STACK TALK

JULY 2016

The Official News Letter of the Adobe Mountain Railroad
Phoenix Arizona, Operated by the Maricopa Live Steamers
Railroad Heritage Preservation Society,

UP-COMING MEETS

2017 OPS MEET JANUARY 19,20,21,22

2016 FALL MEET OCT. 27,28,29,30

July is here, June came and went really fast, and it took a toll. Our railroad is taking a beating from the heat, the kinks in the track are pretty bad. Even at night, the track is still in rough shape. Please be sure to check the board by the tower for which routes are open and which ones aren't. If you are going to take a train for a ride, make sure you have a re-railer with you, and equally important, make sure you bring plenty of water with you. It may seem like a short walk back to the station to get a re-railer, but it will take its toll on you if you don't have enough water.

In June we lost two of our members, one very unexpectedly. Bob Ross and Ken Bain, both long time members, have taken their last train ride. Both will be missed. Bob's wife donated the trolleys on display at the museum to the rail-road, changing their status from loaned to owned. Sahuaro Central's Jerry Oiler has graciously stepped into the role of liaison with the county parks .

department, a role that Ken excelled at. The day I heard about Ken Bain's passing, my father was transferred to hospice care, and with God's blessing, he passed very peacefully the next day. Why do I make a point out of this? It's simple. We all are on this earth for a finite period of time. During that time, we try to cram as much life into life as we can, including the time we spend at the railroad. Make sure you take the time to be with those who are important, and find the positives in life, and avoid the negatives.

The Christmas committee has been hard at work, and they would love your help, and even more so, your donations. The holiday train rides are rapidly approaching, as is our fall meet. I would be willing to bet that there will be discussions about both at the August meeting. Remember, we don't have a meeting in July (it's toooooo hot!)

That's all for now, be safe, stay cool, and be good to one another.

"Please be aware and vigilant on the MLS property. No one has any reason to be in the signal CP houses or working on signal heads other than Terry Liesegang (or helper if I have one). If you see something, say something. If you see someone accessing either a CP or signal head let me know ASAP."

