

FRATERNAL SUPPLIES, INC.

SUCCESSOR COMPANY OF AMERICA'S GREATEST SWORD MANUFACTURERS

by Heath White

Fraternal Supplies, Inc., located in New London, Ohio, was one of the last, great American producers of military and fraternal goods. The company was the culmination of more than 150 years of mergers and acquisitions of other such businesses. The most prolific manufacturers of U.S. made swords including Ames Sword, M. C. Lilley, Henderson-Ames, Horstmann, and C. E. Ward are just a few of the documented enterprises which amalgamated into Fraternal Supplies. Fraternal Supplies ceased operations in 2012 and its last owner, Thom Mezick, passed away in 2016.

The author, stepson of Mr. Mezick, was tasked with the duty of settling the estate and had rarely entered the factory while they were in business. Having no previous knowledge of military or fraternal goods, it was quickly evident that the remains needed to be rescued from their current state of neglect. Thus began a journey to salvage, preserve and document the surviving artifacts in the Fraternal Supplies factory. This article will provide a description of the factory, offer a small glimpse into company history, explain two metalworking processes and highlight a few of the artifacts found.



Figure 1. Fraternal Supplies Factory.

The Factory

The Fraternal Supplies factory was made up of different departments which were compartmentalized by the skills of the workers, or the products they produced. Examples include departments for Sewing, Art, Hat, Leather, Printing and Metal Working. Many departments were broken down even further by the various tasks performed. For example, the Metal department employed people capable of plating, grinding, stamping, casting and etching. Metalworking skills that took years to master were necessary to produce goods ranging from insignia and buckles to swords and jewelry. As sales declined in recent decades, the number of employees dwindled causing some of these tasks to be outsourced. Fortunately, the company held on to much of the machinery, equipment, patterns and dies required to manufacture certain items even though they no longer had employees with the requisite knowledge to manufacture them.

The Fraternal Supplies factory was originally constructed in 1924 as the 'Metal Plant' for the C. E. Ward Company (Figure 1). One of the metal products they began manufacturing at this location was swords. Prior to the 1920's, the Ames Sword Company was the primary supplier of swords for C. E. Ward. C. E. Ward's

largest competitor at that time was the Lilley Company of Columbus, Ohio. The Lilley Company acquired Ames Sword Company in December, 1922. Lilley's acquisition of Ames was most likely a motivating factor for C. E. Ward's decision to build their own plant capable of fabricating swords.

In the area outside the offices were company records, artwork and trade catalogs (Figure 2). This is an example of how things were organized and maintained throughout the factory. Many of these items were perpetually damp and moldy due to a leaking roof and broken windows. In heavy rains, water would seep through the wooden floor onto the items being stored in the basement.

Within the basement was a room that was affectionately referred to by employees as the 'Vault' (Figure 3). While not actually a vault, the room had masonry walls and a big steel door that kept its contents safe from anyone breaking in. What may have been effective at keeping people out allowed water to seep in when it rained. The primary items in this room were steel stamping dies stored in metal bins stacked on shelves. The perpetual water on the floor eventually rotted the bottom of the wooden shelves and rusted the legs of the metal ones. Most shelves toppled over like dominoes with literal tons of steel dies upon them. Some of the earlier dies made

Figure 2. Area outside the offices depicting how items were maintained throughout the factory.



Figure 3. The 'vault' in the basement Fraternal Supplies factory.



insignia and belt buckles worn by soldiers during the Civil War. Sorting through the shards of rotting wood and rusting metal to retrieve dies that themselves had been waterlogged and rusting was akin to an archaeological dig. When asked why the dies were never moved to a safe location, a former manager of the company replied, *'They were that way when I started working here 20 years ago.'*

Much of the machinery and equipment found in the factory had not been updated or maintained anytime during the past century. The oldest piece of equipment found was a metal planer that was manufactured between 1852-1856 by John Parshley from New Haven, Connecticut. John Parshley was one of the earliest manufacturers of machine tools in the United States. This planer had been partially disassembled with many of its pieces residing on a pallet. This is believed to originally be from the Ames Manufacturing Company.

Among the other pieces of industrial equipment were hat forming machines, a drill press and a Ferracute coining press (Figure 4). The hat forming machines were manufactured during the turn of

the 20th century. By changing the upper and lower forms within the press many different styles and sizes of hats worn by military, fraternal, police and fire departments were produced. These machines were still operational up until the factory ceased operations. The Ferracute press would have been used to make Masonic pennies and similar items using stamping dies. Ferracute supplied similar presses to the U. S. and the Imperial Chinese Mints. There was a second, slightly different press that would have been used to produce buckles, insignia, and other stamped metal goods.

Plaster cast molds once used for manufacturing sword components and other cast metal items were also stored in the basement (Figure 5). These molds were originally from the Ames Sword Company (Chicopee, Massachusetts). Ames was acquired by and most of their assets were moved to the Lilley Company (Columbus, Ohio). Lilley's assets, including these Ames molds, were then acquired by the C. E. Ward Company and were moved yet again to New London, Ohio, in 1951.



Figure 4. Hat forming machine, drill press and Ferracute coining press.



