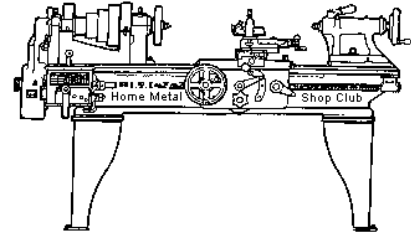




January 2020 Newsletter

Volume 25 - Number 01



<http://www.homemetalshopclub.org/>

The Home Metal Shop Club has brought together metal workers from all over the Southeast Texas area since its founding by John Korman in 1996.

Our members' interests include Model Engineering, Casting, Blacksmithing, Gunsmithing, Sheet Metal Fabrication, Robotics, CNC, Welding, Metal Art, and others. Members enjoy getting together and talking about their craft and shops. Shops range from full machine shops to those limited to a bench vise and hacksaw.

If you like to make things, run metal working machines, or just talk about tools, this is your place. Meetings generally consist of **general announcements**, an **extended presentation** with Q&A, a **safety moment**, **show and tell** where attendees share their work and experiences, and **problems and solutions** where attendees can get answers to their questions or describe how they approached a problem. The meeting ends with **free discussion** and a **novice group** activity, where metal working techniques are demonstrated on a small lathe, grinders, and other metal shop equipment.

President <i>Brian Alley</i>	Vice President <i>Ray Thompson</i>	Secretary <i>Joe Sybille</i>	Treasurer <i>Gary Toll</i>	Librarian <i>Ray Thompson</i>
Webmaster/Editor <i>Dick Kostelnicek</i>	Photographer <i>Jan Rowland</i>	CNC SIG <i>Martin Kennedy</i>	Casting SIG <i>Tom Moore</i>	Novice SIG <i>John Cooper</i>

This newsletter is available as an electronic subscription from the front page of our [website](#). We currently have over 1027 subscribers located all over the world.

About the Upcoming 08 February 2020 Meeting

The next general meeting will be held on 08 February 2020 at 12:00 P. M. at the Bayland Community Center, 6400 Bissonnet Street, Houston, Texas 77074. John Cooper will deliver a presentation on How to Operate a Plasma Cutter.

Visit our [website](#) for up-to-the-minute details, date, location maps, and presentation topic for the next meeting.

General Announcements

The HMSC has a large library of metal shop related books and videos available for members to check out at each meeting. These books can be quite costly and are not usually available at local public libraries. Access to the library is one of the many benefits of club membership. The club has funds to purchase new books for the library. If you have suggestions, contact the [Librarian Ray Thompson](#).

We need more articles for the monthly newsletter! If you would like to write an article, or would like to discuss writing an article, please contact the [Webmaster Dick Kostelnicek](#). Think about your last project. Was it a success, with perhaps a few 'uh ohs' along the way? If so, others would like to read about it. And, as a reward for providing an article, you'll receive a free year's membership the next renewal cycle!

Ideas for programs at our monthly meeting are always welcomed. If you have an idea for a meeting topic, or if you know someone that could make a presentation, please contact [Vice-President Ray Thompson](#).

Please note. All general club meetings for 2020 will be from noon to 4:00 P.M.

Members are requested to submit to the club secretary the name, address, telephone number, and website address, if any, of any metal or other material stock supplier with whom the member has had any favorable dealings. A listing of the suppliers will appear on the homepage of the club website. Suppliers will be added from time to time as appropriate.

Two local sources of anodizing your projects are listed herewith. 1. Outlaw Anodizing, 11806 North Garden St., Houston, TX 77071. URL: www.Outlawano.com. 2. Panel Finishers, Inc., 5616 Rampart St. Suite 'A', Houston, TX 77081.

Recap of the 11 January 2020 General Meeting

By Joe Sybille, with photos by Jan Rowland



Sixteen members attended the 12:00 P.M. meeting at the Bayland Community Center, 6400 Bissonnet Street, Houston, Texas 77074. There was one visitor, a former member, William Swann. There are twenty members in good standing with the club.

Vice-President Ray Thompson led the meeting (right photo).



