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Modifications to Metallic Planes to Reduce Friction

By Bob Garay

The use of hand planes go back to Roman times, their design was basically a wood or metal body that securely holds a cutter that slightly extends from a cut-out on the planes bottom. Roger K. Smith in his book P-TAMPIA has photos of unearthed Roman planes with iron bodies or bottoms. Metallic planes were used in Europe during the 14th -16th centuries. Yet for the most part planes in America developed as wood bodies up until the early 19th century. Craftsman enjoyed the smooth workings of wood on wood with limited friction while using them. Yet in an effort to improve the workings and manufacture of hand planes, makers looked again at iron bodies to hold the cutter. Often the heavy iron bodies met with caution from woodworkers, as they found the heavier iron bodies with an iron sole produced more friction when using. Not a huge problem for the hobbyist, but the early woodworker who used a plane 12 hours a day this difference was a big deal. Thus manufacturers experimented with ways to reduce the friction these metallic planes produced. This was an exciting time of experimentation, especially for current day plane collectors. Collectors often hunt for these rare planes with modifications to the planes bottoms, in an effort to reduce the friction so they were closer to the smoothness of wood bottom planes.

Above - The G.P. Davidson 1902 patent plane with bone inserts on the bottom. Patent #696,414 April 1, 1902. Photo courtesy of the D'Elia Antique Tool Museum.

When I started woodworking as a youngster I used my Dads planes or the planes in the school shop. These were usually Stanley planes and I cannot remember ever using one that was corrugated. It was while I was in the Navy working in the Patternmakers wood shop that I first used one with a corrugated sole. I thought this was great – and when using it I felt like it did indeed work smoothly with less friction. Of course nowadays I look back and think it was all my imagination with the uniqueness of it all skewing my judgement. As now after thirty years as a shop teacher I have done plenty of planing with both smooth bottoms and corrugated bottoms and I don't really feel any difference. During more recent times as a tool collector, I came to realize Stanley was not the first to implement corrugations to reduce friction. I also found that some creative makers experimented with some wild designs to make the metallic plane more comparable with the smoothness of the wooden plane.

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April 11, 2021 - CRAFTS Tailgate Meeting
Oldwick Fire House, Route 523, Oldwick, NJ

CRAFTS Auction - May 22 , 2021
Oldwick Fire House, Route 523, Oldwick, NJ

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of New Jersey

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The purpose of CRAFTS of New Jersey is to encourage interest in early trades and industries, and in the identification, study, preservation and exhibition of tools and implements used and made in New Jersey as an integral part of our heritage.

Membership in CRAFTS is open to anyone who shares the above interests. Annual dues per person or couple are $15 for the membership year of July 1 through June 30. Membership fees may be sent to: Stew May, 300 Winston Dr. Unit 1909, Cliffside Park, NJ 07010 (write check payable to CRAFTS of New Jersey).

CRAFTS of NJ meetings are held at the HOST Masonic Lodge in High Bridge, NJ. Take I-78 to Route 31 exit at Clinton. Go north on Rte. 31 two miles to second traffic light at the High Bridge exit. Turn right and go about half a mile to Dennis Ave. Turn left, then straight to the Masonic Lodge (on the left). Tailgate sales in the parking lot begin at 10 A.M., meeting starts at 1 P.M.

The TOOL SHED

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CRAFTS WEBSITE
www.craftsofnj.org

Containing general information about CRAFTS and its activities including: meeting schedules, Tool Shed articles, etc.

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President's Corner

Welcome to Spring 2021
Hello to all!

Spring is on the way at last! I still have a foot of snow in my yard in some places but it has been melting rapidly over the last several days. Today should get the rest of it as temperatures are forecast to top 70 degrees. I hope that this good weather finds you well. There is a lot of optimism on the horizon as we look forward to getting our Covid vaccine shots and warmer weather. It will be wonderful to get back to "mask free" social events as we visit with family and friends. Meantime, we need to remain vigilant and patient.

The CRAFTS community has a lot to be especially optimistic about. We are planning to have a full schedule of events this year including meetings, auctions, and the picnic. There will be two auctions in 2021! The first will be in May and the second will be in October. Thanks to Cliff , Steve, and Scott our fine auction team! It takes a lot of work to collect, catalogue, advertise, and auction the hundreds of tools that we sell each year. This year we will sell the 2020 inventory and new inventory currently in storage. We invite you to assist when we are setting up the auctions and to be part of the "team of runners" during the auction. Stay tuned for dates and times.

I hope you are all able to begin exploring and collecting very soon! "On-line" tool auctions are fine but nothing beats getting outside in the country and going through box lots as dawn breaks! Happy collecting!

Ivan Raupp
CRAFTS President

Editors notes -

The April CRAFTS meeting will be a tailgate sale only with no inside presentation. The building will be open for bathroom use. It will be held at the Oldwick Fire House, Route 523, Oldwick, NJ, as we did at our November meeting.

Crafts Auction will be May 22 also at the Oldwick Fire House as usual in recent years. The auction lots can be seen on our CRAFTS website - www.CRAFTSofNJ.org

CRAFTS will be holding a second auction this year in October. To add tools to this auction contact Cliff Nagle - 908 -722-2955

CRAFTS picnic is in the planning stage and we are looking for a mid-Sept date possibly Sept 11 or 18th. We will get more information out with the next Tool Shed.

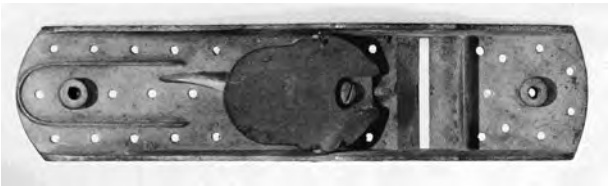
Continued from page 1

Designs for metallic plane bottoms to reduce friction

E. G. Storke – Patent: 96,052, Oct. 19, 1869. Method of Preventing the Adhesion to the Wood of the Faces of Metallic Planes Auburn, NY, (Elliot Storkes founded the **Metallic Plane Company** in 1867) A metallic plane having the sole grooved in lines parallel to the sides. Storke says this is to decrease the points of contact between the plane and work piece and **to form free air-channels** so that **no vacuum** can be formed. The overall intention is to **reduce friction**. Although these channels are commonly known today as corrugations, Storke only refers to them as fluting, grooving, or channeling.
Excerpt: "*Those flutes, grooves, or channel, may be more or less in number, and cut to a greater or less depth, provided the object be thereby attained of relieving all extra and unnecessary friction."*
And it goes on to say -
"The practical effect of this has been to prevent in large degree the introduction of general use of metallic planes. The object of my invention is twofold, namely to remove about one-half of the surface of the face of the plane, so that there shall be fewer points of contact, and to form free air channel, so that no vacuums can be formed, or any trouble arise from atmospheric pressure, however perfect the plane or true the surface on which it is moved."

Above & right - Metallic Plane Co jointer plane with corrugated bottom.

