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Thompson Bevel Mysteries

by Bob Nelson

On October 12, 1858 an unusual bevel was patented by Meriwether Jeff Thompson of St. Joseph, Missouri. That bevel has received little notice in tool- related books or publications other than brief cites in the March 1987 M-WTCA *Gristmill*, the September 1988 EAIA *Chronicle*, and the April 1997 CRAFTS *Tool Shed*. Attempts to learn more about it and the parties connected with it have uncovered some rather surprising facts, but have not produced answers to all of the original questions and have raised some new ones. I offer my results to date in the hope that some readers can help resolve the mysteries that remain. In the paragraphs that follow I will describe the differences between eight known variations of the bevel, provide some details about those connected to it, and discuss a few peculiarities of the patent, the instruction booklet, and the tool itself.

THE VARIATIONS

For discussion purposes I have designated the eight variations A1, A2, B1, B2, C1, C2, C3, and D in the general order of their production. The letter designations are for major variations, and the number designations are for less significant variations within the letter styles.

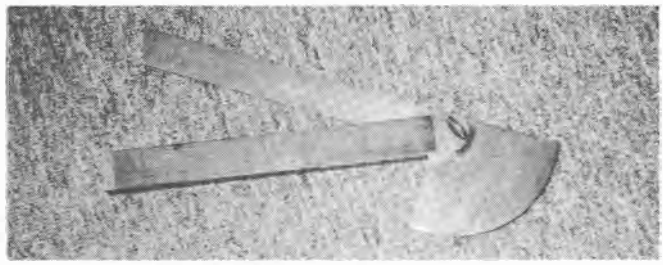

Figure 1. A1 Style Thompson Bevel

All Thompson bevels have a brass blade with a quarter circle segment on the outer end. Besides a protractor-like 0 to 90 degree angle scale around the outer arc of that segment, it has lines marked "3 SIDES," "4 SIDES," etc. up to "16 SIDES." The lines designate the proper miter angles needed to make the cuts for constructing frame assemblies (polygons) with anywhere from 3 to 16 sides. The front side of the body has formulas for determining some (but not all) of the lengths of each side of such frames relative to circle sizes so that they would either just fit inside of a circle or just fit around a circle (i.e. for inscribing or circumscribing a polygon to a circle). The formulas include multipliers expressed in both inches and thousandths of a foot. Related to this, there are distinctive markings of a triangle inside a circle and a triangle around a circle. The back side of the bevel's body has a graph-like scale for measuring thousandths of a foot. The combination of miter-angle markings and side-length formulas form the basis of Thompson's patent.

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November 8 - CRAFTS Meeting
High Bridge, NJ, Masonic Lodge

Brace Yourself for a Bit of Stanley History
Program by Walter Jacob (see page 2)

☞ program starts at 1 p.m. ☜

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CRAFTS of NJ meets at the HOST Masonic Lodge, High Bridge. 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 12 P.M.; meeting starts at 1 P.M.

The TOOL SHED

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CRAFTS Calendar of Events

Nov. 8, 1998 - CRAFTS meeting, High Bridge, N.J.
Nov. 30, 1998 - *ToolShed* (February) free ad deadline
Feb. 7, 1999 - CRAFTS meeting, High Bridge, N.J.
April 11, 1999 - CRAFTS meeting, High Bridge, N.J.
April 17, 1999 - CRAFTS auction, Flemington, N.J.

APOLOGY: Your editors apologize for the late arrival of the September *Tool Shed*. It's particularly embarrassing because at the September picnic we received awards for our work on the *Tool Shed*. We want to thank CRAFTS members for this recognition.

Speaker's Profile - Walter Jacob

With tongue in cheek, Walter has titled his talk for the November 8th meeting, "Brace Yourself for a Bit of Stanley History." I recall from John Walter's articles in the June and September 1997 *Tool Sheds* that Stanley made its No. 2 brace, which was based on A. Stanley's 1869 patent, for one year only – 1870. Not another brace was made for 35 years until a new line of 17 braces was introduced in 1905.

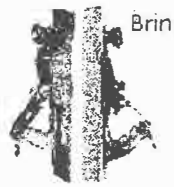
There's a personal profile on Walter and his brother, Charles, in the February 1995 *Tool Shed* that you might like to reread before the meeting. More recently, Walter has an article in the September 1998 issue of EAIA's *Chronicle* on the historic beginnings of the Stanley Rule & Level Company that brings forth much new information. But he's not only in touch with the past. I was prompted to call him recently when I learned that Stanley would introduce a new line of garden tools in 1999. "Yeah," he said, "I've talked to the Superintendent at Stanley about them. There will be 67 different tools ... " Then he told me all about them! And upcoming, Walter will be one of four speakers at the first of an annual series of talks on tools on Friday morning at the October Brown auction. (The other speakers will be Tom Lamond, Don Rosebrook, and Mark Hughes.)

By way of background, Stanley's entry into braces in 1905 came initially from the acquisition of Connecticut bracemakers Bartholomew and Fray. Including the famous 1859 Nelson Spofford patent for a clamshell chuck (acquired by Fray in 1866) and Harry Bartholomew's patent for attaching the handle before bending the brace stock, Stanley has sold braces based on 55 patents. In *Antique & Collectible Stanley Tools,* John Walter lists 47 Stanley bit braces made in this century.

There will be a display of Stanley braces from the Jacob Collection, and Walter will talk about how they were made, about the different types of chucks, about Stanley's approach to acquisitions, and about Stanley's expertise in marketing braces to the world.

Ed: Your editors want to acknowledge the support Walter has given us, including his articles and photos he has provided for others. You can look forward to Walter's feature article on Stanley's Odd Jobs in the February 1999 issue. Thanks Walter.

Union Hill Antique Tools



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PRESIDENT'S CORNER

It's official. Summer is over! The annual picnic marks the end of a muggy season and the start of fall – my favorite season. Once again the weather for the picnic was outstanding, and the Vliets did another great job. There were plenty of sellers and buyers at the tool swap, and, as always, some special things were for sale. A friend purchased the prettiest boxed sharpening stone I've ever seen. Martin Donnelly had three beautiful toted complex molders by Marley, one of my favorite New York makers. I was sorely tempted, but my retirement date of September 30th is looming large. I did buy five wooden planes from Jack Zimmerman for $10 each including two from Philadelphia and one 11" long applewood round. Hey, with a few hours of cleaning they'll be worth $12-15.

More than tools were for sale. Herb Kean had copies of his new book, *Restoring Antique Tools* right from the printer. [Available now from Astragal Press.] Martin's profusely illustrated 1998 catalog was still available. And, Clarence Blanchard was down from Maine passing out the first copies of the catalog for the Brown auction on October 24th.

Displays: we had a few. Our winners were Anna Rokita for her large collection of carpet beaters and Richard Burton for his collection of engraving tools. Ken Vliet had an extensive display of items forged from old files and rasps. In the tool competition, Keith Miguel won the "Most Unusual" category with a wooden clamping device. Charles Hildebrant won both the "Ugliest" and "Make Do" categories with a shovel and fence stretcher, respectively. I won the "Most Beautiful" category for a mahogany and ebony double bead plane.

