from 1895 until the First World War or later.
- Watson** William Watson & Son. This gunmaking business was established in London at 313 High Holborn in 1868, and moved to 308 High Holborn in 1882. The style became 'Watson & Hancock' in 1886, but work seems to have ceased c. 1891. It seems possible that James R. →Watson then began to trade on his own account.
- Watts** W.H. Watts. A gunmaker listed at 54a Marshall Street, London W, in the 1880s.

Watts Locke: see 'William Watts →Locke & Co. Ltd'.

WAW Found on U.S. military firearms and accessories. See 'W.A. →Walker, Jr'.

Waygood Otis Ltd; Falmouth Road, London SE1. Best known for lifts and hoisting equipment, this engineering business made drum magazines for the British .303 →Bren Gun during the Second World War, often using the code 'S 292' instead of the company name. See also "British military manufacturers' marks".

Wayland ['The...']. Found on shotgun cartridges sold in Britain by →Golding of Watton.

wb A code-mark was used after 1940 by Hugo →Schneider AG of Berlin Köpenick, on small arms ammunition components made for the German armed forces.

WB: see 'William →Bradbury', 'Waldemar →Broberg' and 'William →Brown'.

W B Ltd *in three lines, separated by short horizontal bars.* Found on parts for the British No. 4 →Lee Enfield rifle made during the Second World War by →Wilkinsons Ltd of Bradford, Yorkshire, England. See also 'WL'.

WC *superimposition-type monogram, with 'C' within 'W'.* Correctly read as 'CW' (q.v.); used prior to 1919 by Waffenfabrik Carl →Walther of Zella St Blasii.

wc A code allotted during the Second World War to the Meuselwitz/Thüringen factory of Hugo →Schneider AG. It appears on a variety of small-arms ammunition components.

WCA *concentric-type monogram with all three letters equally dominant.* Correctly 'WAC' (q.v.); used by the →Warner Arms Company.

WCAD *concentric-type monogram with all four letters of equal significance.* Correctly 'WDAC' (q.v.); used by the →Warner-Davis Arms Corporation.

WCC or **W C C** or **W.C.C.** or **W.C.Co.:** marks associated with ammunition made in the U.S.A. by the →Western Cartridge Company of East Alton.

WCO Found on U.S. military firearms and accessories. See 'Warren C. →Odell'.

WCDA: see 'WCAD'.

WCW An unidentified Civil War-period inspector's mark, found on →Sharps & Hankins carbines made for the Federal army in 1863–5.

WD or **W.D.** or **W↑D** The British War Department property mark, invariably accompanied by a →Broad Arrow.

wd Found on small-arms ammunition components made for the German armed forces during the Second World War, this code identified the Hugo →Schneider AG factory in Taucha bei Leipzig.

WDAC or **WDCA** *concentric-type monograms with all four letters of equal significance.* A trademark used on semi-automatic pistols made by the →Warner-Davis Arms Corporation.

WDN and **WDW** Found on U.S. military firearms and accessories. See 'William D. →Nicholson' and 'W.D. →Whiting' respectively.

we Used from 1940 onward by the Langwiesen factory of Hugo →Schneider AG, found on German small arms ammunition components.

Weatherby, Inc., of South Gate, California, U.S.A., is renowned for its proprietary

magnum cartridges, but also built sporting rifles on →FN Mauser actions in 1949–58 (prior to the appearance of the Weatherby Mark V rifle). They were chambered for cartridges ranging from .220 Rocket to .375 H&H Magnum. A list of individual patterns may be found in *Rifles of the World* by John Walter (Krause Publications, third edition, 2005).

Weatherhead & Walters, or 'Weatherhead, Walters & Company'; Irongate, Derby.

The marks of this English provincial gunmaking business—active from 1828 until 1857 or later—have been reported on sporting guns and self-cocking →pepperboxes dating from the middle of the nineteenth century. The partnership succeeded 'J.G.S. Weatherhead', at the same address in 1818–21.

Weaver G.T. Weaver, an inspector employed by the U.S. government, accepted .38 →Colt revolvers and other ordnance stores in the 1890s, marking them 'GTW'. See also "U.S. arms inspectors' marks".

Weaver W.R. Weaver Company. A U.S.-based optical sight maker. See 'Springfield'

Webber George Webber of Chicago, Illinois, patented a single shot .32 centrefire 'squeezer' pistol on 7th May 1905 (U.S. Patent 788866). It consisted of a tube forming the barrel and breech, a hemispherical rubber palm rest, and a sliding operating-collar. The gun was held in the hand with the rubber pad against the base of the thumb and the muzzle projecting between the index and second fingers. Squeezing the fingers inward slid the collar down the tube, cocking and ultimately releasing the striker to fire the gun. The barrel unscrewed from the breech to load. The Webber pistol was made only in very small quantities.

Weber Casimir Weber, Zürich, Bahnhofplatz. Founded in 1807 by Jean Frey, succeeded in 1847 by Casimir Weber the Elder and in 1895 by Casimir Weber the Younger. Active until the First World War or later. A distributor of guns and ammunition.

Weber Michael Weber; Zurich, Switzerland. A manufacturer of surgical instruments and an airgun patentee: see British Patent 3376/77 of 1877, protecting a gun cocked by a ratchet-pattern trigger guard.

Webley P. Webley & Son; Birmingham, Warwickshire, England. The origins of this well-known gunmaking business date back to 1838, though 'Phillip Webley & Son' was formed only in 1859. After successfully marketing revolvers and other firearms, Webley acquired Tipping & Lawden in 1877. Webley was listed in London directories at 82–9 Weaman Street, Birmingham, in 1884; at 60 Queen Victoria Street, London, and Birmingham in 1888–9; in Birmingham only in 1890–3; and at 78 Shaftesbury Avenue, London, and Birmingham in 1894–8. The business bought W.C. →Scott & Sons in 1897, and became the →Webley & Scott Revolver & Arms Co. Ltd.

Webley & Scott Revolver & Arms Co. Ltd In 1897, P. →Webley & Son amalgamated with W. & C. Scott & Son and Richard Ellis & Sons to form the 'Webley & Scott Revolver & Arms Co. Ltd', which at various times traded from 89–91 Weaman Street, Slaney Street, Lancaster Street and 13 St. Mary's

Row in Birmingham. Sales offices were also maintained in London, initially at 78 Shaftesbury Avenue and then—after 1907—at 55 Victoria Street. The company became 'Webley & Scott Ltd' in 1906.

Webley & Scott Ltd Several revisions in its ownership have naturally occurred since 1906, and Webley & Scott was part of the Harris & Sheldon Group in 2001. The works in Weaman Street were demolished in 1959, to make way for a new ring road, and the business was moved to new premises in Park Lane, Handsworth. Webley & Scott are best known for cartridge revolvers and semi automatic pistols, including the .25 calibre →Hammerless Pocket Model and →Pocket Model, but have also produced an extensive range of airguns. After dabbling unsuccessfully in the market prior to 1914, as the 1910-vintage patent to William John →Whiting testifies, the company quickly established itself in the mid 1920s, when the Mark I pistol was produced to the patents of Douglas Vaughan →Johnstone and John William →Fearn (beginning with British no. 219872 of 1923). The gun was a great success and was followed by the essentially similar Junior, Senior and Premier. Webley & Scott made 'Pistols, Revolver, .455 No. 1 Mk VI' for the British armed forces in 1940–1; and also supplied commercial .38 'Mark IV' guns from stock. Codes 'M 264' (Birmingham) and 'M 265' (Stourbridge) were allocated to replace the company name where appropriate. See also "British military manufacturers' marks". ¶ The modern Hurricane, Tempest and Typhoon are little more than minor improvements on the original design, testimony to its efficiency. The pistols established Webley & Scott's claim to the principal British manufacturer of the spring-and-piston air pistols. The company also introduced the Mark I rifle in 1927, and this followed with the Mark 2 →Service (or 'New Service') possibly the finest pre-1939 British air rifle. It was developed in 1932–3 by Albert Edward →Statham. Neither was made in sufficient quantity to wrest the laurels from →BSA Guns Ltd, and despite the introduction of the Mark 3 rifle in 1946, the →Airsporter of 1948 returned the lead to BSA. The two companies have enjoyed similarly rivalry throughout the 1960s and 1970s, with the Webley →Hawk, →Osprey and →Vulcan attempting to challenge the BSA →Merlin, →Meteor, →Mercury and →Airsporter. Webley's patents are listed under the names of individual designers: Fearn, Johnstone, Smallwood, Statham and Whiting.

Webley-Whiting A term sometimes applied to describe the semi-automatic pistols made by →Webley & Scott Ltd of Birmingham in accordance with patents granted to William J. →Whiting prior to 1914. These protected a breech-block that ran diagonally back and down during recoil to break the lock between the barrel and the slide. An experimental pattern made in 1904 was followed by the perfected Model 1909 exposed-hammer version (9mm Short) and the .38 High Velocity variants of 1910 and 1913 (9mm Browning Long) with enclosed hammers. The guns all had barrels projecting from short slides, safety levers set into the back straps, and butts that were notably square to the axis of the bore. The large .455 Mark I (1912) and Mark I No. 2 (1915)

pistols were purchased in small numbers for service with the Royal Navy, the Royal Artillery and the Royal Flying Corps. The 'No. 2' had a distinctive rotary back sight on the top of the slide ahead of the hammer, and a modified safety catch. 6. Webley-Wilkinson revolver: see accompanying panel.

Webley revolvers The original guns were all single-action →cap-locks, patented by James Webley on 29th March 1853 (British Patent 743/53) and introduced commercially shortly before the Crimean War (1853-6) began. Known as the Longspur, owing to the extended hammer that facilitated cocking, the guns were offered in a range of sizes. They had open-top frames, and were thus not especially durable compared with the →Adams rivals.

¶ After James Webley died, his brother Philip Webley progressed to solid-frame and double-action designs of his own, and the company was best-known in the 1870s for short-barrel large-calibre →Bulldog and →Royal Irish Constabulary ('RIC') designs. These were marketed under a variety of names, apparently in chamberings as large as .577. More advanced technically were the break-open auto-ejectors based on a variety of patents, the earliest design being credited to Edward N. Wood though the first to be successful was the so-called Webley-Pryse. This embodied a cylinder-locking bolt patented by Charles →Pryse the Younger in November 1876 (British 4421/76).

¶ The Webley Improved Government Revolver ('W.G.') of 1882 embodied patents granted to Michael Kaufmann, protecting a trigger mechanism with only five parts (British Patent 4302/80 of 1880) and a three-piece transverse locking bolt (3313/81 of 1881). Changes made to the gun included the substitution of an improved stirrup-fastener patented in March 1885 by Henry Webley and John Carter (British Patent 4070/85 of 1885). However, these elegant large-calibre weapons with flared-heel butts are sometimes credited to Edwinson →Green, a Cheltenham gunmaker who claimed to have had a hand in their design and subsequently pursued high-profile litigation with Webley over alleged patent infringements. The case was found for Webley, but the suspicion remains that there was more substance to Green's case than his protagonist admitted.

¶ Hard on the heels of the Webley Government Revolver or Model 1886—incorporating a cylinder-pin ferrule patented by William →Whiting—came the greatest success, when the British Army adopted the *Pistol, Breech-Loading, Revolver, Webley (Mark I)*. Sealed on 8th November 1887, nominally .442-calibre, this gun would accept the .476 Enfield cartridges as well as the .455 Webley type standardised in 1899! This break-open auto-ejector replaced the unsuccessful Enfield (Owen →Jones) pattern, and was destined to remain the official British service handgun until the approval of the FN-Browning semi-automatic pistol in 1957.

¶ The Webley service revolver proceeded through a series of 'Marks': the Mk II of 1894, with a modified hammer and a better barrel latch; the Mk III of October 1897, with a new barrel and cylinder assembly; the Mk IV, sealed on 21st July 1899 during the Boer War, was characterised by better grades of steel

and a few minor detail changes; and the Mk V, sealed on 9th December 1913, the last of the pre-war patterns, had its cylinder strengthened to withstand ammunition loaded with smokeless propellant. There were also several 'starred' subvariants, customarily indicating in-service modifications to approximate to the latest →Sealed Pattern.

¶ The .455 Mk VI Webley, sealed on 5th May 1915 and known after 1926 as the *Pistol, Revolver, No. 1 Mk VI* was displaced in British service by the .38-calibre government-developed →Enfield (approved on 2nd June 1932), which was little more than a slightly simplified Webley. The Webley & Scott Revolver & Arms Company and its successor, Webley & Scott Ltd, had always marketed .32 and .38-calibre revolvers commercially and continued to make them in competition with the Enfield.

¶ When the Second World War began, ironically, large quantities of Webley & Scott revolvers were impressed into service alongside the .38 Enfield. Records show that orders totalling 105,066 'Pistols, Revolver, Webley, .38 Mk IV' were placed between May 1940 and November 1944; approved retrospectively in 1945, these handguns were not declared obsolete until June 1963. They were very similar to the Enfields, but had commercial-grade finish and bakelite grips bearing the manufacturer's trademark.

¶ Production of .32- and .38-calibre revolvers continued in Birmingham into the 1960s, the last of their type to have been made in quantity in Britain. Their demise reduced the once-great Webley & Scott to a mere producer of airguns and an occasional importer of shotguns. However, the revolver-making activities of Webley and Webley & Scott have been chronicled most ably by Taylerson, Andrews & Firth, in *The Revolver, 1818–1865* (Herbert Jenkins, 1968); by A.W.F. Taylerson in *The Revolver, 1865–1888* (Herbert Jenkins, 1966) and *The Revolver, 1889–1914* (Barrie & Jenkins, 1970); and by Gordon Bruce and Christian Reinhart in *Webley Revolvers* (Stocker-Schmidt, 1988).

Webster B. Webster & Company [The Southern Armoury]; London. This business was founded in 1887 by Bertram Webster and George E. Greene, apparently as an offshoot of the London Armoury Company. In addition to cartridge guns, it imported large numbers of cheap push in barrel pistols from Belgium (see 'Dare Devil Dinkum') and marketed a range of projectiles under brand names including →Armoury and →Butts. Premises were occupied at 41 Newington Butts, London SE11, in 1922, and at 31–33 Newington Causeway in 1931–9 (after Greene had died). There was also a warehouse at the Elephant & Castle, but the company was subsequently owned by →Collins Bros. and traded from New Kent Road in south east London.

Webster William Webster. This lock filer, originally an employee of the Forsyth Patent Gun Company, started a business of his own in 1818 at 8 George Street, Princes Street, London. After trading briefly as 'Webster & Company', he eventually settled at 2 St James's Place, Hampstead Road, in 1851. Webster is believed to have died at the age of seventy in 1854.

- Wedge Frame** A →cap-lock revolver made by P. →Webley & Son (see ‘Webley revolvers’, above).
- Wegner** Louis Wegner; Zella St Blasii and Zella-Mehlis in Thüringen, Germany. Listed in 1900 as a gun and weapon maker, subsequently as a wholesaler of guns and a maker of tools (*Waffenhandel- u. Werkzeuge*). Listed in 1914 as a gun and weapon maker, and in 1920 as a wholesaler (when owned by Franz Wegner).
- Wegria or Wegria Charlier.** A name applied to a 6.35mm-calibre semi-automatic pistol, originating in Belgium prior to 1914, which unwisely combined the trigger lever with the grip-safety mechanism set into the back strap of the butt. Most guns have ‘WS’ monograms moulded into the grips, but the significance of this is unknown as they were apparently made by →Charlier et Cie.
- WEH** A mark found on U.S. military firearms and accessories. See ‘W.E. →Hosmer’, ‘William E. →House’.
- Weihrauch** A. Weihrauch; Zella-Mehlis in Thüringen. Listed in Germany in 1930 as a gun-stock maker.
- Weihrauch** Hermann Weihrauch; Zella St Blasii and Zella Mehliis in Thüringen, Germany. Founded in 1899. Listed in the *Deutsches Reichs-Adressbücher* for 1900–20 as a master gunsmith and gunmaker; and in 1930–9 as a gun- and bicycle-component maker, under the control of Hermann Weihrauch the Elder, Hermann Weihrauch the Younger and Otto Weihrauch. In addition to hunting and sporting guns, Weihrauch became famous for bicycles during the Weimar Republic. Firearms were made until the end of the Second World War, when the company was allotted the code letters ‘eea’ (in 1941) and is assumed to have made machine-gun parts and signal pistols. Plans to make air rifles had been readied in 1938–9, but had been suspended when war began again. The Weihrauch family, like the Walthers, were able to flee from Eastern Germany before the area became part of the Soviet occupation zone, and their company was re established in 1948.
- Weihrauch** Hermann Weihrauch KG ; Mellrichstadt/Bayern. The end of the Second World War brought the pre-war Weihrauch business in Zella-Mehlis to an end, but operations were re-established in Bavaria in 1948, when production of bicycle components recommenced. Air rifles appeared two years later; finally, in 1960/61, handguns and rifles were added to the product range, including a number of revolvers made under the →Arminius brand name associated prior to 1945 with Friedrich →Pickert of Zella Mehliis. Recently however, emphasis has reverted to the airguns—particularly the HW 35 and HW 55 rifles and the HW 70 pistol—owing to the introduction of a new German firearms-controlling laws. The work force numbered 210–220 in the 1980s, when the business was managed by Hans Hermann Weihrauch. The trademark ‘HWM’ (‘M’ for Mellrichstadt) replaced the pre war ‘HWZ’ (‘Z’ for Zella Mehliis), though a few guns made for Albrecht →Kind were marked ‘Gecado’.

