

# The NEMES

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

# Gazette

No. 243

August 2016

© 2016 NEMES

### Gazette Staff

Editor Dan Eyring  
Publisher Jeff DelPapa  
Events Editor Errol Groff

### NEMES officers

President Jeff DelPapa  
Vice Pres Victor Kozakevich  
Treasurer Richard Baker  
Secretary Todd Cahill  
Director Steve Cushman

### NEMES web site

<http://www.neme-s.org>

### Contact Addresses

Dan Eyring, Editor  
[editor@neme-s.org](mailto:editor@neme-s.org)

Richard Baker, Treasurer  
[treasurer@neme-s.org](mailto:treasurer@neme-s.org)

Jeff DelPapa, Publisher  
[publisher@neme-s.org](mailto:publisher@neme-s.org)

Errol Groff, Event Editor  
[events@neme-s.org](mailto:events@neme-s.org)

Errol Groff, Webmaster  
[webmaster@neme-s.org](mailto:webmaster@neme-s.org)

### Contributors

Kay Fisher  
[KayPatFisher@gmail.com](mailto:KayPatFisher@gmail.com)



### Club Business

**Richard Baker**

**NEMES Apparel.** We have NEMES denim button down shirts, t-shirts, sweatshirts, and aprons for sale. The aprons are \$20, the denim shirts \$35, sweatshirts \$25, and the t-shirts \$15. Contact Rich Baker if you would like to purchase 978-257-4101.

**Dues.** The 2016 dues are also due. Please bring your \$25 check to the March meeting or you can try out our credit card system. Or mail a check mail to Rich Baker at NEMES,

### Next Meeting

**Thursday, August 4, 2016 7 PM**

Charles River Museum of Industry & Innovation

154 Moody Street

Waltham, Massachusetts

Directions are [Here](#).

**For the August meeting**, we will have what is sometimes called a Poster Session, otherwise known as "show and tell". This will be like the Model Engine Show, but on a smaller scale. We will have tables set up all around the Jackson Room for you to display your work and talk about it. If you can make up a simple poster that describes what you are doing, so much the better. Unlike the Engine Show, we do not need finished work. Work in progress will be much more interesting, to see what NEMES members are working on. Bring in pieces of what you are working on, or pictures of work in progress.

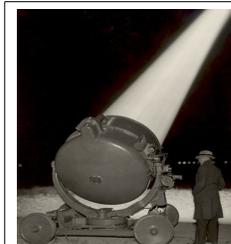
With the permission and help of Dan Eyring and Bob Perry, I will try to put together a poster of new and planned exhibits at the Charles River Museum.

**Membership Info.** New members welcome! Annual dues are \$25 (mail applications and/or dues checks, made payable to "NEMES", to our Treasurer Richard Baker) Annual dues are for the calendar year and are due by December 31<sup>st</sup> of the prior year (or with application).

**Deadline for submitting articles is two weeks prior to the next meeting.**

## Table of Contents

Club Business.....	1
Searching for Speakers.....	1
From the Museum.....	2
From the Gazette Archives.....	4
Upcoming Events.....	5



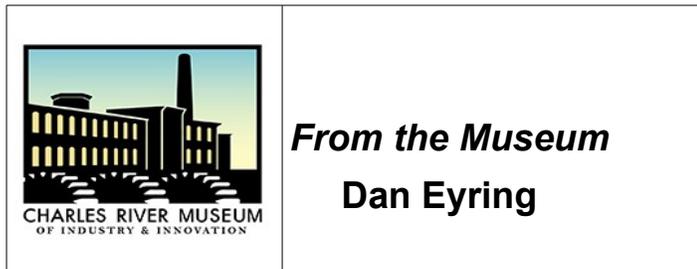
### Searching for Speakers

**Bob Timmerman**

It's always tough to find speakers for our summer meetings. Bob us working hard on it, some future possibilities include visiting an organ building factory, a talk on novel braille reading

devices for the blind, a metallurgist and a company that makes horse shoes. Diversity is our middle name!

