

The NEMES

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

Gazette

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Presidents Corner

Victor Kozakevich

Well, this is my last column as NEMES president. The two years have passed quickly. Thanks to everyone for your support and assistance. I hope the next president will step up and inspire us to new heights.

I'm still working on a speaker for June, but don't have a description in time for press. I expect there will be an interesting presentation, hope to see you all there.

I understand there are changes coming at CRMI, so we should keep in touch, and see how it might affect the club.

Bob Timmerman has offered to coordinate speakers for upcoming meetings, so please help him with contacts to pursue. The talks are an important part of our club, and member presentations are always welcome.

I'm sure there are many interesting topics we'd like to know more about. Given our hundreds of years of collective experience, there will always be something to talk about.

Also, I'd encourage everyone to join the NEMES email list by sending a message to: nemes-subscribe@yahoogroups.com

It's the fastest way to get the word out for events or changes. And a good way to keep in touch between meetings.

Thursday, June 4, 2015 7PM

Waltham Library
735 Main Street
Waltham, Massachusetts

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 31st of the prior year (or with application).

Missing a Gazette? Send a US mail or email to our publisher. Contact addresses are in the left column.

Issue Contributions Due

JUL	JUN 18, 2015
AUG	JUL 23, 2015
SEP	AUG 19, 2015

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	<p>Shop Talk</p> <p>Max ben-Aaron</p>	
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Hearing about the death of Bill Brackett gave us “ ... bitter news to hear and bitter tears to shed”. No mould was broken when Bill was born: he was one of a kind. He was fiercely independent and possessed of great integrity. Although he was once an airborne warrior, he was a kind and gentle soul and NEMES and the world are the poorer for his passing.

I fondly remember Bill explaining how to make an improvised explosive device (which could stop a Tiger tank in its tracks) out of an empty wine bottle, using the punt to form the shaped charge.

His contribution to the reproduction Lowell/Moody loom was one of the ways he left a footprint in the sands of time.

On behalf of the Oil Can Gangand, the members of NEMES, and the Museum Volunteers I extend our sincere sympathy and condolences to Sue and Bill's family on their grievous loss.

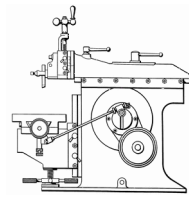
	<p>Editors Desk</p> <p>George Gallant</p>	
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It's time to pass the editor duties on. I've been doing it for 3 years now and a change is needed. I estimate that it takes about 3 hours to assemble, edit, and proff the Gazette.

I then email a PDF copy to the individual submitters and Errol Groff for proof reading. If the edits were simple I make the corrections and email to Jeff for publishing and Errol for the NEMES web site. I may repeat the review process depending on complexity.

I am Linux based and use the free Open Office tools. The word processing program accepts just about everything that submitters have supplied. It is also available for Windows and the Max.

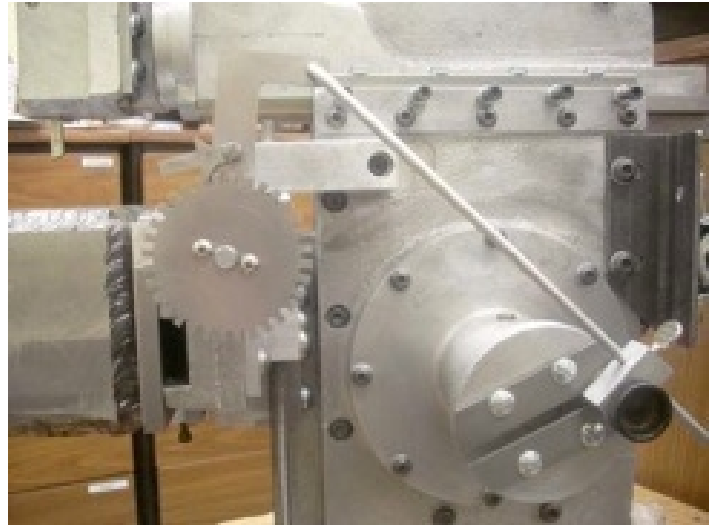
Sometimes I need to save as a text file to remove unwanted hidden text but that is not typical.

	<p>Metal Shapers</p> <p>Kay Fisher</p>
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R. G. Sparber's Gingery Shaper - Part 62

Automatic Cross Feed (part 1 of 2)

Each time the ram retracts, this automatic feed is able to move the taper sideways between 0.002" to 0.01".