- Weihrauch** O[tto]. Weihrauch; Zella-Mehlis in Thüringen, Germany. Listed in 1920–30 as a weapon maker.
- Weihrauch** Oskar Weihrauch; Zella-Mehlis in Thüringen. Listed in 1939 as a master gunsmith. Possibly the same as the preceding entry.
- Weipert** One of the leading gunmaking centres in Bohemia (once a part of the Austro-Hungarian empire, then incorporated in Czechoslovakia), with lengthy traditions, Weipert experienced a period of nineteenth-century decline in the face of competition from newer and more progressive gunmakers who were prepared to mechanise. However, excessive demands made on the Steyr facilities of →Werndl and then →Österreichische Waffenfabriks-Gesellschaft brought a new lease of life to the craftsmen in the Weipert district who thereafter made parts on a sub-contract basis. The adoption of the straight-pull →Mannlicher rifle by the Austro-Hungarian army, in 1886, led to the establishment of a manufacturing co-operative answering directly to Steyr. Led by Rudolf Harnisch, members of the scheme included Gustav →Bittner, Gustav →Fückert, Wenzel Morgenstern, Eduard Schmidl and Elias Schwab. However, the OEWG management eventually decided to build a subsidiary factory of its own in Weipert and the influence of the individual gunmakers waned once again. Even though a proof house was established in the town in 1889, the influence of the local traditions had waned greatly by 1918.
- Weisbach** Karl Weisbach; Mehliis and Zella Mehliis in Thüringen. Listed in German directories as a weapon maker and wholesaler, 1900B20.
- Weisheit** or **Weissheit** or **Weißheit** A.R. Weisheit of Mehliis and Zella-Mehliis in Thüringen, Germany, was listed in 1914–39 as a gun- and weapon-maker. The 1930 *Deutsches Reichs-Adressbuch* notes ‘A.R. Weissheit’ as a retailer of guns and ammunition, but this is believed to have been a misprinted form of ‘Weisheit’. The 1941 edition lists ‘Aug. Rich. Weisheit’ of Zella-Mehliis in Thüringen as a maker of handguns and sporting guns (*Handfeuer u. Sportwaffenfabrik*), but trading ceased at the end of the Second World War.
- Weiss** or **Weiß** Aug. Weiss; Suhl in Thüringen. A gunmaker or possibly two generations of gunmakers trading in Germany in 1914–30. The younger man may then have been recruited by →Mauser to supervise pistol production.
- Weiss** or **Weiß** F. Weiss; Suhl in Thüringen. Trading as a gunsmith, 1920.
- Weiss** or **Weiß** Fritz Weiss; Suhl in Thüringen. Listed in the 1939 edition of the *Deutsches Reichs-Adressbuch* as a gunsmith. Probably the same as ‘F. Weiss’, above.
- Weiss** or **Weiß** H. Weiss; Heidersbach bei Suhl in Thüringen. A gunmaker active in Germany prior to 1900?
- Weiss** or **Weiß** Herm. Weiss; Suhl in Thüringen, Germany. A gunmaker listed in the 1930 *Deutsches Reichs-Adressbuch*. Possibly the same as the preceding entry.
- Weiss** or **Weiß** The gunmaking business of Max Weiss of Goldlauter bei Suhl in Thüringen is said to have been active in the early 1920s, but trading may have been short-lived.

- Weiss or Weiß** O. Weiss; Zella Mehlis in Thüringen. Listed in directories published in the early 1930s as a retailer of guns and ammunition.
- Weisser** August Weisser. Co-patentee with Helmut →Liebmann of an underlever-cocking airgun. See 'J.G. →Anschütz'.
- Wel-Cheroot** About 4½ inches long, this was an enlarged Wel-Woodbine made in the form of a small cigar. It contained a single .22 Short rimfire cartridge activated by a lanyard, which was revealed by biting off the end of the cigar. Pulling the lanyard released the firing pin from the ball bearing 'sear'. A few Wel-Cheroots are believed to have been issued in 1945 to the OSS, but no records of their use exist.
- Welgun** Dating from 1943, this British 9mm submachine-gun was designed by the Special Operations Executive at Welwyn. A return spring concentric with the barrel pulled the bolt forward during the reloading stroke, but proved to be vulnerable to barrel heat. Production was comparatively small.
- Welpen** Among the clandestine weapons produced during in Britain during the Second World War was the .22 'Experimental Firing Device, Hand Held, Welpen' of 1941, a single shot pistol disguised as a fountain pen. Only about a hundred were made in the Welwyn research establishment in Hertfordshire before the project was abandoned in favour of the smaller →Enpen.
- Welrod** A silenced pistol developed in Britain by the SOE research establishment at Welwyn during the Second World War. The earliest guns were 7.65mm single-shot 'Mk 1' examples, but a magazine was soon added. The cartridge was ineffective, and so the original introduction was cancelled in favour of the 9mm Mark 1, chambering standard British submachine-gun ammunition (which was essentially the same as 9mm Pist. Patr. 08 [9mm Parabellum] that could be found in occupied Europe). The 9mm pistol had a six-round magazine. BSA Guns Ltd was to have commenced production of the improved 9mm Mk 2A in 1944, but the war in Europe ended before work could begin in earnest.
- Wel Wand** A gun developed by the British SOE research establishment at Welwyn during the Second World War.
- Wel-Woodbine** Taking its name from the well-known British cigarette, which provided its disguise, the gun was little more than a 3.3in tube containing a one-inch .177-calibre barrel. A detachable breech chamber was held by two tiny cross pins. The hardened steel projectile was fired by a pellet of priming composition, activated by a spring loaded striker. Wel-Woodbines were rolled inside cigarette papers, care being taken to reflect the appropriate theatre of operations in the design. The muzzles were disguised with a plug of charred tobacco to suggest that they had already been lit. The gun was activated by biting off the filter tip, severing the safety wire, and then pressing the thumbnail onto a tiny trigger protruding through the cigarette paper. The tiny gun could even be reloaded by driving out the cross pins holding the breech, inserting a new bullet and propellant pellet, then replacing the breech and inserting a new cork tip safety wire!

- Welch** Jabez Bloxham Welch; Butcher Row, Banbury, Oxfordshire (1829–52). The marks of this English provincial gunmaker have been reported on sporting guns and →pepperboxes.
- Welch** W.W. Welch Company [‘The...’]; Norfolk, Connecticut, U.S.A. A gunmaking business active during the Civil War, Welch received several Federal government contracts for 1861-pattern rifle-muskets (1862–4). Seventeen thousand had been delivered when hostilities ceased.
- Welcome** [‘The...’]. This name was associated with shotgun cartridges sold by →Lacey of Stratford upon Avon prior to 1914.
- Wellesley** [‘The...’]. Associated with shotgun cartridges sold in India by →Rodda & Company of Calcutta, apparently made in Birmingham by →Kynoch prior to 1914. Sir Arthur Wellesley became the Duke of Wellington.
- Wellington** [‘Feeder Factory’]; Maughan Street, Wellington, New South Wales, Australia. This was established in 1942 to supply a few SMLE components to the →Orange factory. Its products were marked ‘WA’.
- Wells** A. Wells & Company of Progress Works, Stirling Road, Walthamstow, London, made magazines for the British 9mm →Sten Gun during the Second World War. The regional code ‘S 125’ may have been used instead of the company name. See also “British military manufacturers’ marks”.
- Wells** George Wells, a lieutenant in the U.S. Navy, inspected and accepted single-shot →cap-lock pistols in the years prior to the American Civil War. They were marked ‘GW’. See also ‘George →Wright’ and “U.S. arms inspectors’ marks”.
- Wells** J.H. Wells. A member of the London gun trade recorded in 1891–2 at 6 Wells Street, Oxford Street.
- Wells** Joseph P. Wells, working for the Federal government during the American Civil War, accepted guns and equipment marked ‘JPW’. See also “U.S. arms inspectors’ marks”.
- Wells Fargo Colt** Among the most-sought variations of the .31 →Pocket revolver, this had a short barrel and lacked the rammer. The first consignments were allegedly delivered to Wells, Fargo & Company, the stagecoach operators, but the story may be apocryphal.
- Wells Fargo Commemorative** The Model 5994 lever action spring-air gun made in the USA by →Daisy to commemorate the hundredth anniversary of the founding of Well, Fargo & Company.
- Weltersbach**. Wilhelm Weltersbach; Solingen, Bimerichter Strasse 11, in 1939. Founded in 1882 and registered with the authorities on 2nd August 1910, this cutlery manufacturer has been linked with a knife-pistol sold under the name ‘Bazar’ (q.v.). There is, however, no evidence that Weltersbach did anything other than supply the knife components.
- Welwyn** This was the principal research establishment of the Special Operations Executive, the British clandestine operations service. It operated during the Second World War producing a variety of sabotage equipment and guns such as the →Wel-Cheroot, →Welrod, →Wel-Wand and →Wel-Woodbine.
- Wen Li Tang**: see ‘Chinese State Factories’.

Werder Johann Ludwig Werder, director of the Cramer Klett'schen Établissements in Nürnberg, patented a block-action breech mechanism in Bavaria in June 1868.

Werder rifle Pressing the front trigger dropped the breech block automatically and kicked the spent case out of the breech; a new cartridge was inserted and the spur of the operating lever was pulled back to raise the block. The speed of this action earned the *Rückladungsgewehr M/1869, System Werder* the sobriquet *Blitzgewehr* ('Lightning Rifle') during the Franco Prussian War of 1870–1.

¶ About a thousand Liège-made rifles, with a single barrel band, were tried against Steyr-made Werndls in 1868 and the perfected two-band M/69 was approved for the Bavarian army on 18th April 1869. About 125,000 rifles were made by the →Amberg manufactory, assisted by sub-contractors, and about twenty thousand came from the →Handfeuerwaffen-Produktionsgenossenschaft in Suhl. Maschinenfabrik 'Landes' of München and Auguste Francotte & Cie of Liège each made about four thousand M/1869 carbines, adopted on 1st July 1869, six hundred others being converted in Amberg from 1868-pattern trials rifles. Francotte also apparently made a Werder gendarmerie rifle, a variant of the standard carbine accepting a socket bayonet.

¶ An improved *Aptierte M/1869* ('altered M1869') chambered for the 11mm Mauser cartridge or 'Reichspatrone' gained royal approval on 5th June 1875; by 1st November 1876, Amberg had produced 124,540 rifles by rechambering the old barrels and fitting new 1871 pattern back sights. Converted rifles were known to be comparatively weak, and so the strengthened *M/1869, neues Muster* ('new pattern') was substituted on 21st July 1875.

¶ To ensure that the new weapon would be compatible with the guns of the Prussian and other imperial German armies, the chamber, the barrel, the sights and the nose cap of the new-pattern Werder duplicated those of the 1871-model bolt-action Mauser. The rifles were assembled in Amberg from actions made by Maschinenfabrik Augsburg and barrels purchased from →Österreichische Waffenfabriks Gesellschaft of Steyr. The Bavarians finally approved the Mauser in August 1877; surviving Werder rifles were immediately relegated to foot artillerymen, and then withdrawn into store by 1882.

Werndl Josef Werndl, son of the gunmaker Leopold Werndl, was born on 26th February 1831. Apprenticeship in the family workshop was followed by a peripatetic career as a journeyman gunsmith in Prague, Vienna, Suhl and the U.S.A. before returning to his native Austria. Experience of mass-production in the Remington and Colt factories in North America convinced Werndl that a fortune could be made in gunmaking only by following this lead.

¶ Succeeding to his father's operations in 1853, Josef Werndl enlarged the factory and installed steam-driven machinery engine in search of lasting success. In company with his factory superintendent, Carl →Holub, Werndl

visited the U.S.A. in 1863 to see at first hand how industry was coping with unprecedented demand for firearms during the Civil War, and how the design of firearms had evolved to meet the needs for increased firepower.

¶ Inspired by the American experience, Werndl and Holub arrived back in Austria determined to make guns which were completely interchangeable. A group of small workshops along the banks of the Steyr river was purchased, including a saw mill, an iron foundry and a grindery; machinery ordered from Pratt & Whitney in the U.S.A. and Greenwood & Batley in Britain was installed in new buildings, and series production began.

¶ The change from making small parts for guns to making guns in their entirety was risky, but the gamble proved worthwhile: the business was employing three thousand people by 1866. When work on the first hundred thousand →Werndl rifles began in earnest in 1867, weekly production capacity was rated at five thousand guns. Werndl's operations were reconstituted as →Österreichische Waffenfabriks-Gesellschaft, founded in Vienna on 1st August 1869; the founder, by then a rich and much-honoured man, died in Steyr on 29th April 1889.

Werndl Gunmaker Leopold Werndl, father of the better-known Josef Werndl (above), established a workshop in the village of Oberletten an der Steyr in the Oberdonau region in 1834. A flourishing business had been built by the 1840s, making components for firearms and edged weapons; as many as five hundred workers were being employed in workshops in Oberletten and Steyr. Werndl retired in 1853, being succeeded by his son Josef, and died two years later.

Werndl-Holub rifle A prototype of this drum-breech design was submitted to the Austro-Hungarian authorities after the rifle trials of 1866 had begun. A 'dirty tricks' campaign was then mounted to reverse the acceptance of the Remington →Rolling Block rifle, which had won the trials, and the Werndl-Holub rifle was approved on 28th July 1867 as the *Infanterie- und Järgergewehr Modell 1867*. A carbine was also made in quantity. The subsequent production order ensured the prosperity of Werndl's Steyr manufactory.

¶ Prolonged service showed that the breech-shoe or receiver was not as strong as it could be, and that the leaf springs enclosed in the drum unit soon became brittle. The back-sight leaf was too weak, and few people liked the clumsy external hammer. The improved or 1873-pattern Werndl—made as a rifle, a carbine or an →*Extra-Corps-Gewehr*—had a stronger receiver and significant changes in the breech drum. Coil springs replaced riband springs, and the hammer was mounted inside the lock plate. A greatly improved cartridge was adopted in December 1878, though the 'M. 1877' rifles and carbines remained unchanged except for chambering and sighting arrangements.

Werner Alfred Werner; Suhl in Thüringen. A gunsmith active in Germany in 1939.

Werner C.G. Werner. Working in Rochester, New York State, in 1857–64, first from 2 Buffalo Street and later from 43 Front Street, this gunsmith made 'New York' pattern spring-air gallery guns. These were stocked in oak and

customarily had revolving cylinder magazines. C.G. Werner was apparently succeeded by Otto Werner in 1865.

Werner Charles Werner; Buffalo Street and Front Street, Rochester, New York State. A maker of shotguns, target rifles and revolving rifles listed in 1857–65.

Werner Charles F. Werner; Main Street, Orange, New Jersey. This gunsmith is believed to have been the son of Charles Werner (q.v.), listed from 1867 until 1870.

Werner Daniel Werner; St Louis, Missouri. Designer of a breech-loading firearm patented in the U.S.A. on 6th October 1868 (no. 82908). This took the form of a pistol-knife with double barrels which sprang forward from the standing breech when a catch was released.

Werner E. Werner; Suhl in Thüringen, Germany. Listed in 1930 as a gun-part maker.

Werner Friedrich Werner Waffenschmiede; Suhl in Thüringen. A gunmaker operating in Suhl in 1920.

Werner George W. Werner of Lancaster, Pennsylvania, U.S.A., patented a gun-lock, US no. 468,853 of 16th February 1892, and is believed to have made double-barrelled shotguns.

Werner Hugo Werner; Suhl in Thüringen. Listed in the 1930 *Deutsches Reichs Adressbuch* as a gunmaker.

Werner J. Rob. Werner; Zella Mehlis in Thüringen. Trading in Germany in 1930 as a retailer of guns and ammunition, but possibly also maintaining repair facilities.

Werner Oscar Werner; Heidersbach bei Suhl, Germany. A maker of sporting guns, specialising in the 1920s in over-and-under shotguns ‘with and without ejector’.

Werner Otto A. Werner of Suhl in Thüringen operated a gunmaking business in Germany prior to 1900. Fate unknown.

Werner Otto F. Werner; Rochester, New York State, USA. This gunsmith is believed to have succeeded to his brother’s (father’s?) business in 1865. See Charles →Werner. Listed at 5 South Paul Street in 1866/7 and at 24 Front Street in 1874/5, trading then ceased. Otto Werner made small single-shot drop-barrel pistols, according to Gardner. (NB: a plausible alternative theory that Werner moved to Orange, New Jersey, in 1865/6 would mean that two ‘Rochester Werners’ were separate entities.)

Werner Rob. Werner; Suhl in Thüringen, Germany. A gun part maker listed in directories in the early 1930s.

Werner Wilhelm Werner; Zella Mehlis in Thüringen. Listed in Germany in 1939 as a master gunsmith.

WES A mark found on U.S. military firearms and accessories. See ‘W.E. →Strong’.

Wesson Daniel Baird Wesson, born on 18th May 1825 in Worcester, Massachusetts, was apprenticed to his elder brother Edwin in 1843. Edwin died unexpectedly in Hartford, Connecticut, in January 1849, leaving Daniel to attempt to perpetuate the business. Its failure led to the formation of the

→Wesson Rifle Company, and when this also failed Wesson returned making →cap-lock rifles with his brothers Franklin and Martin.

¶ In October 1850, with the fraternal partnership at an end, Daniel Wesson returned to Massachusetts working first as superintendent of the →Leonard Pistol Works in Charlestown (though the Leonard pepperboxes were actually made under contract by →Robbins & Lawrence), and then for →Allen, Brown & Luther in Worcester. This move was short-lived, however, as the first partnership between Smith & Wesson was formed in at the end of 1852. Prior to this, Wesson claimed to have been employed by Parry W. →Porter to improve the Porter turret repeater patented in the USA on 18th July 1851.