Figure 5. Plaster cast molds originally from the Ames Sword Company (top left); 'new old stock' sword blades and scabbards (top right); and, (bottom) 'Work in process' inventory of scabbard mounts.

Even though Fraternal Supplies and some of their predecessor companies were capable of manufacturing their own scabbards and blades they would sometimes acquire them from a competitor or import them. Many 'new old stock' imported sword blades and scabbards were stored in the basement. These were in their original boxes covered in a thick layer of dust and grime commensurate to decades of storage. As manufacturers, there was virtually no inventory of finished goods. Items were tailored to customer's specifications once an order was received. The company kept inventory of only the most commonly used components. Some of this 'work in process' inventory originated from Fraternal Supplies predecessor companies and had been moved and stored for over 100 years.

Company Research

In total, there were over 20 companies that were merged or acquired to form what was Fraternal Supplies, Inc. These companies were in business for over 800 years cumulatively, employed tens of thousands of workers and produced millions of items. Many items produced by these companies are historically significant and are sought after by collectors and museums today. These companies represent the largest and most prolific American manufacturers of swords, military uniforms & supplies and fraternal goods.

The flowchart in Figure 6 shows how various companies were merged or acquired to become Fraternal Supplies, Inc. When dates are listed with a month and year there is a reliable, accurate, contemporary source like a Secretary of State record or a newspa-

per article. Dates listed as a year only or 'circa' are ones with less reliable sources like city directories. Special attention needs to be paid to changes in a company's name. Company name changes happen for a reason and often indicate a change in ownership or business philosophy. Sometimes similar sounding company names are created with the intent to deceive. The E. A. Armstrong Mfg Company and The E. A. Armstrong Company are two entirely different entities. The Pettibone Mfg Company and The Pettibone Bros Mfg Company is another example of two different companies with similar names. In the case of Armstrong, the original company (The E. A. Armstrong Company) went bankrupt and all their assets were sold off under bankruptcy to the Henderson Ames Company. The M. C. Lilley & Company established a new company called The E. A. Armstrong Mfg Company and hired Edwin Armstrong to help run this new company. To make matters even more confusing, Edwin's brother and former business partner, Frank Armstrong, went off and created yet another company called The Frank S. Armstrong & Company. In 1894 Henderson Ames, E. A. Armstrong Mfg and Frank S Armstrong were each advertising that they had the rights to sell the original, world famous 'Armstrong Uniforms.' Customers were undoubtedly confused.

Who manufactured Armstrong marked swords? As is true in most cases, it depends. All swords marked with 'E. A. Armstrong Mfg Co' were manufactured in Lilley's sword factory in Columbus, Ohio. This makes perfect sense considering this Armstrong company was owned by Lilley. Armstrong swords from prior to c. 1890 were all manufactured by Ames as advertised and stat-