If you have an idea for a speaker or a pet subject you would like us to have a presentation on, please tell Bob. He will make it happen.



The WH Nichols exhibit will remain in place through the end of the year. We are fortunate to be able to show both WH's "Ella Cinders" locomotive and his son Arthur's home made, front wheel drive car, the "Bug".

All the volunteers are busy. Mike Chalifoux is restoring the replica Moody/Lowell power loom. With little or no available documentation, he's got a real puzzle to solve.

Rob Reeve is about halfway through setting up one of the screw machines from the Wayback, to be powered off the shop's overhead shaft and pulley system. Rob plans to make souvenirs for visitors, specifically miniature replicas of the Museum's tall brick smokestack.

Bob Timmerman is working out the mechanism of the Stoddard Water Wheel Governor, a very interesting example of early control system theory applied to managing water power.

Dick Koolish is working hard getting the Shop in some kind of working order. The objective is to make all of the shop an exhibit, so we can invite in visitors to watch the process of renovating and restoring the cool stuff we'll be bringing out of the Wayback.

Three intriguing new exhibits are in the works. First, the inventor of a revolutionary method for sterilizing medical instruments utilizing low energy plasma has donated his prototype to the Museum. Right now we're building a reinforced platform for this 400 pound behemoth.

Second, we're working with a 157 year old family business in Taunton in an effort to preserve the company's history. Amazingly, right up to the closing of the company in 2014, all manufacturing was done with machines powered by a huge system of overhead shafts, pulleys and leather drive belts.

Finally, one of the hallways leading from the front desk into the heart of the Museum will be dedicated to steam models, including putting the Walter Bush locomotives on prominent display.

## Comparing a Wimberley Toolholder with a Diamond Tool Holder, Version 2

By R. G. Sparber

### Background

I have been the happy owner of a Diamond Tool Holder for over 10 years. If I need to face or turn an outside diameter, it is my tool of choice. Recently I was given a prototype Wimberley Toolholder plus associated documentation in order to evaluate it in my shop. Thanks go out to David Wimberley for this generous gift. Understand that he did not expect anything back from me but an honest review.

### Conclusion

Don't expect the Wimberley to cut any different than the Diamond when it comes to facing or turning outside diameters – they have different geometries but work about the same. The advantage of the Wimberley is in forming the cutter and resharpening it.

The Diamond uses a special fixture that comes with the tool holder. It works well but you will spend a lot of time removing HSS before you get the proper shape. The Wimberley takes a lot less time and effort plus there is no need for a special fixture as long as you are using a Quick Change Tool Post system.

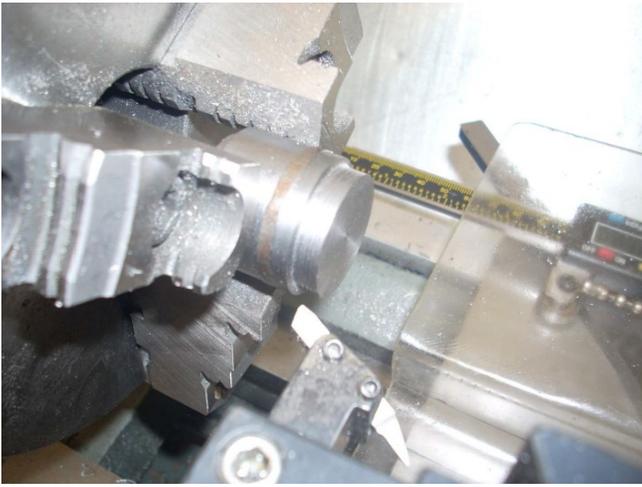
The Diamond has a second cutter design that enables single point threading. The Wimberley design does not.

Once the Diamond or Wimberley cutters are formed, there really isn't much difference in cutting action compared to a conventional cutter in a standard toolholder.