¶ Wesson seems to have met Horace →Smith while working for →Allen, Brown & Luther. He was particularly keen to develop a cartridge with the fulminate igniter placed in the case-head, separated from the charge by a disc, and some of the earliest 'Norwich' Smith & Wesson pistols took this form. However, the manufacturing techniques of the day could not cope with Wesson's demands and a reversion to a →Hunt-style rocket ball was made. When this project had also failed and the initial partnership with Smith ended, Wesson continued to develop self-contained metal-case cartridges. In 1856, therefore, Smith & Wesson renewed their partnership.

¶ Daniel Wesson received a wide range of U.S. Patents. They included no. 72434 of 17th December 1867, protecting an automatically-retracting ejector, and 78847 of 9th June 1868 for hammers that automatically retracted to half-cock as the breech of the double-barrel sporting gun opened. Guns of this type were subsequently made by the →Wesson Firearms Company. U.S. Patent 114374 of 2nd May 1871, protected the detachable lock of a double-barrelled gun.

¶ The first of the revolver patents to be granted in Wesson's name alone (previous protection had been sought jointly with Horace Smith) was no. 136348 of 25th February 1873. Then came an extraction mechanism protected by 158874 of 19th January 1875, incorporated in the →New Model Russian revolver, which allowed the cylinder to be removed without tools. U.S. Patent 186509 of 23rd January 1877, protecting a revolver, was followed by two patents granted jointly with James →Bullard and assigned to Smith & Wesson. The first, 187689 of 20th February 1877, protected an improved retainer for revolver cylinders; 198228 of 18th December 1877 protected a rebounding hammer.

¶ U.S. Patent 202388 of 16th April 1878 was granted for a 'Firearm Lock'; 217562 of 15th July 1879 protected a magazine firearm. These were followed by a series of patents protecting revolvers or their components—222167 and 222168 of 2nd December 1879, 227009 of 25th May 1880, and 285862 of 2nd October 1883. U.S. Patent 289875 was granted on 11th December 1883 to protect a gun-lock safety attachment; 323837 was obtained jointly with Joseph H. →Wesson for a 'revolving firearm'; and two patents granted on 4th August 1885 (323838 and 323839) protected safety-lock systems.

¶ Locking devices were featured in U.S. Patent 323873, obtained jointly with John S. →Landers on 4th August 1883, and in 361100 of 12th April 1887. Then came the revolving firearms protected by 371523 of 11th October 1887; 401087 of 9th April 1889; and 429397 of 3rd June 1890. U.S. Patent 421798 was granted on 18th February 1890 to protect a 'barrel catch for firearms', and 611826 of 4th October 1898 (jointly with Joseph H. →Wesson) depicted a 'cylinder stop for revolving firearms'.

¶ Daniel Wesson continued to patent improvements well into his seventies, receiving protection for 'revolving firearms' (615117 of 29th November 1898, 689,260 of 17th December 1901) and 'Firearm hammer construction', US Patent 684331 of 8th October 1901. He died in Springfield on 4th August 1906, to be succeeded by his sons Walter and Joseph.

Wesson Dan Wesson Arms of Monson, Massachusetts, U.S.A., was founded in 1968. The gunmaking business specialised in revolvers (protected by a range of U.S. Patents) with a detachable barrel within a shroud, and also a series of innovative 'Pistol Pacs' and 'Hunter Pacs'.

Wesson Edwin Wesson; Grafton and Northborough, Massachusetts, and Hartford, Connecticut. Established in Grafton in 1835 as a gunsmith and riflemaker, rapidly establishing a reputation for the quality of his cap-lock target and sporting rifles. Moved to Northborough, 1842, and to Hartford in 1848, making cap-lock revolvers in accordance with patents granted in 1839 to Daniel →Leavitt and Stevens & Miller. Edwin Wesson was granted U.S. Patent 5146 of 5th June 1847, protecting a multi-barrel volley gun and 6669 of 28th August 1849, protecting a 'revolving firearm' operated by bevel gears, approved several months after his sudden death the previous January. Wesson's heirs and assignees elected to produce the gun, which was made by the →Massachusetts Arms Company as the →Wesson & Leavitt, but this was challenged successfully by Samuel →Colt and the resulting lawsuit virtually bankrupted the Massachusetts Arms Company. Control of Edwin Wesson's business passed to a syndicate of local businessmen who had advanced him large sums of money, and an agreement was concluded with Thomas →Warner not only to finish work in progress but also to continue to make the thousand rifles of the 'Wesson & Smith' contract. This resulted in the formation of the Wesson Rifle Company.

Wesson Franklin Wesson; Worcester and Springfield, Massachusetts. An elder brother of Daniel B. Wesson (q.v.), this gunmaker began trading on his own account after the failure of the partnership created in Hartford in 1850 with his brothers. Premises were occupied in Worcester in 1854–62, when Wesson left for Manchester Street in Springfield. Operations continued until 1872, when Wesson moved back to Worcester, but finished c. 1880. Franklin Wesson was granted U.S. Patents 25926 and 36925 (25th October 1859 and 11th November 1862 respectively) to protect the drop-barrel breechloading rifle made in small numbers during the Civil War in carbine form. He also received US Patent 92918 of 20th September 1869, for a two-barreled 'rotating'

pistol with a spring bayonet in a housing between the barrels. Derringers and the 'Pocket Rifle', a long-barrel pistol, were made in accordance with US Patent 103694, granted on 31st March 1870 to protect a pistol with a barrel that pivoted around a longitudinal rod. A distinctive barrel latch protruded beneath the frame ahead of the sheath trigger. US Patent 115916 of 13th June 1871 protecting Wesson's 'revolving firearm', and 193060 of 10th July 1877 (obtained jointly with C.N. Cutter) described a 'Breech-loading firearm'.

Wesson Joseph Hayes Wesson; Springfield, Massachusetts. Born in Springfield in 1850, Wesson was educated as an engineer and returned to his father's business in 1880. Within a year, he had been granted his first patent, U.S. no. 243183 of 21st June 1881 protecting a 'gun lock'. Among the many other patents granted to Joseph Wesson were 251750 of 3rd January 1882 for a revolving firearm; 323837 of 4th August 1885, jointly with Daniel B. Wesson (above) for a 'cylinder stop for revolving firearm'; and 635705 of 24th October 1899, jointly with J.L. →Hobbs for a 'revolving firearm safety device'. These were followed by 702607 of 17th June 1902, 708437 of 2nd September 1902 and 743784 of 10th November 1903—all protecting revolvers or their components—and then by 811807 of 6th February 1906 and 818721 of 24th April 1906 for 'firearms'. U.S. Patent 923915 of 8th June 1908 protected a 'revolver-frame clamp', assigned to Smith & Wesson, and 839911 of 1st January 1907 was granted for a 'magazine pistol'.

¶ Several patents were granted to improve the Belgian →Clément pistol, made under licence by →Smith & Wesson from 1913 onward. A U.S. Patent of 6th December 1910 protected a thumb-bar safety (suitable only for right-handed firers); another of 13th December 1910 protected an improved finger-lever safety set into the front grip-strap; and a third of 30th July 1912 was granted for the recoil-spring disconnector that greatly eased the cocking process. One of Wesson's last designs was the →Half-Moon Clip, patented shortly after the U.S. Army entered the First World War. His health had already begun to fail, however, and Joseph H. Wesson died in April 1920.

Wesson carbine Only 151 of these Franklin →Wesson designs were purchased by the Federal government, being ordered in July 1863 from Benjamin →Kittredge & Company of Cincinnati, Ohio. However, Kittredge is known to have supplied hundreds more to individual regiments in states such as Illinois and Kentucky. The distinctive frame had two separate trigger apertures. The front trigger released the barrel, which tipped forward and down to elevate the breech.

Wesson Firearms Company; Stockbridge Street, Springfield, Massachusetts.

This was formed on 27th May 1867 by Daniel →Wesson, the first directors being Horace →Smith, J.W. →Storrs and Cyrus E. Buckland. The principal product was a 12 bore drop-barrel shotgun C patented by Daniel →Wesson, John →Blaze and John →Stokes C opened by pushing forward on a thumb lever above the breech. Only a little over two hundred guns had been sold by 1871, when all of the stock and the assets of the company were bought back by

Daniel Wesson.

Wesson Firearms Company; Springfield and Worcester, Massachusetts. Maker of the derringer pistols and 'Pocket Rifles' patented by Franklin Wesson (above). It is suspected that the terading style post-dates Wesson's return to Worcester in 1872.

Wesson & Harrington This partnership was formed by Franklin Wesson and his nephew Gilbert Harrington, a one time employee of →Ballard & Fairbanks, to make an auto ejecting pocket revolver patented by Harrington in c. 1874. Harrington bought his uncle's share of the business and, with the factory manager William →Richardson, formed →Harrington & Richardson in 1874. 10. Wesson & Leavitt revolvers. These mechanically rotated .31 and .40 cap lock, based on the manually operated →Leavitt pattern, were manufactured by the →Massachusetts Arms Company in accordance with patents granted to Daniel →Leavitt in 1837 and Edwin →Wesson in 1850. About two thousand were made.

Wesson Rifle Company; Hartford, Connecticut. Formed to complete the work of Edwin Wesson, under the supervision of Thomas →Warner, this gunmaking business was short-lived. Its assets were sold at auction on 22nd November 1849 to a group of businessmen in Chicopee Falls, Massachusetts, wishing to exploit the →Wesson & Leavitt revolver. See 'Massachusetts Arms Company'.

Wesson & Smith; Hartford, Connecticut? A partnership of Edwin Wesson, Daniel B. Wesson and Thomas Smith, created to make a thousand cap-lock rifles (said to have been for the U.S. Dragoons). This order, if it existed, does not seem to have been fulfilled.

Westentaschenmodell, or WTM These 'waistcoat pocket model' guns, were introduced in Germany by J.P. →Sauer & Sohn to compete with the →Mauser →WTP. There were two types.

Westentaschenpistole, or WTP This German-language term ('vest pocket pistol' or 'waistcoat pocket pistol') was used by →Mauser Werke on its two tiny 6.35mm automatic pistols. See also 'WTM'.

Western or Western & Co. These marks will be found on a gas powered revolver made in the U.S.A. by or for →Healthways, Inc. See also 'Spring Western'.

Western Arms & Cartridge Company; Chicago, Illinois, U.S.A. One of the best-known of all North American ammunition makers, this business was acquired the →Winchester Repeating Arms Company after the end of the Second World War.

Western Arms Company; New York City. A distributor of cap-lock revolvers made by the →Bacon Mfg Co. and the →Whitney Arms Company during the American Civil War.

Western Arms Corporation; Los Angeles, California, U.S.A. Distributors of firearms and ammunition, including muzzle-loaders made in Belgium in the mid 1950s by →Dumoulin.

Western Auto Stores A distributor of guns and ammunition bearing 'W.A.' marks.

Western Auto Supply Company: see 'Marlin' (same as preceding entry?).

Western Boy A name associated with a revolver made in Belgium prior to 1914 by A. →Bertrand and possibly also →Deprez.

Western Bul Dog Encountered on six-shot double-action revolvers, chambered for the .44 S&W Russian cartridge and based on the Webley →Bulldog. Made in Belgium prior to 1914, but rarely (if ever) signed, the guns have bird's-head butts.

Western Bulldog A →Suicide Special revolver made in the U.S.A. by the →Hopkins & Allen Arms Company of Norwich, Connecticut; it dates from the late nineteenth century.

Western Cartridge Company; East Alton, Illinois, U.S.A. This cartridge-making business made its first rimfires in 1908. Among the company's tradenames has been 'Diamond', a simple diamond-shape drawing sufficing as a trademark. →Headstamps have included 'W.C.C.', 'W.C.Co.' or WESTERN. It was purchased by Olin and eventually merged with the cartridge making facilities of the →Winchester Repeating Rifle Company to form the →Winchester Western Division of Olin Corporation.

Western Field A brand name associated with guns and sporting goods sold by →Montgomery, Ward & Company.

Western Spring: see 'Spring Western'.

Westgate ['The...']. Associated with shotgun cartridges sold by Jewson of Halifax.

Westinger Karl Westinger, an employee of Mauser-Werke AG, is best remembered for the perfected selective-fire system applied to the Mauser C96 pistol in 1936. This replaced the essentially similar, but less successful →Nickl type. Westinger was also involved in the design of the recoilless air rifles made by Westinger, Altenburger & Co. (below). Among the relevant German patents have been 1132827, sought on 31st December 1959 although the final acceptance was delayed until 23rd March 1967. Protecting the basic sidelever cocking mechanism, the papers name the inventors as Ernst Altenburger, Karl Westinger and Ernst →Trumpelmann. German Patent 1140489 was sought on 24th February 1961 by Ernst Altenburger, Karl Westinger and Edwin →Wöhrstein. Provisionally accepted on 29th November 1962, and finally on 14th September 1967, it protected the basic Feinwerkbau recoil suppressing system with the barrel and receiver running on tracks in the frame. Patents 1147142 (sought on 18th July 1961, finally accepted in June 1968) and 1150906 (26th July 1961, 7th March 1968) both protected modifications to 1140489. They were also granted to Westinger, Altenburger and Wöhrstein. German Patent 1181590, sought on 7th January 1960 and accepted on 8th July 1965, protected the back sight of the LP 65; it was filed on behalf of Westinger, Altenburger and Wöhrstein. Patent 1183407 was sought on 7th January 1960 and granted in August 1965 to protect the safety system embodied in the recoilless Feinwerkbau guns. The designers are named as Karl Westinger, Ernst Altenburger and Ernst Trumpelmann. German Patent

1578289, sought by Edwin Wöhrstein on 18th August 1967 and accepted on 28th September 1972, protected an improved back sight for airguns. British Patent 981122, sought on 19th January 1962, and US Patent 3247836 of 1964 were amalgamations of most of the pre-1962 master patents sought in Germany. Protection was also sought in Belgium, France, India, Italy, Austria, Switzerland and Spain.

Westinger & Altenburger KG, 'Feinwerkbau'; Oberndorf am Neckar, Württemberg. This German engineering company was founded on 1st April 1949 by two ex →Mauser employees. After concentrating for some years on precision machinery, production of the first truly successful recoilless air rifles began. Developed in the 1950s, these were eventually protected by German Patent sought on 31st December 1959 and granted in July 1962. The patent specifications name the inventors as Ernst →Altenburger, Karl →Westinger and Ernst →Trümpelmann, additional information being found in the preceding entry. The resulting *Feinwerkbau LG 150* (essentially similar to the LG 100) appeared in January 1963 and immediately caused a sensation; during its production life, until December 1968, it swept away the bulk of its competition with the possible exception of the →Anschütz 250, and was a catalyst in the elevation of airgun shooting to major international sport. It was replaced by the LG 300 in May/June 1972. The success story continued unabated until the appearance of the Walther LGR in 1974. Once the Walther began to challenge the supremacy of the Feinwerkbau LG 300 series, Westinger & Altenburger admitted defeat and introduced their first single-stroke pneumatic rifle in 1984.

¶ The LP 65 recoilless pistol was introduced in November 1965, and the improved LP 80 in 1979; no gun, including the Walther LP 2 and LP 3, was able to loosen the hold of these weapons at international level until the Italian →Air Match and →FAS appeared in the mid 1980s. By the early 2000s, however, pre-charged pneumatics and the guns powered by carbon dioxide were generally favoured.

¶ Though target rifles have always been the cornerstone of Westinger & Altenburger's reputation, a spring-air sporting rifle was introduced in 1973 in response to demands from the U.S.A. Known universally as the 'Feinwerkbau Sport', this will also be found with the marks of leading distributors such as →Air Rifle Headquarters and →Beeman in the U.S.A. or →ASI in Britain. The runaway success of the airguns persuaded Westinger & Altenburger to produce a series of .22 rimfire target rifles. An entry has even been made into the replica shooting sport, with a modern version of the →Rogers & Spencer cap lock revolver. The influence of Westinger and Altenburger has spread world wide: the Korean →Yew Ha rifle, for example, was a shameless copy of the LG 300.

Westley Richards: see 'Westley →Richards'.

Westminster ['The...']. Found on shotgun ammunition loaded by the →Schultze Gunpowder Company, the cases and caps being supplied by →Eley Brothers.

