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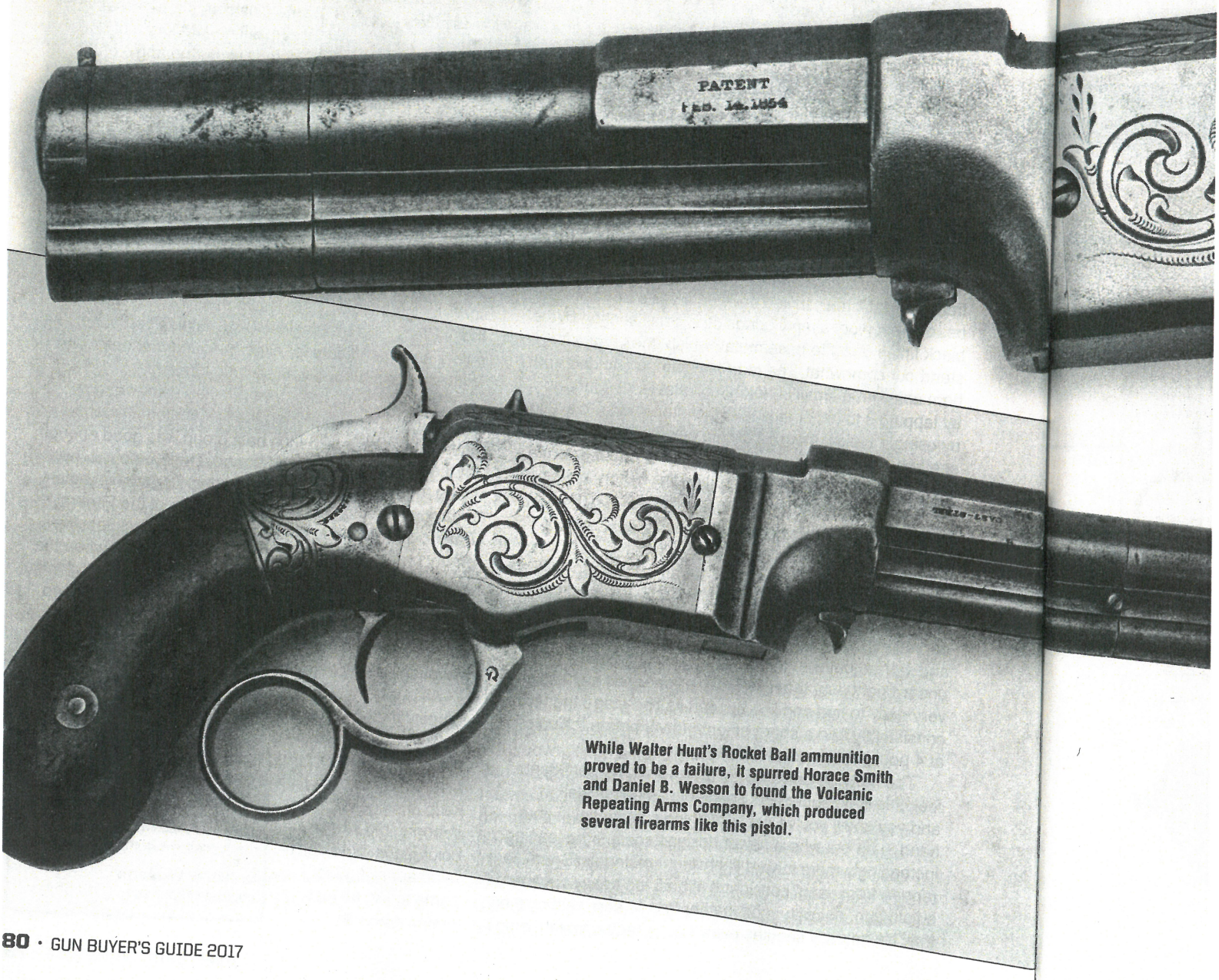
FOOTNOTES OF HI