Fraternal Supplies , Inc Company Mergers & Acquisitions

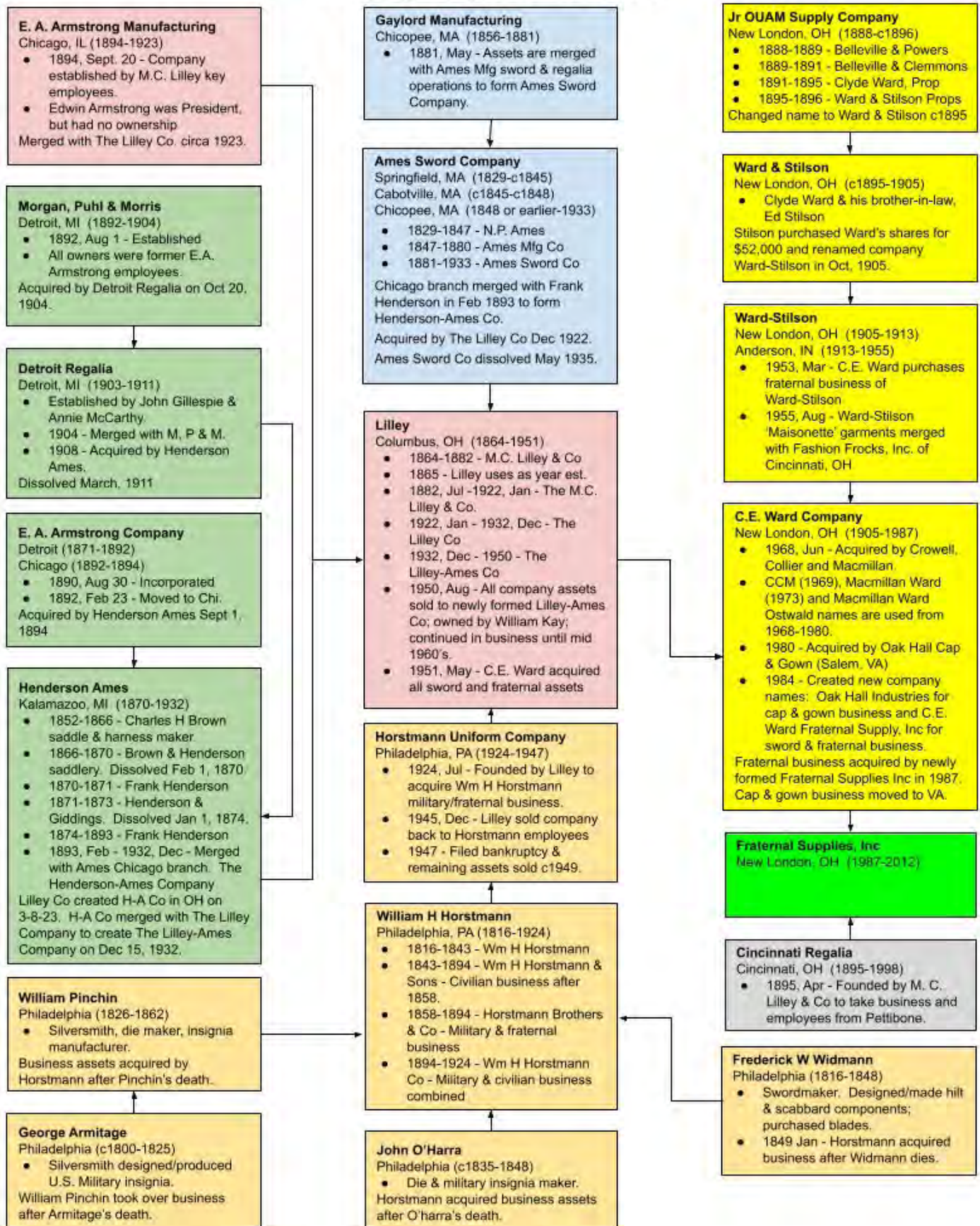


Figure 6. Fraternal Supplies flowchart. Colors represent families of businesses.

ed in their trade catalogs. At some point around 1890 The E. A. Armstrong Company started manufacturing swords in their own factory. They had the requisite machinery, tooling and equipment to produce cast or stamped sword component parts. Surviving etching plates and tooling found at Fraternal Supplies factory can be utilized to someday determine precisely which swords were manufactured in what factories.

There are many fascinating stories and details about company history that are beyond the scope of this paper. Numerous books and articles have been written to document and tell many of the stories about Ames and Horstmann. Lilley, Armstrong, Ward and Henderson Ames have equally compelling stories yet untold.

Stamping vs Casting

This section gives a basic overview of the difference between cast and stamped metal objects, the tooling required for each process and reasons why a manufacturer might choose one process over another. Knowledge of these metalworking processes and their associated terminology is important to understand and appreciate the 'Artifacts Found' in the Fraternal Supplies factory. Most decorative metal objects (i.e. buckles, insignia, sword components, buttons, medals, coins, badges, etc.) were manufactured via one of two metalworking processes: stamping or casting. Stamped items are produced when a piece of solid metal is stamped or pressed into a die using a press or drop hammer. Cast items are produced by heating metal to a molten state and pouring this liquid metal into a mold. The primary tool required in a stamping process is called a STAMPING DIE. The primary tool required in a casting process is called a PATTERN. Items produced via these two processes may look similar, but each process requires different tooling, machinery and skilled employees. In addition, the cost and quality of the finished items associated with each process is different. The cost of tooling is much more expensive for the stamping process. The process of stamping actually hardens the surface of the metal object being stamped thus providing a better quality and more durable finished product. While tooling is more expensive initially for stamped goods, the per-piece costs generally go down as the production quantities increase. For larger production quantities it is often quicker and less expensive to produce items via stamping. For small production quantities the tooling costs associated with stamping are usually prohibitive.

A stamping die is a block of tool steel with a design in the top of it that is a reverse image of the item being produced. One way to get the design in the die is by hand-engraving it. Dies with very simple designs could be engraved in a day or less, while more detailed designs could take more than a month to engrave by a highly skilled engraver (sometimes called a die sinker). Many of the dies used to make military insignia and buckles were engraved by well-known engravers. Some were even employed by the U. S. Mint to engrave dies for medals and coins. A hand engraved stamping die is truly an original work of art that was crafted by a highly skilled artisan.

Once a piece is struck using a stamping die there may be other steps required such as trimming a piece to size, piercing holes, deburring and plating. For items like presentation medals and solid belt buckles with high relief, an item may need to be 'stamped' six times or more in a press or drop hammer to bring out all the design details. Items that require multiple strikes need to be annealed between each strike. Annealing 'softens' the metal by heating it to

around 1,000 degrees Fahrenheit, then cooling it slowly over many hours in an annealing oven. A force, collar and hub are other tools commonly used in the stamping process which are not discussed in this article. There have been millions of dies produced in this country. A very small percentage of these can be accurately ascribed to an engraver. Surviving dies that date to the Civil War era or earlier are rarely found. Finding a die that dates to the Civil War era or earlier, was hand-engraved by a known engraver and was used to make a historically significant object is exceedingly scarce.