Orril R. Chaplin - Patent: 126,519. May 7, 1872, Improvement in Carpenters' Planes. The patent says "*My invention relates to the means to **reduce the adhesion** of the plane-stock to the material being dressed; and it consists in perforating the face of the plane-stock with a series of holes thereby reducing the area of the stock exposed to atmospheric pressure.*" A later Chaplin's Plane Advertisement in 1887 says, "***the corrugations afford air spaces, and reduce friction to the minimum**."*



Chaplin Patent model Smooth Plane, Bed & saddle only. Holes through sole for less friction are part of the patent. PTAMPIA PG.156

Above & right - Chaplin Patent planes made by Tower & Lyon with bottom corrugations.

Zoar plane - This is a "second category" of Knowles - type plane discussed by Roger Smith in PTAMPIA Volume 2 Figure 4, p.10. The Zoar planes were most likely cast at one of the foundries in Zoar, Ohio. Zoar is located in the eastern side of the Tuscarawas River, settled in 1817 by a group of German Pietists who produced agricultural and industrial goods.

Above - Zoar fore plane -No known patent. Origin - Zoar, Ohio. Heavy cast iron plane with corrugations on the bottom. Photo courtesy of the D'Elia Antique Tool Museum.

Louis C. Rodier – Patent: 212,986, Mar. 4, 1879, Laflin Manufacturing Co. – Westfield, MA. Improvement in Bench-Planes, Westfield, MA. Patent description describes benefits of the wavy corrugations.
"*It will be seen that I cast sinuous grooves in the face of stock. A running longitudinally thereon. The general objective of such or straight grooves—viz., **to prevent adhesion** of the plane to a very smooth surface—**is well***

Above - Rodier plane with wavy corrugations on bottom.

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Above - **Hazard Knowles,** Colchester, Connecticut. Patent and date unknown. Knowles type jointer 27" long with Herring-bone pattern corrugated bottom. Photo courtesy of the D'Elia Antique Tool Museum.

***understood**, and to accomplish that objective straight grooves are sufficient; but in using a plane so made it is found that in planing sharp corner of a board the corner will often drop into a groove and thus become scraped or injured; but if the face be corrugated with sinuous grooves as shown, this inconvenience is entirely obviated."*

Above & right - Siegley No. 4-1/2 smoother plane with corrugated bottom.

Jacob Siegley – Patent: 510,096, Dec. 05, 1893, Wilkes-Barre, PA, "*The underside of the main part of the bottom "a" and the underside of the throat piece "b" are provided with longitude corrugations "f"* ***by which the friction of the bottom of the plane with the surface to be planed is considerably reduced*** *and an easier working than with the solid smooth bottom produced."*
In a Siegley Advertisement in 1901 it was written, "*The bottom of the plane being corrugated therefore will* ***greatly reduce the friction*** *common to all solid iron planes.*"

Above - Holly smooth plane with dimpled conical-shaped corrugations.

Birdsill Holly – Patent: 9,094, July 6, 1852, Silsby, Race & Holly, Seneca Falls, N.Y. "Although not part of this patent specifications, all Holly's planes of this "new style" have either parallel fluted corrugations or a series of conical-shaped corrugations that appear to have been made with the tip of a large drill bit."

Above - Morris jointer plane with diamond shaped intersecting ribs on the bottom to reduce friction.

Ellis H. Morris – Patent: 109,037, Nov. 8, 1870. Manufactured by the Sandusky Tool Co. 1870-1875. "The invention consists in casting the body of the plane with a series of intersecting ribs, covering the entire face… In the drawing represents a thin iron plate, cast with narrow projecting and intersecting ridges on its lower face." I am well aware that cast-iron planes have been made with longitudinal grooves planed in their faces, and therefore disclaim the invention of such. What I claim as my invention, and desire to secure by Letters Patent, is - The intersecting ridges on the face of a metallic plane.

Above - Steers smoothing plane with dovetailed rosewood strips to reduce friction.

William Steers – Patent: 284,919, Sep. 11, 1883. Brattleboro Tool Co. Plane Sole with Rosewood Inlay dovetailed. – "The metallic face-plate having longitudinal ribs and transverse ribs forming the throat of the plane, combined with wooden strips, inserted between the ribs, as set forth."

The Steer's patent had recessed grooves machined into the sole of the plane to accommodate rosewood strips into the dovetailed joint. The natural oil of the rosewood, together with its lesser surface tension, probably accomplished the intended function, but it is hard to believe that a feature that would have consumed so much time in the manufacturing and assembly process would have been of sufficient perceived merit to justify the additional expense by the woodworkers of the day. Whatever its economic success, the Steer's patent is an extremely well made and interesting antique hand tool. This plane has the beauty of a rosewood bottom and is about as close to a wood bottom on a metallic plane one can get.

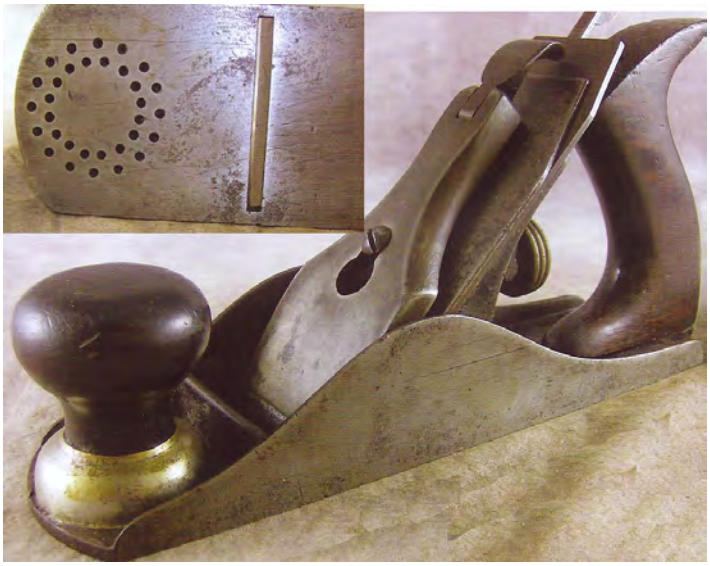
Above - Jack plane & Smoothing plane made by the **Boston Metallic Plane Co.** with open slots in the base to reduce weight and friction.

Above & right - Bailey Tool Co. block plane with their name cast into the sole as corrugations.

Bailey Tool Company – Block plane - Woonsocket, RI. In the 1870s Seldon Bailey was involved in the manufacture of wringing washing machines. In 1872, he formed the Bailey Tool Company to make planes using a patent by Joseph Bailey who was Superintendent of the Bailey Wringing Machine Company, and assigned his patent for an eccentric rod to clamp the cutting iron to Seldon Bailey, who was President of the company. One of the early planes this company produced is the graphic block plane with the corrugated bottom forming the company name. Selden Bailey, who was president of the Bailey Tool Company but not a relation of Leonard Bailey, realized that his company was in financial difficulties and asked Leonard Bailey for help. Leonard Bailey suggested that the Bailey Tool Company improve their marketing by having "Bailey Tool Company" cast into the sole of some of their block planes. Leonard Bailey had left the Stanley Company after a patent dispute and was making his own planes in a shared space of the Bailey Tool Company Factory.

Cyrus H. Hardy - Boston metallic Plane Co. Patent No. 131,544, September 24, 1872. Patent calls for the provisions for "openings or slots" that reduced the weight of the plane. This company was in business for only a short time 1872-1874. The removal of metal on the bottom would indeed decrease the weight of the plane and therefore reduce friction.