The President's Award" is traditionally presented at the picnic. This year I conferred the award on Hank Allen and Stu Shippey, our *Tool Shed* editors. Hank has added a great deal of "color" and variety to our publication, plus great photography. He has stalked many a collector for the articles and photographs. Hank also served as vice president for two years. Stu has done a terrific job, personally laying out each issue and managing its printing. Together they produce a quality publication. Thank you both for all your hard work on the *Tool Shed* and as dedicated members of our board.

One final note: The end of one big event signals the start of another. The auction consignment forms will be available at the November meeting.

Welcome to new members: Ronnie Glover, Headland, AL; Leo Hansen, Janesville, WI; Bud Hinman, Mickleton.

Joe

Meet Your Dealers
Joy & Art Kushlan

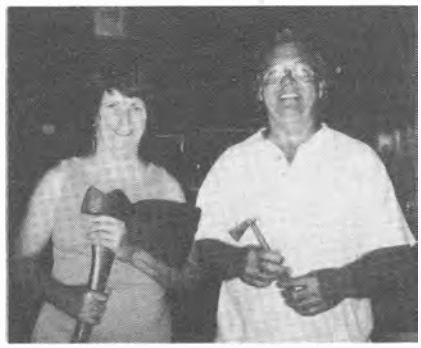
The purpose of this column is NOT to evaluate dealers, but simply to present useful & interesting information about tool sources..

Joy and Art Kushlan have been the proprietors of Joy's Antiques since 1974. The shop is in Little Britain, Pennsylvania, although the mailing address is Quarryville. Little Britain is on Route 272 about twenty miles south of Lancaster and six miles north of Route1 in the southern end of Lancaster County. Art and Joy got started in antiques and tools in the early 1970s while Art was stationed at Bainbridge Naval Training Station. Buying at the local auctions and Adamstown markets and selling at Shupps Grove became a family (5 kids) weekend thing.

When Art retired from the Navy they bought an 1860s home and general store in Little Britain and went full time. The former store is now a 5,400 square foot general antique shop, with about one-fourth devoted to tools. Tools available are roughly 60% user and 40% collector, with prices mostly lower to mid-range. Art cautions not to visit the shop expecting to find a lot of extraordinary, high-end items – just good tools. The shop is generally open every day, except for an extended winter vacation and tooling trip through the south and west.

Art and joy have been members of CRAFTS, PATINA, M-WTCA, and EAIA since the 1970s, and belong to many other regional tool organizations.

Art uses his old tools in his refurbishing and restoration workshop. Art's personal collection is primarily miniature tools. These are not toys, or salesman's samples, but legitimate small working tools. Art says that almost every tool imaginable has been made in miniature size. He has recently acquired a set of 27 different brass shaves, most under four inches, made by a patternmaker in the 1920s and 30s. They will be on display at the fall M-WTCA meeting. He also collects edge tools made by the Hewes family on Puddle Duck Creek just down the road from the shop, and twist bits and augers made by T. Slack in Oxford, also just a few miles away.



And, of course, Art is always interested in buying tools or antiques – singly or an entire collection (or accumulation). Call him at 717-529-2693.

Hank Allen

Thompson Bevel Mysteries by Bob Nelson (continued from page 1)

A STYLE: The primary distinctive characteristic of the two A styles is that angles are aligned on the side of the body. A small brass inset strip there gives a firmer alignment base than the wood side alone would. Another characteristic is the use of thumb-style locking nuts. In general, the assembly and marking of the A styles is noticeably cruder than the later B and C styles.

A1 STYLE: This variation is shown in Figure 1 on page 1. Nothing is known about it beyond what can be seen in that picture, which came from a secondary file and cannot be traced back to its source. As the variation most closely resembling the patent drawing, it is assumed to be the first type produced. The similarities with the A2 example that can be seen in the picture below suggest that it is probably the same in most other respects.

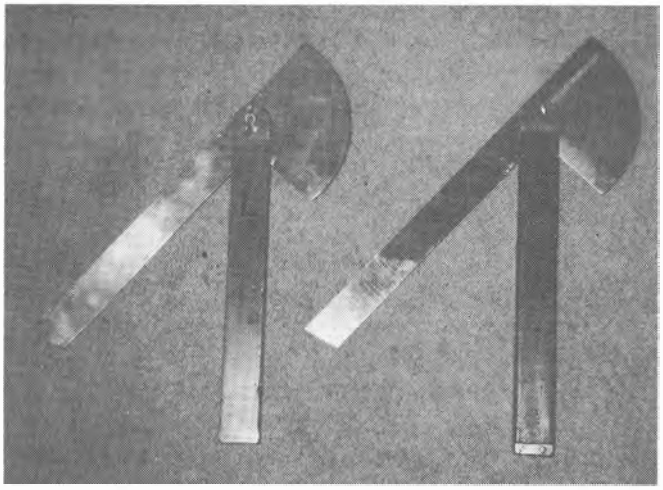


Figure 2. C1 Style (left) A2 Style (right)

A2 STYLE: This is shown above on the right side of Figure 2. The most obvious difference from the A1 style is that the part of the blade below the arc is slotted. This example is stamped "Wm. CONAWAY/PHILA" on the blade. It has additional lines of markings on the back side of the butt end of the body; one of those can be made out to be the patent date. Time and wear have obscured the others, but they appear to be (with some help from the imagination) something like "THOMPSON'S/PATENT" and "L.E. YORKE & CO./PROPRIETORS." Even more imagination is needed to visualize some pivot end scratches as "CHAs. MILLER/SOLE AGENT." The body is birch or beech and is 11 ¼" in length. Some of the side number lines are on the back side of the blade.

B STYLE: The primary distinctive characteristic of the two B styles is a rectangular window in which the angle is aligned. The use of this alignment window dictates all angle markings being on the front side of the blade rather than some being on the back as in the A styles. Note that the use of this window puts the pivot point of the blade at the axis of all angles on the blade's scale. This was not true of the A styles; on them, each angle had to align with an axis point that, being on the edge of the body, was slightly offset from the blade's pivot point and varied as the blade was rotated. Accordingly, the blades of the A styles must have been more difficult to lay out and mark than the B and C styles. Although the B2 style preceded the C styles, there is reason to question whether the B1 might not have succeeded them. All B and C styles are made of boxwood vs. the beech/birch used in the A styles and are a slightly shorter 10 5/8" long.

B1 STYLE: One example of the B1 style was sold as Lot #449 in the 1995 Brown Auction and is pictured in that catalog. Besides the rectangular window, the most obvious variation from the A styles is that it has a flat knurled nut. It has a ruled scale on the blade and that is the primary reason for thinking it might postdate the C styles; the C3 is the only other type having such a scale. On the butt end of the back side it is marked "L.E. YORK & CO./PROPRIETORS." The pivot end back side of the body is marked "CHAs. A. MILLER/SOLE AGENT/ PHILa." And, a marking of "THOMPSON'S PATENT OCT. 12, 1858" appears on one of the narrow edges of the body.