A pattern is the primary tool required in the casting process and the sole purpose of the pattern is to create a cavity in a mold. This mold cavity resembles the object being made. Once the mold is made, molten metal is poured into the mold cavity and allowed to cool. The mold is destroyed when extracting the unfinished casting in most commonly used casting processes. This requires a new mold to be made with each casting. Single piece, two piece, match plate and gated are examples of different types of patterns found in the Fraternal Supplies factory that were used to make sword components. These patterns were made from aluminum, lead, white metal, brass, wood and wax used in sand casting, plaster casting and lost wax casting processes. Cope, drag and core boxes are other important tools used in casting that are not discussed in this article. As patterns are repeatedly used the details on the finished goods become worn and patterns need to be replaced. This is especially true in the sand casting process if the pattern is made from a relatively soft material. As the abrasive sand is pounded and packed around a pattern some of the fine details on the pattern get worn. Master patterns could be used to make many working patterns, so for some of the more popular designs there were many patterns used. Each factory utilized slightly different processes, materials and methods for casting. By understanding, examining and identifying the casting methods used at each factory the various patterns found at Fraternal Supplies can be attributed to their proper factory of origin.

A stamping die has a two-dimensional reverse image of the item being produced engraved or impressed in the top of a block of tool steel (Figure 7). A pattern is a three dimensional tool used to create a cavity in a mold. There are many different types of patterns.

Artifacts Found

This section describes the key categories of artifacts discovered in an order that attempts to follow the manufacturing process within the factories.

Artwork

The first step in the creation of most new products begins with an artist drawing a rendition of the finished product. Artwork was also required to manufacture printing blocks used to publish catalogs. The drawings for printing blocks were always done in black and white. Very detailed color drawings were typically made for more expensive items not pictured in catalogs. The color drawings were presented to customers by salesmen to secure orders. Once an order was received, the color drawings were sent back to the factory and utilized by production managers to make sure the items manufactured look like the items that were sold.

Predecessor companies to Fraternal Supplies employed and hired the finest artists available because having the best images of the items being manufactured played a key role in sales, marketing and portraying the company's image. There were over 10,000



Figure 7. Examples of Stamping Die (top) and various Casting Patterns (bottom).

pieces of original artwork found in the Fraternal Supplies factory. Most of the surviving artwork was drawn between the late 1800s through the 1930s and represents a small fraction of what was actually produced. The overwhelming majority of the artwork did not survive. Much of it was simply sent to a landfill once it was no longer useful in generating sales or profits. Some of the records showing who drew the artwork, how long it took to draw and how much it cost were found. This information documents the staggering sums of time and money that were invested in artwork. Re-

ords indicate black and white drawings used for producing printing blocks cost from \$3 to \$35 each in 1915. This equates to \$90 to \$1,000 in today's (2023) dollars when adjusted for inflation for a single black and white drawing.

Unfortunately, the military related drawings are amongst those that didn't survive. Figure 8 depicts a few examples to show the quality, condition and variety of artwork found in filing cabinets, boxes, and next to sewing machines where they were last used.



Figure 8. Monarch from the M. C. Lilley & Company (left); George Washington from the Ward-Stilson Company (middle) and Native American from the C. E. Ward Company (right).

Monarch, a character in a Grotto ritual, was from the M. C. Lilley & Company archives. This dates to the late 19th or early 20th century and is an example of an item Lilley sold, but never published in a catalog. This drawing would be shown to customers to secure an order. Once an order was received, the drawing was used by the sewing department to produce a costume that looked exactly like the drawing. The drawing of George Washington is from the Ward-Stilson Company archives and was drawn in the 1920s. This costume was used in the 20th degree of Scottish Rite Freemasonry. The back of the drawing is marked with the name of the artist, the date this was drawn, and how many hours it took to draw. As with all costume drawings, the manufacturers sold all items pictured including the uniform, belt, wig, hat, sword and footwear. The Native American costume drawing originated from the C. E. Ward Company c. 1912. This was used by the Degree of Pocahontas which was the female auxiliary of the Improved Order of Red Men. Ironically, Native Americans weren't allowed to become members prior to 1974. This is an example of a black and white drawing that was required to make a printing block. The printing block was then used to print trade catalogs and other company literature.

Printing Blocks

Because much of the artwork was drawn for the sole purpose of creating a printing block, they are the logical item to discuss next. There were several tens of thousands of printing blocks, sometimes called 'cuts', found. Some had been submerged in water for many years rotting, molding and decaying while others were neatly stored in cabinets which appeared to be untouched for 100 years. Examples of electrotype, stereotype and photo engraved printing blocks made from several different metals were represented in the collection. These would make a great case study for anyone interested in researching the various processes and materials used in manufacturing printing blocks over the past 150+ years.

One of the more interesting groupings of printing blocks found were used to print the *Drill Manual for the Gatling Gun* (Figure 9). This book was written by Owen J. Hopkins and printed by The M. C. Lilley & Company in 1900. One of the printing blocks found along with an example of what the printed diagram looked like are shown. Note: the printing block image was flipped so it is oriented the same as the printed diagram.

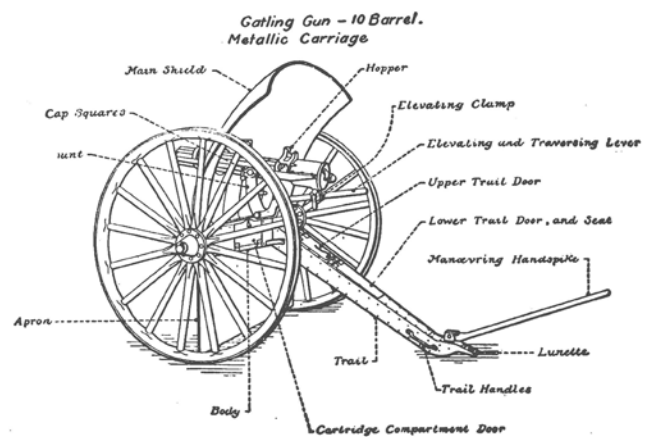


Figure 9. Gatling Gun printing block from the M. C. Lilley & Company.