- The name commemorates a district of London near Schultze's headquarters in Gresham Street, and was perpetuated by →Eley-Kynoch until 1940.
- Weston** William Weston; 7 Royal Colonnade and 7 New Road, Brighton, Sussex. This English provincial gunmaker occupied the same premises from 1825 until 1866, the street name changing in 1844. His marks have been reported on sporting guns and self cocking →pepperboxes dating from the 1850s.
- West Point** A brand name used in the USA by →Cotter & Co.
- Westro** ['The...']. A mark found on shotgun cartridges loaded in Britain by the →Cogschultze Ammunition & Powder Co. Ltd in 1911–14.
- Wetmore** William W. Wetmore of Lebanon, New Hampshire, and Windsor, Vermont, U.S.A., active from 1876 until 1895 or later, spent part of his career working for →Winchester. Relevant US 'magazine firearm' patents include 190264 of 1st May 1877 (assigned to T.G. →Bennett); 206202 of 23rd July 1878; 213538 of 25th March 1879 and 219886 of 23rd September 1879 (both assigned to the Winchester Repeating Arms Co.); 220734 of 21st October 1879 and 223,409 of 6th January 1880 (jointly with Joseph L. →Sweeney); 224366 of 10th February 1880 (with T.G. →Bennett); 310103 of 30th December 1884 (assigned to Winchester); and 548410 of 22nd October 1895 (also assigned to Winchester). U.S. Patent 223662 was granted on 20th January 1880 for an improved 'Firearm Lock'.
- Wettkampfkugel** Associated with a flat-head diablo pellet made in Germany by →Haendler & Natermann.
- wf** Found on German military small arms ammunition made in 1940–4 in the Kielce (Poland) factory of Hugo →Schneider AG.
- W&F** *monogram with both letters of equal dominance, 'F' superimposed on 'W'*. Correctly interpreted as 'F&W' (q.v.); used in the USA by →Forehand & Wadsworth.
- WFW** A mark found on U.S. military firearms and accessories. See 'W.F. →Wilbur'.
- WG or W.G.**, *sometimes encircled*. Found on revolvers, shotguns and sporting rifles made in Liège prior to the First World War by W. →Grah.
- wg** A code-mark was used by Hugo →Schneider AG of Altenburg in Thüringen on small-arms ammunition components made in Germany during the Second World War.
- WGÖ** *superimposition-type monogram, with the letter 'W' dominant, accompanied by STEYR in a banner*. Correctly read as 'ÖWG' (q.v.); associated with Österreichische Waffenfabriks-Gesellschaft.
- WGP** A mark associated with U.S. military firearms and accessories; see 'Walter G. →Penfield'.
- wh** Introduced in 1940, this code identified German small-arms ammunition components made in the Eisenach factory of Hugo →Schneider AG during the Second World War.
- WH** Found on U.S. military firearms and accessories. See 'Wescom →Hudgins'.
- W. & H.** A →Suicide Special revolver made by →Wesson & Harrington of

Worcester, Massachusetts, in the late nineteenth century.

Whaley's of North London Ltd; Hornsey Road, London N19. This gunsmithing company, founded in 1950, offered a greatly modified version of the Crosman pump-up pneumatic rifle, developed by Adam Whaley in 1978/9 (apparently in conjunction with Peter →Marshall) and marketed as the Whaley Crosman 761 XL Super.

What Cheer This brand name, derived from the name of a renowned rifle range, was used on →Peabody-Martini target rifles.

Wheeler Austin Kent Wheeler of Grand Rapids, Michigan, U.S.A., a 'Wholesale Merchant', was the partner of William Matthews →Butts in the →Rapid Rifle Company. Austin Wheeler was also co-patentee with Butts, William Henry Calkins and Charles Augustus Lindberg of a spring-air BB gun protected by British Patent 24688/98 of 1898. An otherwise comparable U.S. Patent, 614532 of 1898, merely credits Calkins & Lindberg (who may have been the actual designers).

Wheeler Charles Wheeler. A London-based gunmaker recorded at 41 Royal Street, Lambeth, in 1844–54.

Wheeler E.C. Wheeler, working from the American Civil War on into the 1880s, inspected and accepted a variety of firearms. They included →Springfield and →Ward-Burton single-shot rifles, →Spencer repeaters and →Remington →cap-lock revolvers, all marked 'ECW'. See also "U.S. arms inspectors' marks".

Wheeler Henry Wheeler was co-patentee with George →Fox of a shotgun with a laterally-pivoting breech: U.S. Patent 196749 of 6th November 1879. The guns were made by the →American Arms Company of Boston. Wheeler was also co-recipient with George →Fox of US Patent 422930 of 11th March 1890, granted to protect a firing system for a revolver.

Wheeler James Wheeler: see 'Marlin'.

Wheeler William Wheeler; Devizes, Wiltshire. This English country gunmaker traded successively from Little Brittox (1841–51), 4 Sidmouth Street (1854–9) and 56 New Park Street (1866). His marks have been found on sporting guns and →pepperboxes dating from the 1850s.

WHH Found on U.S. military firearms and accessories. See 'W.H. →Hayden'.

Whip pistols These uncommon weapons usually consist of nothing other than a short tubular barrel/breech assembly which can be detached from the body of the whip when required. Cap-lock and cartridge versions have been reported, and are normally fired by a combination of a retractable spring-loaded striker and a rocking bar or button trigger. Individual construction varies greatly. No gunmaker has yet been identified with specialisation in this particular endeavour, though many survivors seem to display Birmingham proof marks.

Whiscombe John Whiscombe of Birmingham, Warwickshire, was a British custom airgun maker operating on 'private' basis, renowned for double-cylinder airguns in which both chambers provide power (cf., →Giss system, where only one of the two is the 'power piston'). Some have been made by combining two BSA →Mercury actions, but Whiscombe progressed to design

- the JB-1 →Titan exchangeable-barrel pneumatic rifle. Announced in 1989, this was to be made in China until production problems apparently brought an otherwise promising project to a premature end.
- Whistler** A →Suicide Special revolver made by the →Hood Firearms Company of Norwich, Connecticut, USA, in the late nineteenth century.
- Whistler** Edward Whistler. A London silversmith, pawnbroker and 'Dealer in Guns & Pistols', Whistler appears to have begun trading on his own account in 1856, from No. 11 Strand, and then continued from 1875 as 'Edw. Whistler & Co.'. Trading finally ceased in 1957.
- Whitcomb** B.R. Whitcomb, using a 'BRW' mark, inspected and accepted weapons on behalf of the U.S. government at the end of the nineteenth century. See also "U.S. arms inspectors' marks".
- White** A.A. White, a government inspector working in the early 1900s, accepted arms and equipment marked 'AAW'. Sometimes mistakenly (?) identified as 'CAW', but this may actually be George White (below). See also "U.S. arms inspectors' marks".
- White** Edward White. A gunmaker listed in 1844–88 at 3 Worcester Street, Old Gravel Lane, London. He may then have died, at the age of 78.
- White** George A. White, using a 'GAW' mark, inspected and accepted ordnance stores on behalf of the U.S. Army in 1875. See also "U.S. arms inspectors' marks".
- White** H.P. White Laboratories Inc.: see 'Garand'.
- White** Henry D. White, a U.S. government inspector working at the end of the nineteenth century, accepted arms and equipment marked 'HDW'. See also "U.S. arms inspectors' marks".
- White** John White was co-designer with Willard →Ellis of the →Plant revolver, protected by U.S. Patents 24726 of 12th July 1859 and 39318 of 25th August 1863.
- White** Joseph Chester White was co-founder with Samuel Merrill of the →White-Merrill Arms Company, formed to promote the .45-calibre →White-Merrill pistol in the US Army trials of 1906–7. He was granted U.S. Patents 717958 (6th March 1903) to protect the original pistol—a delayed blowback depending on the interaction of the extended hammer with the bolt—and 888560 of 26th May 1908 to protect the finalised locked-breech gun, which dropped the barrel to release three circumferential lugs from the inside of the half-length slide and had a 'one-hand' cocking spur beneath the trigger guard. He subsequently became interested in automatic rifle design and continued work until the 1920s.
- White** Rollin C. White (1817–92) was patentee of a revolver with a bored-through cylinder, U.S. no. 12648 of 3rd April 1855. The idea had been previously occurred to Eli →Whitney, who had, however, omitted to make a specific claim for the chamber design. Rights were subsequently acquired by →Smith & Wesson, but White was left with the task of pursuing infringers. Eventually, he lost interest and retired from the firearms business and eventually

produced the White steam car.

White Rollin White Arms Company; Lowell, Massachusetts, U.S.A. →Smith & Wesson-type revolvers were made legitimately until the assets of the insolvent company were acquired by the →Lowell Arms Company and they were then regarded as transgressions.

White & Bates; Birmingham, Warwickshire. The marks of this English gunmaking business have been reported on self cocking →pepperboxes dating from the middle of the nineteenth century.

White House A name associated with a revolver sold in Belgium prior to c. 1910 by Ch. →Clément.

White Jacket A →Suicide Special revolver made by the →Hopkins & Allen Arms Company of Norwich, Connecticut, USA, in the late nineteenth century.

White-Merrill Arms Company, Boston, Massachusetts. This promotional agency was formed in 1905 to exploit patents granted to Samuel →Merrill and J. Chester →White. These protected a recoil-operated .45-calibre pistol.

White-Merrill pistol Entered in the US Army pistol trials of 1906–7, without success. One gun was submitted in 1906, marked PAT. APP'D FOR, and another, with a slide-retracting spur beneath the trigger guard, followed in 1907. Neither gun was sufficiently well-made to impress the testers, and the design had soon faded into obscurity.

White Star A →Suicide Special revolver made by the →Harrington & Richardson Arms Company of Worcester, Massachusetts, U.S.A., in the late nineteenth century. Probably named after the well-known Anglo-American shipping line.

Whitehead Thomas Whitehead. A gun lock maker operating from 115 Halfpaved Court, Dorset Street, London, in 1832–4; and then from 117 Dorset Street, Fleet Street, until 1852.

Whitehouse John E. Whitehouse & Son were gunmakers trading in Oakham, Rutland, in 1908–14 and probably later. John Whitehouse was responsible for the 'Whitehouse Patent Target Apparatus', and the business's marks have been reported on shotgun cartridges sold under the names →Quorn and →Rutland. They were probably loaded using components supplied by →Eley Bros. Ltd.

Whiteley Robert H.K. Whiteley, a captain in the U.S. Army, inspected a variety of firearms from the 1830s until the 1870s. They included single-shot →cap-lock pistols, →Sharps breechloading carbines, and cap-lock revolvers made by →Colt, →Savage and →Starr. All were marked 'RHKW'. See also "U.S. arms inspectors' marks".

Whiting Nathaniel Whiting, active on behalf of the Federal government during the early days of the American Civil War, accepted weapons marked 'NW'.

Whiting W.D. Whiting, a commander in the U.S. Navy, working shortly after the end of the Civil War, accepted barrels and components for the →Remington single-shot pistol. These were appropriately marked 'WDW'. See also "U.S. arms inspectors' marks".

Whiting William John Whiting. 'Bill' Whiting, as he was usually known, was responsible for many of the improvements made in the revolvers made first

by the →Webley & Scott Revolver & Arms Co. Ltd and then by its successor, Webley & Scott Ltd. The patents granted from 1886 and 1910 chart Whiting's rise from a 'Tool Maker' to 'Director of the Webley & Scott Revolver & Arms Company' in 1905. He designed the so-called →Webley-Whiting semi-automatic pistol and a selection of air guns, eventually rising to become works manager of the Birmingham factory. Among his patents were British no. 15802/00 of 1900, 7218/05 of 1905 and 4213/10 of 1910, all of which protected airguns. Whiting's home address was successively given as Sutton Coldfield, near Birmingham; Mona Terrace, Bracebridge Street, Aston juxta Birmingham (1888); 53 Douglas Road, Handsworth, and 153 Linwood Road, Birmingham.

Whitmore Andrew E. Whitmore; Iliion, New York State, and Boston, East Boston and Springfield, Massachusetts. Active from 1868 until the 1890s, Whitmore is best known as the designer of the earliest double-barrel hammer shotguns made by E. →Remington & Sons. These were protected by US Patents 117843 of 8th August 1871 and 122775 of 16th April 1872; pushing forward on the top lever withdrew a sliding bolt from engagement with lugs under the breech. He was also co-designer with William →Mason of the first hammerless shotguns made by Colt. Whitmore's other US Patents included 153509 of 28th July 1874; 238821 of 15th March 1881 (assigned to William H. →Davenport); 262521 of 8th August 1882; 282429 of 31st July 1883 (with Joseph →Tonks); 282941 of 7th August 1883; 386184 of 17th July 1888—all for 'breech loading firearms'—and 433262 of 29th July 1890 for a break down shotgun action. He was also granted U.S. Patents 185881 of 2nd January 1877, for a revolver, and 266245 of 17th October 1882 for a 'Firearm Lock'.

Whitmore Thomas Whitmore & Company. This English gunmaking business was listed at 24 Little Tower Street, London, in 1871.

Whitney Eli Whitney of Whitneyville, Connecticut, is regarded almost universally as one of the pioneers of series production by machinery. Whitney accepted a contract to make a thousand Colt →Walker revolvers in 1847.

Whitney Eli Whitney 'the Younger'. The co-designer, with Charles →Gerner and Frank →Tiesing, of the breech-loading shotgun protected by US Patent 93149 of 27th July 1869. The gun had a drop-barrel action operated by a lever ahead of the trigger guard.

Whitney Wallace Whitney, working for the Federal government towards the end of the Civil War, accepted Amoskeag-made →cap-lock rifle-muskets marked 'WW'. See also 'William →Walter' and "U.S. arms inspectors' marks".

Whitney Arms Company; New Haven, Connecticut, U.S.A. The earliest Whitney revolver was a crude brass-framed gun with a manually rotated cylinder. Eventually, Eli Whitney produced a ring trigger revolver protected by US Patent 11447 of 1st August 1854, with the frame made 'all in one piece, with a top bar, not only to strengthen the frame but also to serve as a foil with a comb of the hammer to strike against to prevent battering the cones [nipples]'. This was soon abandoned in favour of the so called →Walking Beam pattern patented by Foryce Beals in September 1856. After making

copies of the →Navy Colt, Whitney produced the .36 six chamber cap lock usually known as the Belt (or 'Navy') Revolver. Federal purchases during the Civil War amounted to 11,200 for the army, 5700 for the navy and 800 for the New Jersey State Militia. Total production approached 33,000. A few shotguns were made on the →Howard pattern action, and then on the better known →Phoenix (or 'Whitney Phoenix') design. Pinfire double-barrel shotguns were also made, before moving on to a centre-fire drop-barrel breech loader patented in 1869 by Eli →Whitney the Younger, Charles →Gerner and Frank →Tiesing. The first guns (1869–70) lacked the auxiliary guard for the barrel-release catch, but this was soon added. The Whitney was cheap, but not successful enough to stay in production after 1875. After making a range of cartridge rifles, the Whitney Arms Company was acquired in 1888 by →Winchester.

Whitneyville Armory A →Suicide Special revolver made by the →Whitney Arms Company in the late nineteenth century.

Whittier Otis Whittier; Enfield, New Hampshire, U.S.A. This gunmaker, active in 1829–42, patented a 'revolving firearm' on 30th May 1837 (US no. 216). A few guns of this type were completed as rifles or shotguns.

Whitworth & Co. Ltd First listed in 1866 at 28 Pall Mall, London SW, this business had become 'Joseph Whitworth & Company' by 1871. The London directory for 1879 lists it as 'Sir Joseph Whitworth & Co. Ltd', at 44 Chorlton Street, Manchester, and (from 1880 until 1887) at 24 Great George Street, London SW. The London office moved to 2 Victoria Mansions for 1888 only.

Whitworth Express Rifle, African Model. Made only in .375 H&H or .458 Winchester magnums, this →Interarms sporting rifle had an →Express sight and an English style stock. It was introduced in the mid 1970s.

WHL Found on U.S. military firearms and accessories. See 'W.H. →Lyndon'.

WHM *often in monogram form, accompanied by a rabbit and a corn-stook.* A trademark associated with William H. →Mark, found on shotgun ammunition and accessories sold in Britain.

WHM Found on U.S. military firearms and accessories. See 'W.H. →Morley'.

Wholesale Arms & Ammunition Trading Company ['The...']. A gun merchant operating from 40 St Andrew's Hill, London EC, in 1894–8.

WHR and WHS Marks found on U.S. military firearms and accessories. See 'William H. →Roberts' or 'William H. →Russell', and 'W.H. →Soderholm'.

Wicker C.H. Wicker, a government inspector, accepted firearms and equipment marked 'CHW' c. 1905. See also "U.S. arms inspectors' marks".

Wickliffe rifle This dropping-block designed, based on the →Stevens No. 442, was patented in 1978 by Triple S Development Co., Inc., of Wickliffe, Ohio. The Model 76 was announced in 1976 in standard and deluxe grades, chambered for cartridges ranging from .22 Hornet to .45–70, but production ceased in 1981.

Wide Awake →Suicide Special revolvers made in the U.S.A. by the →Forehand & Wadsworth Arms Company of Worcester, Massachusetts, and the →Hood

- Firearms Company of Norwich, Connecticut. They date from the late nineteenth century.
- Widmer** C. Widmer, Rorschacherstr. 52, Zürich? The name of this retailer of guns and ammunition has been reported on Einsteckläufe made for the Luger, as well as on Swiss sporting rifles.
- Wiegand** H. Wiegand; Mehli in Thüringen, Germany. Listed in 1914 as a gun-stock maker.
- Wiener Neustadt armoury:** see 'Mosin Nagant'.
- Wiener Waffenfabrik** This Viennese gunmaking company made the 6.35mm and 7.65mm →Little Tom pistols in accordance with the designs of Alois →Tomiška.
- Wiggett** J. Wiggett & Sons. An English gunmaking business trading from 74 Bath Street, Birmingham, Warwickshire, in 1881–2.
- Wilbraham** Joseph Wilbraham. Blanch, writing in *Arms & Explosives* in 1909, notes that this English gunmaker was listed variously in 1854–60 at 4 or 5 Pavilion Terrace, Battersea, London. However, Howard Blackmore, in *A Dictionary of London Gunmakers, 1650–1850*, places him at 280 Strand in 1851–4 and 404 Strand in 1854–6. The 'Blanch' address is probably Wilbraham's home; the Strand addresses were presumably his shop.
- Wilbur** W.F. Wilbur, working in 1905 as a government inspector, accepted military equipment marked 'WFW'. See also "U.S. arms inspectors' marks".
- Wilcox** Henry W. Wilcox inspected and accepted 1860- or army-pattern .44 →Colt →cap-lock revolvers during the American Civil War, marking them 'HWW'. See also "U.S. arms inspectors' marks".
- Wild** Hermann Wild. An employee of J.G. →Anschütz, inventor of hydraulic and pneumatic recoil suppressing systems.
- Wilder** John Wilder, using a 'JW' mark, inspected and accepted →cap-lock and breech-loading rifles acquired by the Federal Army during the Civil War and by the U.S. Army in the immediate post-war years. See also 'John →Williamson' and "U.S. arms inspectors' marks".
- Wildburger** Designer of the earliest metal-case ammunition to reach service in the Austro-Hungarian 'Common Army', for the 11mm →Werndl-Holub rifle. Weaknesses in the cartridge case and an unnecessarily large primer led to replacement by a →Roth-type case within a few years of introduction.
- Wildfowler** ['The...']. A mark found on 12-bore shotgun ammunition distributed by T.W. →Murray & Company of Cork; origins unknown (*Eley-Kynoch?).
- Wildfowler** A mark identifying shotgun cartridges loaded from →Eley-Kynoch components by T. →Page-Wod of Bristol. Perhaps also supplied elsewhere (e.g., to Ireland).
- Wilhelm** J. Wilhelm; Zella Mehli in Thüringen, Germany. Listed in the *Deutsches Reichs-Adressbuch* for 1930 as a master gunsmith.
- Wilhelm** O. Wilhelm; Zella Mehli in Thüringen. Listed in 1930 as a gun-barrel maker.
- Wilkes** John Wilkes, successor to gunmakers →Wilkes & Harriss in 1895,

continued to trade from 1 Lower James Street, London W, into the twentieth century.