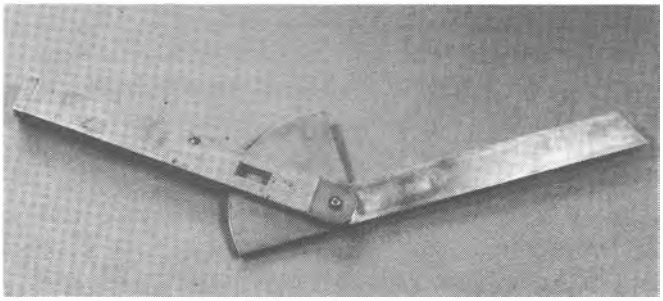


Figure 3. B2 Style Thompson Bevel

B2 STYLE: Except for the rectangular window, the B2 (Figure 3) has more in common with the C styles than with the B1. It has a wing nut vs. the B1 style's knurled nut. While the patent marking is in the same place, it has a slightly different "THOMPSON PATENT/OCT.12th, 1858" format (Figure 4). The Miller marking is the same (Figure 5). In place of the YORK & CO. marking, it is marked "MADE BY/L.C. STEPHENS & CO./No. 3" (Figure 6). Most of the C styles have these same markings. Note that the Figure 3 bevel, as compared with those in Figures I and 2, has the nut mounted on the opposite side of the body. It is not certain whether this was the way it was made or just a reassembly reversal, but such a reversal would be virtually impossible with most of the other styles checked.

C STYLE: The primary distinction of the three C styles is that the window is domed on one end vs. being rectangular. All C styles noted so far have wing nuts and most of them have the same markings as the B2 style with the exception of the number with the Stephens & Co. marking. Those are serial numbers rather than model numbers; as such, they provide a basis for tracking the chronology of the changes.

Cl STYLE: This is shown on the left side of Figure 2. The Cl style was made both before and after the C2 style. All known examples are marked with some or all of the three markings shown in Figures 4, 5, and 6. These marks are stamped quite lightly and easily worn away, so any absences of markings are apt to be due more to such wear (or masking grime) than their not having been marked at all. An example which is probably "Ser. No. 95" (but might possibly be 35) has a small "26" stamped a ways to the side of the patent marking; no such marking was noted on any other examples, and its significance is unknown. Note that with no examples known numbered between 3 and 95 (or, possibly, between 35 and 123) there might have been other styles within that sequence; further, the serial number dividing lines between the different styles are uncertain. Although additional Cl styles are known, the only other one from which a serial number has been confirmed is No. 182.

C2 STYLE: The primary distinctive characteristic of the C2 style is brass plates on the butt end of the body that are as long as they are wide. Note that all other examples pictured have plates that only extend a short way up the bodies. This plate covers the area where the Stephens & Co. marking appears on earlier and later examples; there is no such marking on the C2. However, a serial number is marked above the Miller marking on the pivot end. The one example known is No. 123 (or possibly 128).

C3 STYLE: The C3 style has a one-foot ruled scale along the edge of the blade. The B1 is the only other style to have this, and it is the only difference between the C3 and the Cl. Since the scale has not been seen on any examples with serial numbers below 219 (the highest serial number found to date), it is assumed to be a change made toward the end of the bevel's production vs. an option or such.

D STYLE: I have been told that there is one known example of a Thompson bevel that has an all brass body. I have not seen that one and have no other details about its form or markings.

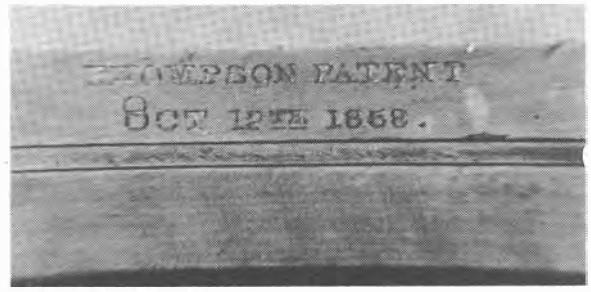


Figure 4. Patent Marking

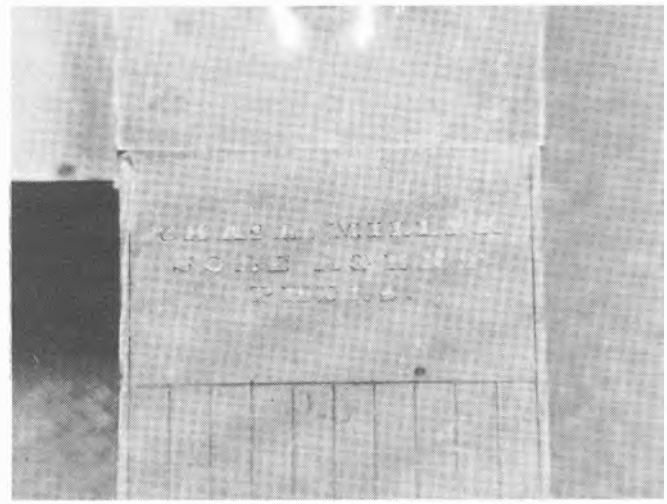


Figure 5. Agent Marking

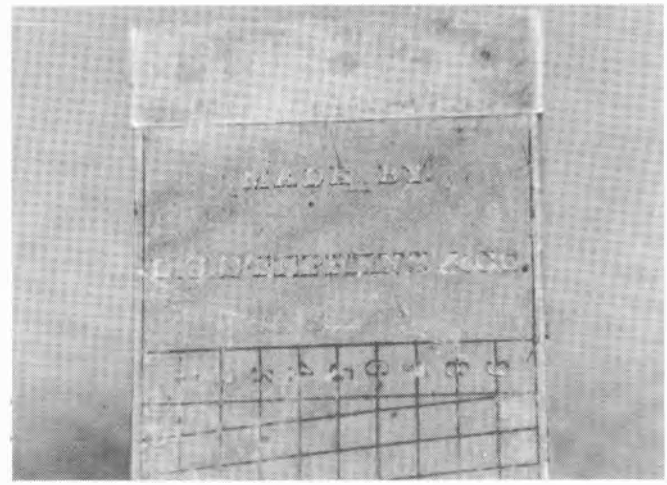


Figure 6. Maker Marking

THE PARTIES INVOLVED

Meriwether Jeff Thompson who is quite well known to Civil War buffs as the "Swamp Fox," was a C.S.A. Brigadier General who commanded up to 5000 men in the Mississippi River arena of the war. He was born January 22, 1826 in Harper's Ferry, Virginia (now West Virginia). Moving from Harper's Ferry to Liberty, Missouri, in 1846, he settled in St. Joseph in 1847. After initially working as a store clerk, he and a partner opened their own store in 1852. He later converted that business to a commissary traveling with a railroad surveying party. During those

travels he learned enough about surveying to be put in charge of that party. In 1857, he was elevated to head the construction of a 25-mile section of the Hannibal to St. Joseph rail line. That section was not completed until February 1859, but Thompson also served as the St. Joseph City Engineer in 1858 and a one-year term as mayor in 1859. He then engaged in various railroad and real estate activities until shortly after the April 12, 1861 bombardment of Ft. Sumter when he organized a battalion to fight for the C.S.A. After surrendering on May 9, 1865, he worked briefly in Memphis, Tennessee, before moving to New Orleans, Louisiana. Initially a storekeeper there, the influence of some of his wartime associates led to his appointment as Chief Engineer of the Board of Public Works of the State of Louisiana. In 1876, taking a leave of absence due to ill health, he returned to St. Joseph where he died on September 5, 1876. No clues have been found as to how Thompson made a connection with a "Sole Agent" working in Philadelphia.