Figure 10. United Confederate Veterans (UCV) printing blocks from the M. C. Lilley & Company.

The United Confederate Veterans (UCV) printing blocks are from the M. C. Lilley & Company archives (Figure 10). Lilley advertised regularly in a monthly journal called *Confederate Veteran* and supplied uniforms and equipment to many Civil War veteran organizations. Lilley published a catalog for UCV and supplied many items to the UCV. None of the artwork, trade catalogs or other UCV related artifacts from Lilley survived except these three printing blocks. These are also interesting because of all the printing blocks found, these were the only ones that printed a three-color design (red, blue, and black). Each color was printed separately requiring the press to be thoroughly cleaned and set up before printing each successive color. Getting the registration correct with a three-color logo undoubtedly added time and cost, and resulted in additional scrap pages to be printed.

For anyone interested in acquiring a waterboarding device in 1915 the C. E. Ward Company would gladly sell you one (Figure 11). Very few C. E. Ward printing blocks had the company name or initials on them. This was an exception. While difficult to see in the image below, 'C. E. W. Co' on the lower right of this printing block would have been clearly legible when printed in a catalog. This is one printing block from an entire trade catalog of similar devices. No surviving examples of this catalog have been located after searching extensively. For now, the printing blocks are the only surviving documentation of what items were offered in this catalog. Why a waterboarding device? In the late 1800s it became popular for certain fraternal organizations (not the Masons) to include what they called 'side degree' or 'burlesque' devices in their initiation ceremonies. Today this would be called hazing. This started as good clean fun to entertain the active members of an organization at the expense of the initiates. Various organizations and the manufacturers that supplied them would try to outdo one another. Before long many of these devices involved a blank .32 cartridge exploding or someone getting shocked by a jolt of electricity. What was all fun and games wasn't so fun for an organization or manufacturer after injuries, a few deaths and the resulting lawsuits.

The Ames Sword Company offered over 1,000 different models of swords and there was a printing block made for each of them (Figure 11, right). Most of these are easy to identify because the Ames item number is just above the pommel of the sword. By cutting off the Ames item number from the top of the printing block, many of these Ames printing blocks were used by Ames distributors or Ames successor companies (M. C. Lilley and C. E. Ward) long after Ames went out of business.

Trade Catalogs

Trade catalogs are a great resource for provenance information. Knowing what company manufactured or sold an item, the products they offered for sale, when they were sold, all the variations of an item offered and how much it sold for originally are all basic provenance details that trade catalogs often answer. Sometimes trade catalogs provide biographical and historical information not available in any other resource about a company, their business or their owners.

To say trade catalogs were scattered from one end of the factory to the other would be an understatement. Once gathered and sorted, there were over 600 different trade catalogs found. This is believed to exceed any museum or library collection of trade catalogs on military and fraternal goods in this country. A page from The M. C. Lilley & Company military goods catalog NO 43 from 1890 provides a great example of the type of information rarely found in any resource (Figure 12).

Stamping Dies

There were over 12,000 stamping dies found in the Fraternal Supplies factory with the earliest dies pre-dating the Civil War. The majority of the dies were from the various Lilley companies, the earliest dies were from the various Horstmann companies and other dies originated from Henderson-Ames, E A Armstrong, C. E. Ward and Fraternal Supplies. Many of these dies can be properly ascribed to the manufacturers they came from and some have provenance information on the engravers and die makers that created the dies. The age of most dies can be reasonably estimated based on subject matter, name of engraver or die maker, shape and construction of the die and company records. Lilley's dies made after 1900 had a serial number on the die starting with number 1,000 and increasing sequentially. A spreadsheet was recently created to document the known dates of the dies from Lilley. By knowing an accurate date of when some of the dies were manufactured, it is possible to estimate all others to within a year or less based on the serial number.

An early die found that is historically significant with great provenance was one used to produce the M1851 regulation eagle belt plates for William H Horstmann & Sons (Figure 13). Horstmann didn't make or engrave their dies. Instead, they purchased them from Philadelphia area engravers. The Historical



Figure 11. Ames Sword Company printing block for different models of swords (left). Printing block of a waterboarding device sold in 1915 by the C. E. Ward Company (right).

The M. C. Lilley & Co.

SWORD * FACTORY

THE LARGEST PLANT IN THIS COUNTRY.

OUR ANNUAL OUT-PUT IS ABOUT

Twenty Thousand Swords and Sabres.

These Arms are made of the best materials. The mountings and trimmings are hard metals—BRASS and BRONZE.

The blades we use are imported—made by manufacturers of armor, swords and other arms, since the eleventh century, and who enjoy the reputation of being the producers of the **FINEST ARMS IN THEIR LINE IN THE WORLD.**

In the lowest grades of swords only, do we use domestic blades. These we make in our own shops, and claim them as a *superior* production.

