AUSTRIAN FRUWIRTH MODEL 1872 GENDARMERIE CARBINE

By Marc Gorelick

Fruwirth M1872 carbine made by OEWG. Photo courtesy of Joh. Springers Erben, Vienna, Austria

The Fruwirth Model 1872 Carbine (official name *Gendarmerie-Repetiergewehr System Frühwirth M1872*) is noteworthy for a number of reasons. First, it was the designed by Ferdinand Fruwirth, from a famous family of Austrian gunmakers. Second, it was the second bolt action magazine cartridge firearm to be adopted by a western country, the first being the Swiss Vetterli M1869. Third, it was the first modern military (or paramilitary) repeating rifle in Austria. Fourth, it was one of the few military type longarms with a tubular magazine beneath the barrel. And finally, it was the first adoption of a tube magazine cartridge gun with a rear pivoted cartridge carrier.

Fruwirth M1872 carbine made by OEWG. Photo courtesy of Joh. Springers Erben, Vienna, Austria

Ferdinand Fruwirth (1842-1892) was a scion of a famous Viennese gunmaking dynasty and one of the leading firearms manufacturers in the Austro-Hungarian Empire. He was both a firearms designer as well as being a major contractor to the Austrian government. The Früwirth (also spelled as Fruhwirth and sometimes Fruewürth) gunmaking family of Vienna Austria can trace their roots to Georg Früwirth (1680-1760), who was a second generation Moravian gunmaker. Joseph Früwirth (1722-1797), also from Moravia, is believed to be Georg's son. Joseph worked as an apprentice and gunsmith for the Prince of Esterhazy at Fortchenstein Castle. He became a journeyman in 1753 and a master gunsmith in 1757. That year he married the daughter of gunsmith Christoph Ries who was a well-established Vienna gunmaker who worked circa 1732-1757. Reis was a gunmaker to the royal Court and upon his death in 1757, Joseph took over his business. In 1758 he became a court gun and gun wrench maker. His son Johann (1766-1824) took over Joseph's business around 1789. Johann had begun his apprenticeship in 1783 and became a master in 1788. When Johann died in 1824 his widow took over the management of the business until his son Ferdinand (1813-1867) took over the business in 1834, the year he became a master gunmaker, which allowed him to take over his father's shop. Ferdinand's son Ferdinand II (1842-1892) would continue the family business until his death and would be instrumental in the development and improvement in Austrian rifle designs during the 3rd quarter of the 19th century. The Fruwirth Model 1872 Carbine is one of Ferdinand II's designs.

Ferdinand Fruwirth first developed his carbine around 1869 (some sources call it the M1869). At that time the Austro-Hungarian army's service rifle was the M1867 Werndl–Holub, a single-shot

breechloading rifle that had replaced the earlier Wanzl single shot breechloader conversion of the muzzle-loading Lorenz rifle. The Austrian army was looking to replace the Werndl with a breachloading magazine rifle firing then modern ammunition. The basic Werndl-Holub drum breech was seen as cumbersome and incapable of transformation into a magazine-loader and in 1869 Fruwirth offered his design to the Austro-Hungarian Army for consideration. .

As stated earlier, the Fruwirth was the first adoption of a tube magazine bolt action rifle with a rear pivoted cartridge carrier which lifted rounds from the magazine to be chambered by the closing bolt. Unlike the hand-cocked German/Prussian Dreyse and French Chassepot, the Fruwirth was self-cocking upon the bolt being closed. Fruwirth's design, which was partly based on the new Swiss M1869 and M1871 Vetterli rifle, became the basis for many later Kropatschek rifles with tube-magazines under the barrel, including the French Gras-Kropatschek M1878 and M1878/84 Marine, as well as the German Mauser M71/84. French M1886 Lebel, the Norwegian M1884/87 Jarmann and Swedish M1879 and M1881 Jarmann. The same basic design can still be seen today in many rifles and shotguns with tube magazines under the barrel.