In 1858, Charles A. Miller worked at 415 Commerce Street as a "Hardware Commission Agent." A Philadelphia directory which lists nine individuals/companies in that category shows eight of them working in the 400 and 500 blocks of Commerce Street, the apparent hub of that type activity. A later directory lists only Miller as a "Merchant" at 505 Commerce Street; that location might imply that he was still actually working as an agent. By 1872 he was a partner of a George Zinn, working as Miller and Zinn at 1401 Walnut Street. What they did is not specified. The specific services provided by Miller, and his links to the other parties involved remain elusive.

The instruction booklet, as well as the B1 (and probably the A2) style tool, bears the name "L.E. Yorke & Co." (but note the "e" is not in the mark on the B1 style); it contains the equivalent of a copyright notation dated 1858 that was registered in the Philadelphia District Court. That fact plus Miller's working in Philadelphia led to an assumption that this was a Philadelphia company. However, no record of them can be found in any Philadelphia directories or other sources of data about Philadelphia businesses. A check of St. Joseph, Missouri, (Thompson's home town) records was also unsuccessful. The possibility of Yorke & Co. being only a publisher/printer would seem to be denied by their name on the bevels. The use of the term "Proprietor" would be unusual for a maker, so it is suspected that they were a hardware wholesaler or such. Major questions remain regarding where this company worked, what type business they were "Proprietors" of, and what their relationship to Miller was.

A William Conaway is known to have been working as a sawmaker in Philadelphia in 1858, and he was initially assumed to have made the A2 style bevel. While that still seems probable, another possibility has surfaced. The data on Conaway's activities as a sawmaker are somewhat confused. One source links him to Johnson & Conaway before 1857, when Disston acquired that business. Another source shows him having owned a Union Saw & Tool Co. in the early 1850s. An 1861 source shows an Eagle Saw & Tool Mfg. Co. as his successor, but that name does not appear in subsequent years, and he continues to be listed as a sawmaker. Directories consistently spell his name Conway vs. Conaway and list his work address at 402 Cherry Street (1855-60) or 404 Cherry Street (until 1866). His home address in 1858 was 415 Cherry Street, but in 1859 that was shown (spelled Conway) as 1416 Ridge Road. That same 1859 Directory also lists a William Conaway for "hardware" at 1410 Ridge Rd. Was that the same man? Whether so or not, might the marking have been made as a dealer vs. as a maker? Finding additional examples of A style bevels that are or are not marked by Conaway should resolve this question.

Lorenzo Case Stephens was born in 1809 and died in 1871. He was working as L.C. Stephens & Co. in New Hartford, Connecticut, in 1858. By 1864 when the company moved to Riverton, Connecticut, it was being run by Deloss B. Stephens, L.C.'s son. Deloss continued to run the company until 1901 when it combined with H. Chapin's Son & Co. to form the Chapin-Stephens Co. L.C. Stephens himself obtained the January 12, 1858 patent for the well-known No. 36 combination rule/level/bevel/etc. tool which was still being made by Stanley (who bought out Chapin-Stephens) into the 1940s. It seems likely that Stephens started making the Thompson bevels in 1859 or 1860 at the latest. There is no evidence that it was ever sold by Stephens as one of their own products. Miller and/or L.E. Yorke & Co. probably handled marketing. The changes of styles suggest that Stephens made the bevels over some period of time, but it seems doubtful that was more than a few years. It can be imagined that Stephens produced them in relatively small groups, with changes being made at some of the times that a new group was ordered. If Conaway did not make the A styles, Stephens may have. Who made the Bl style (and when) is quite debatable. Whoever was ordering the bevels might have obtained the C2 group from some other maker. Regardless, Stephens & Co. appears to have made most of the Thompson bevels ever produced.

THE PATENT

There are some discrepancies within the patent. The text of the patent cites only miter-angle lines for 3, 4, 5, 6, 8, and 10 sided assemblies. The patent drawing, however, clearly shows side-length formulas for those and 12, 14, and 16 sides. The formulas for 7, 9, 11, 13, and 15 sides

were never put on any of the tools, and those are the lines put on the back side of the arc on the A styles. Whether the decision to provide them was made at the same time the other three were added, or even later, is not known. The lack of a brass alignment piece for these back side lines adds to the suspicion they were afterthoughts. Somewhat similarly, the text of the patent includes an example of using the tool to lay out a 10-sided column, but the portion of the patent drawing that relates shows only a 5-sided column being laid out. The patent describes its length formulas as replacing a standard procedure of stepping dividers around a circle and changing their spacing until the number of steps (equaling the number of sides) produces an exact return to the starting point. That is a more exact method than Thompson's formulas, and probably is easier for any carpenter not fairly proficient in mathematics.

THE BOOKLET

This booklet was probably written by Thompson. Its registry in 1858 suggests that it was written, possibly even printed, before the patent was issued. As originally written, the booklet describes an Al style with the angles aligned on the side. My copy of the booklet includes a pasted in notice of an improvement that moves that alignment to the "Slot Hole". Whether a revised version was ever printed is unknown. The booklet covers all frames from 3 to 16 sides and includes the side-length formulas missing from the bevel itself (but does not repeat those on the bevel). It cites only angles for making 6, 8, 10, or 12-sided columns. When the bevel is set to those sided frames, the arced segment of the blade blocks the intersection of the blade and body, so as to prevent laying the tool on a frame's angle to check it (see Figure 3). The booklet describes a process for reversing that angle to the other side to get the arc out of the way. The booklet also includes a comment relative to Thompson's use of thousandths of a foot. It describes such decimal measuring as "fast beginning to be a necessity" and predicts that very little more time would pass before inches would be "heard of no more."