ALL OF THE SCABBARDS ARE OF THE BEST OF STEEL, unless otherwise specified.

We do not make brass scabbards that will beat themselves into curves and angles in striking the leg during a march, and become unserviceable. *The finish and the plating is of the best.*

WE MAKE A SPECIALTY OF DESIGNS AND PATTERNS FOR SWORDS

For Presentation, Special Corps, or Societies.

And particularly solicit this class of work.

WE MAKE OUR OWN DIES AND PATTERNS. AND CAN MAKE ANY DESIGN DESIRED

In connection with this branch, we also make

ALL KINDS

OF CAST AND STRUCK-UP METAL WORK

EITHER FOR MILITARY OR SOCIETY PURPOSES.

We claim our productions of better quality and at more reasonable prices than our competitors. No matter what they claim. Write for estimates and be convinced.

Address all communications to

THE M. C. LILLEY & CO.,
COLUMBUS, OHIO.

Figure 12. A page from the M. C. Lilley & Company military goods catalog NO 43 from 1890.

Society of Pennsylvania (HSP) has some of Horstmann's original company records showing when a die was ordered, what the die made, the engraver that produced it and how much they paid for it. This die is documented in Horstmann's 'Machine Book' at the HSP. Horstmann's Machine Book show exactly two stamping die purchases to produce the M1851 Eagle Buckle, both in 1851 (Figure 14). One was purchased from Frederick C. Key & Sons in September 1851 and the other from Anthony C. Paquet in December 1851. The M1851 Horstmann eagle buckle die found was the one engraved by Paquet, not Key. In December 1851, Horstmann recorded the purchase of a die to make the eagle and a separate die to make the wreath 'for U. S. new Reg Belt Plate complete'. The cost for engraving the dies and providing cutting tools was \$50. There was a separate listing for '1 die forged' that cost \$6.25. The '1 die forged' is the cost of the forged block of steel that was to be engraved. In April 1853 this die was sent back to Paquet to be altered at a cost of \$4. There is no indication of what was altered on the die. In December 1854 the die was sent back to Paquet one final time to have the wreath added to the die for \$12. The \$12 cost to add the wreath suggests the \$4 alteration in 1853 was much less significant. When making any changes to the design in a die the first step would be to anneal the steel which makes it 'softer'. After the changes are made to the die the final step is to heat treat the die which returns it to a hardened state.

Based on this information there were three versions of this Paquet die and the belt plates it produced prior to 1855. The original design with wreath applied, the altered design with wreath applied and the final design with the wreath incorporated in the buckle design. The \$72 it cost to have this die made was by far the most expensive die purchased by Horstmann from 1845 to 1860. The cost to have this made today, if outsourced to China using modern technology, would be around \$2,000. To have this hand-engraved by a known engraver today??

Horstmann's records show they only purchased three dies from Paquet. Two made a wreath and one for the M1851 eagle belt plate described above. Anthony C Paquet was born in Germany in 1814,



Figure 13. Die used to produce the M1851 regulation eagle buckles for William H Horstmann & Sons.

Machinery December 1851.

Amount bought over			86 31 40 75 26
Engraving 1 Die for Eagle	for U.S. new		
1 " " Wreath	Reg Belt Plate		
Cutting Tools and for the Dies	complete	A. Paquet	50 00
1 Die forged			6 25
Altering Steel Die for U.S. Belt Plate		A. C. Paquet	4 00
Engraving Wreath in Die of U.S. Belt Plate.		A. C. Paquet	12 00

Figure 14. Horstmann record showing purchase of M1851 eagle buckle die from Paquet (top); M1851 eagle buckle die altered in 1853 (middle); Wreath design added to M1851 eagle buckle die in December 1854 (bottom).

immigrated to America in 1848 and died on September 5, 1882. Paquet is amongst the finest engravers in American history and there are numerous examples of work that can be cited. Paquet engraved dies for the 1861 \$20 gold coin while working for the U. S. Mint in Philadelphia. One of these coins, which was stamped from Paquet engraved dies, recently sold for over \$7 million dollars. The highest military award in this country is the Medal of Honor and it was Paquet that engraved the original dies used to manufacture these medals. When the U. S. Congress commissioned a medal to be presented to Ulysses S. Grant in 1863 commemorating his victory at Vicksburg, it was Paquet that was commissioned to engrave the dies. Pertaining to the Grant medal, multiple newspaper articles stated, *'the engraver expects to have the work completed in seven months, for which he will receive the sum of \$2,200.'* One of Paquet's business cards (nothing fancy, just a business card) came up for auction in 2015 and sold for \$2,900. When Paquet died in 1882 the example of Paquet's work mentioned in nearly every obituary was none of the above. The obituary in *The United Opinion* (Bradford, Vermont) from September 15, 1882 tells the story as follows:

WASHINGTON LETTER – The death in this city of Anton C Paquet, an engraver and die sinker at the Bureau of Engraving and Printing, revives a strange coincidence. Congress had voted a medal to Abraham Lincoln, and its completion was put into the hands of Paquet. The work was just being finished, and in the process of hardening the medal, on the night of the assassination the die cracked completely across the head, the course corresponding exactly with that of the bullet from the pistol of the assassin Booth.