Feed Setup & Working Photo by R. G. Sparber

Gingery certainly outdid himself this time! You can find a movie of the shaper cutting a block of paraffin wax on my web site. Be warned, it is a 60 MB file so takes a long time to download.

rick.sparber.org/Articles/CD/CDM/t011.mov

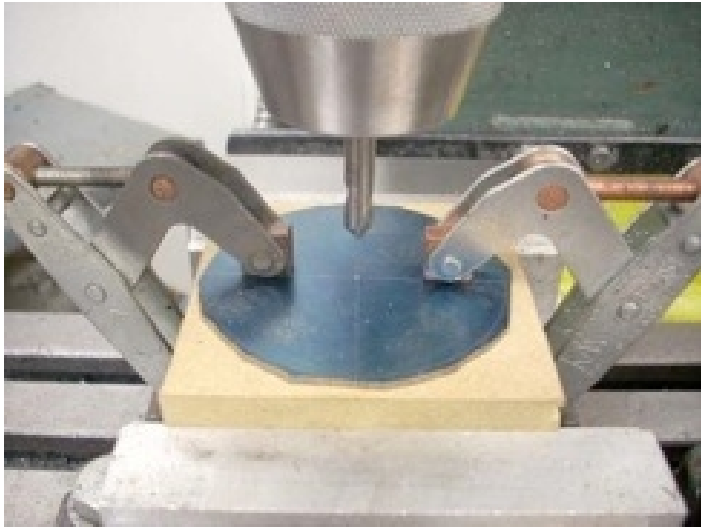


The Ratchet Wheel Photo by R. G. Sparber

The ratchet-wheel construction started by scribing the OD of the disk on a piece of 13 gage sheet metal. I set my digital caliper to 2.625", locked the slider, put one point into the dimple in the center of the disk, and ran the other point around in a circle. This is an accurate

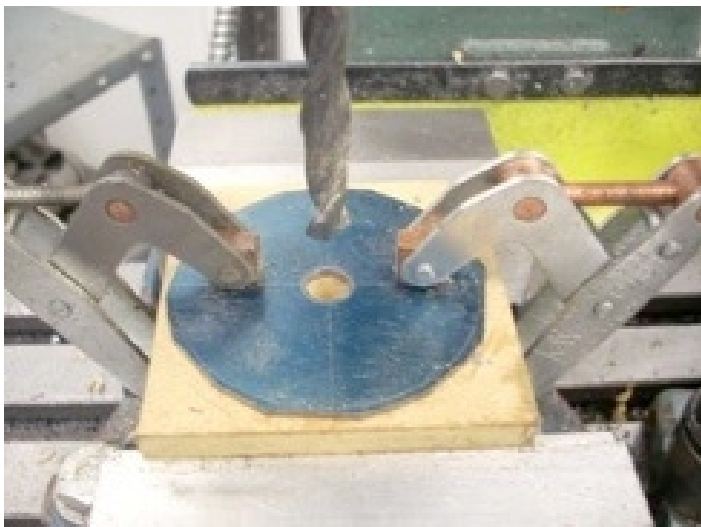
and easily handled compass.

After marking the center, I trimmed much of the excess with my bandsaw.



Spotting Center Hole Photo by R. G. Sparber

A piece of 1/2" thick MDF is used to support the disk. Here I have clamped the disk to the MDF in preparation for drilling a 3/8" center hole.



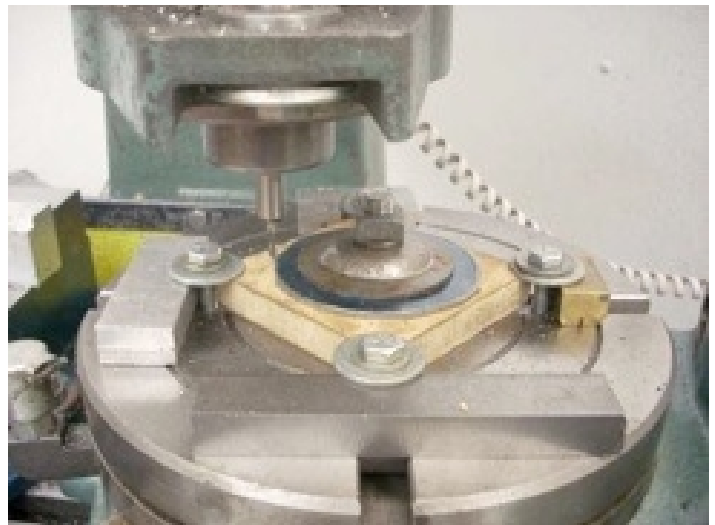
Drilling Center Hole Photo by R. G. Sparber

The drill goes through the disk and into the MDF.