Fruwirth M1872 carbine made by OEWG. Photo courtesy of Joh. Springers Erben, Vienna, Austria

The Fruwirth has a long bolt guide rib which acted as the locking lug that locked forward of the split receiver bridge. It has a long turned down bolt handle with the bolt knob lower than the underside of the stock. The cocking knob at the rear of the bolt has an upward projecting spur that from the side resembles a hammer. There is a magazine cut-off on the right side in front of the bolt handle that locks the cartridge carrier/elevator in a raised position, blocking cartridges from moving up from the magazine and turning the repeater into a single shot rifle. The screw on the right side behind the bolt is part of the repeater's mechanism. There is a screw on the left side of the action for disassembly and removing the bolt. The carbine has a long steel loop Jager type pistol grip, which is integral with the triggerguard. There is no barrel band. Rather, the barrel is pinned to the stock with a screw that also retains the forward sling swivel.

Photo – private collection

The carbine has an overall length of 10.75 to 40.9 inches (1035-1038mm), and the barrel is 22.4 inches (570mm) long with six groove 1/700mm right hand twist rifling. It weighs 8.1 pounds (3.69 kg). The rear sight is graduated with six "steps" (or paces) giving 100 to 600 "steps" a step being approximately 80 meters or 87.5 yards. The front sight acts as the bayonet stud. There is no cleaning rod.

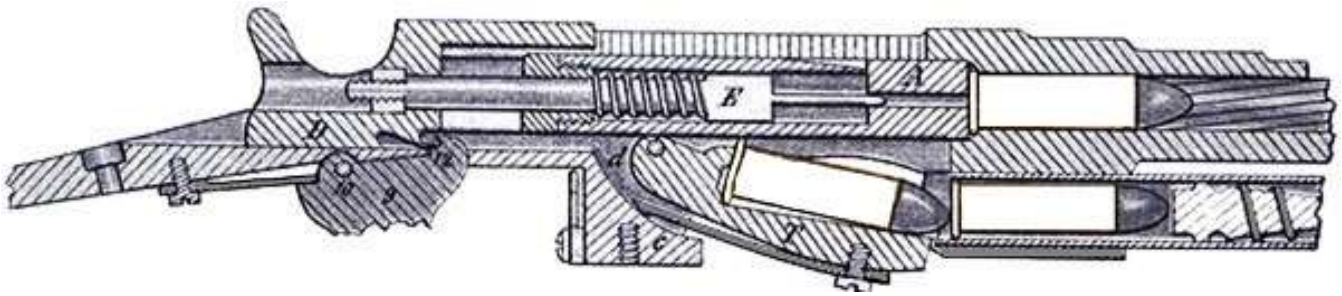
Although the Fruwirth design was based on that of the Vetterli, unlike the Vetterli which loaded through a gate in the receiver, the Fruwirth loaded from the top, through the open action.

Fruwirth M1872 carbine made by Fruwirth. Photo courtesy of Morphy Auctions, Denver, PA.

There are two variants of the Fruwirth M1872 Carbine. Variant 1 has a short action that fired an 11.15x36mm rimmed centerfire cartridge and holds 8 rounds – 6 rounds in the tubular magazine, one on the elevator or carrier and one loaded in the chamber. Variant 2 has a longer action that fired a slightly longer 11.15x42mm rimmed cartridge and holds 7 rounds – five in the in the magazine, one on the cartridge elevator or carrier and one in the chamber. The Variant 2 action was lengthened by 6mm to handle the longer cartridge.

Fruwirth M1872 carbine made by Fruwirth. Photo courtesy of Morphy Auctions, Denver, PA.

The Fruwirth was tested by the Austro-Hungarian Army but was deemed to be too fragile for hard general service. Although it was not adopted by the army, it was officially adopted for the Cisleithanian Gendarmerie. Issuance was later extended to the Tirolean Landesschutzen (territorial mountain troops). Fruwirth carbines were manufactured by both Fruwirth and by Osterreichische Waffenfabriks-Gesellschaft (OEWG.), Steyr. Conventional wisdom puts the total number of Fruwirth M1872 produced at 12,000, about 80% (9,600) by Fruwirth and 20% (2,400) by OEWG.



Schematic of Fruwirth action showing bolt (A), off-center firing pin (E), and cartridge elevator (T). Image – Weaponland and Military Review.