There has never been a stamping die engraved by Paquet offered for sale and none were known to exist in any private collections. The historical significance of the early eagle belt plate design with the eagle facing its heraldic left and the connection to Horstmann make this stamping die an amazing find. However, this pales in comparison to the discovery of a die engraved by the hands of the master engraver, Paquet. There are many more stories to tell amongst the many other dies found in the Fraternal Supplies factory.

Patterns

The original patterns used to make molds for sword components, buckles, badges and insignia represents some of the more historically significant artifacts found and are also amongst the least researched. There were different types of patterns (single piece, two piece, gated), made from different materials (white metal, brass, wood, lead, or wax), spanning nearly 200 years of use from many manufacturers. The following examples show some of the variety found:

Known as the 'Congressional War of 1812 swords' are a group of presentation swords that were awarded by Congress to Navy officers for their heroic action in battle during the War of 1812. The earliest artifact found thus far is the pattern used to manufacture the drag for these Congressional Swords (Figure 15). This stunning design features a fouled anchor with a sea creature entwined around it in high relief. This drag pattern is ascribed to the well-known Philadelphia sword maker Frederick W. Widmann. Peter Tuite's book, *U.S. Naval Officers, Their Swords and Dirks*¹, shows several images of the War of 1812 Congressional Presentation swords, but none of this drag. Tuite did include a notation in his description of the swords which stated, *"There is also some*

evidence that Frederick Widmann worked on these swords." The endnote associated with this statement referenced a letter written by Widmann in which he claimed to be employed in executing these swords when he arrived to Philadelphia in 1817. Widmann's sword making business was acquired by William H Horstmann & Sons after Widmann's death in 1848; Horstmann's sword business was acquired by The Lilley Company in 1924; Lilley's sword business was acquired by the C. E. Ward Company in 1951 and Ward's sword making assets were acquired by Fraternal Supplies in 1987. This pattern survived 200 years of corporate mergers and moves.



Figure 15. Pattern used to manufacture the drag for Congressional Swords.

Many artifacts discovered stand out as exceptional designs with great character without knowing anything about the provenance of the item. This two-piece eagle sword pommel pattern is a good example (Figure 16). The eyes, beak and mouth of this eagle pommel design have character and attitude that is lacking in so many other designs. The wooden block this is mounted to has a won-

derful patina with worn edges with worm holes reminiscent those found in old chestnut beams. Once this two-piece pattern is split in half and examined from the inside there are clear indications that this was modified at some point in its life so the design now differs from the original design. Note the arrows are pointing to areas where material was brazed or soldered to the original design. In addition, the ring at the tip of the eagle's beak may not have been on the original design. On the wood is stamped a number 23 and a number 28. These two numbers suggest this may have been pattern number 23 initially, then became pattern number 28 after the pattern was altered.

Listed as sword model 'U' in Ames Sword Company catalogs was a Navy Officer Presentation sword (Figure 17). This was among the most expensive swords offered in the Ames catalog and featured a guard depicting a mythological sea horse (hippocampus). This sword guard pattern stands out as one of the most visually appealing in design and detail. This is also special because the

tool marks are still clearly evident indicating this pattern produced very few finished parts.

The Georgia state seal two-piece buckle pattern is believed to be from the Ames Manufacturing Company and date to sometime prior to the Civil War (Figure 18). It is likely that there were many patterns of this buckle design that were assembled on a gated pattern so a mold would produce many pieces with each casting. The two-piece navy buckles mounted on a gated pattern show how that would have been done.

Etching Plates

Sword manufacturers utilized etching plates to etch decorative designs or company hallmarks into sword blades and scabbards. An etching plate is a flat piece of metal with a design engraved into it. To transfer a design from an etching plate to a sword blade the following was a fairly simple process. The first step was to heat and filter a concoction of beeswax and other ingredients. A thin



Figure 16. Two piece eagle pommel pattern.

