

SAFE

My father died thirty-eight years ago. He was a collector. His favorite was his stamp collection, which he took over from my older brother and dramatically increased. Upon his death the collection physically came to me, largely because I was living in Cincinnati. I had no interest in the collection, but had hopes that it would stimulate enthusiasm in my son. It did not. I was faced with the problem of how to handle a collection of major value, which comprised thirty-five volumes. At that point it occupied the top shelf of my son's closet. It was clear that this could not continue. The hazards of theft, fire, and my son all put it in jeopardy. I decided to rent a safe-deposit box. Such would solve the problems but it was not to be. I already had a box at the Central Trust Company branch near my house. I took one volume and went to the bank to speak to the manager. One look at it yielded a combination of horror and mirth. Of course they didn't have anything that would come close to handling one volume, much less thirty-five. Undaunted, I went to other banks, large and small and received the same response. I finally visited the First National Bank whose manager was most helpful. The main office of First National had moved from its Fourth Street location to its new building. They were keeping the old building and had decided to utilize the vault to rent space for safe storage for large items. Examples of these were: paintings, furniture, musical instruments, and other valuable objects. They could be stored safely while owners vacationed or had no immediate place for them.

The search re-kindled my long-standing interest in locks, and particularly safes. Safes have a long history beginning in the fifteenth century. It is one of continuous development in Europe, which then moved to the United States. Several forces influenced the course of development. New materials and manufacturing techniques were only a part of the process. An equal force was the uncanny ability of thieves to thwart the newest techniques of protection remarkably soon after they appeared.

How was it that each new development in the manufacture could be circumnavigated so quickly? Yeggs, as safecrackers were known, addressed each point of vulnerability with a combination of brute force and ingenuity. The oldest and most primitive method consisted of prying open the door. The earliest solution to this was the "screw-door" which operated by having the entire round door threaded and screwed into a threaded round container needing only one bar to prevent rotation to re-open. An alternate technique of safe-cracking consisted of "cutting" into a safe using oxyacetylene torch to enter. The manufacturers dealt with this by placing a barrier of copper composite which was effective in dissipating the heat generated by the torch.

The most frequently described technique of entering a safe or vault is "safe manipulation", the discovery of the combination by listening to or feeling the mechanics of the lock.

What is the mechanism of the combination lock, present on most vaults, small safes, and even bicycle locks? These devices have been around for 150 years. Most combination locks use a wheel pack. The number of wheels is determined by how many numbers are in the combination. A spindle is attached at one end to the dial on the front of the door and at the other end to a drive cam. The drive cam is attached to a pin, which comes into contact with each wheel in different positions. At contact it spins the wheel until all wheels are spinning. Each wheel is notched which allows all wheels to stop at the correct point when their notches are aligned. A bar known as a "fence" rests above the aligned notches and falls into the groove thus created. The fence has provided a barrier to the movement of the bolt which when removed allows the bolt to slide forward thus allowing the safe to open.

Combination locks emit both distinct sounds as the wheels align, and sensations as they fall into place. This technique takes the most sophistication and knowledge of varying mechanisms, to accomplish, and is one of the least used, in spite of its popular appeal. As safe locks became more complex the technique of drilling a safe developed. This consisted of making a hole in the lock to view the mechanism or manipulate with a tool to move the plates into the proper position. This too, required great knowledge of all lock mechanisms and great manual dexterity. Locksmiths and technicians employed this to enter the safe with little damage. Manufacturers countered with "hard plates" which were impenetrable to all but the hardest bits. If such bits were used they would frequently encounter a glass re-locker. The device consisted of a sheet of glass which when penetrated shattered and triggered a series of spring locks which shot bolts via another mechanism making it much more secure. With the recent use of fiberoptic instruments it is possible to drill a small hole and insert the scope to view the mechanism directly. Certain landmarks on the wheelpack of the lock mechanism indicate the position at the point of the combination and make it possible to use the combination in a normal fashion to open the lock. A new generation of electronic mechanisms has slightly changed the direction of combat, but not the aim or effort of either group.

Gustav Mosler emigrated from Austria in the early 1840's. No-one can pinpoint the exact date of his arrival in the U.S.A. In Austria he was a newspaper editor. He moved to Cincinnati and went to work at the Diebold company which manufactured safes. He became a friend of Fred Bahmann, who also worked at Diebold and in 1867 they left Diebold and founded the Mosler-Bahmann Safe Company. Their factory was located on Pearl Street in Cincinnati. Gustav died in 1874 and his sons Moses and William took over business and renamed it the Mosler Safe Company. This was an era of rapid expansion of all types of business, and as such, the demand for safes for filing, currency, and other valuables was great. The demand rapidly outstripped capacity and the Pearl Street factory was soon replaced by a much larger space on Elm Street, and in just a few years this was supplanted by an even larger plant on Front Street. At that time it was incorporated under the name, Mosler Bank Safe Company. Over the next ten years its reputation and business grew at a colossal rate. The word was that the product was of excellent quality, reliable, and generally out-performed its competitors. They opened offices in New York, Boston, Chicago, St. Louis, Philadelphia, and Mexico City. By 1890 demand was so great that it again exceeded capacity, and it was necessary to expand. Expansion was not possible at the Front Street location. It was time to consider relocation.

Several cities in Ohio entered the competition to attract this thriving company. There were two major requirements: a ten acre property close to transportation, and an adjacent property upon which to construct employee housing. Hamilton, Ohio put on a successful campaign, adding significant cash to induce them, and Mosler was hooked. They purchased the property, built a giant factory, and housing, and moved the plant, offices, and employees by September 21, 1891. This was to be the last move for the company which remained in Hamilton, Ohio for the next 120 years.

During this period the company became the premier manufacturer of vaults in this country. Its famous projects included the doors at Ft. Knox gold depository, the vaults at Federal Reserve Banks, and the ingenious storage - display vault for documents at the National Archives. It built vaults which survived atomic bomb blasts at the Nevada test site and in Hiroshima, Japan. Mosler branched out into the manufacture of vehicle armoring during World War 2, and the building of castings for magnets of cyclotrons. They also expanded their primary business into card-access banking, drive-up windows, and automatic teller machines.

At its peak the company employed 1000 people at all levels. It remained a family owned and controlled company until 1967 when it was sold to American Standard Companies. They, in turn ran Mosler until 1986 when they sold it to a group of employees and investors. This group owned and operated the company for twelve years until mounting debt and declining revenues forced their unsuccessful attempts to sell. In 2001 Mosler Safe Company entered into Chapter 11 bankruptcy, and its assets were purchased by Diebold Incorporated. It was ironic that a company which spawned a competitor which Mosler out-performed survived to acquire its assets.

To return to my original challenge - to find safe storage for the stamp collection - it was solved more easily than I expected. In moment of epiphany it occurred to me as all philatelists know, that with few exceptions, the value of a collection rests in a small portion of the stamps collected. Even as a novice it was not a problem to obtain a Scott's catalog, find the valuable stamps and remove them. These were then placed in a proper envelope and into my small box in the bank.

Theodore W. Striker

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