Wilkes Joseph Wilkes of Birmingham, Warwickshire, was listed by Bailey & Nie in *English Gunmakers* successively at 4 New Summer Street (1846–54), Colmore Place (1855–8), Alma Street, Aston New Town (1859), and 1 Lench Street (1860–72). Wilkes made airguns until he moved from Alma Street, an address perpetuated by John Wilkes (brother?) until 1875.

Wilkes & Harriss This gunmaking partnership was trading from 1 Lower James Street, West London, in 1894. In 1895, however, it became 'John Wilkes' (above).

Wilkinson James Wilkinson & Son. Founded in Ludgate Hill, London, in 1818, this gunmaking business moved to 27 Pall Mall in 1829 and traded until 1889, when it became the →Wilkinson Sword Co. Ltd. London directories record additional premises at 18 St Mary Axe (1850–2), and "King's Road & Sydney Street, Chelsea" from 1888 onward. Wilkinson's marks have been found on a variety of sporting guns, including self cocking →pepperboxes dating from the middle of the nineteenth century.

Wilkinson Arms; Parma, Idaho, U.S.A.. Maker of the Diana automatic pistol in .22 and .25.

Wilkinson Arms Company A brand name found on shotguns handled in the U.S.A. prior to 1917 by the H. & D. →Folsom Arms Company, possibly imported from Europe.

Wilkinson Revolver Transformer: see 'Webley revolvers'.

Wilkinson Sword Co. Ltd ["The..."]. Formed c. 1889 by James Wilkinson & Son and German interests—Rudolf Kirschbaum of Weyersberg, Kirschbaum & Co. was one of the first directors—this business grew to become Britain's best known sword cutler. The business was also responsible for commissioning the →Webley-Wilkinson revolvers and also made the Revolver Transformer.

Will Bruno Will; Zella St Blasii and Zella Mehlis in Thüringen, Germany. Listed in 1914–20 as a gunmaker.

Will Julius Will; Zella St Blasii and Zella Mehlis in Thüringen. Listed in 1900–14 as a gun- and weapon-maker and wholesaler. Julius Will was the younger brother of Oskar Will; in 1925, his products were listed solely as airguns. Still listed in 1930–9, however, as a maker of guns and weapons.

Will Oskar Will; Zella St Blasii and Zella Mehlis in Thüringen. The operations of this German metalworking and gunmaking business began in Zella in 1844. Listed prior to 1914 as a gunmaker specialising in 'air-, target- and hunting guns, →Hirschfängern, hunting knives, etc. Ammunition. Complete shooting outfits', Oskar Will the Younger was one of the best known of the airgun makers active in Germany prior to 1914. Production included a vast number of crude bolt action *Mauser-Verschluss* ('Mauser action') airguns made, apparently, to the patents of Adalbert →Kempe, alongside barrel-cocking guns bearing model numbers in the 1700; work on these continued into Foss's days, as the Modell 1708 (a repeater based on the Mauser-Verschluss gun)

did not appear until 1932. Oskar Will was granted several new patents prior to the First World War, including British no. 12793/96 of 1896, for a break action airgun, and 22205/05 of 1905 for a modification of the basic design. His home address was given as '39a Kleine Bahnhofstrasse' in 1905, but had become 17 Kleine Bahnhofstrasse by 1912. Will was also responsible for cartridge weapons ranging from single-shot pistols to magazine rifles and double-barrel shotguns. However, the business was sold c. 1923 to Dipl. Ing. Wilhelm →Foss, who continued to trade until 1945 under the 'Venuswaffenwerk' banner. The 1925 edition of the *Deutsches Reichs-Adressbuch* lists Foss's specialties as airguns and shooting gallery equipment. A cursive form of the →Tell trademark (no. 337292) was registered in August 1925 to '→Venuswaffenwerk Oscar Will, Inhaber Wilh. Foss'.

Will & Köhler; Schmalkalden in Thüringen. Listed in 1925 as a maker of airguns, pistols and flare guns.

Willcox: see 'Johnsons & Willcox'.

Willen, Jones & Sons Ltd of Birmingham, Warwickshire, England, made magazines for the British 9mm →Sten Gun during the Second World War. The regional code 'M 136' may have been used instead of the company name. See also "British military manufacturers' marks".

Williams: see 'Townsend & Williams'

Williams Benjamin Williams; New York City, U.S.A. This inventor was granted U.S. Patent 150120 in April 1874 to protect his 'improvements in revolver design'. These were subsequently exploited by →Merwin, Hulbert & Co.

Williams David Marshall 'Marsh' Williams ['Carbine' Williams]. The cost of using .30 M1906 ammunition for training was realised long before the Second World War, and the U.S. Army had taken steps to develop barrel inserts as early as 1928. These, however, had not been successful and a suitable sub-calibre conversion was still being sought when, early in the 1930s, Williams approached the Ordnance Board with his patented floating-chamber system which had already proved its worth in several rifles and the Colt →Ace conversion. An efficient prototype was subsequently demonstrated to the Ordnance Board which, much impressed, made some examples of its own (as the T2) in 1935–6.

¶ Williams is best known, however, as the 'designer' of the →M1 Carbine—though only the short-stroke piston system was his work C and the American Press bestowed the nickname 'Carbine' on him.

Williams Frederick Williams was an English gunmaker listed at 32–33 Weaman Street, Birmingham, from 1893 until 1900 or later.

Williams Gunmaker Henry Williams began trading from 3 Little Prescot Street, London E, in 1854. He then moved to 10 Chamber Street in 1861, and was at 4 Wellclose Square by 1872. Business seems to have ceased about 1880.

Williams Isaiah Williams was a British patent agent; see also 'Michelsoni'.

Williams Ted Williams: a brand name associated with guns and sporting goods sold in the USA by →Sears, Roebuck & Company. See also 'J.C. →Higgins'.

- Williams** Walter Frederick Williams. This English gunmaker was the co-designer with Arthur Henry →Hill of the →Hill & Williams air rifle, protected by British Patents 25222/05 of 1905 and 19519/07 of 1907. The patent specifications record Williams' address as '82 Wills Street, Aston Manor, Warwickshire'.
- Williams & Powell** ran a gunmaking business from 25 South Castle Street, Liverpool, in 1881B92. Its marks have been reported on self-cocking →pepperboxes dating from the 1850s. See also 'Jeremiah →Patrick, Liverpool'.
- Williamson** David Williamson designed the →teat-fire cartridge chambered in the →Moore revolver, protected by a patent granted in the U.S.A. on 5th January 1864. Williamson also designed the combination extractor/cartridge retainer found on →Moore revolvers, protected by patents granted on 17th May and 5th June 1864. Another patent, granted on 2nd October 1866, protected a single shot convertible cartridge/cap-lock derringer.
- Williamson** E.A. Williamson inspected and accepted →Spencer carbines on behalf of the Federal government, marking them 'EAW'. They date from 1864–5 only.
- Williamson** John Williamson, a captain in the U.S. Army, inspected and accepted a variety of military stores prior to 1850. The items all bore 'JW'. See also 'John →Wilder' and "US arms inspectors' marks".
- Williamson** Robert Williamson. This English gunmaker was listed at 42 Prince's Street, Leicester Square, London, in 1865–6.
- Williamson** Thomas Williamson & Son[s] of Bridgnorth, Shropshire, made a 12-bore →Lefauchaux-type breech-loading pinfire shotgun entered by Mr Joyner in the trials undertaken by *The Field* in 1866. The business first entered the directories in 1797, trading from 'Back of Castle' Street in 1834, Waterloo Terrace (by 1841) and then High Street (by 1855). A branch was also maintained in Bull Ring, Ludlow, Shropshire, from the mid 1850s. The trading style became ' & Son'—sometimes listed in plural—some time after 1863.
- Williamson** William Williamson, a gunmaker based at 61 Gracechurch Street, London EC, in 1878–90, also maintained premises at 153 →Minories in 1879–84.
- Williamson Brothers** This gunmaking business retained as its London agent William J. Cummings of 4 Guildhall Chambers, 54 Basinghall Street, EC, in 1868. The directories record a move on the business's own account to 27 Finsbury Pavement in 1869, Cummings having been dismissed, and to 42 & 44A Cannon Street in 1872 or 1873. The trading style became 'Williamson & Company' in 1875, but operations seem to have ceased very shortly afterward.
- William Tell** Found on spring-and-piston airguns made in Zella-Mehlis by Oscar →Will and possibly also the →Venuswaffenwerke, then sold by →Clyde's Game & Gun Mart of Glasgow in the 1920s.
- Willison** Archibald G. Willison, trading as a gunmaker, was listed in 1873–4 at 9 Railway Approach, London Bridge.

Willoughby: see 'Nagy Willoughby'.

Wilmont Arms Company A name found on shotguns handled in the U.S.A. by the H. & D. →Folsom Arms Company, possibly imported from Europe.

Wilshire Arms Company A brand name associated with shotguns made by the →Crescent Gun Company of Norwich, Connecticut, prior to 1917. See also 'Wiltshire'.

Wilsker & Companie, 'Wischo KG'; Erlangen, Bavaria. The status of this business, trading from Dresdener Strasse in Erlangen in 2001, has been subject to some dispute. Smith credits it with the production of airguns during the 1950s, but the specifications and illustrations look so similar to those of →BSF products that Wilsker was probably acting simply as an export and distribution agency.

Wilson Found on a small 6.35mm semi-automatic pistol, undoubtedly made in Spain (most probably in Eibar) though individual guns customarily bear marks suggesting French or Belgian origins; the left side of the frame, for example, may display PISTOLET AUTOMATIQUE CAL. 6,35 WILSON PATENT – DEPOSÉ. The shallow slide reciprocates on rails cut on the inside of the frame (cf., →Vici), and a lenticular ejection port is cut through the right frame-wall.

Wilson Alfred Wilson. This English gunmaker was listed at 20 Little Alie Street, London E, from 1875 until 1887.

Wilson Archibald Wilson. An English gunmaker trading from 6 Princes Street, Drury Lane, London, in 1834–6; and then from 141 Drury Lane until 1850.

Wilson Charles E. Wilson, working for the Federal government during the Civil War, inspected weapons and equipment marked 'CEW'. See also "US arms inspectors' marks".

Wilson Edward Wilson; Bridge Street, Horncastle, Lincolnshire. Listed in 1861–8 variously as a maker of guns, archery equipment and fishing tackle, Wilson entered a 12-bore →Lefauchaux-type breechloading pinfire shotgun in *The Field* trials, 1866.

Wilson F.E. Wilson, sometimes listed as 'Willson', was a U.S. government inspector working in the early 1900s. He accepted arms and equipment marked 'FEW', but Wilson's work is, however, very difficult to distinguish from that of F.E. →Wyman. See also "US arms inspectors' marks".

Wilson Henry J. Wilson. A gunsmith (or possibly a gun-merchant) trading in 1888 from 134 Cheapside, London EC.

Wilson John Wilson is recorded as gunmaker of 6 Edward Street, York Road, King's Cross, in the London directories for 1856. He apparently began trading in Bishopsgate Street in 1841, but little else is known about this retailer or distributor or air canes, mentioned by Eldon Wolff.

Wilson Russell C. Wilson inspected and accepted .22 →High Standard pistols on behalf of the U.S. government in 1941, marking them 'RCW'. See also "US arms inspectors' marks".

Wilson Thomas Wilson & Company. This gunmaking business began operating in 1869 from 15 Cockspur Street, London SW. By 1870/1, it had moved to 2 East India Avenue, London EC, and 5 Lime Street. Appropriate marks have been

found on Snider rifles, Wilson being granted a one-tenth share of royalties after settling a patent infringement claim.

Wilson & Mathieson Ltd of Leeds, Yorkshire, made box- and drum magazines for the British .303 →Bren Gun during the Second World War, often marking them with 'N 90' instead of the company name. See also "British military manufacturers' marks".

Wiltshire Arms Company A name found on shotguns handled in the U.S.A. prior to the First World War by the H. & D. →Folsom Arms Company, but possibly imported from Europe. See also 'Wilshire'.

Winans Ross Winans (1796-1877) of Baltimore, Maryland, USA, was renowned as a maker of railway locomotives and rolling stock, first for the Baltimore & Ohio Railroad and then in partnership with Joseph Gillingham. He retired from railway work in 1860, but is said to have designed and built the so-called 'Confederate Steam Gun' in the early days of the American Civil War.

Winchester Oliver Fisher Winchester. Entrepreneur, one-time shirt manufacturer and founder of the Winchester Repeating Arms Company (below).

Winchester Repeating Arms Company; New Haven (1865–6, then 1873 to date) and Bridgeport (1866–73), Connecticut. This long-established firearms manufacturer was founded by Oliver Fisher Winchester in 1866, though it had existed as the →New Haven Arms Co. since 1857.

¶ Unfortunately, changes of ownership have not always been accompanied by improvements in fortune. Though Winchester had swallowed many rivals in the nineteenth century (→Burgess, →Fogerty, →Robinson and →Whitney among them), and had entered a partnership with the Western Cartridge Company, fortunes declined after the Olin Corporation took control. Olin eventually sold the business to the →US Repeating Rifle Company in 1983.

¶ Winchester rifles, important in hunting, sport and war, have been studied in great detail. Among the many books that have chronicled them—either together or individually—are *The Winchester Single-Shot Rifle* by John Campbell (Mowbray, 1995); *Winchester '73 & '76* by David F. Butler (Winchester Press, 1970); *Winchester 94. The First Hundred Years* by Robert C. Renneberg (Krause Publications, 1991); and *Winchester Slide-action Rifles* by Ned Schwing (two volumes, Krause publications, 1992 and 1993). Particularly good guides to the richness and diversity of the company's history are given by Harold Williamson, *Winchester. The Gun that Won the West* (Barnes, 1962), and Herbert G. House, *Winchester Repeating Arms Company* (Krause Publications, 1996). A handy list of individual rifle models will be found in John Walter, *Rifles of the World* (Krause Publications, third edition, 2005).

¶ Winchester maintained representation in Britain in the late nineteenth century, first from 54 King William Street (1884), and then from 118 Queen Victoria Street in 1884B7. The directories record a 'move' to 114 Queen Victoria Street in 1888, but this is suspected to have been the original office renumbered.

Winchester airguns The company's contribution to the history and distribution of the airgun remains no more than a flirtation with the importation of →Mayer & Gammelspacher →Diana guns in the 1973 period. These were given new model designations in the 300 or 400 series, and are still occasionally found in collections even though the quantities involved seem to have been small.

Winchester pistols The company was given a contract for 100,000 .45 M1911 →Colt-Browning pistols for the U.S. armed forces during the First World War. No guns are known to have been made, as the order was cancelled immediately after the 1918 Armistice.

Winchester rifles, auto-loading Blowback rifles designed by Thomas →Johnson in the early 1900s were very successful; the lineal successor to .22 rimfire M1903, the Model 63, remained in production until 1958. Centrefire guns were less popular, though seventy thousand of .351 M1907 rifles were made.

¶ The →M1 Carbine was a Winchester submission to the US Army in 1941, though only 828,060 of more than six million guns were made in New Haven. Large quantities of M1 →Garand (513,580, 1940-5) and M14 rifles (356,500, 1959-64) were also made.

Winchester rifles, bolt action If the lever-action Winchester can be said to have made and then perpetuated the company's fortunes, post-1945 success has been based equally on a variety of shotguns and the Model 70 bolt-action rifle. The latter owed its inception to the Model 54, developed in the early 1920s by a team headed by Thomas →Johnson, though the first bolt-action Winchester was a single-shot .22 M1900 rimfire patented by John →Browning in August 1899 (U.S. no. 632094) and a range of similar guns had been marketed prior to the First World War.

¶ The Model 54 was superseded in 1936 by the superb Model 70. Designed by Edwin Pugsley, Leroy Crockett, Albert Laudensack and a team of company engineers, the M70 has been made in a bewildering variety of styles (e.g., African, Alaskan, Featherweight, Varmint, Westerner) and, even though Winchester has changed hands several times during its lifetime, still spearheads the company's activities.

