

# The Hyphens

A Newsletter for E-M-F, Flanders  
and Everitt Owners Everywhere



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## Editors Column

So here I sit again, putting together another issue of the Hyphens. This issue marks the ninth year of publishing *The Hyphens*. The E-M-F Registry continues to grow and is still active. I think that is good for all E-M-F, Flanders and Everitt owners.

I still have not had the chance to get my wheels out for new wood. Hopefully I will by the next issue in the fall. I have picked up a couple of pieces for the E-M-F, like the E & J Acetylene Generator for the headlights, and some NOS burners for the headlights.

I have also been working on the website. I recently added code to allow management of the For Sale/Wanted page to be much more automated. That means less hand's on work by me on a daily basis.

Hyphen funds are still doing well. No need for donations at this time. I have not sold any leftover commemoratives since the last issue, so there has been no income into the registry fund. If you would like to purchase one of the leftovers, you can see the related article in this issue. All sales go to fund the Hyphens.

Don't forget the E-M-F Registry meeting at Chickasha. It is on the Thursday of the show and will be in one of the conference rooms. Look for signs at the show. Come out and see what is coming up with the E-M-F Registry.

If you have any ideas for articles, please feel free to submit them. I am always looking for material.

Happy Motoring!

John M. Daly

**Don't Forget**  
E-M-F Registry Meeting  
@ Chickasha Swap Meet -  
Thurs 1:00PM - See signs  
at show for place.



The picture on the left is of an original Sears Switch cover plate. The image on the right is the digitized image of this picture used for creating a reproduction.

## Technical Topic: Electrolytic Etching of Brass

By John M. Daly

When restoring early automobiles, there are frequently several parts which need to be found to complete a restoration. The more rare the car, the harder the parts are to find. Some parts may never be found, so the only solutions are to either do without the part or to make the missing part. When a part must be made from scratch, the two options are to have someone else make the part, or figure out a way to make the part yourself. This is one of the challenges I enjoy about the old car hobby.

Now I will be honest, the process I am going to write about was not used to make a part for my E-M-F, but the process could be used for the E-M-F, or any car you may be working on.

Here was the problem: My Dad has a 1909 Sears Motorbuggy which was missing the switch when he restored it in the 1970's. This switch was basically just a small block approx two inches square and 3/4 inch thick with a cylindrical plug which you would slide one way to turn on the ignition and the other way to turn off. My dad was able to make a functional copy of this switch theorizing how it must have worked based on the pictures in the parts manual. This switch was covered with a small brass tag which originally had some writing on it. Unable to find an original cover, he put a piece of brass on it and called it done. The car has worked with this switch ever since.

About 15 years ago, another Sears owner made a copy of an original switch cover

plate by taking an original and having a casting made of it, and sold these casted copies to other Sears owners. I bought one of these copies for my dad at that time, but was disappointed in the clarity of the image which was lost in the casting process. Still, it was better than a blank brass plate.

I have been looking for an original of this switch cover for years on eBay and at swap meets like Hershey and Chickasha and have never seen one. In fact, it appears that many Sears themselves are missing the original switch so even seeing an example of the switch cover plate has been a challenge.

About a year ago, I started thinking about trying to reproduce this plate by etching a piece of brass in the same way that they would have been made originally. I looked around on the internet and found a website by an artist who was etching brass with various designs he was creating on it (<http://steampunkworkshop.com/electroetch.shtml>). After reading the site, I felt that this technique was something I could apply to my quest for a Sears switch plate.

Step one was to find an image to use. I was fortunate to have a photo of an original switch plate cover which I received from another Sears owner which was clear enough to see all the detail. Using a program on my computer called "Paint Shop Pro", I was able to

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"The Hyphens" is the official publication of the "E-M-F Registry" - an affiliated registry of the **Horseless Carriage Club of America**. There are no Membership dues at this time. Donations are accepted to help with the cost of the newsletter.

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## Etching Brass

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take the color photo and convert it to a 2 color (Black and White) image. This was the hardest part of the entire procedure and it took me weeks of on-and-off work to accomplish. Once I had the image the way I wanted it, I used the program to invert the image to make a mirror copy and then pasted it into a Microsoft Word document for printing. Microsoft Word allowed me to resize the image to whatever size I wanted. I know that the size I was going for was 1 13/16 inches square, so that is what I sized the image at. I was now able to print sheets of this image.