I have evaluated using the Wimberley Toolholder and making a new cutter. I will not comment on the documentation because I received an early draft.

### Using the Wimberley Toolholder and Cutter

Let me refer to the Wimberley Toolholder and Cutter as the Wimberley System. Here you see a simple facing and turning job performed with my Wimberley System. Had I used my Diamond Toolholder and cutter, the part would have looked the same.



now understand that I could have held the blank in some pliers and got it rather hot without hurting it.

I expect that re-sharpening the Wimberley cutter would take less than 2 minutes while doing the same on the Diamond might take 10. However, the Wimberley requires that I set two angles on the grinder while the Diamond only needs one.

### My First Wimberley Cutter

On the left is a top view of the cutter given to me by Mr. Wimberley. On the right is my first attempt at making my own.

### Making the Wimberley Cutter

First I want to say a few words about nomenclature. The cutter is held by the toolholder. The toolholder is in turn held by the toolblock. In operation, the toolblock is held by the Quick Change Tool Post.

There are a few ways to form the cutter. The easiest is with a Carbide Grinder which I just happen to own.



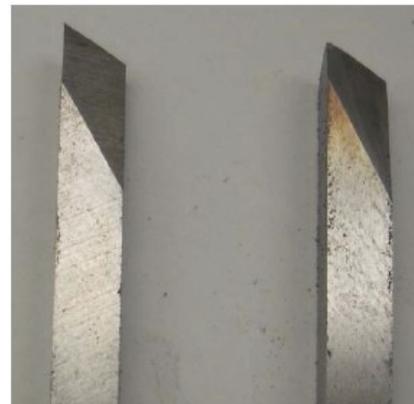
Here you can see the cutting edge used for facing. The one on the left is from Mr. Wimberley while the one on the right is mine.



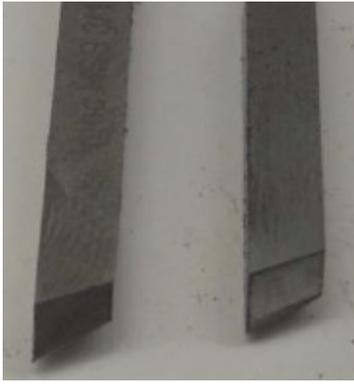
Here you can see me grinding the cutting edge used for turning. I am using a block behind my toolblock to set the angle with respect to the small slide angle support that came with the grinder. It took a little trial and error to figure out how far to stick out the HSS blank so the toolholder clears the wheel.

One thing that makes it easier to grind the Wimberley cutter is that it is  $\frac{3}{16}$ " x  $\frac{3}{16}$ " so is smaller than the Diamond's  $\frac{1}{4}$ " x  $\frac{1}{4}$ " cutter. I didn't notice any difference in rigidity during my 0.05" deep cuts.

Forming the cutter took me under 10 minutes starting with a blank of HSS. Doing the same task for a Diamond cutter would take me around 30 minutes of hogging. The reason it took this long was that I held the cutter blank in my fingers. When it was too hot to hold, I let it air cool. I



This is a front view with the one on the left being Mr. Wimberley's and the one on the right being mine. I don't see much difference between cutters.



The one place I diverged from Mr. Wimberley's grinding procedure is that I used a stone to get the radius of the point. It just took a few passes with the stone and looked fine. It also cut acceptably well as you can see on page 1.

### **What's Next**

Mr. Wimberley gave me a second cutter which I have tested but not documented. It has a rather unique geometry and cuts well. I may document this second cutter in the future.

Mr. Wimberley indicated to me that he may offer his Wimberley System for sale. I hope he does so as this design is certainly an advancement in the art.

### **Acknowledgements**

Thanks to Corey Renner who pointed out this opportunity to receive a cutter and holder. I wish to thank Mr. Wimberley for giving me this cutter system. It will be a nice addition to my shop. I also wish to thank Larry Gill for editing this article. Thanks to Daniel Remer for pointing out the excessive time to grind the Diamond cutter blank.