Aligning Rotary Table Photo by R. G. Sparber

I rough aligned the rotary table with the spindle center. I followed it up with a DTI to get within 0.001". The bits of packing you see in the photo are part of my clamping system.



Setup for Making Wheel Photo by R. G. Sparber

A length of threaded rod with a nut on the bottom was fed up through the hole in the MDF. A heavy washer went on next and was followed by a split washer and a second nut. The disk is now securely held on the MDF. I then used washers and hold down bolts to secure the MDF to the rotary table. The assembly was centered on the table by eye. I then used a sleeve with an ID of 3/8". It fit over the threaded rod and accepted the body of the end mill. I suspect I'm within 0.005" of true.



Wheel Cut Photo by R. G. Sparber

With a $\frac{1}{8}$ " end mill set to the correct distance from the center of the RT, I cut the OD of the ratchet wheel. Some of the MDF was removed too. This insures that I have gone all the way through the sheet metal.



32 Cuts Photo by R. G. Sparber

It took me about 20 minutes to cut the teeth. The challenge was to stay focused on the task since it would be easy to mill off a tooth.

Tooth Number	Angle (Degrees)	Angle (Minutes)
1	188	15
2	197	30
3	206	45
4	215	0
5	224	15
6	233	30
7	242	45
8	251	0
9	260	15
10	269	30
11	278	45
12	287	0
13	296	15
14	305	30
15	314	45
16	323	0
17	332	15
18	341	30
19	350	45
20	359	0
21	368	15
22	377	30
23	386	45
24	395	0
25	404	15
26	413	30
27	422	45
28	431	0
29	440	15
30	449	30
31	458	45
32	467	0

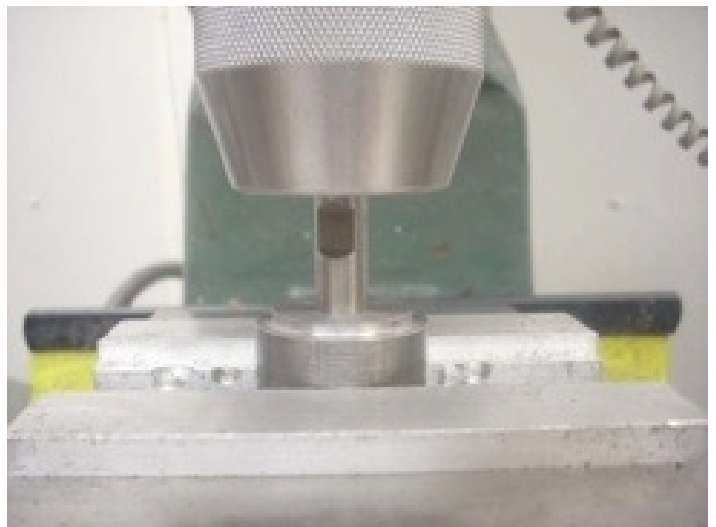
Rotary Table Calculation Photo by R. G. Sparber

In order to cut 32 teeth, I needed to advance $11^{\circ} 15'$ after each tooth. It took a few minutes to set up an Excel® spreadsheet to guide the work. The first column is the tooth number, the second and third columns are the angle in degrees and minutes.



Ratchet Wheel Photo by R. G. Sparber

The ratchet wheel came out surprisingly well. I'd never done one before.



Aligning Hub on Mill Photo by R. G. Sparber


A few minutes on my lathe and the hub was turned. I'm

using 12L14. Here you see the hub being aligned with the mill's spindle. I then drilled and tapped two 6-32 holes.