Presentation

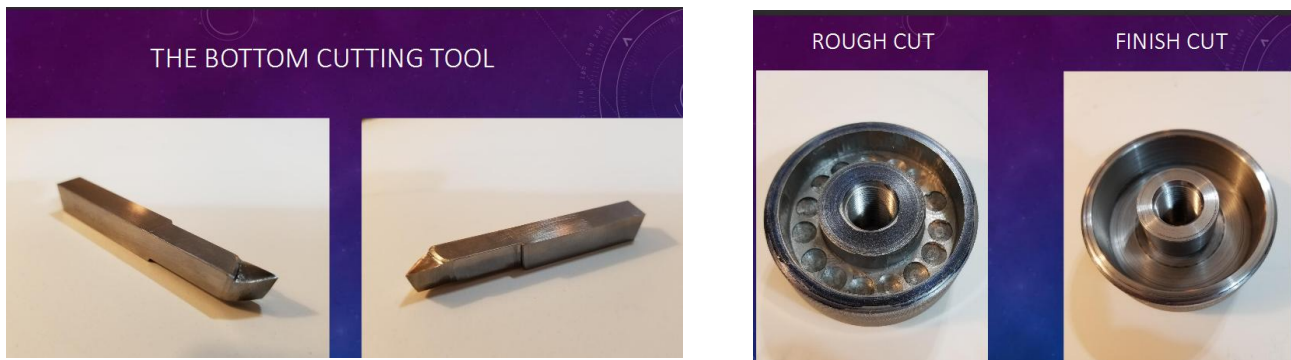
Club member, Norm Berls, gave two presentations today. The first, **Animation Insanity**, pertained to adding animation to still graphics drawings made by SketchUp. SketchUp is a Computer Aided Design program used to create, among other things, machine tool related projects. The program produces 3D pictures as jpg files that may be converted to mp4 files for animations. The problem with these animations, according to Berls, is that the animations are difficult to build.

To facilitate making animations of SketchUp files, Berls found another program, Camtasia. Camtasia assembles the SketchUp files into a series of clips to make a video. The program supports soundtracks such as mp3 files or a narration from a microphone. Berls then showed a short video clip of his tool grinding jig project. The video demonstrated the utility of Camtasia.

Other uses of Camtasia include uploading presentations to YouTube and linking to PowerPoint files.

Berls slide presentation may be found [at this link](#).

The second presentation, **Single Point Bottom Cutting Tool for Use on a Metal Lathe**, pertained to making a tool bit to hollow out a knob for his tool grinding jig under construction. The knob as initially built proved tool heavy. Hollowing out the knob lightened it and provided Berls with the opportunity to learn new machining skills. After shaping the tool bit and using an assortment of sharpening stones to finish the bit, the tool bit would not cut the 1018 steel of which the knob is made. Sharpening the bit with a disk grinder did not work either. As a last resort, Berls used a regular tool grinder to sharpen the bit. That worked. The tool bit and the knob are shown below.



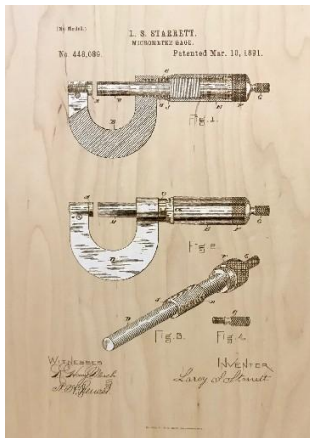
Berls second slide presentation may be found [at this link](#).

Safety Moment

The safety video emphasized the importance of the safe use of angle grinders. In addition to proper PPE (e.g., hearing protection, safety goggles and shield for two levels of eye protection, respirator, gloves, and long sleeves), one must always use the appropriate accessory wheel for the job at hand.

Also discussed was the issue of fires in the workshop. One member mentioned how leftover shavings of magnesium improperly discarded in a rubbish bin ignited and caused a fire. Fortunately, workers extinguished the fire before much damage occurred.

Show and Tell



Joe Sybille exhibited a laser cut reproduction of the drawings L. S. Starrett submitted in 1891 with his application for a patent of his version of a micrometer. The reproduction is cut into a thin sheet of plywood and then mounted onto a wooden picture frame. His son, Nicholas, made the reproduction as a Christmas gift. See reproduction without the frame shown in photo at left.

John Cooper described and showed a picture of his lathe tool bit holder rack that he made from salvaged redwood that once served as part of a partition at his house. He used 2



dowels to securely hold each Aloris style tool holder. See photo at right.

Problems and Solutions

A member requested suggestions on the best repair of a plastic knob. The broken part of the knob slides onto a nearly round shaft with a flat. The use of 'super glue' resulted in a temporary repair. One suggestion offered involved using 'super glue' again on the broken parts, then wrapping with thread or fishing twine the part that slides onto the shaft. Afterwards, spread epoxy onto the wrapped part.

Another member sought advice on troubleshooting an electrical problem with his belt driven drill press. At unpredictable times, whenever he pressed the start button the circuit breaker would trip on the circuit to which his drill press is connected. Several suggestions were offered, including replacing the motor.

Articles

John Howe's Pin-Making Machine By Vance Burns



I visited the Smithsonian back when real men used photographic film and hoped they made decent pictures. Back when digital was more your IQ and number of known relatives.

For me, the Smithsonian complex was a *bucket list must see*. The Smithsonian's National Museum of American History is filled with early technology and it was there I saw John Howe's complex masterpiece, the Howe pin-making

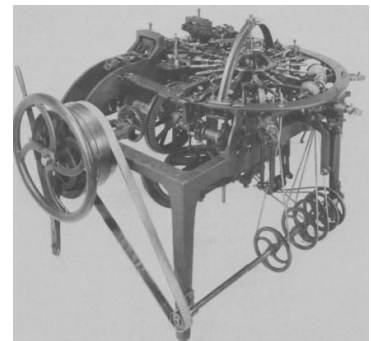
machine. At the time, I naively saw this as a dated anachronism; no, this labor saving device revolutionized a significant part of the 1800's commercial landscape. It turns out commercial pin manufacturing was not sequestered to some low level back room in 1800's technology. In 1841 when Howe received his patent, the pin industry had emerged as a high profit, though labor intensive, industry. His first patent model, barely 12x12 would be dwarfed by the production machines (see picture above).