¶ However, major changes have been made during the life of the M70 and collectors now recognise three distinct pre-2000 patterns. Many details were changed in 1964, to reduce production costs, but the new guns were badly made and poorly finished. Though some of the changes were seen to be beneficial, a new variant appeared in 1968. This added a guide slot in the bolt-head, mating with a rib in the right side of the receiver, which restored the smooth stroke of pre-1964 guns.

¶ Like its immediate predecessors, this variant of the Model 70 has been made in a tremendous profusion of subvarieties, ranging from the *African Rifle* (.458 Winchester Magnum only, 1970-84), by way of the *Laredo Long-Range Hunter* (7mm Remington and .300 Winchester Magnum, 1996) to the *Win-Tuff Sporter* of 1992-5.

¶ Winchester has made military weapons, including British .303 P/14 →Enfields and their U.S. Army equivalent, the .30 M1917; 235,530 of the former and 465,980 of the latter had been made by 11th November 1918. About 300.000 1895-pattern lever-action rifles were delivered to Russia prior to 1917, and large numbers of .44–40 Model 1894 guns served the armed forces of Britain and France in the same.

Winchester rifles, lever action The success of the Winchester Repeating Arms Company was based on a lever-action rifle, the Model 1866 ‘Yellow Boy’, an adaptation of the 1860-patent →Henry rimfire rifle. The principal improvement was the receiver-side loading gate patented by Nelson A. King.

¶ The M1866 was superseded by the M1873, with a receiver of wrought-iron instead of bronze. The principal chambering was a centrefire .44–40, but the basic action remained a comparatively weak toggle-locked design. However, more than 720,000 guns had been made when work finally ceased c. 1924.

¶ Next came the M1876, based on patent granted to Luke Wheelock (U.S. no. 111500 of 31st January 1871), which had been embodied in a rifle submitted unsuccessfully to the US Army trials of 1872–3. The changes allowed long-case ammunition such as .40–60 and .50–95 WCF to be chambered in safety. Yet though sales were buoyant throughout the 1870s, the inability of the Winchesters to compete with single-shot →Sharps and →Remington buffalo-hunting and long-range target rifles seemed an insurmountable barrier.

¶ Salvation came in the form of John Browning, whose improved locking system, relying on a locking block that slid vertically in the receiver, was incorporated in the M1886 lever-action rifle. Introduced contemporaneously with the M1885 single-shot dropping-block rifle, adapted from a gun patented in October 1879 (U.S. no. 220271) by John →Browning, the new M1886 was a great success. Chamberings had ranged from .33 Winchester to .50–110 Express by the time work ceased in 1936. A similar locking mechanism was incorporated in the M1892 (short-case centrefire cartridges) and M1894 (long-case centrefire cartridges), production of the latter, which is still underway, far exceeding seven million.

¶ M1894 chamberings were initially restricted to .32–40, .38–55 and .44–40, though rounds as diverse as .219 Zipper and .32 Winchester Special have also been used. However, the most popular option has proved to be .30–30, introduced in 1895. Ejection changed from vertical to lateral with the advent of the M94 ‘Angle Eject’ in 1983, allowing optical sights to be mounted above the centreline of the receiver.

¶ Primarily intended as a military weapon, a guise in which it was notably unsuccessful excepting for ‘desperation sales’ to Russia during the First World War, the Model 1895 was a Browning design with a detachable box magazine beneath the receiver. It could chamber cartridges such as 7–57, .30–03, .30–06 and .303 British.

¶ Among other lever-action rifles have been a variety of guns introduced between the world wars, and the streamlined Model 88 (1955–73)—a

hammerless design handling cartridges ranging from .243 to .358 Winchester.

Winchester shotguns The first shotguns to bear Winchester's name were 'Model 1879' 10- or 12-bore hammer doubles bought in England, mostly from C.G. →Bonehill and W.C. →Scott & Sons. They were offered in grades ranging from de luxe 'Match Gun' to plain class 'D'. The first slide action shotgun was the 12-bore exposed-hammer *Model 1893*, designed by John M. →Browning. A tube magazine lay beneath the barrel. The M1893 was not particularly successful, and only 34,000 had been made when it was superseded by the *Model 1897* (12- or 16-bore). When work ceased in 1957, more than a million 1897-type guns had been made.

¶ The lever-action *Model 1887* was another John →Browning design, about 65,000 10- and 12-bore guns being made in 1887–1901 in a variety of patterns. The 10-bore *Model 1901* was little more than the 1887 pattern strengthened for smokeless ammunition. It was discontinued in 1919 after less than fourteen thousand had been made. The auto loading Winchester *Model 11* shotgun was the work of Thomas →Bennett, but only about 83,000 of this comparatively unsuccessful design had been made when work ceased in 1925; however, the *Model 12*, designed by Thomas C. →Johnson, proved to be outstandingly successful: nearly two million had been made when production ended in 1963.

Windage adjustment: see 'drift adjustment'.

Windsor Associated with Diana-type →Mayer & Grammelspacher spring-air guns sold in the 1920s by →Clyde's Game & Gun Mart of Glasgow. They appear to be identical with the →Clyde.

Winfield Arms Company Found, usually as 'Winfield Arms Co.', on →Suicide Special revolvers made by the →Crescent Arms Company of Norwich, Connecticut, U.S.A., in the late nineteenth century.

Winfield Arms Company A brand name associated with shotguns made in the U.S.A. prior to 1917 by the →Crescent Gun Company of Norwich, Connecticut.

Winkler Gunsmith Benedikt Winkler of Ferlach, Austria, made sporting rifles incorporating refurbished military →Mauser actions. Most rifles were fitted with a double set-trigger and a magazine floor-plate latch, and were often ornately decorated.

Winoca Company A brand name associated with shotguns made in the U.S.A. prior to the First World War by the →Crescent Gun Company of Norwich, Connecticut.

Winslow Arms Company ['The...'] of Camden, South Carolina, made a variety of →Mauser type sporting rifles in the U.S.A. from 1962 until the late 1980s. Customarily distinguished by the outlandish design of their stocks, the actions were purchased from →Fabrique Nationale and Zavodi →Crvena Zastava. See also 'Bushmaster' and 'Plainsmaster'.

Winter Gustav Winter & Co. of Suhl in Thüringen, Germany, according to 1920s directories, made hunting- and sporting guns, automatic pistols and munitions of all types—but was probably really little more than an agent, despite a claim to 'export to all countries'.

- Winton** [“The...’]. This mark will be found on shotgun cartridges sold by Howard →Davis of Winchester and his successor, B.E. Chaplin.
- Wirsing** A.F. Wirsing; Cincinnati, Ohio, U.S.A. A gunsmith working at 53 Sycamore Street between 1862 and 1865 (according to Gardner), and probably succeeded, possibly briefly, by the partnership of Wirsing and Schemann.
- Wirsing & Schemann;** Cincinnati, Ohio, U.S.A. Presumed to be a successor to the business of A.F. Wirsing (above), but probably short lived. New York-pattern spring-and-piston gallery guns were made and (distributed?) in 1865–70.
- Wirth & Companie;** Frankfurt am Main. These German ‘Patent Solicitors’ worked for Michael →Weber in connection with British Patent 3376/77 of 1877.
- Wischo** A German trademark and brand name used in 1955–80 by →Wilsker & Co. of Erlangen, the principal exporter of →BSF spring-and-piston airguns. It was often associated with guns sold in the U.S.A.
- Wissler Instrument Company;** St Louis, Missouri, USA. This manufacturer of levels, theodolites and other surveying equipment also made the →Benjamin airguns until Wissler died in 1926. The factory was then acquired by Aloys →Spack.
- Withers & Grant;** Rugby, Warwickshire. The marks of this English gunmaking business, probably founded c. 1855–8, have been reported on sporting guns and →pepperboxes dating from the 1850s.
- Witkop** M. Witkop. This government arms inspector, working c. 1910, accepted equipment for the U.S. Army marked ‘MW’. See also “US arms inspectors’ marks”.
- Witte** Otto Witte of Berlin was granted a German patent to protect improvements in air-pistol design, mentioned in *Die Waffenschmied* in 1883.
- Wittmann** K. Wittmann of Zella-Mehlis in Thüringen, Germany, was listed in 1930 as a master gunsmith.
- Witton** Applied to a brand of diablo airgun pellet made in Britain by →Kynoch Ltd of Witton, Birmingham.
- Witton** David William Witton, a merchant first listed in Fenchurch Street, London, c. 1812, was successively a partner in ‘Lacy & Witton’ (1815–33) and ‘Lacy & Reynolds’ (1837–52). When Lacy retired in 1852, Witton succeeded to the business, moving to 21 Great St Helen’s in 1854. By 1857, David William Witton and Thomas Wilson Witton were operating as ‘Witton Bros.’, from 21 Great St Helen’s and Dunning’s Alley, Bishopsgate Street Without, until 1869.
- Witton** Joseph Sergeant Witton. A gunmaker listed at 82 Old Broad Street in 1841–50, but subsequently a partner in →Witton & Daw. His marks have been found on sporting guns, →pepperboxes and cap-lock revolvers dating from the middle of the nineteenth century.
- Witton** Thomas Wilson Witton, and Witton Brothers: see ‘David William →Witton’.
- Witton Cast Steel Cannon & Small Arms Factory.** This agency was recorded in 1874–8 occupying offices at 23 Abchurch Lane, London EC. It is believed to be

- the 'Witten Company' of Witten an der Ruhr, Germany.
- Witton, Daw & Company** succeeded John Sergeant →Witton in 1851, trading from 57 Threadneedle Street, London EC, until 1853 and then as 'Witton & Daw' (at the same address) until 1860. The business then passed to George H. →Daw.
- Wittwer, Schemmer & Mahrholdt GmbH**, or 'Suhler Waffengesellschaft'; Suhl in Thüringen. This German gunmaking business advertised itself in the 1920s as sole agent in Germany for →Manufacture Liegéoise d'Armes à Feu, but does not seem to have survived for more than a few years. Owing to the absence of the company from the 1930 *Deutsches Reichs-Adressbuch*, it is assumed that the onset in 1929 of the Great Depression had already accounted for it.
- Wizard** ['The...']. Associated with shotgun ammunition, perhaps emanating from Belgium or Germany, distributed by James →Matthews of Ballymena. See also 'Hawk', 'Kingfisher', 'Swift'.
- wj** Used by Hugo →Schneider AG of Oberweissbach on German military small-arms ammunition components made after 1940.
- WJH and WJO** Marks used on U.S. military firearms and accessories by W.J. →Hines and W.J. →Ober respectively.
- wk** Found on German military small-arms ammunition components made in the Schlieben factory of Hugo →Schneider AG. The mark dates from 1940.
- WK** Used on U.S. military firearms and accessories by William →Kennedy.
- WL or W.L.** Found on components for the British No. 4 →Lee Enfield rifle made during the Second World War by →Wilkinsons Ltd. This company was also allocated the area code 'N85', but often used its initials instead.
- WLAR**, 'Winchester Light Weight Military Rifle'. This was a .224-calibre automatic rifle created for the →Winchester Repeating Arms Co. by Ralph →Clarkson to challenge the →ArmaLite AR 15 in 1958–9. Only a few guns were made, as the ArmaLite was preferred.
- WLJ** *superimposition-type monogram, with 'L' and 'J' on the arms of the dominant 'W'*. Correctly read as 'LJW' (q.v.); used by L. & J. →Warnant Frères of Hognée.
- WLM** Found on components for the No. 4 →Lee Enfield rifle made in Britain during the Second World War by →Walls Ltd. This company was also allocated the area code 'M260', but often used its initials instead.
- WM** *monogram, possibly to be read 'MW'*. A trademark associated with the products of →Patronen-Hülsen Fabriken Bitschweiler. Its significance remains unknown.
- WM** *superimposition-type 'WM' monogram with both letters equally prominent, usually on a shield*. Found on the grips of pistols and the butt plates of sporting rifles made by →Waffenfabrik Mauser AG, generally prior to 1909. It was replaced by the better-known 'banner' trademark.
- wm** This post-1940 marking was applied by Hugo →Schneider AG of Dermbach in Thüringen to small-arms ammunition components made for the German armed forces.
- WM** Found on U.S. military firearms and accessories. See 'William

→Maynardier’.

WMH monogram. Correctly read as ‘WHM’, found on sporting guns and shotgun ammunition. See ‘William H. →Mark’.

WMM A mark used on US military firearms and accessories by W.M. →Mills.

Wm. Tell or William Tell A →Suicide Special revolver made by the →Lee Arms Company of Wilkes Barre, Pennsylvania, USA, in the late nineteenth century.

WN and WNJ Used on U.S. military firearms and accessories by Walter →North and W.N. →Jeffers respectively.

WÖG *superimposition-type monogram, with ‘W’ dominant, accompanied by STEYR in a banner.* Correctly ‘ÖWG’ (q.v.); associated with Österreichische Waffenfabriks-Gesellschaft.

Wolf A brand name found on shotgun cartridges made in Germany by →Wolff & Co. of Walsrode prior to 1911.

Wolf Adalbert Wolf of Zella-Mehlis in Thüringen, Germany, was listed in 1939 as a master gunsmith.

Wolf Alb. Wolf; Suhl in Thüringen. Listed as a gunsmith in 1930 and 1939. Possibly the son of (and successor to) Alb. Wilh. Wolf, below.

Wolf Albert Wilhelm Wolf; Suhl in Thüringen. Listed as a gunmaker immediately after the end of the First World War, though operations may have failed by 1925. Possibly the son of Julius Wolf, below.

Wolf Ernst, Max & Otto Wolf; Zella Mehlis in Thüringen, Germany. Listed in 1939 as specialist gun-stock makers.

Wolf Ewald Wolf; Suhl in Thüringen, Germany. A gunsmith trading in 1939.

Wolf Fritz Wolf; Zella Mehlis in Thüringen, Germany. Working in 1930 as a gun-stock maker.

Wolf Fritz Wolf, Rob. Sohn; Zella Mehlis in Thüringen. Listed in 1939 as a gun-stock maker.

Wolf Julius Wolf; Zella St Blasii and Zella-Mehlis in Thüringen. Founded in 1879, this gunmaking workshop seems to have disappeared by the beginning of the First World War.

Wolf R. Wolf; Zella Mehlis in Thüringen, Germany. Listed in 1920 as a gun-stock maker.

Wolff J. Wolff; Zella Mehlis in Thüringen, Germany. Listed in 1930 as a master gunsmith.

Wolff & Company This ammunition-making business was responsible for shotgun cartridges marketed in Germany prior to 1911, under the names →Sonnenmarke and →Wolf.

Wolff & Anschütz; Zella-Mehlis. Founded immediately after the end of the First World War, this gun- and tool-distributing partnership had soon failed. Few other details are known.

Wolloms & Company were gunmakers, operating from premises at 239 Tottenham Court Road, London, in 1867–72.

Wolverine Arms Company A brand name associated with shotguns made prior to 1917 by the →Crescent Gun Company of Norwich, Connecticut, U.S.A.

- Wonder** A →Suicide Special revolver made by the →Hopkins & Allen Arms Company of Norwich, Connecticut, U.S.A., in the late nineteenth century.
- Wonder** A short-body airgun pellet made in Britain by →Cox & Son of Aston, Birmingham, with a medial waist.
- Wood:** see also 'Woods'.
- Wood** Edson L. Wood, a government arms inspector, accepted .45 M1911A1 pistols made by →Colt's Patent Fire Arms Mfg Co. Dating from 1940, they bear 'ELW' markings. See also 'E.L. →Wunler' and "U.S. arms inspectors' marks".
- Wood** J. Wood; 194 School Hill, High Street, Lewes, Sussex. This English provincial gunmaker was listed in Lewes directories in 1850, but had been superseded by his widow Ann by 1858. His marks have been reported on →pepperboxes.
- Wood** J.A. Wood, a government inspector, accepted firearms and accoutrements in the 1870s, though his 'JAW' mark may be difficult to distinguish from a similar stamping applied thirty years later by J.A. →Woodward. See also "U.S. arms inspectors' marks@.
- Wood** John & William Wood; 79 Market Street and 74 King Street, Manchester, Lancashire (1844-55). The marks of this English gunmaking partnership have been reported on →pepperboxes.
- Wood** Joseph Wood; Spurrier Gate, York, England. This name has been found on sporting guns and self cocking →pepperboxes. The business was founded by Joseph Wood the Elder prior to 1815, became 'Joseph Wood & Son' in 1828-9, and was run by Joseph Wood the Younger from about 1850 to 1867 or later.
- Wood** Stephen W. Wood was responsible for the break-open revolver made by the →Connecticut Arms Company, protected by U.S. Patents granted on 1st March 1864 and 16th January 1866. He also developed revolvers experimentally for the →Winchester Repeating Arms Company.
- Wood** William S. Wood, using a 'WSW' mark, inspected and accepted firearms on behalf of the Federal army during the American Civil War. See also "U.S. arms inspectors' marks".
- Woodbury** J.G. Woodbury, a government arms inspector working in the early 1900s, accepted weapons marked 'JGW'. See also "US arms inspectors' marks".
- Woodcock** ["The..."]. A mark used on shotgun cartridges made in the U.S.A. by the →Chamberlain Cartridge Company of Cleveland, Ohio.
- Woodman** Charles Woodman inspected and accepted .45 →Schofield →Smith & Wesson revolvers on behalf of the U.S. government in the mid 1870s, marking them 'CW'. See also "U.S. arms inspectors' marks".
- Woods:** see also 'Wood'.
- Woods** Alfred Woods was an English gunmaker, occupying premises at 3 Waterloo Road, London SE, in 1890.
- Woods** The gunmaking business of Edmund Woods & Son, first encountered in the London directories in 1864 trading from 36 Bow Street, WC, had become simply 'Edmund Woods' by 1871. Additional premises were used at 38 Lime

Street, EC, and 46 Waterloo Road, SE, and 38 Russell Street, WC, until 1881. 46 Waterloo Road was then used alone until 1889, and, lastly, 68 Waterloo Road in 1890–1.