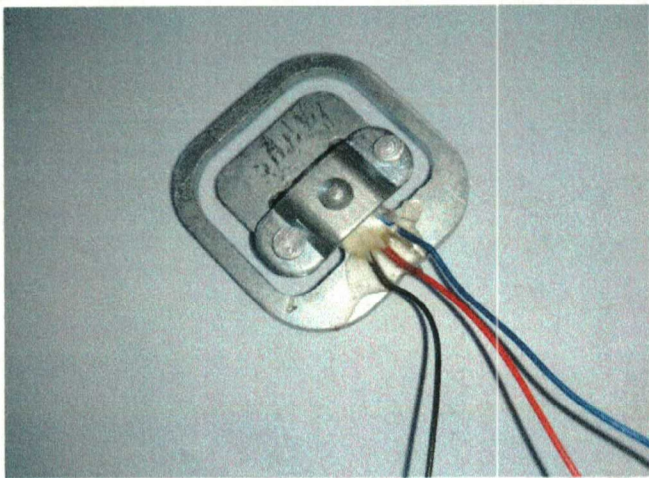
A 6-32 hole was cross drilled and tapped for the set screw. If anything binds, I don't want the hub locked too tightly to the cross feed rod. This small set screw should yield easier than a 1/4"-20 set screw.

Stay Tuned for part 63 from R. G. Sparber next month.

Keep sending me email with questions and interesting shaper stories.

	<p>Shop Talk</p> <p>Bob Bober</p>	
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Load Cell 50KG



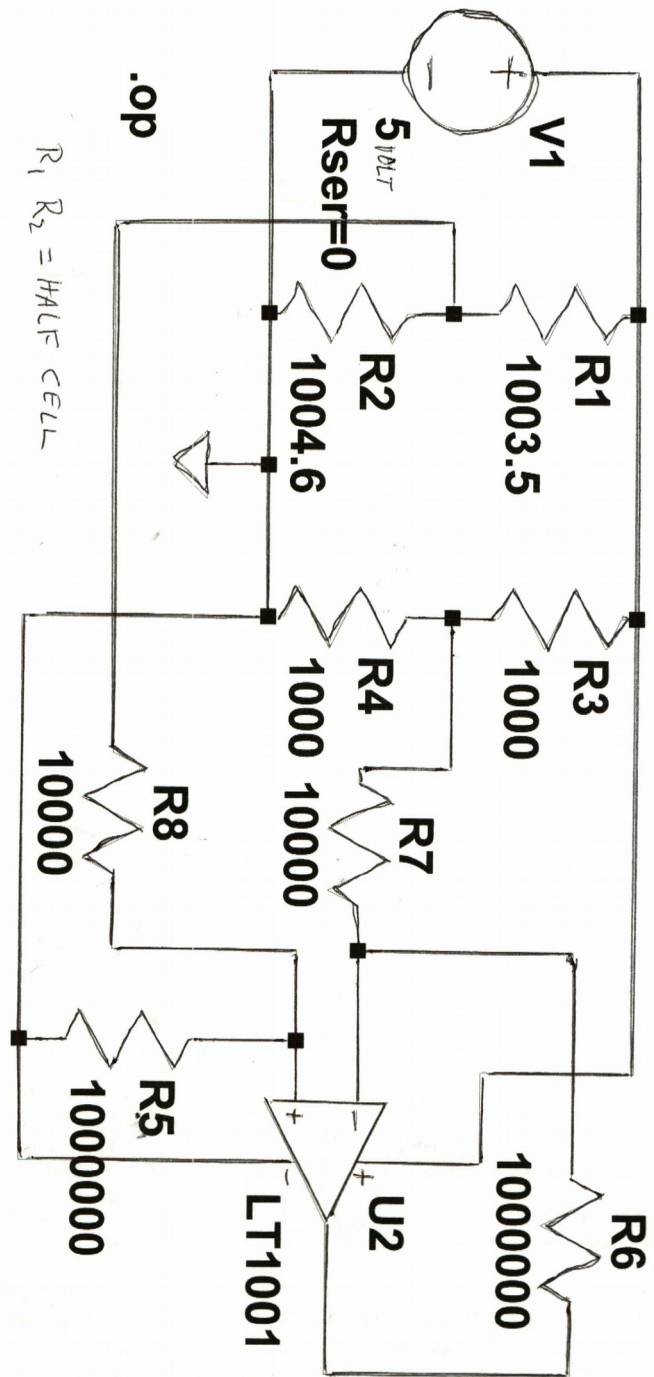
Pictured is a half load cell. I bought 8 for \$12 including shipping from JIMI in China.