Three ammo inventions that failed but offer plenty essons fo

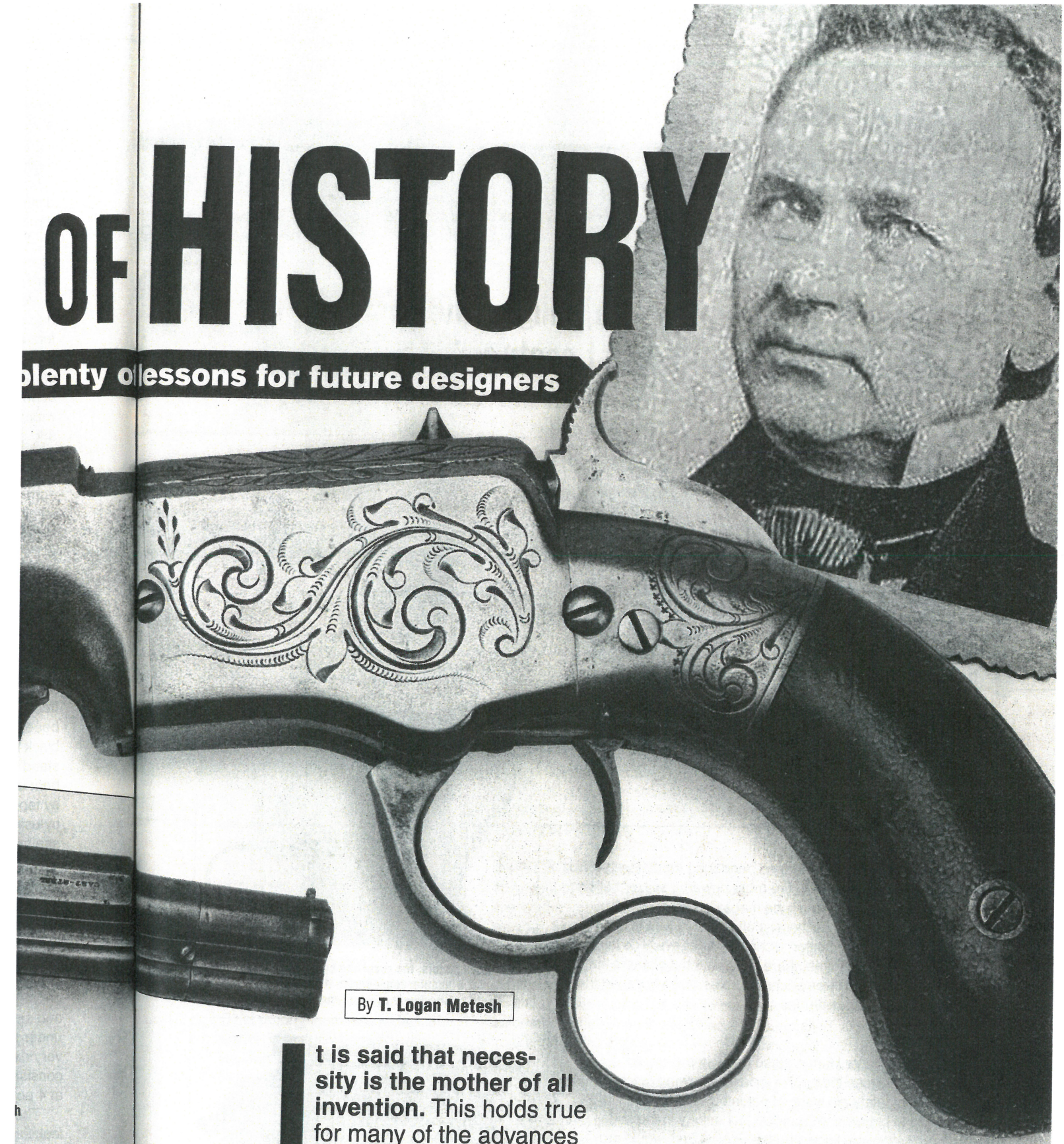
By **T. Logan Metesh**



While Walter Hunt's Rocket Ball ammunition proved to be a failure, it spurred Horace Smith and Daniel B. Wesson to found the Volcanic Repeating Arms Company, which produced several firearms like this pistol.