Oliver Longval - Patent #471,391, March 22, 1892, Millbury, Massachusetts. Oiling device modification made on a Stanley No. 4 smooth plane. Patent applied for. "O. LONGVAL" stamped on the top of the knob. In his patent description he states - *"the plane when thus oiled running smooth and easy upon the most objectionable surfaces."*



Above - Oliver Longval - Oiling device modification made on a Stanley No. 4 smooth plane. Photo courtesy of the D'Elia Antique Tool Museum.

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Above - Weyland Self Oiling Plane. 1904 patent. Photo courtesy of the D'Elia Antique Tool Museum.

Joseph Weyland Patent 770,881, September 27, 1904. Los Angeles, California. Self oiling plane modification. Fill the hole in the top of the knob and dispensing hole drilled into the sole. Oiler modification here is shown on a Stanley No. 4-1/2 plane.

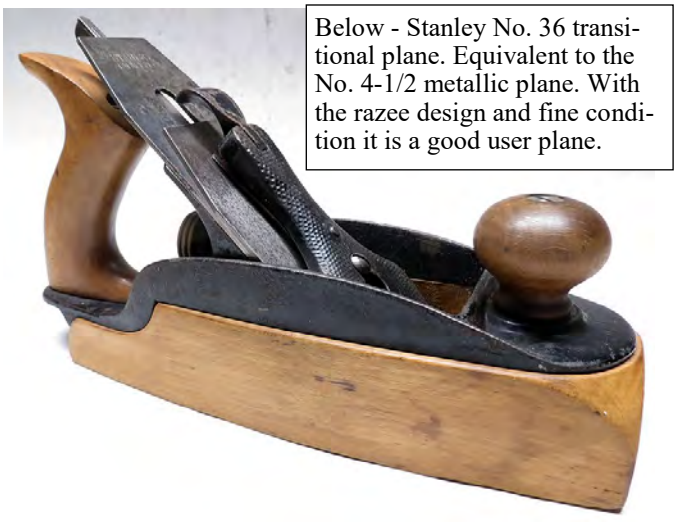
William Foster - Savage Mfg. Co. Patent 3,355, November 24, 1845. William Foster patent of a Knowles type cast iron jointer plane 21" long. As stated in his patent - *"The material which is inserted in the recess occasions the plane to run light and easy, thus rendering it the most efficient plane stock made for durability, economy and convenience. The material which is inserted in the recess (CZ) occasions the plane to run light and easy, thus rendering it the inmost efficient plane stock made for durability, economy and convenience."*
The cap is stamped Phoenix Works. The word "SAVAGE" is cast into the top heel of the plane. The Savage Mfg. Co. of Savage, MD 1840-1850 . There is a opening behind the cutter for soap stone as shown in the patent to reduce friction.

Above - Foster jointer plane with cut-out opening behind cutter for soap stone insert. Photo courtesy of the D'Elia Antique Tool Museum.

Conclusion

During the 100 years of these plane modifications it makes one wonder, did any of this actually work to reduce the friction of the metallic plane enough to notice or to matter. As many of these modifications did not sell well and are rare today, I would think not. Or maybe it was the extra work and expense that did not justify the limited results. Of all these modifications the simple corrugations did catch on and had success with buyers. Also the Steers patent plane has enough samples still around to consider it a success, and also what a beautiful plane.

But to me, the modification that seems to be the one that really won early woodworkers over is a plane that today is pooh-poohed by many woodworkers and collectors. The wood bottom transitional plane. The wood bottom matched with a cast iron top frame included all the adjustment features of the Bailey - Stanley metallic planes and the smooth frictionless action of the older wood planes. Of course like the wood planes the bottoms did get worn and eventually the mouths did open up, but a transitional plane in good condition is a pleasure to use.



Below - Stanley No. 36 transitional plane. Equivalent to the No. 4-1/2 metallic plane. With the razee design and fine condition it is a good user plane.

Thus what can be done to the metallic plane to reduce the friction inherent in the metal to wood contact. The one thing that can't be patented seems to work the best. Clean the bottom of the plane with a light sanding and coat it with paste wax. This totally changes the action of the planes performance. Woodworkers are amazed with the superb smoothness this paste wax application achieves in reducing the friction of their planing action. Yet I do enjoy all of these creative modifications to the metallic planes.

Many thanks to Andy D'Elia for his contribution of many of the planes and information included here. The D'Elia Antique Tool Museum in Scotland, CT is filled with his collection of patented and rare planes. See his website for more information here - D'Elia Antique Tool Museum.

Thanks to Don Wilwol for his article, ***Why Were Planes Corrugated***, it got me thinking about this topic and he kindly contributed some of his research here. Much more information on antique tools can be seen at his website - www.timetestedtools.net

The Union Manufacturing Company
A Brand Reborn, Tools Reimagined, Building on Tradition
By Don Bosse

Most companies have humble origins and are typically founded by one or two individuals who aspire to make a better life for themselves. Usually limited in capital but not determination, many companies take years of hard work and long hours to succeed. The Union Manufacturing Company of New Britain, Conn. was founded under quite different circumstances. Following the close of the Civil War the businessmen of New Britain realized their industries would benefit by having a local foundry that could supply grey iron castings and perform machine work on a contract basis. On August 30, 1866, the Union Manufacturing Company was organized as a joint stock company, 38 of New Britain's most prominent businessmen raised $100,000 in capital to fund the new company, the list of contributors reads like a who's-who of the towns industries. Timothy W. Stanley was elected president and was one of the directors, some readers may recall he was one of the incorporators of the Stanley Rule & Level Company when it was formed in 1858. The other directors were Cornelius B Erwin (Pres., Russell & Erwin), Charles Blakeslee (Judd & Blakeslee), J.A. Pickett (Sec. and Treas., North & Judd), and William. H. Hart (Sec. and Treas., Stanley Works), the secretary was Mahlon J. Woodruff (Mgr., Russell & Erwin).[1]

Figure 1 - The Union Manufacturing Co., ca. 1892.

A parcel of old swamp land located east of the Stanley Rule & Level Co. was purchased, new buildings were to be constructed and ready for occupancy by January of 1867.[2] An 1868 listing of the factory buildings describes them as "the main building is the iron foundry 168x42, 1 story, built of wood, with wing 80x40; also, a wood factory 135x35, 2 stories; office and packing room 120x35, 3 stories, brick and wood."[3] With property secured and buildings in progress that still left the factory absent the necessary tools, materials, and a skilled work force to produce the goods. Acquisitions were a common method used to quickly expand a company's capabilities. Three businesses were acquired to help get the new company up and running as soon as possible. The butt businesses of the James Y. Smith Mfg. Co. of Providence, and the Union Butt Co. of Providence were acquired, these purchases included the machinery, tools, patterns, flasks, and stock on hand. The machine shop business of A. H. Merriman of New Britain was also bought out and included 10 or 12 experienced machinists.[1] These three acquisitions provided the Union Manufacturing Company with many of the resources necessary to get the business up and running.