THE TOOL

The bevel's design limits flexibility that would make it more satisfactory for its purposes. Explaining this gets a bit technical, but I'll try to make it as painless as possible. Every angle has a supplement - the difference between it and 180 degrees (e.g., the supplement of a 45-degree angle is 135 degrees). Either such angle can be expressed, different positions on the stock allow either to be used, and bevel users know which is appropriate. Accordingly, the fact that a Thompson bevel set to a marked 45-degree angle actually provides a 135 degree blade-to-body angle is not, in itself, a problem. (NOTE: The angles for measuring solid frames, which are all greater than the 90 degree range of the arc, are expressed as their supplements and have an exactly opposite meaning than the miter-angle markings in that the blade-to-body angle is the one to be used.) Note, however, that as can be seen in Figure 3, the arc completely eliminates any inside blade-to-body angle on one side of the body, partially blocks a complete marking of such an angle on the other side, and the part of the blade below the arc might be too short to fully mark some frame miter angles. Thus, four possible positioning options that exist with a "T" bevel are reduced to only one that is fully satisfactory.

SUMMARY

There are reasons to doubt that more than about 250 of these bevels were ever made, or that many more than 30 can currently be found in tool collections. With a brass blade and distinctive form, it is an attractive and desirable collectible. That plus its limited availability makes it fairly pricey. The B1 style that sold in the 1995 Brown auction brought $4,200. However, the A2 style sold at the 1997 Brown auction for only $270; it was not identified as a Thompson in the catalog and its differences from "standard" Thompsons may have confused some potential bidders. Most C styles known to have been sold recently were in the $2,000 to $4,000 price range. I would very much appreciate hearing from anyone who owns any style of one of these bevels. Both details about any characteristics or markings that differ from those described here, and confirmations of like examples (with serial numbers when applicable) are desired. To date, the Cl is the only style that I have seen more than one example of; more like examples would help establish the serial number ranges and quantities of the different styles. I would also like to know anything more about any of the parties involved (especially L.E. Yorke & Co.). I will prepare a follow-up article if/when enough additional or contradictory data is obtained to warrant your further attention.

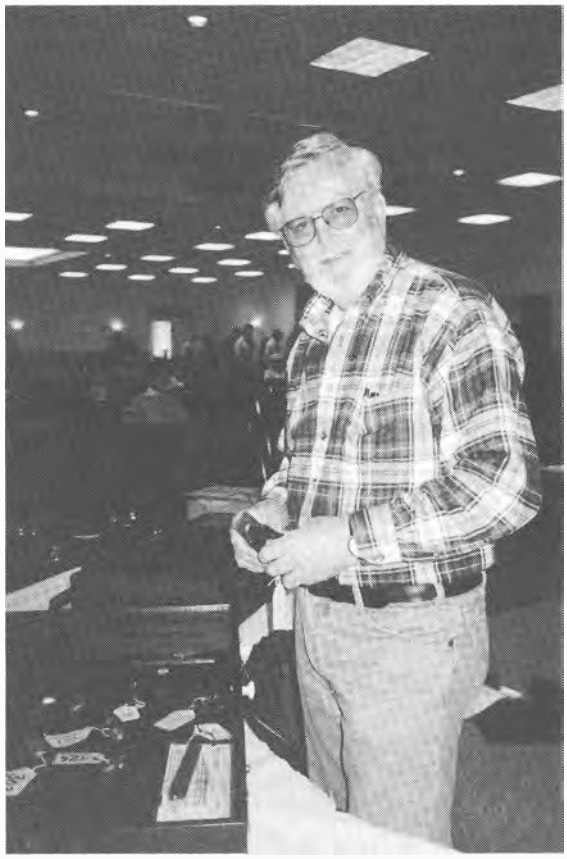
For their contributions to this article, I would like to thank the following: David Arms; Phil Cannon; Charles Flynn; Chuck Granick; Don Johnstone; Herb Kean; Rick Kerns; Chuck Morgan; Sam Pickens; Terry Thackery; Don & Anne Wing; Historical Society of Pennsylvania; St. Joseph, Missouri, Historical Society; and St. Joseph, Missouri, River Bluffs Library.

Ed: The *Tool Shed* thanks Bob for allowing us to publish his research on the Thompson bevel. He's well versed on measuring devices as evidenced by his article in EAIA's June 1998 *Chronicle* on "George Miller's Carpenter Gauge." He also does the CRAFTS auction reviews for us.

History of Measurement
by Greg Welsh

Early man needed no accuracy of distance or size. He could see if a cave was big enough for his family. As his needs required greater accuracy, his height, his arms, his feet, his hands, all became methods of measuring clothing, weapons, etc. There were no standards and each person worked alone when measuring anything.

In 6000 BC, along the Nile on the plains of Chaldea, the first known standards of measurement were established. The **cubit** became the prime measurement of distance. A cubit represented the distance from the point of the elbow of a bent forearm to the tip of the middle finger of the outstretched hand -- roughly 18 to 19 inches. Cubits varied among regions of the ancient world. In about 4000 BC the cubit was standardized at what is now 18.24 inches.



The Egyptian cubit was used in building all the pyramids! Pyramid measurements are all in multiples and fractions of cubits. The perimeter of some pyramids measured as much as 2000 cubits or 1/2 of a meridian mile. The Egyptians also used the **span**, which represented the distance between the thumb and little finger of the outstretched hand. The span was also 1/2 a cubit or about nine inches. Today the universal size of a brick is one span long, 1/2 span wide, and one nail thick. The nail represented the length of the last 2 joints of the middle finger.

The **palm**, the breadth of 4 fingers (1/6 of a cubit) or about 3 inches was widely used for measuring cloth. The **digit**, which was 1/24 of a cubit, was the breadth at the middle of the middle finger, or about ¾ of an inch. From this division of the cubit into 24 digits and the division of the span into 12 digits emerged the number of hours in a day and the number of months in a year. The **foot** was adopted quite late in history, just as the pyramids were being built. It was equal to 2/3 of a cubit, 4 palms, or 16 digits and measured about 12.16 inches.

Modern science cannot improve greatly on the meridian measurements made in Egypt and Chaldea 60 centuries ago. The **meridian mile**, used by seaman the world over, was established by 4000 BC as 4000 cubits or 1000 Egyptian fathoms. The **fathom** was equal to the distance across the outstretcaed arms, or about 6 feet. The fathom is still used today. In the 16th century the **rod** was established as the length of the left feet of the first 16 Romans out of a certain church on a certain Sunday.

Oddly enough, all ancient measurements were in a sexdecimal system, that is in units of sixteen or sixteenths, or a duodecimal system, that is in units of twelve or twelfths. To this day many of us stick to a system derived from physical measurements and resist the decimal system. However, in many places that is changing.

The inch! The Roman foot, called the pes, was divided in twelfths by the uncia, which through English translations became the inch. Originally the inch measured the thumb's breadth. In 1150 AD King David I of Scotland ruled that the inch was the average measurement of the thumbs of three men: "a mekill [big] man, a man of messurabil statur [medium], and a lytell man. The thombs are to be a messurit at the rut [root] of the nayle." In 1324 England's King Edward II decreed that 3 barleycorns, taken from the middle of the ear, placed end to end equaled one inch.