The definition of a half load cell is that there are two resistance strain gages. One is in compression and one is in extension. I tested several of mine with an ohmmeter. There are three wires and they are all on the same side of the deflection arm. Each of the elements responded in the same way. Increased resistance when loaded from the top and decreased resistance when loaded from the bottom.

For comparison, a quarter load cell would also have two resistance strain gages, but only one is active. The other is for temperature compensation.

Has anyone had any hands on experience with this kind of sensor? Am I misunderstanding the application or did I receive faulty sensors?

I show the differential opamp circuit that I used. That I have tested separately and also simulated. It works fine and has a gain of 100. When I put pressure on one side of the sensor, I see no change in the opamp output.





Club Business

Rich Baker

Year End Summary. NEMES is a very healthy club from a financial viewpoint, with 134 active members and \$12,677 in assets at the end of 2014. We have \$11,277 in the bank.

The club had a surplus of \$1359 in 2014, with revenue of \$3911 and expenses of \$2553. Most of our revenue comes from dues (\$3350), and most of the expenses go to the NEMES Gazette (\$1843).

In 2014, we received official notification that NEMES is a 501(c)(3) non-profit from the IRS. We still need to file paperwork with the Commonwealth of Massachusetts to be granted our public charity status. This will cost us a \$130 fee that we will need to approve at the next meeting. The forms are completed and ready for filing.



Upcoming Events

Errol Groff

To add an event, please send a brief description, time, place and a contact person to call for further information to Errol Groff at:

events@neme-s.org

June 6-7 9th Annual Cannon Mountain Show
Franconia NH
Route 93 to Exit 34B, Tramway exit.
Steele Lightbody
760 South St.
Walpole, MA 02081
508-380-3054

June 6-7 Whately Engine Museum Show
33 Christian Road
Whately MA

June 7 2nd Annual Spring Open House & Show
Roxbury CT
102 Painter Hill Rd., 10 miles from I-84 exit 14 or 15.
Dudley Diebold
102 Painter Hill Rd.
Roxbury CT 06783; 860-354-0649
ddlivinghistory@aol.com
www.toplandsfarm.com

June 7 Ocean State Vintage Haulers 20th Annual Antique Truck Show Johnston War Memorial Park

Hartford Avenue (Route 6)
Johnston RI
8 am-2 pm.
Joe Pingitore
401-692-0095

June 13 COMVEC Military Vehicle Show
Chester Fairgrounds
11 Kirtland Terrace
Chester CT

June 13 Maine Antique Power Assn.
42nd Annual Show
Skowhegan ME
Skowhegan Fairgrounds
St. Rt. 201, Madison Ave.
use Beech Street or main gate at Wal-Mart entrance.
Joe Kelley
25 Wessnette Dr.
Hampden, ME 04444
207-862-2074
wildirishman52@gmail.com
www.maineantiquepower.org

June 13-14 Charter Day Antique Tractor Pull
Granby MA
Dufresne Recreation Area
off Rt. 202, Taylor Street entrance
George Randall
52 Taylor St.
Granby, MA 01033
413-530-5218
george.randall3@comcast.net

June 13-14 ATCA CT Yankee Show
Bethlehem, CT At the Bethlehem Fair Grounds.
203-739-0118

June, 13 Massachusetts Antique Fire Apparatus Association
38th Annual Fire Parade and Flea Market
Edgewater Park
400 Audubon Road
Wakefield, MA
mass.mafaa.net/Home_Page.php

June 19-20 Vermont Gas and Steam Engine Assn.
Brownington Show
109 Old Stone House Rd.
Brownington VT
Bob Williams
3146 Burke Hollow Rd
West Burke, VT 05871
802-467-3611
bojanewilliams@gmail.com
www.vermontgasandsteam.com

June 18-21 Coolspring Expo & Flea Market
Rt. 36

Coolspring, PA

June 27-28 39th Annual Central Massachusetts Steam,
Gas and Machinery Assn. Yankee Engine-uity Show
Feature: Waterloo Boy engines; Model T; belt driven displays
80 Airport St.

Grover Ballou, Jr.

PO Box 32

Orange, MA 01364

978-249-2895

info@cmsgma.com

www.cmsgma.com

28 June ATHS Nutmeg Chapter Brooklyn CT Truck

ShowRoute 169 (just south of Route 6)

Brooklyn Fairgrounds

Jon Yeomans

860-803-5799