Most of the casting work the Union Manufacturing Co. performed was for other businesses, over time the company expanded their own offering of cast butts, and in the early 1870's began producing a line of polished copper cistern and yard pumps. In the spring of 1880 James N. Skinner of Windsor Locks, Conn. came to New Britain, having just invented and patented a new type of chuck he was in search of the right company to manufacture it and sought out Charles M. Burgess, his tent-mate from the Civil War. Charles M. Burgess was the superintendent of the Russell and Erwin Mfg. Co. and arranged a meeting between James N. Skinner and Cornelius B. Erwin. At first Mr. Erwin considered entering that line business but decided it did not fit their business model and recommended he contact the Union Manufacturing Co.[1] (recall that Erwin was one of their directors.) Recognizing the value that the Skinner chuck provided, the Union Manufacturing Co. entered into an agreement with Mr. Skinner and commenced producing them. James Skinner oversaw the production of the chucks and even made several trips each year to market them. In May of 1887 Mr. Skinner left the Union Manufacturing Co. and

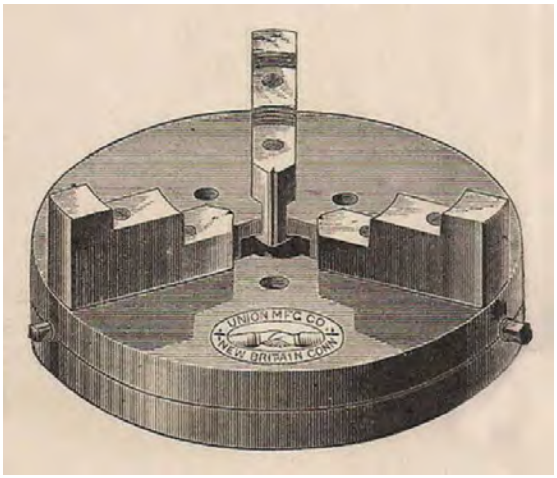


Figure 2 - A catalog image of a Union Mfg. lathe chuck.

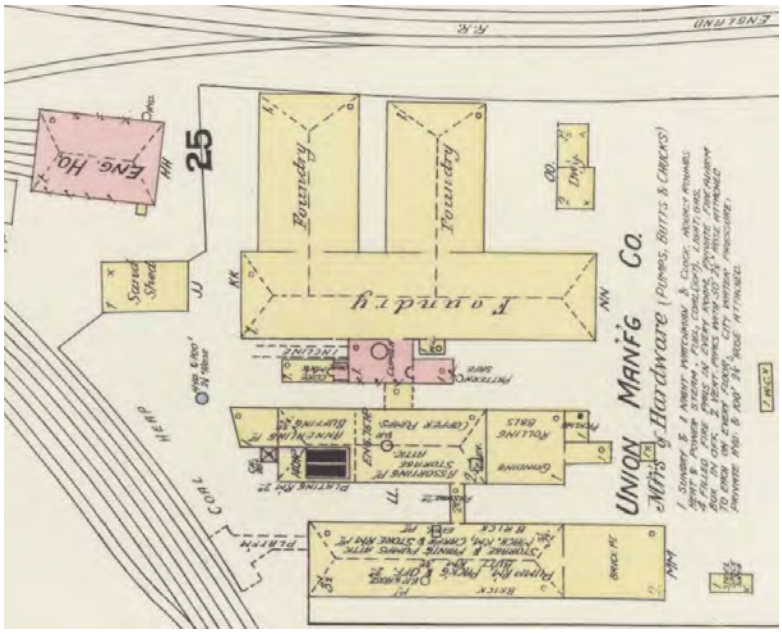


Figure 3 - The factory building layout ca. 1890.

founded the Skinner Chuck Company. Fortunately, the Union Manufacturing Co. had in their employ John W. Carleton and A. W. Hadley, talented machinists who were very capable and who took over the supervision of the chuck manufacturing operations.[1] With the advent of the internal combustion engine and as the mechanization of society increased, so did the demand for chucks and machine tools, the variety of chucks offered by the company continued to expand over the years (Fig. 2). The manufacture of chucks became the most successful endeavor the Union Manufacturing Company would undertake; continued demand brought many years of increasing growth and profits.

Early in the 1890's the Union Manufacturing Company's reputation for fine quality castings led them to specialize in the production of castings for numerous pioneering typewriter companies, such as Yost, New Century, Densmore, Blickensdorfer, and Hammond, later they supplied castings for the Underwood and Royal typewriter companies. Changing times brought changes to their line of goods, as many towns established centralized water supplies and homes became connected to them the need for pumps diminished. The decline in sales prompted the company to sell that portion of the business in 1907 to the W. & B. Douglas Co. of Middletown, Conn.[1]

One of the greatest improvements to manufacturing was brought with the advent of electricity, electric lighting and electric motors revolutionized how the factories were operated. In 1899 the power system in New Britain was split into two distinct systems, a 110-volt system for powering the trolleys and a 500-volt system for supplying the factories. The Union works was one of the first factories to sign a contract to be connected to this new electrical system.[4] Factories and the production of goods evolve over time as technologies change, and buildings need to be remodeled to adapt to the evolution of the business. Sometimes change is forced upon a business, on April 4, 1900 a fire broke out in the main factory building of the Union Manufacturing Co. The building was of wood construction three stories high with most of the timbers dry from age and much of the structure soaked with oil from years of machine work. That structure housed the main factory engine, and the drilling machines which were located on the top floor. The fire burned so rapidly that within an hour of it being reported the drilling machines on the top floor had crashed down through the building, destroying the east end. Figure 3 illustrates the original factory buildings as they stood in 1890, the yellow color indicates buildings constructed of wood, pink indicates structures made of brick. The building was totally gutted by the fire and it is fortunate the rest of the complex survived since most of the buildings were of wood construction. Plans were put in place immediately to begin recovery; electric motors were placed in the various departments not damaged by the fire to restore factory function.[5] A new building of brick construction was called for and work on it began almost immediately. To avoid the potential for future fires the other buildings were also rebuilt using brick and the finished structures are reflected in the 1909 fire insurance map shown in figure 4.

The fire that destroyed the factory building precipitated expansion of the facilities with modernized buildings and this brought new opportunities to the Union

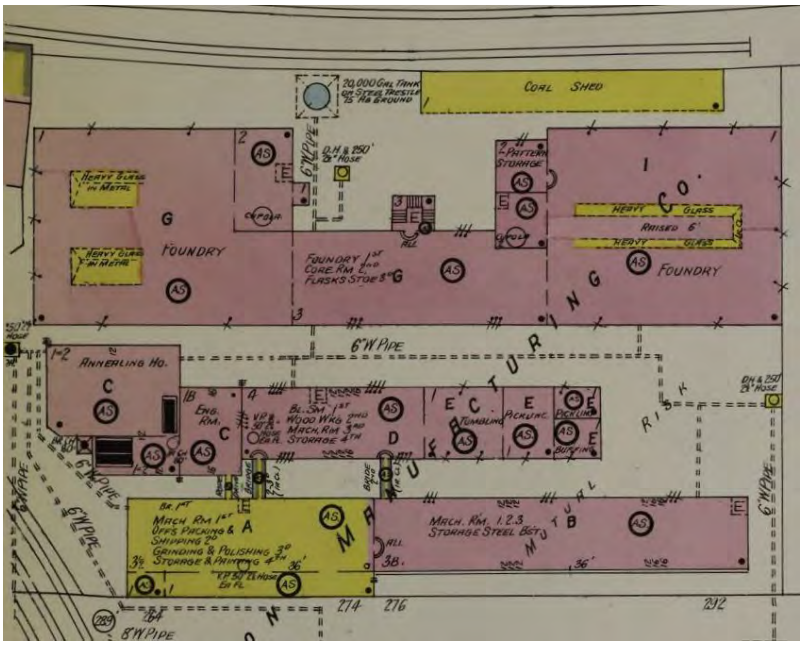


Figure 4 - The factory layout after rebuilding ca. 1909.