The legend of the **foot** is a fairy tale. There is no basis in history that the foot was based on the heel and toe measurement of King Alfred's foot! It is more likely that King Alfred established the English foot as the measure of a cubical vessel containing 1000 Roman ounces of water. This set the standard of both the lineal foot and the cubic foot. The yard is a different story. This measure of three feet or ½ fathom was decreed by King Henry I to be the distance from the tip of his nose to the end of his thumb. **Yard** comes from the old English "gerde" or "yerde" meaning wand.

Things became so confusing by the 13th century that all land measurements were made in accordance with the foot stored in Saint Paul's Church and with the iron **ell** in the king's palace. An ell was five spans, also an old cloth measure. From these measurements came the establishment of the mile in about 1500. The English system thus became: 1 inch = 3 barleycorns, 1 foot=12 inches, 1 yard=3 feet, 1 span= 9 inches, 1 ell = 5 spans, 1 pace = 5 feet, 1 rod = 5½ yards, 1 furlong = 40 rods, 1 English mile = 8 furlongs, 1 league = 12 furlongs.

Rules emerged as measuring devices with three basic types: linear measure, by far the most common; volume measurement, wet and dry; and calculating. The joint for folding rules was invented by an Italian architect, Vincenzio Scammozi (1552-1616). The three most common joints are the round joint, the least expensive; the square joint, a stronger joint; and the arch or double arch joint, the most expensive and the strongest. Bitted rules have a plate inserted in the edges to protect the wood from splitting out from the closing pins.

Rulemaking developed from instrument makers working in London. The first U.S. rulemaker was Belcher Brothers in New York, followed by other early makers: J. & G. H. Walker, Andrew Brenmor, J. Souls, John Gee, John Hughes, Orrin Noble, Isaac Arm, and Kirby & Davidson. Hermon Chapin started in 1834. Lorenzo Stephens worked for Chapin, but left for his own business in 1853. A. Stanley started in 1854. Much information about rules and rulemakers can be found in *Fundamentals of Rulemaking - Excerpts from Studies by Kenneth D. Roberts and Philip E. Stanley.* See your tool dealer or send $13.25 to Ken Roberts, P.O. Box 151, Fitzwilliam, NH 03447

SOURCES: *The Amazing Story of Measurement* from the Lufkin Rule Company and *Boxwood and Ivory* by Philip Stanley.

Ed: This article is based on the talk on Carpenter's Rules and Rule Making that Greg gave at our June 1997 meeting. Greg is CRAFTS Vice President, Auction Chairman, and Membership Chairman.

GAGE TOOL Co. Advertising Piece ☞

Dick Hepner sent us an unusual advertising piece some time ago which we are finally bringing to you. Distributed by the Gage Tool Company of Vineland, New Jersey, it's a 3" by 7" two-side piece that Vinelanders were requested to send to their friends. Recipients could return it to Gage for a free trial of a Gage plane (provided Gage planes were not for sale in their towns). Both sides are shown to the right.

According to Alex Farnham in *Early Tools of New Jersey and the Men Who Made Them,* the Gage Tool Company was founded by John Porcius Gage in Vineland, New Jersey. It sold transitional wood-bottom planes with a self-setting cutter adjustment based on an 1883 patent by David Bridges, and later patents by Gage himself. Apparently Gage made a quality product because he competed successfully with Stanley over an extended period. Gage sold his business (and patents) in 1917, and in 1919 it was acquired by the Stanley Rule and Level Company. Stanley introduced a line of 8 new transitional planes. They were marked "Stanley" but most had a model number on the toe that was preceded by the letter "G."

Just as this was going to press, I noticed Lot 265 in the Brown Auction Catalog for October 24, 1998. It's a wood bottom plane marked Bridges Plane Works, a likely predecessor to the Gage Tool Co. It's reported to be the only known example with this mark and carries a range $2500 – 4500! It's applewood, which Gage also used for his higher-priced planes. ... Hank Allen

Prove your confidence in the article you have to sell by allowing a trial of it before it is paid for. We are sending our Self-Setting Planes for trial, to towns where not sold, to be returned at *our expense* if they are not wanted. Vinelanders will you favor your friends and ourselves by inclosing this statement and request in your letters to them. By so doing you will bring to their notice a plane which will save them *time, money,* and *hard work,* by doing their work *quicker, better* and *easier* than can be done with any other plane.

They or any friend can fill out the following "*request*" and return to us if they want to try the planes, or keep it until they do.

GAGE TOOL CO.
Vineland, N. J.

Sent by.....

.....P. O.....189

To The Gage Tool Co., Vineland, N. J.

My Friend.....of Vineland, kindly sent me this blank, and I desire to try your planes, which are not sold in our town.

If you will send me a.....plane about..... inches long, with an iron about.....inches wide, all sharpened and ready to use, I will try it and either send you the price, or return the plane at your expense within 30 days from receipt.

Name.....State.....

RMTC President's Column by Steve Scruggs

"A few weeks ago I received a phone call from a man who had been a member of RMTC for a short while, but hadn't renewed his membership for 1998. He called with a few questions about a tool he had recently found. After answering his questions, I asked him why he hadn't renewed his membership. I was more than a little disturbed by his answer, and I think you should be too. He said, "Aw, Steve, I just don't feel like I'm in the same class as most of you guys when it comes to collecting tools."

I realized that if one person felt that way there was a good chance that others might also. I was upset at the thought that some of us may have given others the impression that there is some arbitrary standard that collectors have to meet to be considered serious about collecting. There isn't, of course. Sure, there are differences in tool collectors: different tastes, different preferences, different goals, different tool budgets. But the one thing we all have in common, the one thing we share that makes us all equal and keeps us in the *same class,* is a love of old tools. Tool collecting is not a contest; there's no prize at the end for the most tools, or the best tools, or the most expensive tools. You're much more likely to be admired and remembered for your attitude toward collecting and toward other collectors than you are for what you collect or how much you spend on your collection.

If anything, a tool collector should be measured not by his tool collection but by his attitude and passion toward tool collecting. Some people may lead you to believe that you have to collect only the rarest of tools, or that your collection has to be worth a certain amount, or that you have to collect what they do to be considered a serious collector. You should ignore those people - they are **Tool Snobs.**

If you are a beginning collector or fairly new to RMTC, please don't be intimidated by what others collect or how much they spend on tools. If you are an old-timer at collecting or have been around RMTC for a while, please do your part to welcome new members into the family and to encourage their desire for collecting whatever it is they collect. Please don't be a **Tool Snob.** Let's not lose another member simply because he feels that he doesn't measure up."

Ed. Steve Scruggs is the President of Rocky Mountain Tool Collectors. When I met him in Albuquerque in 1996 I found him very enthusiastic about collecting and about RMTC. In the August 1998 issue of *Shavings, Sawdust and Splinters*, the Club's newsletter, Steve's "President's Column" focused on the importance for Club members to be welcoming and encouraging toward new members, and to not be **Tool Snobs.** His words are probably as applicable to CRAFTS as to RMTC, and, so, they are reprinted above as worth thinking about.