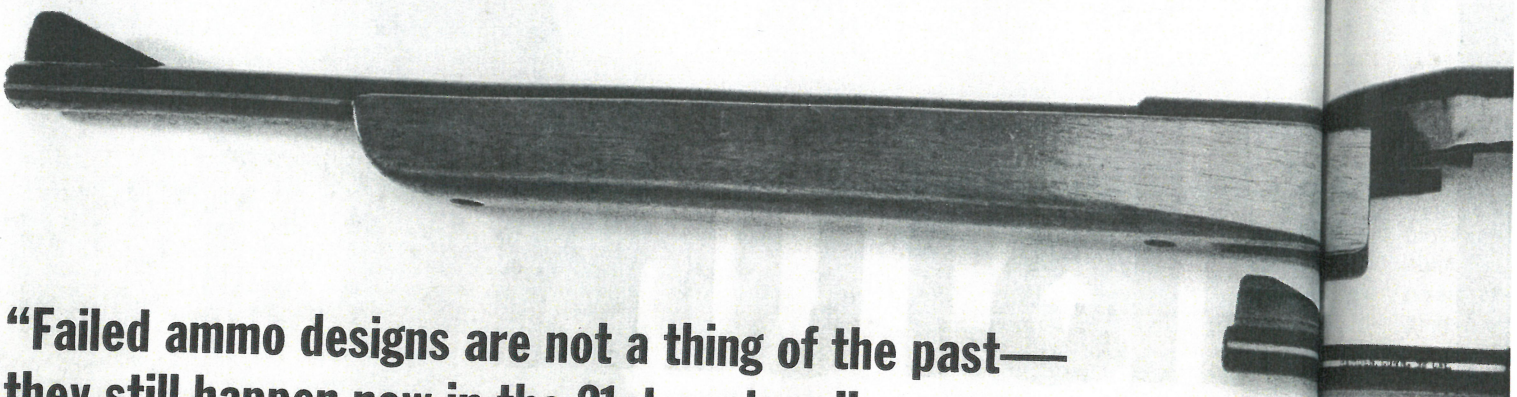
OF HISTORY

plenty of lessons for future designers



By **T. Logan Metesh**

It is said that necessity is the mother of all invention. This holds true for many of the advances in ammunition over the centuries. Conical bullets with hollow bases, such as the Minié ball, expanded to engage the barrel's rifling, resulting in a more accurate projectile. Metallic cartridges solved the problem of



"Failed ammo designs are not a thing of the past—they still happen now in the 21st century."

powder getting wet in paper cartridges, rendering them useless. Box magazines created a safe way to fire more powerful spitzer bullets without the risk of discharge in a tube magazine.

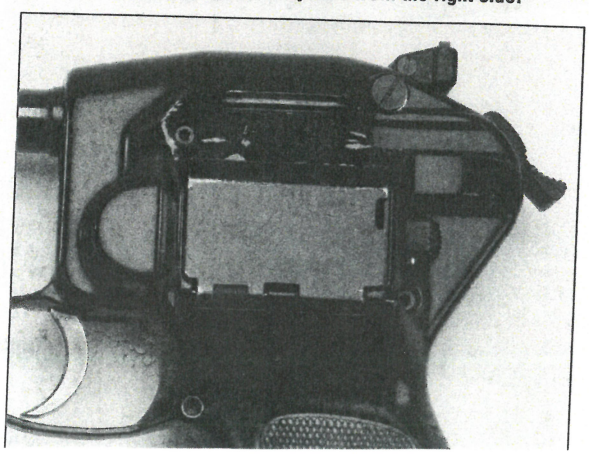
Despite this, the path to success is often paved with failure. Such is the case with ammunition technology. For every development that stood the test of time, there were countless others that failed to launch. Here are three such examples, each covering the 18th, 19th and early 20th centuries.