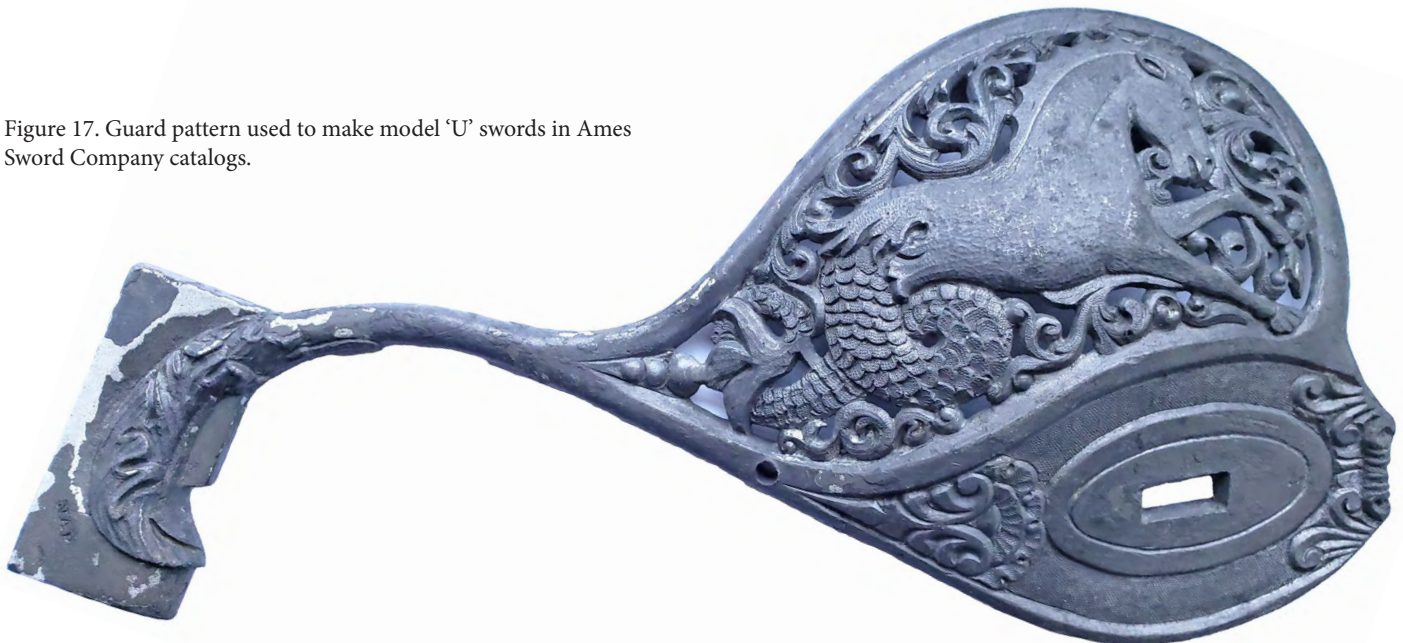


Figure 17. Guard pattern used to make model 'U' swords in Ames Sword Company catalogs.



Figure 18. Georgia state seal pattern from Ames Mfg Company(left) and two-piece navy buckle pattern (right).

layer of liquefied wax was applied to the etching plate. A special transfer paper was placed and pressed on the etching plate. Next, the transfer paper was removed from the etching plate and carefully placed on a sword blade. This step transferred a film of wax to the blade which protected the parts of the blade that were not to be etched. Finally, acid is painted on the metal surfaces not protected by wax. The acid removed a portion of the metal's surface leaving an etched finish.

Etching plates that can be positively ascribed to Ames Sword, Henderson-Ames, Lilley, Horstmann, C. E. Ward, Fraternal Supplies and E. A. Armstrong were found. The collection of sword etching plates represent a wonderful resource in sorting out and identifying what company actually manufactured certain swords and which distributors and retailers they sold to. From a historical and research perspective these offer great insight and information that has never been studied. There are over 100 company logos/hallmarks depicted on the etching plates. A sample of some of the company hallmarks found on sword etching plates are shown (Figure 19). The Springfield Armory hallmark is on an etching plate that was made and used by the Ames Sword Company. The blade patterns on this etching plate (not shown) provide proof that these swords, commonly attributed to the Springfield Armory, were manufactured by Ames.

Each manufacturer used a slightly different size, thickness or type of metal stock for their etching plates. Horstmann etching plates were plated with a yellow metal finish. The First Troop Philadelphia City Cavalry etching plate is an example of one from Horstmann (see Figure 19). Lilley's etching plates tended to be made from steel that was wider and thicker than others. The United States Marines etching plate is from Lilley. Ames actually etched their company name in their etching plates. E. A. Armstrong etching plates appear to be made from a magnesium alloy, not steel. By determining the differences in manufacturing processes and methods utilized by each manufacturer it is possible to identify which tooling originated from each manufacturer.

Scabbard Mandrels

Scabbard mandrels are the tool used to manufacture or repair scabbards. The collection found are believed to originate from Ames, Lilley or Horstmann. Also in the Horstmann Machine Book at the Historical Society of Pennsylvania is a journal entry from February 1853 documenting the purchase of '20 irons for making scabbards'. The cost was \$75. Because many of Horstmann's sword patterns, stamping dies and core boxes from this era were here, it is plausible to assume some of the scabbard mandrels pictured below are from this 1853 purchase (Figure 20).



Figure 19. Etching plate blade designs the First Troop Philadelphia City Cavalry (top left) and the United States Marine Corp. (second from top left). Samples of company hallmarks (bottom left and above).



Figure 20. Scabbard mandrels.

Conclusion

There is no better source of provenance information for any collectable objects than the manufacturer that produced them. Trade catalogs, company records and tooling used to manufacture and sell items that are sought after by collectors, researchers and museums provide details not available from any other source. In the absence of this information the story of many objects is incomplete at best, many times inaccurate. This article provides little more than a brief overview of Fraternal Supplies factory, company history and some of the artifacts found. Some of these topics have been re-

searched and documented in great detail while others will require years of additional research. The sword related artifacts salvaged and preserved offer an opportunity for researchers and authors to tell a more complete, accurate story about American manufactured swords and the companies that produced them. None of these artifacts have ever been utilized in any published work. The overwhelming majority of the sword related artifacts found have been kept intact as a collection. The future of these is yet to be determined. While available, it is the intent of the owners to make this treasure of information and artifacts available to those interested in researching, learning, teaching and sharing.

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