Hank Allen

STANLEY OFFERS GARDENERS TOOLS THEY THINK THEY HAVE (1)

New Britain, Conn. – When the Stanley Works was named a favorite maker of garden tools among focus group consumers, company officials were thrilled – and surprised. The company didn't make garden tools. It does now. Stanley rolled out its new line of garden tools at a Chicago trade show this week.

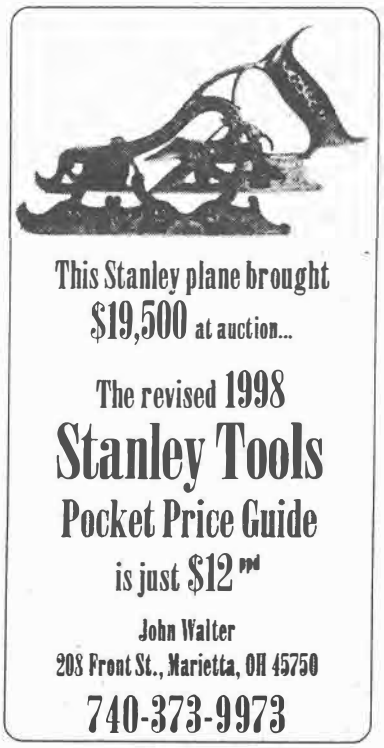
In focus groups commissioned by Stanley over the past two years, Stanley tied for the lead with Sears' Craftsman brand in garden tools, far ahead of the competition. Some shoppers even went as far as to say Stanley made excellent pruners and shears. The odd thing was, Stanley didn't make any garden tools at the time.

The company had a brief foray into garden tools in the late 1960s, when it sold a line of 10 to 15 tools. The company had abandoned the line after just a year when retailers didn't buy the tools, which were manufactured by another company under the Stanley name, said Lee Wilkins, venture manager for Stanley's new line of garden tools.

Company officials were pleasantly surprised when their focus groups – as well as surveys and targeted one-on-one interviews – showed that consumers liked Stanley garden tools. "I think it's the ... power of the brand," Wilkins said.

Inspired by the focus groups and other research, the company quickly designed a full complement of "AccuScape" garden tools – 67 in all. The company plans to give the public what it thinks it already has in time for next spring's tilling season.

(1) From the Bergen (County, N.J.) Record, August 21, 1998 Via The Associated Press



Essay: Reminiscences of a Long-Time Tool Collector

by Alex Farnham

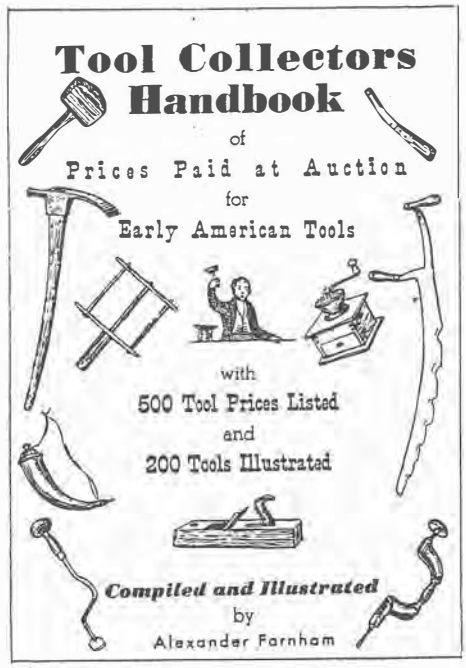
When Hank Allen requested that I fill this space formerly occupied by that most-read and admired column "Kean Kuttins," I was faced with the dilemma of what to write about. I knew that I would be unable to come up with anything as amusing or enthralling as the writings of Herb Kean, but I thought that perhaps my experiences as a tool collector for the past forty-five years might be of interest to some readers. Though I did not collect any at the time, my interest in tools goes back to the early 1930s when I began to use those I found in my father's workshop. Many of them were over one hundred years old at the time. I did not actually start collecting tools until 1953 when my wife, Barbara, and I bought a stone house and barn on acreage overlooking the Delaware River. The house was built around 1800 and by the time we took it over it required considerable repairs.

Our next-door, weekend neighbor was Albert T. Gardner, Associate Curator of American Art at the Metropolitan Museum of Art. He introduced me to Frank Kolbe's auctions across the river at Point Pleasant, Pennsylvania, which he and I would attend every other Saturday. Kolbe sold a variety of antiques including numerous early tools. Carpenter tools sold for prices ranging from five cents up to as much as two dollars. Wooden planes never brought more than twenty-five cents, and those purchasing them had no interest in the names stamped into them. Chisels and gouges, some of which were in near mint condition after many years of service, sold for around fifty cents. At almost every auction a number of dated Conestoga wagon jacks were sold for two or three dollars each, and spinning wheels went for around six dollars. At one of the first auctions I attended, a broad axe was put up for sale, and I bid fifty cents for it. A reckless spendthrift topped my bid by offering seventy-five cents. Since I noticed that the axe had a crooked handle I let the other bidder have it. It wasn't long before I discovered that most chisel-edged broad axes intended for hewing beams had offset handles.

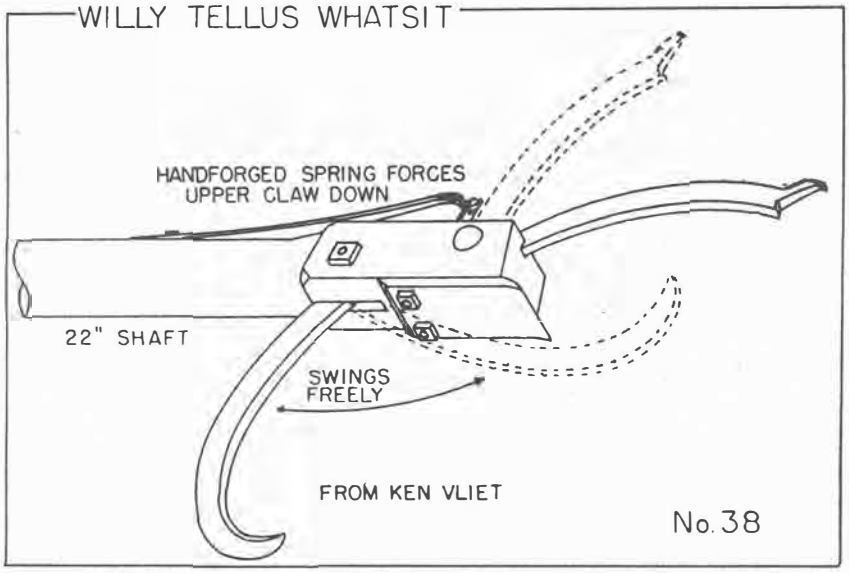
In the beginning I bought mostly tools that I could use in making repairs to our house, but soon I realized that many of the tools, as well as being efficient and pleasant to work with, were also quite beautiful to look at. During my early days of collecting I had little or no competition for the tools at the auctions I attended. In fact, many antique dealers who came across tools in the box lots they purchased handed them over to me. Besides the biweekly auctions in Point Pleasant there were numerous house and farm auctions taking place on both sides of the Delaware River, and I attended most of those within a twenty-mile radius of our home. My collection of early tools increased rapidly until it took up a large part of my studio.