As expected the design of the action of this early bolt tubular action magazine rifle was far from perfect and had some unusual features. For instance, there was no extractor attached to the bolt so the bolt face is smooth. Rather there were two claws in a channel in the left side of the action wall, one in front and one in the rear. One of the unusual features of these extractors is that they disconnect when the bolt is closed. They reconnect to the bolt and slide back in a groove in the sidewall when the bolt is opened. The bolt itself is reminiscent of the French Chassepot bolt.

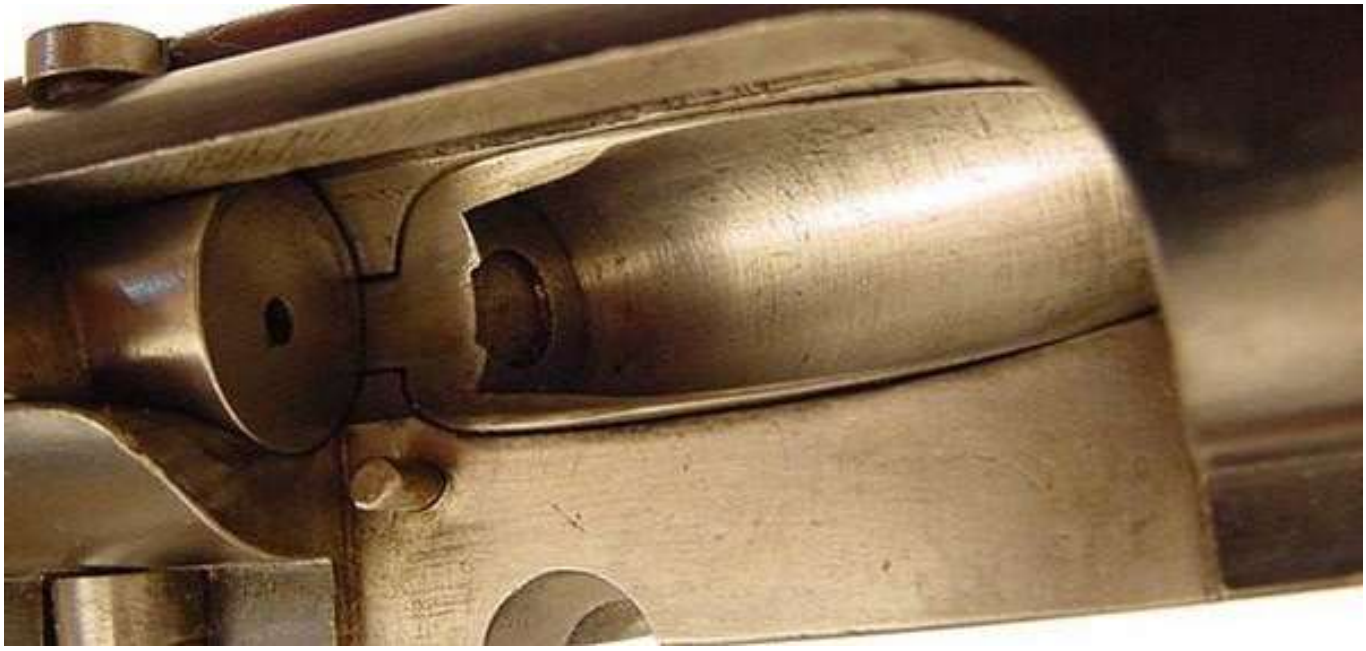
The elevator is normally held in the raised position by a powerful spring pushing it up (unless the magazine is being loaded or cartridges are being fed from the tubular magazine). In repeater mode closing the bolt pushes the elevator down, allowing a new cartridge to be fed onto the elevator from the magazine. When the bolt is opened, the extractors draw the fired shell back and the upward pressure of the new cartridge on the elevator ejects the extracted fired cartridge. When the carbine is in single-shot mode the elevator is locked in the up position so feeding from the magazine is prevented and ejection is accomplished by turning the gun on its side or upside down and letting the spent cartridge fall out.