Thanks,

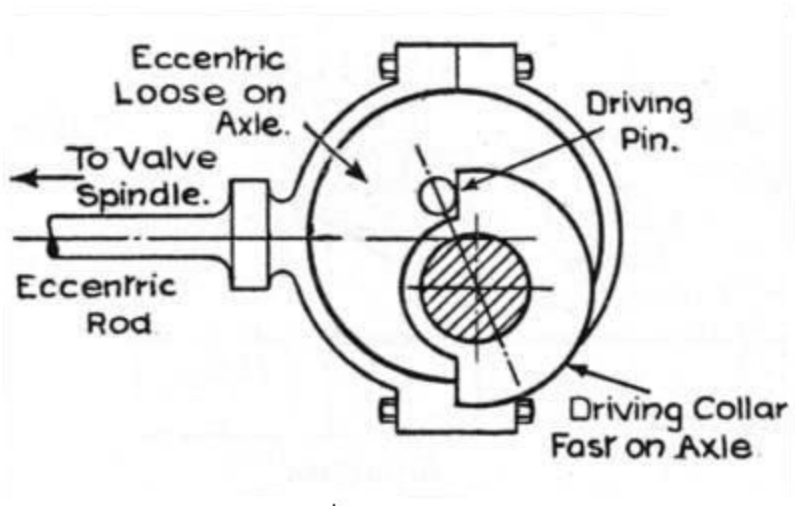
Terry Liesegang

STEAM LOCOMOTIVES

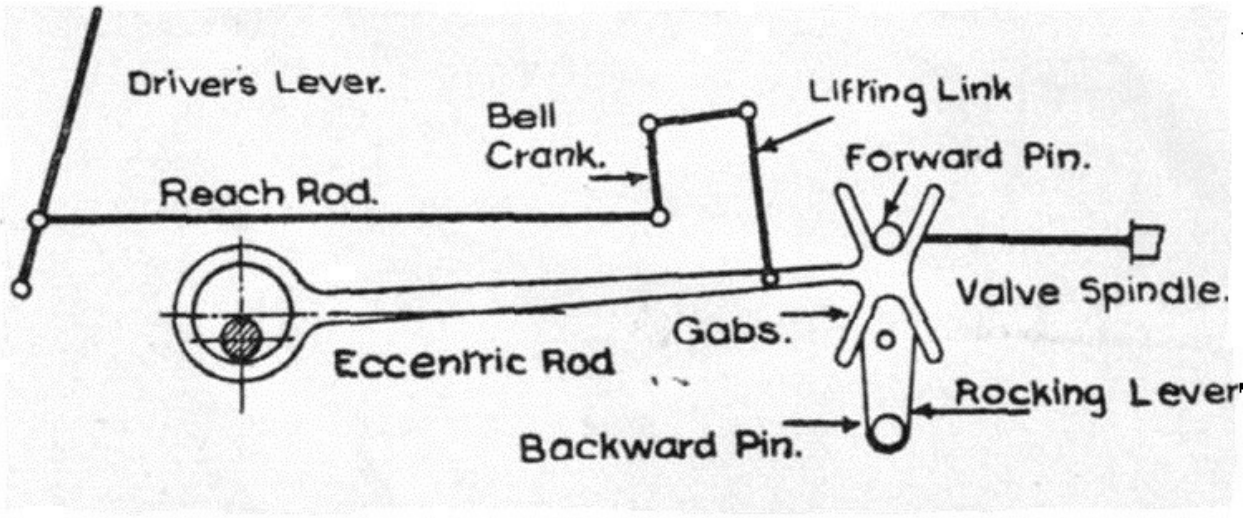
VALVE GEAR

Well, guess we'll pursue this valve gear thing further. The fundamental function of the valve gear is to give reciprocating motion to the valve, (i.e. make it go back and forth).

In the early years this was accomplished by some very rudimentary mechanisms, we'll take a look at a few.



This is called a loose eccentric gear since the eccentric is not fastened to the axle. The eccentric rotated from the shown position in the other direction, then engaging the driving pin thus reversing the engine. There were two significant problems; First, it could not be put in reverse without moving the engine, hence when changing direction we had to get off and literally push or bar the locomotive to the point where the driving pin was relocated, the steam could be admitted and away we go. Second, there was no mechanism to change the point of cutoff, thus not allowing the use of the steam expansively, which is very uneconomical.The next advancement came with the "hook and gab" mechanism as shown in the following illustration.



Here the eccentric is fixed on the axle, the engine is reversed by raising or lowering the eccentric rod, which changed the position of the gab from the forward pin to the backward pin. Most times you did not have to move the engine (most times,……. as long as you did not stop on a center!!). This gear also did not provide for adjusting the cutoff and was very heavy on steam.

OK, we have the valve going back and forth in a reliable manner, now we want to get something that will give us some mechanism to use the steam expansively, hence more economically.

In the early years George Stephenson was one of the major locomotive builders, as such he was instrumental in developing the "Stephenson Valve Gear", although researchers have suggested that, in fact, its design came from one of his shop foremen, (jury still out on that though!). Be that as it may, things change drastically from here on out, mainly because this design has provision for adjusting the cutoff, a major advancement.

Here is a drawing of the mechanism:

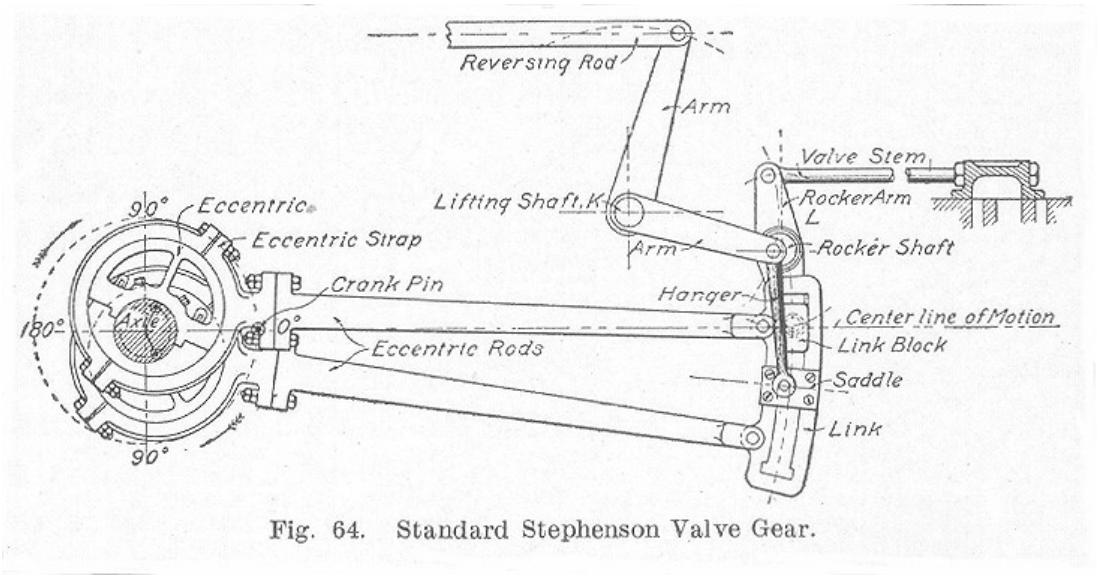
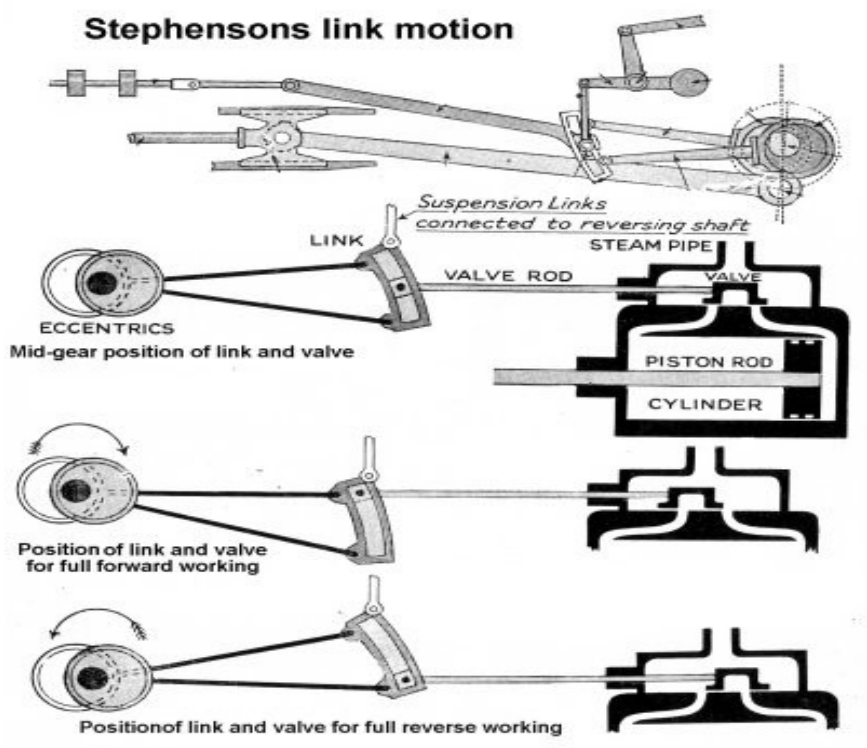


Fig. 64. Standard Stephenson Valve Gear.

Here we have a gear that employs TWO eccentrics and a CURVED link in place of the hooks and gabs. This is where things change because it is with a rocking link acquiring its motion from the eccentrics that an adjustable cutoff can be easily applied.



The drawing above clearly shows how a curved link varies the position of the valve relative to the link block on the radius of the link.

Here is the connection to Mr. Dockstaders valve gear program for the Stephenson gear.

http://www.billp.org/Dockstader/ValveGear.html

You want the outside admission version. As can be seen, it is the curve of the link that gives the modification of travel to the valve that allows the cutoff to be changed relative to the needs of the work being done by the engine. This curved link (or a variation of its motion) will come into play with all future valve gear arrangements, an historic achievement!

It becomes quite apparent that the fellow who invented it was very intuitive since he had never seen anything of its kind, this came from his original thoughts on the subject, amazing!

We'll let that one age for a while!

Take care,

Dave Griner

UPDATE ON HOLYDAY LIGHTING

Great meeting today. We got a lot covered and everyone understands (to some degree) all the parts that make up this project.

There was a discussion on the base ring so we slightly simplified the design and we'll tack weld the EMT to the T connectors for strength. The ring will be assembled and left in place year round. We will spray paint all the components to prevent rust. We identified $170 in materials we'll need to complete the base ring:

70' 1" EMT pipe $50

20' black iron pipe $30

40' 5/8" rebar $40

250' 1/4 galvanized steel cable $50

Concrete $undetermined

Matt brought the top light support ring so we can see how it is constructed. He used lock-tite and tightened all 64 j-hooks

JimZim completed a drawing of the Megatree pole configuration. We need to make some adjustments to the measurements, but it gives us a great feel for how the mechanics go together.