Manufacturing Company. Increased space meant the company could take on additional lines of work, and it was in December of 1900 when they entered negotiations to purchase the Derby Plane Co. of Derby Conn., the final agreement being announced on Jan. 8, 1901.[6] The Derby Plane Co. had been producing Bailey pattern bench planes after the original patents had expired, the name of this line of goods being called the "B Planes." The Derby Plane Co. had been utilizing a leased three-story building, expansion of a much larger neighboring building required their building be razed to facilitate the expansion, which is probably what precipitated the sale of the company.[7]

It was a bit late in the game for the Union Manufacturing Co to enter the plane business at this time, considering their next-door neighbor was the Stanley Rule & Level Co., who's line of bench and specialty planes dominated the market. Offering a copycat product (the B planes) would make it difficult to set themselves apart and succeed, and it was probably this fact that inspired some innovative new designs. Between August 1, 1903 and October 26, 1903, three patent applications for improvements in bench plane designs were submitted. Patent No. 746,285, issued Dec. 8, 1903 to John W. Carleton and George E. Trask, relates to new economical mechanism for holding and adjust the cutting blade on transitional and iron bodies bench planes. This patent however was never used on any iron bodied planes; however, it was utilized on the Union 500 series transitional wood bodied planes. The second patent, No. 746,286 was issued Dec. 8, 1903, to John W. Carleton for an improvement in plane irons. The patent addressed an engagement mechanism utilizing a

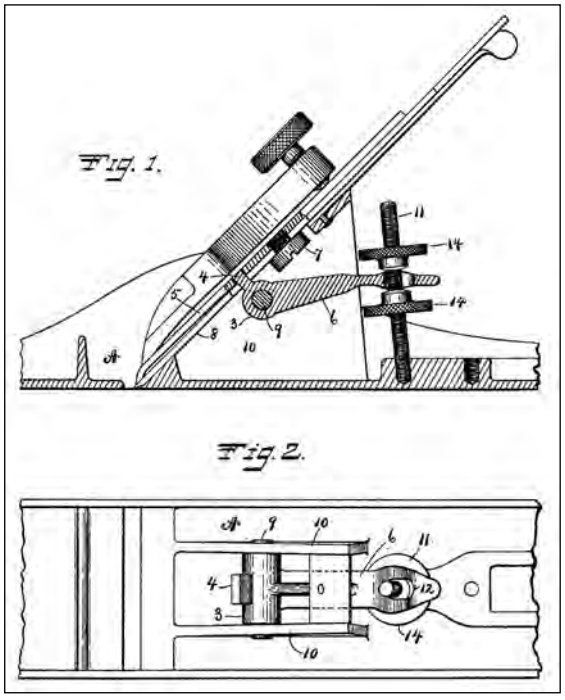


Fig. 5 - Patent drawing for the X Plane.

Fig. 6 - First known advertising for the Union X Plane.

double nut secured to a cutting blade where one side of the blade has fine grooves milled along the length of the longitudinal slot. The grooves provided extra holding power with less force applied to the nut when it was tightened. The third patent, Fig. 5, is the ground-breaking design that differentiated itself from other bench plane designs and became the Union Manufacturing Company's preeminent bench plane offering. Designed by John W. Carleton and George E. Trask, the patent was issued to them on June 28, 1904. The new design was put into production and billed as the Union Patent "X" Plane series, the earliest known advertisement for them appearing in the April 10, 1904 edition of "Hardware" magazine (Fig. 6).

Offered in 12 different configurations and sizes with smooth bottoms, and 11 configurations with grooved bottoms they sold well.[8] The strength of their design relied on several key features. First is the double-locking nuts that adjusted the plane blade longitudinally and locked it into position. Second is the length of the blade adjustment lever, the movement of which being regulated by the solid locking nuts. The lever is at least twice the length of a Bailey pattern lever and provides for much finer adjustment with greater leverage. Third is the solid bed for the iron that is integrated into the body of the plane and provides for solid support. Fourth is the extra thick iron which eliminates any chatter during the cut. A good deal of space could be dedicated to describing the various configurations of the planes and to the merits of their design, more space than available for this article, a more detailed article will eventually be published in the M-WTCA Gristmill at a later date.

The strengths of the design of the "X" Planes made them ideally suited for manual training students and were advertised as such.[9] Absent a moveable frog it provided fool-proof simplified adjustments. The more finely controllable blade adjustment made dialing in that perfect position much easier for inexperienced users, and once set the double-locking nuts kept it locked in that position with no

Figure 7 - Union Mfg. Co. No. X3 Bench Plane.

movement. Another advantage of the double-locking nuts is the ability to retract the blade when not in use and return it to the working position without any change of adjustment required. Loosening the lower nut allows the blade to be retracted, the upper nut remains in position and when desired, tightening the lower nut returns the blade to the working position.

A Change of Direction

The X Planes had barely been on the market for two years when a sudden turn of events brought a new twist into their storied history. The market for butts and pumps had declined and when C. W. Corbin became president of the Union Manufacturing Company, he reevaluated the various lines of work being performed. As mentioned previously the production and sale of chucks by the Union Manufacturing Company was highly successful, as was the contract foundry and machine shop work which were the foundation of the company. It was decided in 1905 that the company would refocus its efforts on these lines of work to maintain future growth and profits and divest itself of the less lucrative products.[1] The plane portion of the business must have been profitable enough to where maintaining the revenue was desirable, the utilization of the foundry for castings fit the Union Manufacturing Company's business model. However, the labor and machine shop resources required to finish the planes conflicted with the new direction of the company. This dilemma was solved on Aug. 6, 1906, when a mutually beneficial agreement was made with the Stanley Rule & Level Company. Under the agreement the Union Manufacturing Company would furnish the castings for the planes, and the Stanley Rule & Level Company would finish them. The marketing of the tools would still be facilitated by the Union Manufacturing Company.[10] This arrangement allowed both companies to profit by capitalizing on their strengths and existing capabilities. One change occurred to the Union planes with this arrangement was a switch in tooling, each company used different thread standards, planes finished by the Stanley Rule & Level Co., were produced using their tooling and thread pitches.