Step two was using the image created to make a transfer which would be applied to the brass sheet stock. The steps on the website I studied basically called for printing the image using a Laser Printer onto paper which would not hold onto the Laser Printer Toner. The site revealed that the best paper the author was able to find was the shiny paper used to print ads in the Sunday newspaper, so that is what I used. I attached a piece of this paper to a regular sheet of 8.5 x 11 paper used in the Laser Printer and ran it through and printed my image right on top of the ad already existing on the sheet. Remember, the original advertisement image was printed using ink. I was printing Toner on top of that which was not able to fully grab into the paper.

Step four was to transfer the image onto a piece of brass stock. I found .032 brass stock at Hobby Lobby which looked perfect for what I wanted to do. First I used a piece of fine steel wool to clean the brass where I was going to put the image. Next I used some dish soap and a scotch bright pad to really clean the area. Once clean, it was time to reup the image onto the brass. The idea is to heat the image up thus melting the toner and making it stick to the brass. To do this, I first heated the brass using my wife's iron (don't tell her). I used the hottest setting, all the time avoiding touching the area where the image would be transferred. Once the brass was heated, I carefully laid the transfer onto the brass. With the brass hot, the transfer immediately stuck to the brass. There was no moving it once it touched, so I had to lay it down right the first time. I then used the iron to lightly iron the transfer and used a roller to apply pressure to the transfer to ensure good adhesion. This took some trial and error to get enough pressure to get all the toner to transfer without squishing out the toner and losing clarity of the image. Mistakes meant using steel wool to remove the image from the brass and starting again.

Step five was to remove the paper from the transfer. This was accomplished by letting the brass cool naturally and then submerging in warm water for a few minutes. Once the paper became water logged, it peeled off rather easily. A little rubbing with my thumb left only the toner on the brass.

Now we come to the neat 19th Century technique called Galvanic Etching. You may be familiar with the technique of electro-plating, where a metal object is plated



Set up showing Battery charger, piece to etch connected to Anode terminal and negative terminal attached to cathode, and the tank with Copper Sulfate solution.

with a layer of another metal by placing it in a bath with a source of plating metal and running current through it.

This is exactly the same thing except we connect our piece to the positive terminal because we desire to remove material from it. This technique was developed in the 19th Century for creating etchings and is still in use today.

So we need something to hold our piece of brass while we etch it. I used a piece of Bronze welding rod which I bent into a shape that would fit over the edge of the container I am using for a tank and allowed me to clamp my battery charger to.

I then attached my piece of brass to the holder with duct Tape making sure that the side of the brass which was to be etched would be facing the opposite side of the tank where the negative terminal would be. I covered all exposed areas of the plate which I did not want etched with duct tape as well as any exposed area of the bronze rod holding fixture.

For the negative terminal, I took a couple of small pieces of brass tubing and drilled some holes in them to run some bronze rod through, then crushed the brass tubing in the vise to give it more area and to fix it to the bronze rod. I suppose I could have soldered it together as well, but it does not appear that I needed to. I also bent the bronze rod on the negative terminal to a shape that would fit over the edge of the container I was using as a tank.

Now for the solution: For brass, I used a solution of copper-sulfate. Copper-Sulfate can be bought at most hardware stores as a root killer for septic systems. The stuff I used was 99% copper-sulfate. It comes in crystal form which I diluted in water. For the size container I was using (a Tupperware-like container from some lunch meat), I used approximately 9 capfuls which I think was more than I needed. I think it would have been

fine to just keep adding crystals until it would not dissolve anymore. I was not able to get the 9 capfuls to dissolve completely.

Once the solution is ready, the piece to be etched is well attached to the bronze rod holder and the negative terminal is ready, I submerged the both terminals in the solution ensuring that the brass is completely submerged. I then set my battery charger to the 6V/15Amp setting. I tried the 12 volt setting on one of my attempts and it proved to be too aggressive of an etch. 6Volts worked better for me. I attached the positive to the holder with the piece to be etched, and the negative to the negative terminal and plugged it in.