Fruwirth M1872 carbine with bolt closed. Note magazine cut-off switch in front of bolt handle that prevents the cartridge elevator from lowering to pick up cartridge fed from the tubular magazine. Photo – Weaponland

Fruwirth M1872 carbine with bolt closed. Photo – Weaponland

The Fruwirth M1872 did not have a controlled feed mechanism so the length of the cartridges was critical to the gun's operation. If the cartridge on the elevator was too long it would hit the bottom of the chamber preventing the elevator from moving up so that the fired round would not be ejected and the bolt

could not be closed. If the round on the elevator was too short the following round in the tube magazine could be pushed out onto the elevator, preventing it from rising.



Fruwirth M1872 carbine with bolt open. Note offset hole for firing pin in the flat face of the bolt. Also note the cartridge elevator in front of the bolt. Photo – Weaponland.

An unusual feature of the Fruwirth bolt is that the centerfire firing pin is off-center because it was slightly bent at the base. This can result in a misfire if the firing pin strikes a modern centerfire primer off center. However, there was a good reason for the Fruwirth's off center firing pin. When the Fruwirth carbine and Werndl carbine were used the Austrians testing various centerfire cartridges. They first tried ammunition with Vilberger primers in their centerfire ammunition. This had what was in effect a rimfire primer that was integral with, and in the center of the case base. When the cartridge case was being made there was a pocket extending out of the back of the base. The priming compound in an annular anvil was very carefully put into the pocket and was gingerly pushed back into the base. This system favored a slightly off-center strike on the annular anvil rather than a center strike.

The Roth primer system supplanted the Vilberger primer. The Roth had a stand-alone primer with an annular anvil that was pressed into the cartridge in the base. Cartridges using the Roth primer system were safer, easier and faster to produce than ammunition with the Vilberger primers. An off center strike against a Roth primer produced good compression against the annular anvils and a more reliable ignition.

The ammunition for the Fruwirth carbine is practically identical to the Werndl M1867 cartridge for carbine (11.15x36R or 11.2x36R). Most of the dimensions are the same. The Fruwirth cartridge (Variant 1) was a Fruwirth 11.1.5x36R (some sources identify it as a Fruwirth 11.2x36.3R) with a straight case 36mm long and with a total length of 53mm. The bullet weighed 19.6-20.7g. It had a muzzle velocity of 298 m/second. The Variant 2 cartridge was a Fruwirth 11.15x42R that was 6mm longer and may have had a muzzle velocity of 307 m/second.

Photo left courtesy of Česko Moravská Společnost Sběratelů Nábojů – CMSSN.

The carbine took the M1867 socket bayonet. This bayonet was also used with the Werndl M1867, M1867/77, M1871 and M1873/77 Extra Corps Gewehr, as well as the M1878 and 1881 Kropatschek Gendarmerie Carbine. It has a long cruciform spike blade and a bright finish. The long socket has a diagonal helical slot to the right, rather than a stepped mounting slot, and a locking ring. The left side of

the shank is marked "**1794**". According to Kiesling, the slanted helical mortise slot is a distinctive feature of Austrian socket bayonets. The bayonet's overall length is 22.9 inches (582mm) with an 18.2 inch (462mm) long blade that is almost one inch (25mm) wide at the base. The bayonet's socket is 4.2 inches (104.5mm) long.

Photos above. Bayonet for Fruwirth M1872 Carbine. Note the long socket and the distinctive slanted slot for the bayonet stud. front sight. Photos – private collection.

The Fruwirth M1872 carbine was an interesting development in the evolution of bolt action magazine fed rifles. It was comparatively lightweight and handy and although it was a transition design, the carbine had a high rate of fire for its time. A skilled shooter could fire six aimed rounds in 12 seconds and eight rounds in 16 seconds, when the gun worked perfectly.

Unfortunately, the carbine used a comparatively weak cartridge, which had poor ballistics, a comparatively short range and less than optimum lethal force. In addition, because of the action design, the bolt mechanism was difficult to operate, needing some force when cycling the bolt, and required certain skill from the shooter. The elevator could jam if the ammunition was either too long or too short and ejection could be problematic. Although it was considered too "fragile" for the Austro-Hungarian army, it was entirely suitable for the Gendarmerie. On the whole, despite its flaws, this little known carbine was a step forward in firearms development.

Production of the Fruwirth M1872 Carbine ceased in 1875 and it was retired from service in 1880.

Print of Austrian Gendarmerie 1896. Courtesy of New York Public Library.

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