It is apparent this arrangement continued for several years with one change occurring October 5th, 1922, when it was announced that the Union Plane Co. of New Britain had been incorporated with a starting capital of $5000, with commitments to increase to $50,000 if necessary. The Union Plane Co. had acquired the plane business from the Union Manufacturing Co, the officers of this new company were A. F. Corbin, H. H. Wheeler, and C. S. Neumann, and not surprisingly all were officers of the Union Manufacturing Company.[11] The address for the company was 28 Forest St., New Britain, Conn., the residential address of H. H. Wheeler.[12] It is likely this was an individual investment on their part to glean what profits there were left to be made from the declining sales of planes. The tools produced by this new entity were marked with the Union Plane Co. name, and the boxes marked accordingly.

As sales continued to decline it is likely the Stanley Rule & Level Co. through some agreement acquired the remaining inventory of the Union Plane Co. inventory and began liquidating it. The Union planes were offered in the Stanley Rule & Level Plants catalog No. 129, in 1929. Union copies of the Stanley Nos. 48 and 49 match planes were reworked, the Union markings were milled off and those areas japanned, they were rebranded using a Stanley transfer decal. Some of the last remnants of these planes used a mix of Stanley and Union components and show signs of minimal care in their processing with grinding marks evident and no japanning used to cover those areas.

Everything Old is New Again

Typically, this is where the story of most plane manufacturers ends, but that is not to be the case with the Union Manufacturing Co and the X Planes. The company has been resurrected 154 years after its original

Fig. 8 - Union Plane Co. Label for the No. 63 Scraper.

founding, and 92 years after the X Planes were last offered. This time around, the company's founding happened on a much more modest scale, launched by Robert Porter of Glenolden PA., from his home machine shop in a single car garage. You may ask what was the inspiration for this endeavor, and how does one go about relaunching a company? A little background history will bring you up to speed and answer those questions.

Robert Porter began his professional career as a furniture designer and maker, he worked as an apprentice under an English trained furniture maker, where he learned the art of building English replica pine furniture, which was a popular style in the 1800's. After working 16 years as a furniture designer and maker, back issues prevented him from continuing in the trade and forced him to find a new vocation. While recovering from two back surgeries, he had time on his hands, and it was during this period that he discovered his passion for antique tools. As his knowledge of the tools grew, he soon realized he could turn this new-found passion into a business and began dealing in antique tools on a full-time basis as The Old Hand Tool Shop.

Figure 9 - The Union Mfg. Co. first tool the 609 bevel.

His interest and knowledge of tools led him to try his hand at making some tools of his own design starting with some plumb bobs and a limited run of bevels under the Porter & Sons brand name. Being a self-taught machinist, he quickly discovered his skill set dovetailed nicely with machining and tool design. Having found his new passion and with the encouragement of his wife Eva Porter, he decided to take a leap of faith and become a full-time tool maker which appealed to him greatly. Antique tool dealing involves a significant amount of travel, having his own business would allow him to be home more and spend time with his wife and two young sons. As an antique tool user, enthusiast and dealer, Robert had come to appreciate the merits of the planes produced by the Union Manufacturing Company, of New Britain, Connecticut, the Union X Planes. The simple yet superior working properties of the X Plane design had developed a loyal following with hand

Figure 10 - An original Union X0 plane body foreground and the pattern for the X0A in the background.

tool users, and in many ways much of this can be attributed to Robert singing their praises with other hand tool enthusiasts. Most wives tend to ignore their husband's obsession with tools, sound familiar? However, some wives pay attention, and Eva realized there was more to her husband's passion for the X Planes than he normally displayed and asked if there was a reason why he could not make them? She was sure he could! This was the impetus for not just creating a knock-off copy of the X planes, but to pursue resurrecting the original company and he set about procuring ownership of the company name, the logo, and brand names. Having secured the ownership rights Robert quickly pivoted and started producing a series of bevels under the Union Manufacturing Company brand (Fig. 9). During the production of these bevels Robert used his free time to begin the process of resurrecting the planes and made

Figure 11 - Union's Master Machinist, Bill Clark.

Fig. 12 - Casting pours for the X0A planes.

the decision to enter the market by producing a limited run of the rarest size of the Union planes, the No. X0 bench plane, and for extra impact was going add an adjustable mouth feature. Utilizing the skills of his previous trade he set out designing the CAD drawings for the X0A plane (the A indicates adjustable mouth), and once satisfied with the design began creating the wood patterns for casting the plane components (Fig. 10). During the production of bevels Robert became acquainted through a mutual friend with Bill Clark (Fig. 11), a retired master machinist with 60+ years of experience. Robert was discussing his start-up business with Bill and some of the technical issues he was running

Figure 13 - Finished castings waiting for the next phase of machining and grinding.

Fig14 - Brass locking nuts ready for installation.

into and invited him to come by the shop so he could draw from his experience.

Bill, being a no-nonsense kind individual quickly identified the cause of the technical problems and provided straight forward advice to Robert on how to solve them. The two men hit it off, a blend of personalities that just works, and Bill having a passion for machining and a new-found friend kept coming back. The timing could not have been better, Robert has a natural talent for machining but needed the experience Bill possessed to get past some of the more complicated process issues. One of the next tasks was locating a foundry capable of producing the fine castings the X0A plane required, which is not as easy as it sounds.

After seeking advice on foundries from renowned machinist and tool maker Paul Hamler, he was able to identify a local foundry which appeared to fit the company's needs. During discussions of the X Planes manufacture the topic of metallurgy was debated, the foundry specialized in a unique alloy that combined cast iron, nickel, and chrome, into an almost indestructible material. The properties of the alloy were seductive, after all, shouldn't a special introductory plane be made utilizing a material that would offer legendary durability? An agreement was made to manu-

Figure 15 - Lawrence Freifeld, Union's wood component engineer.

Figure 16 - The Union Mfg. Co. X0A Prototype.

facture 100 of the X0A castings utilizing their special alloy mix and would be produced using the investment casting process and shell-mold technology (Fig. 12). The castings are allowed to cool slowly, and then are processed through several heating and cooling cycles to allow the metal to "relax" and remove any internal stresses. After the casting process comes the application of the finish, environmental standards prevent the use of traditional finishes such as asphalt japanning, the X0A planes are given a powder coat finish that closely resembles the original appearance of traditional japanning. That is one aspect of the new Union Manufacturing Co. that should be mentioned, where possible, traditional means of manufacture are used to ensure the new X planes will still have that vintage look and vibe to them, where not possible, processes and materials that will provide comparable properties are used. There are many steps to the finishing process, the adjustable mouth needs to be ground and fitted, throats opened, frog surfaces machined, and bolt holes threaded and tapped. There are of course all the various components that need to be machined, the lever caps, mounting pins, brass lever cap screws and lock nuts, etc. (Fig. 14).

So far, the discussion has been regarding the metal components of the planes, there are also the wood components to consider, the rear tote and front knob. The introductory run of X0A planes were being offered with the buyer's choice of Honduras mahogany, cocobolo, or the buyer could send in their own choice of wood and have it made to order. Spearheading the wood component production for the Union Manufacturing Co. is Lawrence Freifeld. (Fig. 15) From the look of the wood used on the prototype plane (Fig. 16) they will be one beautiful tool when finished!