Woods Leonard Woods of St Louis, Missouri, patented a single-shot ‘watch gun’ on 16th September 1913 (U.S. no. 1073312). This contained a single central barrel—masquerading as the winder stem—and had a simple hammer mechanism. It was loaded by unscrewing the barrel, then fired by pressing back the slider above the barrel to activate the hammer. Woods subsequently produced a repeating .22 Short rimfire version (patented in the U.S.A. in August 1915) with a seven-shot cylinder, but there is no evidence that it was ever made in quantity.

Woodsman Made by Colt’s Patent Fire Arms Mfg Co., from 1915 until c. 1943, though the ‘Woodsman’ name was adopted only in 1927, this target/sporting pistol was designed by John →Browning; a similar series of pistols was made in Belgium after the end of the Second World War by →Fabrique Nationale d’Armes de Guerre.

¶ Characterised by a raked grip, a fixed barrel and a half-length reciprocating slide, Colt-made guns were chambered only for the .22 LR rimfire cartridge. Total production has been estimated as 690,000 Woodsman pistols of all types. About 54,000 ‘pre-1927’ guns were made, initially with ultra-slender barrels. They were followed by the first named series, 112,000 being made prior to 1948, when a slide stop and a hold-open were added, the butt-heel magazine release became a push-button, and plastic grips replaced wood.

¶ After another 146,000 guns had been made, Colt reverted in 1955 to the butt-heel magazine catch that lasted until work ended in 1977. Most of the guns made after 1960 had walnut grips. The *Sport model*, introduced in 1933, allied a 4.5in barrel with fixed sights; the *Target version* had a 6.5in barrel and adjustable sights.

¶ The *Woodsman Match Target*, made c. 1938–44, was easily recognised by a slab-sided 6.5in barrel milled from bar stock and a one-piece walnut grip. The trigger mechanism was finished by hand, but production, owing to high price in a depressed market, was never large. Guns purchased by the U.S. armed forces during the Second World War customarily had elongated plastic grips and ordnance inspectors’ marks.

Woodstock or Wood Stock A lever-action spring-and-piston BB gun made in the U.S.A. by →Daisy Mfg Co., with a wooden stock instead of synthetic patterns customarily associated with guns of this type and age.

Woodward James Woodward & Sons. This gunmaking business was formed by the dissolution in 1872 of a 1843-vintage partnership of Charles Moore and James Woodward, beginning work from 64 St James’s Street, London. Trading was still underway when the First World War began.

Woodward J.A. Woodward, using a ‘JAW’ marking, accepted guns and equipment for the U.S. Army in the early 1900s. See also ‘J.A. →Wood’ and “U.S. arms inspectors’ marks”.

Woodgate Herbert Ferdinand Woodgate, an officer in the South Wales Borderers, was the co-designer with William →Griffiths of the →Griffiths & Woodgate rifle. This was the subject of British Patents 21282/91 of 5th December 1891 and 16730/92 of 19th September 1892, but Woodgate subsequently received 20792/94 of 30th October 1894 (in his own name) to protect an improved turning-bolt recoil-operated rifle.

Woodsmaster A name given to several rifles made by →Remington-UMC and the →Remington Arms Company. The *Model 81A Woodsmaster* was an auto-loader made in accordance with patents granted to John →Browning, introduced in 1936 to replace the Model 8A. It chambered .300 Savage cartridges in addition to Remington's proprietary ammunition, and was eventually superseded by the Model 740 in 1950. The *Model 740A Woodsmaster*, made in huge numbers in 1952–63, was a gas-operated replacement for the Model 81A relying on lugs on the rotating bolt locking into the barrel extension. Chamberings were restricted initially to .30–06 or .308 Winchester, but .280 Remington was added in 1957. The *Model 740ADL* (1955–63) was a deluxe version with chequering on the pistol grip and fore end; the 740BDL offered select grade woodwork and a special squared-back receiver. The *Model 742A Woodsmaster*, dating from 1960–80, was an improved 740A chambering cartridges ranging from .243 Winchester to .30–06. It could be identified by its decorative →skip-line chequering, with a fleur de lys border on the butt and foliate edging on the fore-end. The *Model 742ADL* had hand-cut chequering and better woodwork; the *Model 742BDL* had basket-weave checkering and a Monte Carlo butt; and the *Model 742 carbine* of 1962–80, made only in .30–06 or .308, had an appropriately shortened barrel. The Model 742D →*Peerless* and 742F →*Premier* rifles (1961–80) had scroll engraving and gold-inlaid game scenes respectively.

Woodworth A.L. Woodworth, a government arms inspector, working from 1905 until the early 1930s, accepted .38 →Colt revolvers and other military stores identified with the stamping 'ALW'. See also "U.S. arms inspectors' marks".

Woody George A. Woody, lieutenant-colonel in the U.S. Army Ordnance Corps, accepted .45 M1911A1 →Colt-Browning pistols in the mid 1930s. They were customarily marked 'GAW'. See also "U.S. arms inspectors' marks". Woody is also known for the design of a trigger fitted on →Springfield-type International Match Rifles.

Worcester Metallic Cartridge Company; Worcester, Massachusetts. A short-lived ammunition making-business, founded to capitalise on the American Civil War but unable to withstand competition during the succeeding peace.

Worden G.E. Worden. This government inspector, working in 1905, accepted arms and equipment marked 'GEW'. See also "U.S. arms inspectors' marks".

Worsley Samuel L. Worsley, a Federal government arms inspector working during the Civil War, accepted the guns marked 'SLW'. See also "U.S. arms inspectors' marks".

Worthington Arms Company A brand name associated with shotguns made

- prior to 1917 by the →Crescent Gun Company of Norwich, Connecticut, U.S.A.
- Wotkyns** G.L. Wotkyns, a U.S. Army officer, inspected and accepted →Colt pistols in the mid 1920s. They were marked 'GLW'. See also "US arms inspectors' marks".
- WP** *monogram, usually in an oval.* A private proof mark used by the →Winchester Repeating Arms Company.
- WP** Found on U.S. military firearms and accessories. See 'William →Page', 'William →Prince'.
- WPP and WPT** Marks found on U.S. military firearms and accessories inspected by W.P. →Pulcifer and William P. →Taylor.
- W.R.A. Co. or W R A CO** Found on the products of the →Winchester Repeating Arms Co. of New Haven, including cartridge →headstamps from c. 1884 until the merger with the →Western Cartridge Company occurred.
- Wrage** Hans Wrage & Co. GmbH; Hamburg. Distributor of the →Alpina air pistols in 1968–76.
- WR & Co.** Associated with Westley →Richards & Co. of Birmingham, Warwickshire.
- Wright** Arthur C. Wright of Worcester, Massachusetts, was the patentee of a 'firearm', U.S. no. 625009 of 16th May 1899. This was apparently a feature of a revolver made by →Harrington & Richardson.
- Wright** Charles Wright; Barnsley, Yorkshire. The marks of this English gunmaker have been reported on self-cocking →pepperboxes dating from the middle of the nineteenth century.
- Wright** Charles Wright or 'Charles Wright & Company': a gunmaker recorded in London in the 1841 census at Gloster Buildings, St Georges, but operating from 1 Fenchurch Street, London EC, in 1853–8 and at 376 Strand in 1859–62.
- Wright** G.E. Wright & Company. An English gunmaking business to be found at 9 & 11 Wilson Street, London EC, from 1900 until the First World War or later.
- Wright** George Wright, an arms inspector working in the early 1850s, accepted single-shot →cap-lock pistols for the US Army. Marked 'GW', they can be distinguished from the work of George →Wells by the absence of navy marks. See also "U.S. arms inspectors' marks".
- Wright** James Wright. A gunsmith trading from 9 Castle Court, Berners Street, London W, in 1881–5.
- Wright** Sheffield H. Wright, working at the behest of the Federal government, inspected and accepted →cap-lock rifle-muskets during the American Civil War. They were stamped 'SHW'. See also "U.S. arms inspectors' marks".
- Wrist:** see 'butt'.
- WRS** Used on U.S. military firearms and accessories by W.R. →Shipley.
- WS** *superimposition-type monogram, with neither letter dominant.* Found on 'grip-trigger' semi-automatic pistols made in Belgium prior to 1914, allegedly by →Charlier et Cie of Liège. See also 'Wegria-Charlier'.
- W&S or W. & S.** *often cursive, accompanied by a winged-bullet trademark.* Associated with the products of →Webley & Scott Ltd of Birmingham, England.

- WS** *superimposition-type monogram, with the letter 'S' slightly dominant.* Found on a →Smith & Wesson-type break-open revolver made in Spain or possibly Belgium prior to 1914. Significance unknown.
- WS** Found as 'WS' on U.S. military firearms and accessories. See 'W. →Syrett'.
- WSS** *superimposition-type monogram with 'W' placed centrally on two overlapping letters 'S'.* Correctly 'SSW' (q.v.); used by →Steyr-Solothurn Waffen AG.
- WSW** Found on U.S. military firearms and accessories. See 'William S. →Wood'.
- WT** Associated with U.S. military firearms and accessories. See 'William →Turnbull'.
- WTM:** see 'Westentaschenmodell'.
- WTP:** see 'Westentaschenpistole'.
- Wunler** E.L. Wunler, working on behalf of the U.S. Navy, inspected and accepted .38 →Colt revolvers in 1903; they were marked 'ELW'. The date and style of the guns distinguishes them from .45 Colt pistols accepted many years later by Edson L. →Wood. See also "U.S. arms inspectors' marks".
- Würthrich** Gunsmith W. Würthrich of Lützelflüh, Switzerland, specialising in re-creations of the →Heeren action marketed from 1977 onward in a variety of chamberings. The guns have a special extractor, patented in Switzerland (no. 458125) to overcome one of the perceived weaknesses of the Heeren prototypes.
- Württembergische Metallwarenfabrik:** see 'Haenel'.
- Würz** Hugo Würz; Suhl in Thüringen, Germany. Operating in the late 1930s as a gunsmith.
- Würzinger** This experimental Austrian breech-loading rifle was submitted to the Austro-Hungarian rifle trials of 1866 where it competed against the American →Peabody and →Remington rolling-block rifles. It was eliminated in testing undertaken at the end of September 1866.
- Wüst** Ernst Wüst; Vacha. Listed in Germany in 1941 as a retailer of sporting guns and ammunition.
- WW** A mark found (usually as 'WBW') in the headstamps of cartridges made by the Winchester Western Division of Olin Corporation. See 'Western Cartridge Company' and 'Winchester Repeating Arms Company'.
- WW** Found on U.S. military firearms and accessories. See 'William →Walter', 'Wallace →Whitney'.
- WWF** *linear monogram with a small 'W' above a large 'W', with the tail of the latter forming the stem of 'F'.* Found on the grips of →Little Tom pistols made by →Wiener Waffenfabrik.
- WWG** or **W.W.G.**, *often with an encircled elephant.* A trademark associated with W.W. →Greener Ltd of Birmingham. It will be found on a range of products from bayonets to shotguns. It will also be found on rimfire conversions of .303 Lee Enfield rifles made by W.W. →Greener Ltd of Birmingham in 1918–19, and also on components for the No. 4 →Lee Enfield rifle made during the Second World War. Greener was allocated the area code 'M94', but often used initials instead.

- WWK** Found on M1889 Colt revolvers accepted for service in the U.S. Navy in the early 1890s. See 'W.W. →Kimball'.
- WWS** Associated with marks applied to U.S. military firearms and accessories by W.W. →Street.
- Wyatt** Kenneth W. Wyatt. The designer, jointly with Elmer R. →Imthurn, of the .45 Wyatt-Imthurn Target Luger pistol protected by U.S. Patent 3039366 of 14th December 1959. The patent was assigned to the →Cascade Cartridge Company, but only about fifty guns were made. The fixed magazine was loaded through the top of the open action.
- Wyatt** William Wyatt; Romsey, Hampshire. The marks of this English gunmaker have been found on self cocking →pepperboxes dating from the 1850s.
- Wyatt-Imthurn Target Luger:** see 'Kenneth L. Wyatt', above.
- Wyman** F.E. Wyman, a government arms inspector working in 1909–10 only, accepted →Colt revolvers marked 'FEW'. See also 'F.E. →Wilson' and "U.S. arms inspectors' marks".
- Wyoming Saddle Gun** This name has been given to half-stock carbines embodying a Sharps action modified by gunsmith Frank →Freund of Cheyenne, Wyoming. A few hand-made 'Freund Sharps' actions, with notably elongated flat side receivers, were made before the project was abandoned in the early 1880s.

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THE DIRECTORY: X-XXX STANDARD

Last update: May 2018

- X** *beneath a crown, above a number.* A mark applied by an inspector working in the →London Small Arms Co. Ltd factory. See also “British military inspectors’ marks”.
- xa** Found on German small-arms ammunition components made in the Second World War by →Busch Jaeger, Lüdenscheider Metallwerke AG, of Lüdenscheid in Westfalen.
- Xcelsior:** see ‘Excelsior’.
- X.L.** [‘The...’]. Found on shotgun cartridges sold in England by →Gale of Barnstaple and →Leech & Sons of Chelmsford.
- XL or X.L.** A brand name used by →Hopkins & Allen of Norwich, Connecticut, U.S.A., on →Suicide Specials introduced in 1871–5: .22 XL No. 1, .32 Short No. 2, .32 Short No. 22, .32 Long No. 3, .38 Short No. 4, .38 Long No. 5, .38 No. 6, and .41 No. 7. Excepting the .38 No. 6, which fired centre fire ammunition, the guns were all rimfires; and, apart from the seven chamber No. 1, virtually all of the guns were five shot.
- XL or X.L.** A single-shot cartridge derringer, based on the →Thuer patent Colt No. 3, made by →Hopkins & Allen of Norwich and their successors, →Forehand & Wadsworth, until the late 1880s.
- XL or X.L.** A single-shot cartridge derringer, based on the →Thuer patent Colt No. 3, made by John →Marlin of New Haven, Connecticut, U.S.A..
- XL** Found in the →headstamps of ‘Extra Long [Range]’ ammunition made in the U.S.A. by the →Federal Cartridge Company.
- XL DA or X.L.D.A.** These double-action revolvers were made in the U.S.A. in the 1880s by →Hopkins & Allen, with trigger guards and folding spur hammers. They included .32 Short XL DA No. 3, .32 or .38 XL DA No. 6, and the .32 or .38 XL Bulldog. The five-shot No. 3 DA chambered rimfire ammunition, the others were six-shot centrefire.
- X Pert** A brand name associated with →Suicide Special revolvers made by the →Hopkins & Allen Arms Company of Norwich, Connecticut, USA, in the late nineteenth century.
- XR or X-R** Marks found in the →headstamps of ‘Xtra Range’ rimfire cartridges made for →Sears, Roebuck & Company.
- XXX Standard** A →Suicide Special revolver made by the →Marlin Fire Arms Company of New Haven, Connecticut, U.S.A., in the late nineteenth century.

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THE DIRECTORY: Y-YOUNG AMERICAN

Last update: May 2018

- y** Associated with small-arms components made under contract to the German armed forces during the Second World War by the Nagytetyeny subsidiary of the Hungarian state munitions factory: 'Jagdpatronen-, Zündhütchen- und Metallwarenfabrik AG, Budapest'.
- Y** Found on U.S. military firearms and accessories. See 'Jonathan →Young'.
- ya** This mark was allocated early in 1940 to Sächsische Metallwarenfabrik August →Wellner Söhne AG of Aue/Sachsen, for use on small-arms ammunition.
- YakB** The four-barrel powered machine-gun developed in the USSR by Yakushev and →Borzov.
- Ybarzabal**; Eibar, Spain. Active in the middle of the nineteenth century, this gunmaker was responsible for large quantities of cap-lock rifle-muskets. Many were subsequently fitted with →Berdan-type breech-loading conversion units.
- Ydeal** A mark found on the grips of Czechoslovakian →Ideal pistols, probably made in Spain. See also 'Singer'.
- Ydeal** A small Spanish 6.35mm or 7.65mm Browning type automatic pistol made in Eibar by Francisco →Arizmendi; six rounds, striker fired.
- Ye Bishop's Gate**: see 'Charles →Riggs & Company'.
- Yellow Seal** Associated with shotgun ammunition made in Birmingham in the →Mullerite Cartridge Works. The name refers to the colour of the case-crimp disc. See also 'Green Seal', 'Grey Seal', 'Red Seal'.
- Yellow Wizard** ['The...']. Found on shotgun cartridges made in Britain by Frank →Dyke & Co. of London.
- Yeoman** ['The...']. Found on shotgun cartridges loaded in Britain by the →Schultze Gunpowder Company, apparently often on the basis of components supplied by →Eley Brothers. The mark was used by →Eley-Kynoch until the Second World War began.
- Yeomans** Horace Yeomans [& Company]. This gunmaking business is believed to have been formed by the son of J. Yeomans, below, trading from 42 Great Tower Street, London E, in 1865 and 35 Upper East Smithfield from 1866 until 1870.
- Yeomans** J. Yeomans & Son, an English gunmaker first listed in 1837 at 67 Chamber Street, London E, died in 1851; and so the entries for 1853-6 list 'Mrs Elizabeth Yeomans' at Tenter Street West and then 'Elizabeth Yeomans & Son' until 1864. Additional premises at 7 Mildred's Court, Poultry, were listed in 1864 only. Business was thereafter continued by 'Horace Yeomans & Company', above.
- Yew Ha**; Republic of Korea. This mark, which may be the manufacturer's name, may be found on a pneumatic shotgun known as the 'Model Triple B

Dynamite' and a recoilless rifle copied from the Feinwerkbau 300 series.