The total "cook time" I used was

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## Etching Brass

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# Centennial Commemoratives Still Available

The following items are still leftover after the E-M-F Centennial.

**Radiator badges.** These have the Centennial logo and two mounting loops which would fit between vertical radiator fins. These are **\$35.00 (\$30.00 for badge plus \$5.00 for S&H)**. 11 badges remain.

**Pewabic tiles.** These tiles were designed specifically for the E-M-F Centennial and only a limited amount was produced. You can purchase one of these tiles for **\$35.00 (\$30.00 for tile plus \$5.00 for S&H)**. 7 tiles are still available.

All funds collected from sales of these items go to fund the publication of the Hyphens. Please make checks payable to John Daly. Thanks.

## Presidents Message

By Daryl Kemerer, E-M-F Registry President

Even when you think things are going well @#%\$^&\*!...

We had to rebuild the motor for the Flanders roadster after losing a rod (Kathy's fault, ha ha). Kathy was the last to drive it, making a successful trip from Buffalo to South Bend. We had changed the oil and unfortunately started the engine before enough oil had gotten into the crankcase...my fault (oh, no)!

During a restart after the rebuild, the piston in the first cylinder got too high and a .010 spacer got caught in the top of the combustion chamber (we think). A ring broke and resulted in also breaking the top of the piston. The E-M-F rule of repair is plan on doing it three times--one each for Barney, William, and Walter. AND make sure there is a correct thickness gasket between the cylinders and crankcase.

More and more car collectors worldwide are learning about E-M-F products, thanks to John Daly's wonderful E-M-F website and "The Hyphens." Also the popularity and visibility of E-M-Fs on tour have increased the public awareness of the marquee. A member of the HCCA board remarked to me on a recent tour that the E-M-F Registry is one of the most active registries having cars on tours, outings and meetings of the Registry, and communications through "The Hyphens" newsletter.

Friends Kathy and I have toured with over many years have become aware of the quality and virtues of E-M-F vehicles and as a result have acquired or wish to acquire one for their stable of brass-era cars. In fact, one Canadian friend recently purchased a 1911 E-M-F which once belonged to his father. Nothing like bringing home an E-M-F!

Daryl Kemerer

P. S. Also, nothing like driving an E-M-F on the 2012 Outing in Lancaster, PA hosted by the Gil Fitzhugh family. Hope to see you there!

### Etching Brass

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about 1.5 hours. After this time, the toner began to let loose a bit and caused etching where I did not want it. Another important thing I did was that every 15-20 minutes of "cook time", I removed the piece from the solution and ran it under warm water to remove the sludge that was forming. If I did not do this, the final etch was not as smooth. Obviously, the longer you leave it in the solution, the deeper the etching. In fact, it will eat all the way through the unprotected areas.

After the 1.5 hours, I removed the piece from the solution and removed it from the holder, used some steel wool to remove the

## E-M-F Parts For Sale

I now have **E.M.F. timing gear sets** available at \$750.00 a set plus \$25.00 shipping. This is a onetime small run of gear sets. I will need to know which type of timing gear is required. There are 2 different types, one with 2 dowel pins to time it to the cam shaft and another that is timed with a woodruff key. I could deliver these to Hershey and save shipping charges. I also have a list of E.M.F. parts too numerous to include. Write or e-mail for list. **New Manufacture:** Part number A-180, **Water outlet pipe.** Limited run of fully machined aluminum water pipes. \$ 260.00 postpaid. **Floyd Jaehnert** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

I have 2 sets of **oil tank parts** for sale. Includes 2 packing nuts, top plug, the bowl, the nut that attaches the bowl to the tank and the lower plug. These are new castings machined and threaded. Priced at \$225.