**Rick Sparber**

**August 26, 2012**

**rgsparber@aol.com**

Copyright protects this document

You are free to copy and distribute this document but please do not modify it.

## ***From the Gazette Archives***

### **Stealing the Obelisk – A Moving Story**

#### **From the June 2000 Gazette**

Vern Dibler has a new book out on Obelisks, listing the twelve tallest obelisks in the world. They range from 80 to 100 feet tall, and weigh hundreds of tons.

An obelisk is a four-sided monolithic pillar that tapers as it rises and ends with a pyramid at the top. The ones in the list are all from ancient Egypt, made prior to 330 BC. All of them are made from syenite, a hard form of red granite, and all from the same quarry on the upper Nile.

The Obelisk in the Vatican was made about 1500 BC by the Egyptians and moved from the Quarry to Heliopolis, where it was erected. Nobody today knows how the Egyptians managed to make it, to move it down the Nile to Heliopolis, or to erect it once they got it there. When the Romans conquered Egypt they decided to bring it to Rome. They managed to lay it over on its side, moved it across the Mediterranean Sea to Rome, and then re-erected it in Rome.

It weighs 361 tons, and the Romans packed it in 100 tons of wheat before rowing it from Egypt to Italy. Nobody knows the details of how the Romans did it either. It arrived in Rome in 41 BC.

In the sixteenth century when Saint Peter's was being built in Rome, the Obelisk was located behind it. In 1585 Pope Sixtus the Fifth had a competition to move it from the back of St. Peter's to the Front.

At the time it was standing on a 27-foot tall base buried in fill so that its 9-foot square base was about at ground level. Mounted on the top was a bronze ball, rumored to hold Caesar's ashes. (When it came down the bronze ball was removed. There were no ashes in it, but there were lots of dents from where various invaders had hit it with arrows - some things never change.)

It didn't sit directly on its base, but on four bronze astragals, one at each corner. Each was 16 inches in diameter and cast in the shape of a crab. The front of St. Peter's was 30 feet lower than the level of the fill at the back of Saint Peter's where the Obelisk had been for about 1600 years.

Domenico Fontanna won the competition to move it, and by Papal Edict he could commandeer whatever he needed to do the job, but had to pay a fair price for it. He supported it with two inch by four and a half inch wrought iron bars, and wrapped it in a protective cover to prevent any further damage to the stone. This added another 28 tons to the mass that had to be lowered.

Since it was too tall to lower without hitting St Peters he had a portion of the building's wall removed so it could be laid flat. Forty capstans with three-inch diameter hemp ropes were used, which worked out to about 15,000 pounds of pull on each rope for a 300 per cent safety factor figuring the compounding of the force with the pulleys used.

Work started on April 30, and by 10 PM they had lifted it up two feet and ran into problems with unequal stress. He also found that it was 17 inches out of line and that at some point the Romans had repaired the base, which had been broken off the bottom and repaired. It was off center because the weight had squashed one of the bronze crabs.

They had it on the ground May seventh. Fontanna had done a lot of work to calculate the loads and stresses involved, but didn't know about shear stresses and pulled the eyes out of several of the wrought iron bars.

After the obelisk was down they dug up the 27-foot tall base and moved it around front to put under the obelisk at its new location. It went into a 45-foot square 25-foot deep hole on top of 20 foot piles, covered with peeled chestnut planks that were covered with concrete before the base was put back into place.

New Astragals were made, with a lion's head facing out from each corner and a lion's body to each side, so there are eight bodies and four heads. Putting it back up was harder than taking it down because it had to be lifted entirely with the ropes, while coming down they had been able to lean it against a support. By September 28 it was back up, minus the bronze ball on the top.