Production space was of course a concern and with the promise of growth the need for additional machinery and space was addressed in Nov. of 2020 with the purchase of additional equipment and the leasing of a factory building in Boyertown, PA. (Fig. 17). Everything is in place and an incredible amount of effort has been expended to make this dream a reality. No corner has been cut in the commitment to quality or in the production of a tool true to the heritage of the Union Manufacturing Company and the X Plane. For the latest news and information regarding the line of tools being produced by the Union Manufacturing Company, of Boyertown, PA. Please visit the company's website at Unionmfgco.com.

Figure 17. The new machine shop, Boyertown, PA.

Figure 18. Robert Porter, President, Union Mfg. Co.

Continued from page 13

The Union Manufacturing Company
Image and Source Citations

Figure 1. In and About New Britain [Connecticut]. [New Britain]: Lewis & Atwell, 1892. The Hathi Trust, Hathitrust.org
Figure 2. Billhead for the Union Mfg. Co. ca. 1884, Authors Collection.
Figures 3&4. Sanborn Fire Insurance Maps for New Britain 1890 and 1909. Library of Congress digital collections. https://www.loc.gov/collections/sanborn-maps
Figure 5. Drawings for patent No. 763,721, USPTO.gov
Figure 6. Hardware Dealers' Magazine. New York: Hardware Dealers' Magazine, Inc., Apr. 10, 1904. Hathitrust.org
Figure 7. Union X3 plane, photo courtesy of Robert Porter, Union Mfg. Co. Boyertown PA.
Figure 8. Union cabinet scraper box label, authors collection.
Figure 9. Union 609 bevel, photo courtesy of
Figures 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, courtesy of Robert Porter, Union Mfg. Co., Boyertown PA.
1. Interesting Connecticut Industry, Hartford Courant, Hartford, Conn., pg. 24, Oct. 21, 1930.
2. Hartford Courant, Hartford, Conn., pg. 1, Sept 1, 1866
3. (1869). Webb's New England railway and manufacturers' statistical gazetteer: containing an interesting sketch of every station, village, and city on each railroad in New England, together with a statistical, historical and biographical account of their representative manufacturing establishments. Providence: Printed by the Providence Press Company.
4. Electricity Plans, Hartford Courant, Hartford, Conn., Aug. 4, 1899, pg. 10.
5. Union Works Fire, Hartford Courant, Hartford, Conn., Apr. 5, 1900, pg. 1.
6. A Plane Combination, Naugatuck Daily News, Jan 8, 1901.
7. Historical records for the Birmingham Corset Co. Building, connecticutmills.org
8. Union Iron and Wood Planes, Union Mfg. Co 1905. Note: The X0 plane is not known to be listed in any catalogs or price sheets, indicating they may have been done in a limited production run.
9. Manual Training Magazine, labeled as Industrial Education Magazine, pg. 306, Chicago, Ill.: The University of Chicago Press, hathitrust.org
10. To Make Union Works Planes, Hartford Courant, Hartford, Conn., Aug. 7, 1906, pg. 11.
11. Union Plane Co. Also Incorporates, Hartford Courant, Hartford, Conn., Oct. 5, 1922, pg. 18.
12. The Iron Age, Nov. 23, 1922 pg. 1407, hathitrust.org.

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A memorial to Carl Bopp by Leon Kashishian

On Christmas morning 2020, we lost a great friend of the tool collecting community. Carl was an avid tool collector, historian, researcher, and author. He passed away at the Care One Assisted Living Facility in Evesham, New Jersey from a long battle with Parkinson's Disease. He was born in February of 1937 and married his wife, Betty (nee Santerian) in 1961. They enjoyed a loving marriage and had two daughters, Karen, and Janet.

Carl and Betty had a shore house on the bay in Tuckerton, NJ, where they enjoyed summers with the family – boating, fishing, and crabbing. He was a longtime member and volunteer at the Historic Tuckerton Seaport Museum.

For high school, Carl enrolled in Camden County Vocational School, graduating in 1953. Upon graduating, he started in business for himself building and installing kitchen cabinets. As his business expanded, he bought an old ice factory in Audubon, NJ and renovated it into a workshop and retail store – Ye Olde Workshop. He helped to supply the growing demand for cupolas, with J.C. Penny and the local housing development builders as his main clients. One thing led to another, as he sold custom signage for mailboxes, unique early American items, and fireplace equipment.

Carl was a member of CRAFTS of NJ, Mid-West Tool Collectors Assoc, and Early American Industries Assoc. He was fiercely loyal to EAIA, where he served as president from 1995-97.
He tirelessly researched and published articles on John Gage, Henry Disston, Philadelphia plane makers and a series of articles on "Made in PHILADA". Carl was a member of EAIA since 1971 – 49 years. In 2000 he was awarded the Long-Time Service Award from EAIA. By the way, the first plane in his collection he bought from a scrap metal dealer – a John Gage (Vineland, NJ) smoothing plane.

Carl had a quiet, calm, and intelligent demeanor. Enough cannot be said for all the time he spent researching. Documenting, writing, and publishing articles on tools and toolmakers. He wrote 17 articles for E.A.I.A., 23 for CRAFTS, and 10 for B.A.R.S.

I first met Carl at a CRAFTS picnic in the early 1990's. Someone told me that if I was interested in Philadelphia wood planes, to go see Carl Bopp. Off I went and a friendship started. We found that we had two things in common – Philadelphia wood planes and Armenian heritage (Carl's lovely wife as Armenian). As time went by, we saw each other at local auctions. At one auction we pushed each other hard for a very rare exotic wood JOHN VEIT plow plane. Carl won. We were still friends. After Betty passed away, I contacted Carl to see if was interested in going to Martin Donnelly's Tool Extravaganza's in Nashua, NH. This event began our bi-annual trips to Nashua, that lasted for 10 years. Before we started out, we snacked with baklava and coffee at 3:30 am. We were on the road by 4 am with an ETA of about 11 am- stopping for breakfast along the way. On the drive we talked about our lives, our family and you guessed it, PHILADELPHIA toolmakers. With all of Carl's research and articles of the years, I learned much from my mentor. In the last two or three years of our trips, we found a fantastic Greek Diner (Blue Colony Diner) at about the halfway point. We would go in for a great dinner and a piece of baklava and coffee for the road. Carl, I miss your company.

Carl is survived by both his daughters and their husbands, as well as one granddaughter and one grandson. His pony and pet monkey passed years ago.

Carl, your fellow tool collectors will miss you. I personally will miss you. Thanks for everything that you have done for all of us.

In Memory of Carl Bopp by Steve Zluky

On Christmas Day 2020, a very special person passed away after years of suffering from Parkinson's disease. Carl Bopp was a kind, considerate man who was very active in the antique tool world. Carl became active with CRAFTS shortly after our beginning in 1978 and helped the organization in many ways, and was a board member. Carl and his wife Betty attended our meetings, auctions, and other events.

He was not only interested in the tools he collected, but in who made them and where they originated. Carl was especially interested in planes made in Philadelphia. Additionally, he researched information about the Disston Saw Company. A very special interest of Carl's was the Gage Tool Company of New Jersey. He wrote many interesting articles on the history of the company and collected their planes. Carl wrote numerous articles for The Tool Shed, and for the EAIA. He was active with the EAIA at a time they were having difficulties. Eventually he became president of this association.