With Dardick pistols, the revolving cylinder was fed with special triangular rounds from the magazine in the grip. Empty casings were ejected from the right side.

ROCKET BALL

New York inventor Walter Hunt created many items we are familiar with and still use today. The lockstitch sewing machine, fountain pen and safety pin were all patented in his name. He also attempted to improve ammunition technology in the mid-19th century. His design, known as the Rocket Ball, would prove to be far less successful than his other inventions.

Patented in 1848, Hunt's Rocket Ball design sought to eliminate the need for traditional paper cartridges that had been state of the art for more than a century. Hunt's creation created a caseless type of ammunition. (The self-contained metallic cartridge that is ubiquitous today would come later.)



David Dardick's unconventional magazine-fed Model 1500 revolver had interchangeable barrels, and a carbine conversion kit was available.

The .31- and .41-caliber bullets had hollow bases in which a charge of gunpowder was packed. The powder-filled cavity was closed with a waterproof cap that had a small hole in it through which the ignition source could travel and reach the powder. When fired, the bullet's hollow base expanded and engaged the barrel's rifling, which also helped improve accuracy. The cap stayed behind and ended up in front of the next round that was chambered in the gun.

While Hunt's design was a step forward, it was not without its flaws. Chief among them was its lack of power. The round's powder charge was necessarily small because it had to fit in the bullet cavity. This provided a round that lacked muzzle velocity and effectiveness. By the mid-1850s, the concept had been scrapped and the initial Rocket Ball design faded into obscurity.

Despite the Rocket Ball's failure to catch on, it did have a profound influence on firearm development. Hunt's design created a domino effect through its influence with some big names, such as Horace Smith, Daniel Wesson, Benjamin Tyler Henry and Oliver F. Winchester. As such, Hunt's failed caseless ammunition paved the way for the iconic lever-action rifles made by Winchester.

DARDICK TROUNDS

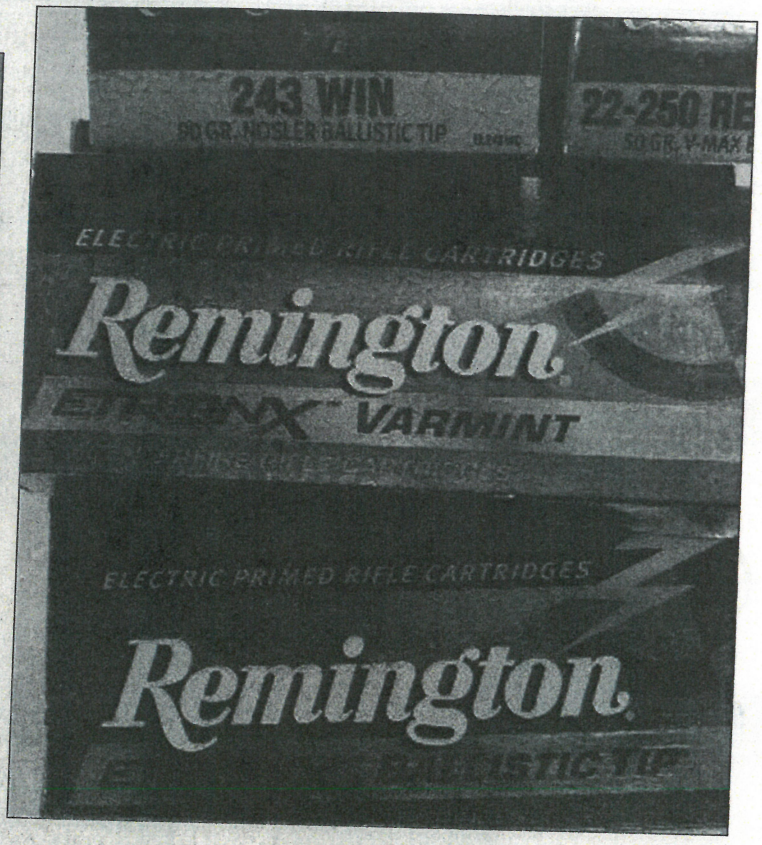
In August of 1958, David Dardick received a patent for a magazine-fed revolver. His design featured a cylinder with openings on each exterior edge, creating U-shaped chambers instead of traditional O-shaped chambers. This allowed rounds to be automatically fed into the chamber from a magazine loaded with a stripper clip, instead of being loaded manually like in a traditional revolver. Additionally, extraction was also done automatically.