We know how it was done in 1585 because Domenico Fontanna wrote a book about how he did it in 1590 and included all the details. After moving the Obelisk he went on to build the dome of Saint Peter's.

Another obelisk is in New York City. It sits on a base that has a steel band holding it together. It's made of puddled steel with half a percent carbon that was made about 2000 years ago.

In all, there are about 40 obelisks known to exist in the world today, all made by the Egyptians prior to about 330 BC from the exceptionally fine and flaw free syenite in a single quarry. Cut and polished to a fine finish. Today we have no idea how they did it.

	<p><b>Upcoming Events</b> <b>Errol Groff</b></p>
---	--

August 5, 6 & 7, Mark Gluck's Farm Plainfield CT  
The show is the Northeast Rockbusters diggin' and dozzin' in the past show. The show features shovels, cranes, bulldozers, loaders, trucks, and anything else that might move dirt.

Contact: Mark Gluck Phone: 860-608-6013  
Mark Gluck's Farm, 159 Packerville Rd., Plainfield CT

August 6, AHS Green Mountain Chapter Truck Show, Antique Truck Show at Bellows Falls Union High School  
Location: Westminster, VT

Contact Name: Roger Martin  
Contact Phone: 802-439-5797  
Contact Email: [mackltl52@yahoo.com](mailto:mackltl52@yahoo.com)

August 6-7 Vermont Gas and Steam Engine Assn. Quechee Gorge Village Show

U.S. Rt. 4. Quechee VT  
Contact: Doug Lunna, 2391 Music Mtn Rd., Stockbridge, VT 05772 802-234-9177  
email: [musicmtexcavator@gmail.com](mailto:musicmtexcavator@gmail.com)  
[www.vermontgasandsteam.com](http://www.vermontgasandsteam.com)

August 13-14 37th Annual Straw Hollow Engine Works Show

Pine Ridge Farm, Cross St., off Rt. 70 Boylston, MA  
Contact: Daniel Moore, 125 Linden St., Boylston, MA 01505; 508-869-2722.

August 13-14 New England Power of the Red Feature: International tractors, trucks and engines.

Rt. 101, west at mile marker 11  
Contact: Matthew Petz, 68 M; III" Nashua, NH 03063; (603) 493-3335  
email: [matthewpetz@yahoo.com](mailto:matthewpetz@yahoo.com)  
[www.ihcne18.com](http://www.ihcne18.com)

August 20-21· Antique Marine Engine Expo  
75 Greenmanville Ave. Mystic CT (1-95 exit 90, south on CT Rt. 27 to Mystic Seaport)

Contact: Scott Noseworthy, Mystic Seaport Museum, PO Box 6000, Mystic, CT 06355; 860-572-5343;  
email: [scott.noseworthy@rnysticseaport.org](mailto:scott.noseworthy@rnysticseaport.org)  
[www.mysticseaport.org](http://www.mysticseaport.org)

August 21, Granite State Truck Show  
Please note: the 2016 Granite State Chapter ATCA Old Truck Meet has moved again. It will be held in Deering, NH at the Feather Airport, off Rte 202 on Old Concord Rd. NO DOGS--7am to 3pm. Registration \$5.00.  
More info available, call Don Smith, President at 603-

664-9761

August 26-28 Northeast Two-Cylinder Club Classic  
Tractor Show

New Boston, NH

Contact: Dana Ramspott, 11 Lower Main St., Sunapee,  
NH 603-763-9481

email: [rspot@comcast.net](mailto:rspot@comcast.net)

[www.twocylinderclub.org](http://www.twocylinderclub.org)

August 27-28 23rd Annual Show CT River Antique  
Collectors Klub (CRACK)

Ely VT Rt. 5 exit 14, 2-1/2 miles south of Fairlee

Contact: Ruth Driscoll, 802-333-3243;

email: [vtantiquecollector@myfairpoint.net](mailto:vtantiquecollector@myfairpoint.net)