**Tom Huehn** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

**EVERITT firewall tags.** I have reproduced the "Metzgar Motorcar Co." tag that goes on the firewall just above the center of the hood on Everitt cars. They are brass and have an area for the I D number of the car. These are a lost wax casting of an original tag. 1"X 3" \$50.00 **Davis McCann** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

## E-M-F Services

**Restoration:** Presently repairing and doing complete restorations on the Splittdorf Model D Magnetos and Coil boxes used on E-M-F automobiles. I also have a small number of excellent **NEW E-M-F Magneto Caps.** For price, please inquire to **The Brass Magneto** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE **Registry Member Gordon Matson**

tonner and, Voilà, the brass was etched. I could then trim the pieces, clean up the edges, apply a couple of light coats of black paint to it, and, after it dries, sand the paint off the high areas and polish up the exposed brass. I ended up with a nice copy.

So how could we apply this to an E-M-F? How about the data plate on the dash? How about the round tags on the radiator top tank? The triangular E-M-F tags on the top of the E & J Headlamps?

I am sure the same procedure could also be used on other metals if you knew what solution to use.

I thought I would share what I learned, even though the part made is not E-M-F. I thought any antique car guy would find it interesting how something like this could be accomplished quite easily at home and at a very low cost.

## E-M-F Parts Wanted

**Information, Postcards, Trophies, etc. on E-M-F Racing.** **Gordon Matson** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

Any interest in **cast aluminum reproduction hood formers** for **Flanders**? Contact **Daryl Kemerer** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

I am in need of **(2) or more 1911 Flanders connecting rods.** The apparently made light forged rods and also a heavier forging. I need the heavy forging to achieve a decent balance. Some rods were very thin next to the rod bolt. I'm not interested in those. **Roger Lamb** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

I am looking for a **brass radiator** and a **hook shelf** that attaches to the fire wall to hold the hood in place for my **1909 E-M-F. John Malone,** Ireland. CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE **Brass serial number plate** for 1911-12. **Lower tank** for brass, frame mount carbide generator (rough condition OK). **Horn bracket** that mounts on cowl of 1911 roadsters and demi-tonneaus. Any **EMF tools**, including a jack. Also need hubcaps for a 1911 E-M-F. Is anyone reproducing the fleur de lis pattern running board mats? I'd like to talk to any other owners of Canadian production EMF's and also 1911 roadster owners. **John Smith** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

## A Thought to Ponder

Why do they put Braille dots on the keypad of a drive-up ATM?



This is the first plate I etched and painted the background. Though decent, the 3 subsequent ones were much better. Wish I had taken a picture before giving them away.

## Upcoming E-M-F “30” Events

**March 17<sup>th</sup>, 2011 @ 1:00 PM - E-M-F “30” Owners Meeting at Chickasha Pre-WWII Meet** on the Thursday of the show. The location is not known at this time, so look for signs posted at the meet. It will likely be in a meeting room in one of the buildings. This will basically be a time to meet up with other owners, register your E-M-F with the E-M-F Registry, check/update your E-M-F Registry information and discuss the future of the E-M-F Registry. If you are going to Chickasha, please plan on attending.

**For more information contact: John M. Daly** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

**October 6<sup>th</sup>, 2011 - E-M-F/Flanders/Everitt Owners Meeting at 2007 Hershey AACA Fall Meet- Thursday October 6<sup>th</sup>, 1:00PM Hershey Time** - Meet at HCCA Space RWO 30 rain or shine. - Meet up with other E-M-F Owners during Hershey at the HCCA tent. This will basically be a time to meet up with other owners, register your E-M-F with the E-M-F Registry, check/update your E-M-F Registry information and discuss the future of the E-M-F Registry. If you are going to Hershey, please plan on attending. **For more information contact: Daryl Kemerer** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

**July 22<sup>nd</sup> – July 27<sup>th</sup>, 2012 – E-M-F Company Outing Tour in Lancaster, PA** - Open to all E-M-F related Marques through 1915. Backseats are available for those who cannot bring a car. Plans are coming together for the 2012 E-M-F Tour. Mark your calendars and join us for a fun week of touring and sharing. Some things to look forward to: Ice Cream Social, 5 Days of Touring, Historic Sites, Private Collections, Amish Trade Shops (foundry, wheelwright, machine, body, upholstery), Evening to share your E-M-F memorabilia, Le Roy award, Final Banquet. Registration forms will be mailed after Hershey. **For more information contact tour chairman: Gil Fitzhugh** CONTACT INFO IS BLOCKED FROM ONLINE ARCHIVE

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**John M. Daly**  
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