Dardick soon realized that his U-shaped ammunition would require it to be fed in a very specific fashion in order for his revolver to function properly. By the end of 1958, he was issued a second patent that showed his ammunition being three-sided like a triangle. The uniform size of the round on each side enabled it to feed into the cylinder more easily, thereby increasing the gun's reliability.

The new triangular ammunition needed a name, so Dardick called them "trounds," a combination of the words "triangle" and "rounds." The bullet, powder and primer were all loaded into the triangular-shaped plastic case that created the outer wall of the revolver's cylinder.

Dardick's first gun, the Model 1100, was only chambered for the proprietary .38 Dardick Tround. However, a cylinder adapter could be purchased, allowing the shooter to fire traditional handgun ammunition. Next up was the Model 1500, which had interchangeable barrels and could fire .38-, .30- and .22-caliber trounds. This model was also available with a carbine conversion kit to turn the revolver into a rifle.

Shortly after its introduction to the public, *Mechanix Illustrated* magazine featured an article on the new gun. Its author called it "as versatile as a six-armed monkey." While the



Remington's EtronX rounds used primers specifically designed for ignition via electronic impluse. The ammunition was also designed to work with the special firing pins built into EtronX-equipped rifles.

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"...Hunt's failed caseless ammunition paved the way for the iconic lever-action rifles made by Winchester."

analogy may seem to be an unusual way to praise Dardick's creation, it proved to be accurate in a way the author never intended: Just as there's no such thing as a six-armed monkey, there's also no such thing as a commercially successful, magazine-fed revolver that fires triangular rounds.

The public never embraced his concept, and Dardick's trounds remain little more than a footnote in the advancement of ammunition.

REMINGTON ETRONX

Failed ammo designs are not a thing of the past—they still happen now in the 21st century. Remington introduced its new EtronX technology in 2000, calling it "the most significant advancement in rifle and ammunition performance since smokeless powder."