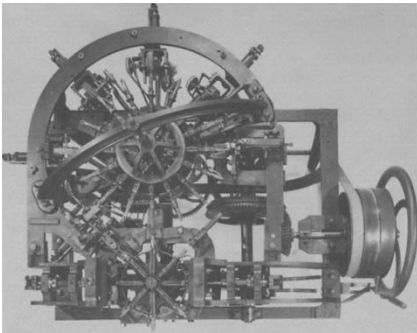


Steven Lubar, in his ***Culture and Technological Design in the 19th-Century Pin Industry*** said "The pin industry has always been a popular industry on which to base explanations of the economy and the philosophy of manufactures, somewhat incongruous due to the size of a pin and the amount of labor, capital, and technology that goes into making it. For that reason Adam Smith began his ***Wealth of Nations*** with a description of the pin industry."

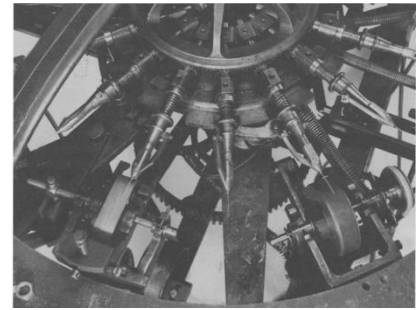
John Howe's 1841 pin machine was one of the marvels of the age, and was frequently described in the major journals of the day, even making it into the encyclopedia. A visitor to the pin factory described as follows:

The apparatus is one of the most ingenious and beautiful pieces of mechanism in the whole circle of the arts. It is impossible for me to give you any adequate description of it. Those who have any fondness for mechanical ingenuity must see it for themselves. Generally, I may state that the wire from which the pins are to be made is passed in at one end of the machine, cut in the requisite length, and passed from point to point, till the pins are headed and fitted for the process of silvering and putting up. The whole process may be distinctly seen, and as one pair of forceps hands the pin along to its neighbor, it is difficult to believe the machine is not an intelligent being.

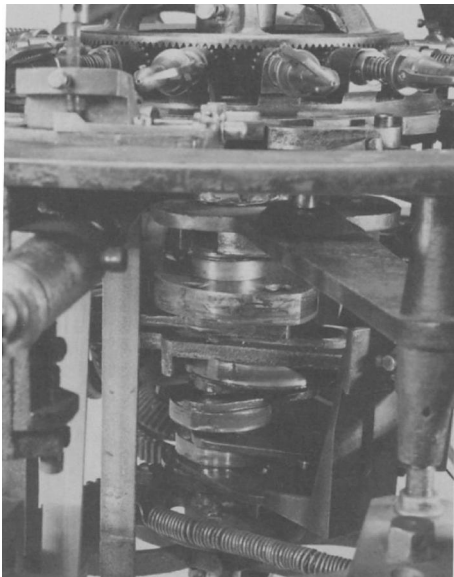




While pin-making machines turned up in patents dating back to 1813, Howe's was the first commercial success. Howe noted that manual pin making was labor intensive. In commercial manufacture, it took as many as 30 workstations to produce one pin. It was at the New York Almshouse that Howe observed this production line. His



first attempts at designing a machine tried to mechanize the process as if one person held the pin at all times. His successive designs echoed the multi-handed division of labor, where one mechanism completed a partial process and handed the pins off to the next. Howe incorporated forming and grinding stations along with separate mechanism to manage final fit and finish.



The evolutionary design of this machine had influences beyond the pin industry and helped popularize the use of cams in processes. (photos by Lubar)

But, we are interested in the mechanism and how it works. I could not get adequate photos of the complex mechanism. However, in another Lubar photo you can see the complex cam mechanism that the machine depends on. Cams had captured the minds of industrialists as mentioned in the 1847 Scientific American Magazine. I do expect that Howe's design pushed the cam fad to new levels of achievement. I recall my childhood research into Disney's Animatronics and how efficiently they used cams, incorporating pneumatics only later. The cams allow the machine to move the solitary pin through several layers of manufacture, from sizing to pointing, polishing and anvil heading.

There are two anvils in Howe's design. "Heading" in blacksmith terms comes through a process called upsetting. Upsetting is easily described as hammering the pin/rod/part until the "head" develops. It is not hard to understand why upsetting is an apt description of having one's head hammered. From the last step on this machine, the pins were plated or "silvered". Howe's machine could produce 2400 pins per day. Howe continued to leverage his understanding of cams, incorporating it in other, non-pin patents.