Through the recommendation of Ethel Howe, a prominent Bucks County antique dealer, I joined Early American Industries Association in 1959. At the time membership was around 900, far smaller than it is today, and much of it was made up of museum personnel, historians, and antique dealers. The first EAIA meeting I attended was at Williamsburg, Virginia, where I met all of the legendary names in the field of collecting and studying antique tools. For many years I never missed a meeting. In those days selling tools was prohibited at the meetings though a few dealer members did so in their rooms. I believe that CRAFTS of New Jersey and other splinter groups were formed in later years to allow members to buy and sell tools, which is a major part of many meetings nowadays.

One of the first things I did upon joining EAIA was to start writing and illustrating for the *Chronicle* of which William Geiger and Ray Townsend were coeditors. Though I had written for US Navy publications during World War II and later for *The Art Students League of New York Bulletin*, writing the articles for the *Chronicle* was the beginning of nearly forty years of my writing about antique tools. In 1969 I started work on the first edition of *Tool Collectors Handbook,* which I believe was the first tool-pricing guide ever published. In 1972 a second edition was published, and in 1975 a third and final edition. Starting in 1972 I wrote and illustrated full-page articles for *Mid-America Reporter*, and continued writing them when the name of the publication was changed to *The Antique Reporter*. Samuel Pennington, editor of *Maine Antique Digest* asked me to write and illustrate a report on the auction of the James Keillor collection for the November 1976 issue. Since then I have written more than one hundred articles on antique tools, weathervanes, and art for that publication.



In 1976 the publishing firm of Wm. H. Wise asked me to do a chapter on tools for the book *Collecting New Jersey Antiques*. I had never thought about tools made in New Jersey, but after writing the chapter about them and finding how scarce they were, I decided to do further research on them with the idea of writing a book devoted to their manufacturers. With help from my fellow members of CRAFTS, which was founded shortly after I started work on the book, I was able to publish *Early Tools of New Jersey and the Men Who Made Them* in 1984. Eight years later my second book on the subject, *Search for Early New Jersey Toolmakers* was published. These two books, along with my other writings, and including those in the *Tool Shed*, have introduced me to friends across this nation. The books have also resulted in my receiving grants from EAIA and the New Jersey Historical Commission. During the forty-five years that I have been studying and collecting tools, I have gained some knowledge and a great deal of enjoyment.



Whatsit Indentified

The June whatsit was a clinking hatchet belonging to Wallace Therien. Leatherworking professional Russell Bigelow (See "Displaying Tools" in the November 1997 *Tool Shed*.) called to describe the tool's use.

Leather soles can be produced in quantities on a clinking machine, or clinker, which has a multitude of sole dies for this purpose. The base of the clinker is made of wood, much like a butcher board. Salt and water are rubbed into this bade regularly for conditioning and to keep it damp. Leather sheets as large as 4 feet wide by 5 feet long are placed on this base and the soles are cut in one stroke. Dies are set about ½" apart so what remains after the soles are punched out is a web of leftover leather. A clinking hatchet is used to chop up this web of leather on the clinker's base for easier disposal. Clinking machines are still employed in the shoe industry.

Clinking hatchets show up regularly at flea markets. Most are stamped USMC for the manufacturer, United Shoe Machinery Company. But some sellers are not above letting collectors think these are Marine equipment. In fact, they show up at military auctions under this guise.

Winter Auction Schedule

Nov. 7, and **Dec. 12**: Boyertown, Pennsylvania. Barry Hurchalla's regular monthly auctions. Call Barry 610-323-0333 for information or to get on his mailing list.

Nov. 13-14: Baxter's, Indianapolis, Indiana. Tom Witte's Fall Tool Show and Auction. Call Tom 616-668-4161 for a catalog or information.

Nov. 14: Hillsboro, New Hampshire. Your Country Auctioneer's Listed Antique Tool Auction. Call Lee Murray for information 603-456-3705.

Nov. 21: N. Kingstown, Rhode Island. Bill Spicer's tool auction managed by Bud and Vera Steere. Call Vera for information about upcoming winter auctions or to get on Bill's mailing list 401-884-5049. Send $2 for a list to 110 Glenwood Drive, N. Kingstown, RI 02852.

Dec. 6, Feb. 28: Fine Tool Journal absentee auctions. Call Clarence Blanchard for information or subscription 207-688-4962.

Jan. 23: Day's Inn Conference Center, York, Pennsylvania. Barry Hurchalla's auction followed by M-WTCA Area P meeting on Jan. 24. Call Barry 610-323-0333.

Feb. 20: Nashua, New Hampshire. Your Country Auctioneer's Cabin Fever Antique Tool Auction. Call Lee Murray for information 603-456-3705.

March 27: England. David Stanley's 33rd International Catalog Auction. Call Mechanicks Workbench for a catalog 508-748-1680.

Notice

Cory Amsler, curator at the Mercer Museum in Doylestown, Pennsylvania, reports that the Museum's annual Tool Discovery Day will be held on November 14 from 10am to 3pm. Come and see exhibits and programs by CRAFTS and EAIA members, as well as the Museum's vast collection. For lunch your editor recommends Maxwell's Restaurant and Victorian Pub.

Buy, Swap, & Sell

CRAFTS members only may have a free 5 line (40 word) ad that is primarily related to the exchange of tools or information. Each line over 5 is $1. Send to: Stuart Shippey, 251 Hillside Ave., Chatham NJ 07928-1732, FAX 973 701-2050, or email: stushippey@prodigy.net. Ads accepted if space permitting basis.

For Sale

1998 STANLEY TOOLS POCKET GUIDE. Updated with several hundred price adjustments to reflect recent market activity $10 + $2 pstg. Available from John Walter, 208 Front St., Marietta, OH 45750 or call (740) 373-9973.

Wanted

FOR RESEARCH: Early or unusual spiral screwdrivers or information such as catalogs, advertising, or manufacturing information. Particularly seeking Forest City, Bowser, Ellrich, and Mueller (Archimedian). Cliff Fales,1435 South Urban Way, Lakewood, Co. 80228. 303-987-3849

Delta/Rockwell Model 11-280 32" radial drill press, with cast iron belt guard, vintage 1960's/early 1970's. Al Conrad 973 625-8508.

DRAWKNIFE names, markings, logos, brands, ads, etc. on and/or for fixed or folding handle types, rare or common. A photo, drawing or opportunity to see the marks would help along with the cutting edge length. For a mini-directory...with credits) Tom Lamond, 30 Kelsey Pl., Lynbrook, NY 11563 or call (516) 596-1281.

Boxwood and ivory FOLDING RULERS of all types and makers. Please send description and price. John Hathaway, 18 Hopp Ground Lane, Bedford, NY 10506. Tel 914-234-6529, or email: hathaway@bestweb.net