He will always be remembered fondly by his friends and tool collectors. We would like to extend our greatest sympathies to his daughters, their families, and to his sister.

Carl Bopp discussing the Gage Tool Company with Ted Hopkins at a Martin Donnelly Auction Gala event.

Josh's Journeys #2

by Josh Kavett

It has always amazed me that interesting artifacts related to Fisher & Norris continue to turn up. I am a member of various Facebook groups devoted to Anvils, Blacksmithing, and Vises. At the beginning of October, a person located in Massachusetts posted some photos of two vises he had found. I immediately contacted him about purchasing them, but he was not ready to sell.

I waited a month and contacted him again with a cash offer. Again he was not ready to sell, but I did raise my bid, hoping to add incentive to make a deal. My busy season selling Christmas trees was now upon me, so I waited until the season was over before further pursuing any deal.

We made contact during the Christmas week, and finally negotiated a deal, and arranged a date for me to drive to Hanson, Massachusetts to pick up the vises. Yes, it would have been possible to ship them, but I do not trust USPS or other carriers with rare items.

I set off on a dry Sunday morning at 4:30 AM for the 5 hour drive North. After an uneventful trip, I arrived at 9:30 AM, loaded the vises, paid, and was heading home by 10 AM. I arrived home by 3:30 PM. It was a 595 mile round trip.

The first vise is a #2 size of the early Fisher vises, serial number 84. I estimate this vise was made around 1856. This small size is extremely hard to find. This one and the other #2 in the Museum are the only ones I have ever seen of this size. A bit of wire brushing, Kroil oil and cleaning, and the vise was working great.

The second vise was a bit of a mystery. It is a double screw chain vise, but a totally different design. It turns out to be what Fisher made after obtaining the rights to Patent #3212, by E.G. Mathews, dated August 11, 1843. The vise is not marked but has the characteristic F&N welded in steel jaws. (They were the only ones who were doing this.)

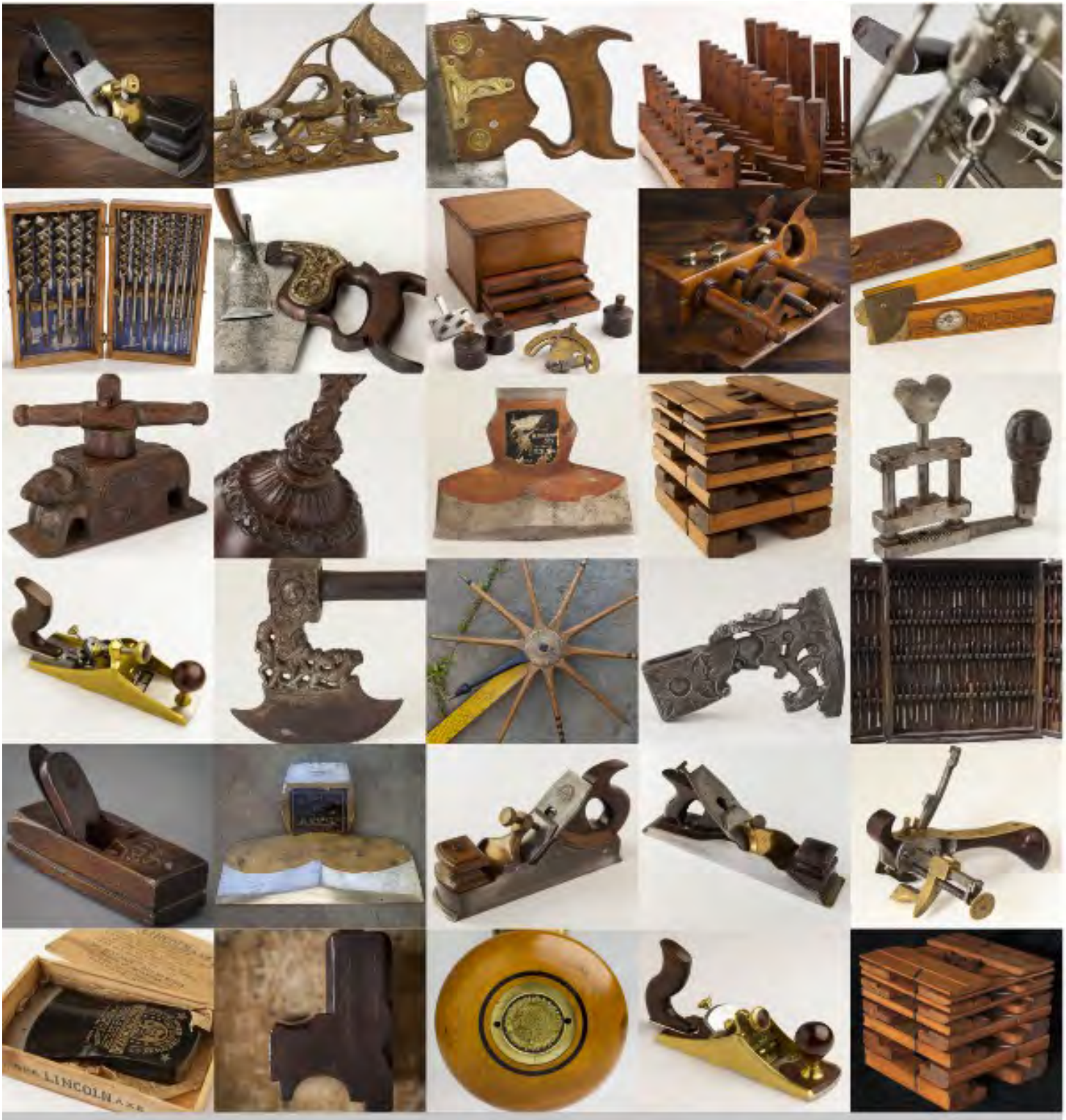
So this rare vise is perhaps a prototype or a rare example of what F&N tried before changing the design in 1852. I did not know that any examples even existed before this one turned up!

The vise I obtained was dirty and the chain links were rusted solid. It had been in a flood, and never dried off. I soaked the whole vise in Kroil penetrating oil for a week, and wire brushed everything. The links were freed up by careful use of a small propane torch, heating them individually and working them loose with two pliers. Eventually I was able to turn the handle and get it working. Applications of liberal amounts of penetrating oil and regular oil have gotten the vise working almost perfectly. This vise is over 170 years old, yet it came back to life rather quickly.

The slide bar between the jaws is broken, but the piece is still there. After cleaning and degreasing the whole vise, I will epoxy the part back in place.

This vise is probably the earliest Fisher & Norris vise existing.

I find it amazing that these items continue to turn up. How many times in the last 175 years of Fisher products, could these items have been lost, broken, or scrapped. I will continue to seek out items related to Fisher & Norris in a quest to further add to the story of this great American company.



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April 9 & 10 - Donnelly Antique Tool Auction, online only - www.mjdtools.com

April 11 – Crafts Tailgate Meeting, Ivan Raupp, ivanraupp@aol.com.

May 7 & 8 - Donnelly Antique Tool Auction, Nashua, NH - www.mjdtools.com

May 14 & 15 - Brown 58th Tool Auction , Radisson Inn, Camp Hill, PA. Jim Gehring, 800-248-8114 - www.finetoolj.com

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