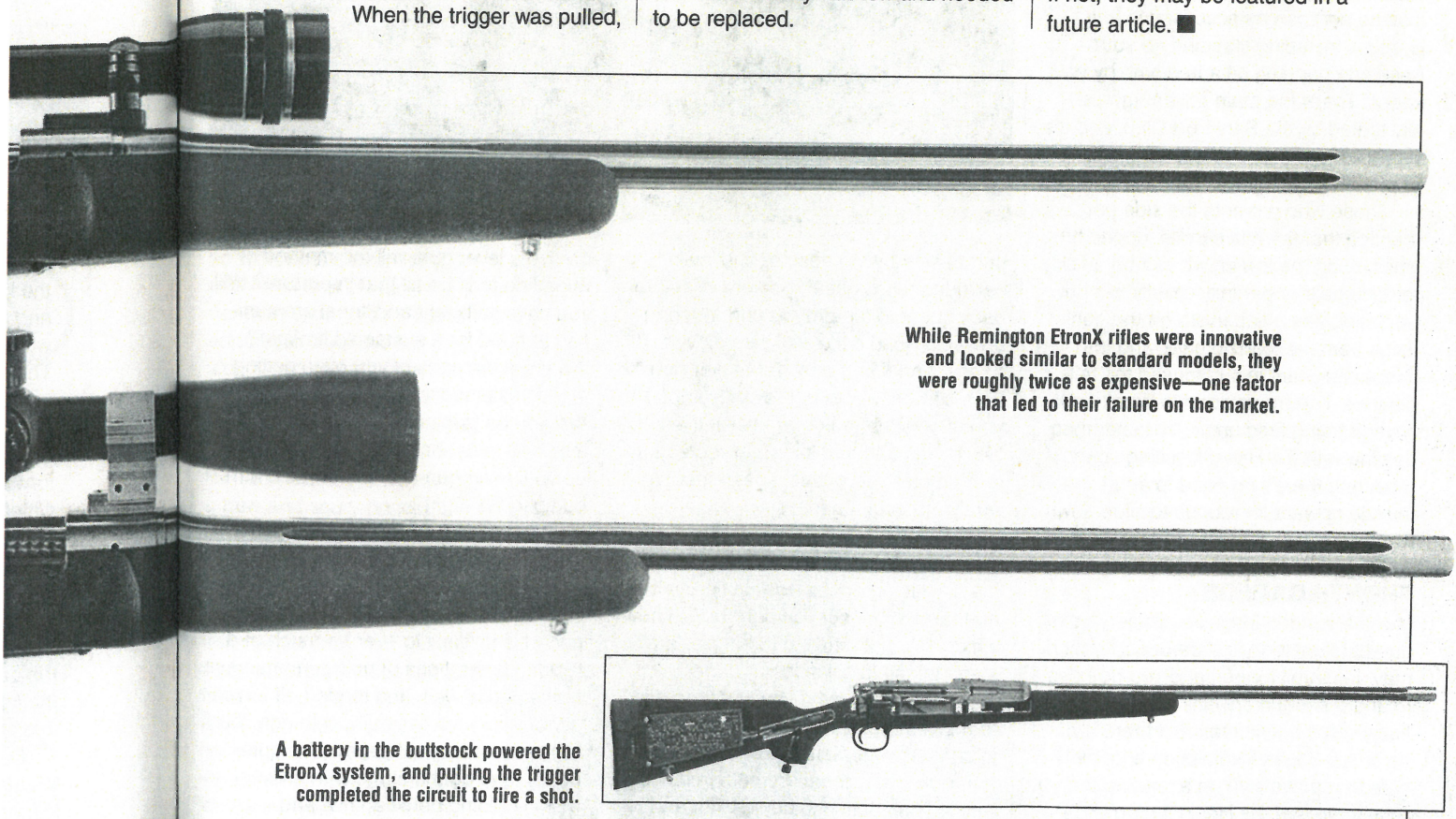
Designed for the company's Model 700 rifles, the rifle's bolt made a circuit between the special firing pin and primer when it was closed. When the trigger was pulled, the circuit was completed and an electrical pulse was sent through the firing pin and into the primer, which was specially designed to ignite by electrical pulse.

Since ignition happened electronically, there were no moving parts other than the trigger, which was reported to have 36-percent less travel than a traditional trigger. This all combined to create an almost instantaneous ignition—0.0000027 seconds, to be exact. The lack of moving parts, Remington promised, would result in a more accurate shot.

The entire system was controlled by one 9-volt battery in the buttstock. A removable key in the butt cap had to be used to turn the system on; the rifle could not be fired if the key was not used to turn it on first. An LED display on top of the grip indicated if the system was on or off, if a cartridge had been chambered, and if the battery was low and needed to be replaced.

When introduced, the EtronX-equipped Model 700 rifles had an MSRP of $1,999—double the price of a traditional Model 700. The new technology and jump in price proved too much for the venerable Model 700, which had developed a solid reputation over its 32 years of production by 2000. As a result, Remington's EtronX technology was gone within just a handful of years.

It is hard to know what advances in technology will be embraced by the consumer. A new design must offer marked improvement over existing technology, maintain a familiarity that does not make the consumer uncomfortable, and be offered at a price point that makes it worthwhile to the consumer to invest in the product. Hopefully, future ammunition designers will look to history and avoid the pitfalls of the designs mentioned here. If not, they may be featured in a future article. ■



While Remington EtronX rifles were innovative and looked similar to standard models, they were roughly twice as expensive—one factor that led to their failure on the market.

A battery in the buttstock powered the EtronX system, and pulling the trigger completed the circuit to fire a shot.