Yokosuka navy arsenal: see 'Arisaka', 'Garand'.

You Bet A →Suicide Special revolver made in the U.S.A. by the →Hopkins & Allen Arms Company of Norwich, Connecticut, in the late nineteenth century.

Young D. Young & Company. This patent agency occupied chambers at 11 & 12 Southampton Buildings, London WC, when it acted for John Miller →Epensheid in connection with British Patent 21235/02 of 1902; a sub-agent named George Harrison was also involved in the work, presumably one of Young's employees.

Young Jonathan Young, a gunner in the U.S. Navy, accepted →Whitney →cap-lock revolvers in the years immediately prior to the American Civil War. They were marked 'Y' or 'JY'. See also "U.S. arms inspectors' marks".

Young America Made by J.P. →Lindsay, this U.S. cap-lock pistol contained two charges, one on top of the other, which were to be fired from a single barrel by two hammers.

Young America A name given to a small-double action .22- or .32-calibre revolver offered by →Harrington & Richardson of Worcester, Massachusetts, U.S.A., sometimes with a spurless 'Safety Hammer'.

Young America Bulldog This was a five-shot .32-calibre →Harrington & Richardson revolver with a two-inch barrel, made from the 1890s until 1908 or later.

Young American: see 'Young America'.

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THE DIRECTORY: Z-ZVP

Last update: May 2018

- Z** *within a concentric-circle motif representing a rifled barrel.* A trademark found on pistols, rifles and machine-guns made by →Ceskoslovenska Zbrojovka of Brno and its successor, →Zbrojovka Brno.
- z** Associated with small-arms ammunition made under German supervision by Waffenwerke Brünn AG of Povaska Bystrica during the Second World War.
- Zabala Hermanos SA** of Eibar, Guipuzcoa, Spain, is known to have made sporting and target spring-and-piston airguns.
- Zacharie**; Rue de l’Huerton 4, Saint Étienne, France. Listed in 1892 as a distributor of and agent for arms and ammunition.
- Zacharie aîné**; place Chavanelle 23, Saint Étienne, France. Listed in 1879 as a distributor of and agent for arms and ammunition.
- Zacharie père et fils**; rue de Lyon 112, Saint Étienne, France. Listed in 1879 as a distributor of and agent for arms and ammunition.
- Zaklady Metalowe Lucznik** The Polish state-owned firearms factory is best known for →Mauser rifles and →Wilniewczyk/Skrzypinski ‘Radom’ pistols, and has also made a selection of →Kalashnikov derivatives. These have ranged from the 7.62mm PMK and PMK-M, to the KA-89 ‘Tantal’ and the KA-96 ‘Beryl’ assault rifles. A range of accessories is also made, including the 40mm →Pallad grenade launcher.
- Zaldun** A Spanish 6.35mm Browning-type autoloading pistol made by an unknown gunmaker, probably in Eibar.
- Zamacola** S. Zamacola SA [‘Sucesores de’]; Eibar, Guipuzcoa, Spain. A maker of spring-and-piston airguns.
- Zanoletti** Attilio Zanoletti, Armigas Comega SpA [also ‘Costruzione Armigas’ or ‘Costruzione Meccaniche Gardonese’]; Via Valle Inzino, Brescia, Italy. Makers of →Armigas brand gas-powered rifles, Zanoletti began trading in February 1961 and registered his business in Brescia in March of the same year.
- Zastava or Zastava Arms**: see ‘Zavodi →Crvena Zastava’.
- Zauch** George Zauch, a government arms inspector working in 1905, accepted guns and equipment marked ‘GZ’. See also “U.S. arms inspectors’ marks”.
- Zavatero**; rue de l’Huerton 24, Saint Étienne, France. Listed in 1892 as a gunmaker, probably of Basque origins. Still listed in 1933 as ‘Zavattero et Cie’, and in 1951 as ‘Zavaterro’ (trading from 24 rue Jean Claude Tissot).
- Zavodi Crvena Zastava** [‘Red Banner Works’]: see ‘Crvena Zastava’.
- ZB** This abbreviation was applied to the products of →Ceskoslovenská Zbrojovka of Brno, Czechoslovakia. They included the vz. 24 →Mauser action rifle and its derivatives, and ZB vz. 26 light machine gun—derived from the →Praga—which was adopted by the Czechoslovakian army in 1926. Improvements in the bolt and gas system then created the vz. 27, but this was soon superseded

- by a 'vz. 30' with a sturdier piston and a better gas-regulation system. Later patterns included the 7.9mm ZB 53 and the 15mm ZB 60. Brno-designed machine-guns sold in large numbers to Bulgaria, China, Portugal and Turkey; others were made under licence in Romania and Yugoslavia.
- zb** A code allocated in 1940 to distinguish the German small-arms ammunition components made by Kupferwerk →Ilsenburg AG of Ilsenburg/Harz.
- Z BER** Found on British small arms with components damaged 'beyond economic repair' and fit only for scrap.
- Z BLR** On British small arms with components damaged 'beyond local repair'.
- Zbrovojka Brno:** see 'Československá Zbrojovka'.
- Zbrojovka Praga;** Prague. This Czechoslovakian gunmaking business was founded in 1918 by A. Nowotny. It employed the →Holek brothers, Frantisek →Myska and Karel →Krnka, making the 6.35mm and 7.65mm 'Praga' pistols and a series of experimental light automatic weapons until development work (which included the perfected →Praga M 24 machine-gun) was transferred to →Československá Zbrojovka of Brno. The Praga company was taken over by its principal creditor, the Industrial Bank, and liquidated in 1926.
- ZCZ:** see 'Zavodi →Crvena Zastava'.
- ZE** *part-superimposition monogram with slight prominence given to 'Z'*. Correctly read as 'EZ' (q.v.); associated with Eduard →Zehner of Suhl.
- Zehna** A compact 6.35mm-calibre pocket pistol, based on the →FN-Browning of 1906, made in Suhl by Eduard →Zehner. It is suspected that the guns date from the early 1920s, and that they formed the basis for the later →Haenel pattern; the earliest examples (usually marked 'Zehna' above 'D.R.G.M.') have their barrels retained by a lateral pin, whereas later guns rely on the recoil-spring rod and include 'D.R.P.a.' and the manufacturer's name in the slide-mark.
- Zehner** Ad. Zehner; Suhl in Thüringen, Germany. This man was listed in 1939 as a gunsmith.
- Zehner** Eduard Zehner of Suhl in Thüringen, Germany, made sporting guns and rifles, and is also recognised as the designer of the 6.35mm →Zehna semi-automatic pistol. His business may have been sold to →Haenel c. 1925, but details are lacking.
- Zehner** Emil Zehner; Suhl in Thüringen. This German 'gunsmith' is recorded in the 1914 as a specialist screw-maker. Business continued into the post war period C it was owned in 1920 by Wilhelm Zehner C but there is no evidence to suggest an involvement in gunmaking after 1919. Operations were still being listed in 1939 as 'metalworking', but it is supposed that trading ceased in 1945. Zehner is believed to have marked his guns with 'E.Z.' or an 'EZ' monogram.
- Zehner** Heinz Zehner; Suhl in Thüringen. Designer of the earliest →Sauer semi-automatic pistol, patented in Germany in 1912.
- Zeiss** Carl Zeiss of Jena is renowned as a manufacturer of optical equipment, including optical sights, gunmakers' tools and bore sighters.
- Zenit** A mark be found on a spring-and-piston air pistol, cocked by a top lever,

made in Germany by →Moritz & Gerstenberger in c. 1937–40. See also ‘Krone’.

Zenith Applied to →Langenhan spring-and-piston airguns advertised in Germany in Gustav →Genschow catalogues published in the mid 1920s.

Zentrum A single-shot block-action target pistol made by M. →Neumann of Suhl (?) prior to 1940.

Zero A brand name applied to diabolito-type airgun pellets sold in the early 1980s by →Sussex Armoury.

ZF or Z F Found on small arms with components damaged beyond local repair, but capable of repair at an approved factory.

ZGB This Czechoslovakian light machine-gun was a .303-calibre variant of the →ZB vz. 27, made for trials in Britain from 1931 onward. The last major sub-variant, the ‘ZGB Improved Model 4’ of 1934, was virtually a prototype of the →Bren Gun. It lacked the barrel fins of the original ZGBs, had the back sight on the receiver behind the magazine, and the rate of fire was slowed. Sixty Brno-made Improved Model 4 machine guns arrived in Britain early in 1935 to facilitate field trials.

Zi-Di or ZIDI: marks associated with →Ziegenhahn & Diem of Suhl.

Ziegenhahn Alfred Ziegenhahn; Suhl in Thüringen. This gunmaking business was founded in 1922, trading independently until absorbed in the partnership listed below.

Ziegenhahn & Diem; Suhl in Thüringen. A partnership of Alfred Ziegenhahn and Heinrich Diem, trading from c. 1935 until the end of the Second World War, this made the sporting guns and target pistols that often bore the trademark ‘Zi-Di’. The factory was apparently absorbed in 1946 by the state-owned firearms industry of the German Democratic Republic: see ‘Ernst →Thälmann’.

Zieh- und Stanzwerk Schedetal: see ‘Schedetal’ and ‘Haendler & Natermann’.

Zig Zag A nickname applied to a German →Mauser revolver and the U.S.-made Remington-Elliott derringer. See ‘W.H. →Elliott’ and ‘E. →Remington & Son’.

Zimmermann Carl Zimmermann; Mehlis in Thüringen, Germany. Said to have been founded in 1857, this gunmaking business also made hunting accessories (*Jagd-Requisiten*). Listed in 1900 under the heading *Waffen* (‘weapons’) in the *Deutsches Reichs Adressbuch*, Zimmermann seems to have ceased trading at the end of the First World War.

Zimmermann Friedrich Zimmermann; Arnstadt in Thüringen. Listed in Germany in 1941 as a maker of sporting-gun parts.

Zimmermann Fritz Zimmermann; Albrechts bei Suhl in Thüringen. Listed in 1940–1 as a maker of gun parts (*Waffenteilefabrik*).

Zimmermann Karl Zimmermann, Ulm/Donau. Employed by →Anschütz, this engineer was the co-patentee of recoilless air rifles with Heinrich →Liebmann.

Zimmermann R. Zimmermann; Suhl in Thüringen, Germany. A specialist barrel-blank maker active in the late 1930s.

Zimmerstutzen: see ‘Saloon Gun’.

Zink Carl Zink; Zella St Blasii in Thüringen. This gunmaking business is said to

- have been founded in 1871, but its operations may not have survived long into the twentieth century.
- Zink** Fritz Zink; Suhl and Zella-Mehlis in Thüringen. Possibly the son of (and successor to) Carl Zink, this gunmaking business made sporting rifles and shotguns until 1939 or later.
- Zip** A cheap-break barrel spring-and-piston air pistol made in Italy by →Mondiale, distributed in Britain by Gunmark in 1976/7.
- ZJC** *cursive superimposition-type monogram*. Correctly read as 'JCZ' (q.v.); used briefly by →Jihoceska Zbrojovka of Prague, Czechoslovakia.
- Zögner** Richard Zögner of Suhl in Thüringen, Germany, was listed in the *Deutsches Reichs Adressbücher* for 1930 and 1939 as a gunsmith.
- Zoli** A. Zoli & Co. SNC, Gardone Val Trompia, Brescia, Italy. A maker of shotguns, sporting rifles and an autoloading pistol.
- Zöllner** Gebr. Zöllner of Zella St Blasii in Thüringen, Germany, was listed in the 1900 *Deutsches Reichs-Adressbuch* as a master gunsmith and gunmaker.
- Zonda** A .22 LR rimfire semi-automatic pistol made in Argentina by →Hispano-Argentina Fábrica de Automviles SA. See 'Hafdasas'.
- ZS** or **Z & S** Associated with Zieh und Stanzwerk →Schedetal AG.
- Zschocke** Fr. Zschocke; Suhl in Thüringen. Apparently established in the 1870s, this German gunmaking business was being operated by 1914 as "Fr. Zschocke's Nachfolger, Paul Stadelmann". It seems to have failed about 1923.
- Zulaica** M. Zulaica y Compañía of Eibar, Guipuzcoa, Spain, made →Ruby-pattern semi-automatic pistols for the French army during the First World War. The business also distributed pistols bearing →Royal, →The Victory or →Vincitor brand names.
- Zulu** A name applied in the U.S.A. to 12-bore shotguns converted from French →Tabatière breech loaders, purchased in Europe after the Franco-Prussian War of 1870-1.
- Zündnadelgewehr** The renowned Prussian needle-gun was the work of Johann →Dreyse (1787-1867), a gunsmith who had trained with Samuel Pauly in Paris prior to 1814. Dreyse embarked on a gun of his own after returning to Thuringia, though experiments undertaken in partnership with Kaufmann Collenbusch stretched over several years. From this era come a variety of single-shot pistols, loaded from the muzzle but fired by a needle igniter.
- ¶ These guns were comparatively primitive, and not until Dreyse developed the first of his breech-loading rifles in 1833 (locked by what was effectively a door-bolt) was progress made. The Prussian army undertook field trials with Dreyse Zündnadelgewehre in 1836-9 and adopted the weapon for infantry service on 4th December 1840.
- ¶ Made in Dreyse's factory in Sömmerda, the *Model 1841* rifle was long and cumbersome, with three barrel bands and a small cheek-piece on the butt. The needle catch had to be retracted from the back of the bolt before the mechanism could be opened, but reloading was easier than re-charging a muzzle-loading musket. M1841 rifles that survived the Franco-Prussian War

(1870–1) were relegated to the Landwehr in August 1872.

¶ The *Model 1849 sharpshooter's rifle* (with a barrel held by keys instead of bands) was accepted in December 1851, but replaced by the *M1854 Jägerbüchse* ('Pikenbüchse'), adopted on 22nd March 1855, which had a distinctive rod bayonet beneath the barrel. Next came the *M1860 Füsiliergewehr*, adopted on 4th August 1860, with its barrel held by keys instead of bands; the *M1865 Jägerbüchse* (16th March 1866) was similar, but had an additional set-trigger within a spurred guard.

¶ Adopted on 28th July 1862, the *M1862 infantry rifle* was a refinement of the 1841 pattern, with a shorter action, and the short-barrelled *Pioniergewehre u/M* (16th November 1865) and *M1869* (25th January 1869) were duly issued to the pioneers. There were also two *cavalry carbines*, the models of 1855 and 1857, but these had an unsuccessful shortened action and were made only in small quantities.

¶ Dreyse-type rifles were used in many of the states that supplied contingents to the Prussian army, often converted from old muskets. The bolt action also inspired a legion of copies, even though the Dreyse cartridge was ballistically inferior to the powder-and-ball of any small-calibre rifle-musket. Changes were made to the ammunition in 1847 and 1855, reflected in wholesale changes of back sights, but continued to rely on poorly-shaped bullets set in papier-mâché sabots which engaged the rifling. In addition, the needle had to pass through the charge before reaching the primer that had been set in the sabot base.

¶ Tests with French →Chassepot rifles showed the Prussians that the Dreyse was greatly inferior in muzzle velocity, trajectory height, and potential accuracy. A short-term solution was found in a bolt head designed by Johannes →Beck, a foreman armourer in the Spandau factory. Adopted on 10th March 1870, before the war with France began, this is easily distinguished by a large screw-head on the bolt body ahead of the operating handle.

¶ The *Beck Transformation* allowed more powerful cartridges to be used, but only a few guns (converted M1862 infantry rifles and M1865 Jägerbüchsen) reached the troops during the Franco–Prussian War. The conversion programme ended soon afterward, owing to progress with the 1871-pattern →Mauser cartridge rifle. The last of the Dreyse infantry rifles had been withdrawn by 1877; others remained in the hands of second-line troops into the 1880s, but most were either scrapped or sold as surplus to the major arms-dealers of the day.

¶ The best guide to Dreyse needle-guns is unquestionably *Das Zündnadelgewehr. Eine militärtechnische Revolution im 19. Jahrhundert* (Rolf Wirtgen [ed.], 1990), though John Walter, *The German Rifle* (Arms & Armour Press, 1979) and *Rifles of the World* (Krause Publications, third edition, 2006) present concise identification details.

Zurch or Zurich; New York City. Gardner lists this gunmaker at 106 East Houston

Street in 1850–61, but Eldon Wolff reports that no such place existed in the city and speculates that Zurch may have owned a shooting arcade—and that, consequently, →Zuendorff might have worked elsewhere, as his mark has been found on spring-and-piston gallery guns. Information is lacking and the various problems remain unresolved.

Zürich Zeughaus: see 'Vetterli'.

Zuylen [van...]. Prosper van Zuylen. A gun merchant listed at 8 Catherine Court, Tower Hill, London E, in 1857.

ZV Czechoslovak-made spring-and-piston air rifles have been reported with the designations 'ZV3' and 'ZV4', but their maker has not yet been identified.

ZVP A cheap break barrel spring-and-piston air pistol exported by →Omnipol of Prague in the 1960s. See also 'ZV', as it was probably made by the same company.

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