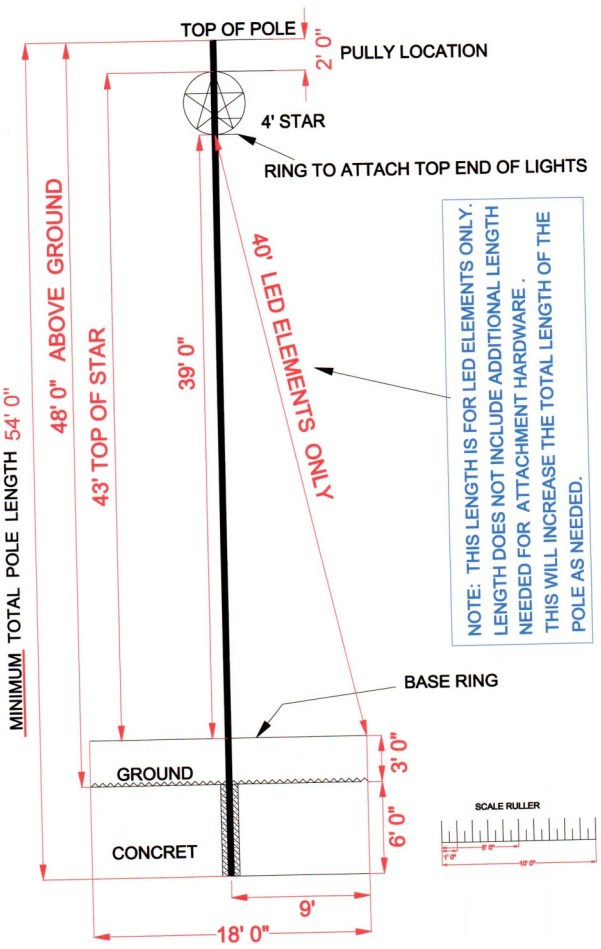
I brought the 7,000 LED's. I had some concerns on how the wiring will work. After returning home, I tested and I now know it will work, since I tested with the actual extension cables we received from China. Ray sent us 50 pigtails at no charge for testing. There were some questions on how these all interconnect, so I created (hopefully) a simple diagram. I only diagrammed outputs 1 and 2, but 3, 5, 7, 9, 11 & 13 are the same as #1 and 4, 6, 8, 10 & 12 are the same as #2. I'm waiting for the Falcon controller to arrive, so I used our Pixlite 4 controller for testing We'll use two outputs to run the tree-topper stars. That leaves a spare output we can use in the future for leaping arches or North Poles.

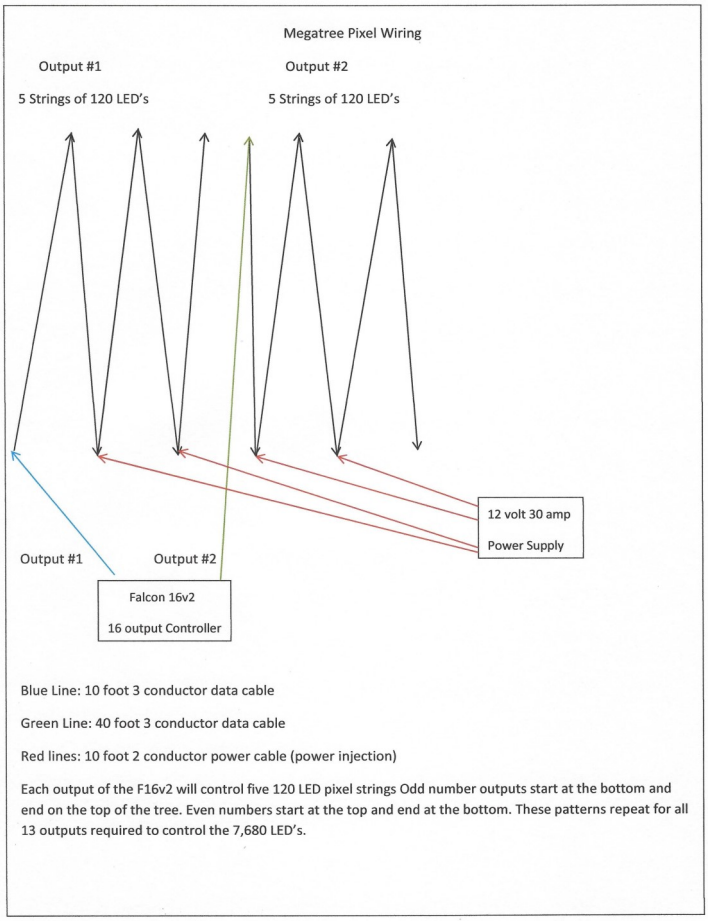
Some folks stayed and assembled one output string of 600 LED's and mounting them in the pixel support strips.

If anyone has additional questions or comments, please "reply to all" so we can get them answered.

Thanks for all your hard work team!

Hank Gallo





MARICOPA LIVE STEAMERS
PHOENIX, ARIZONA

ENGINEER
CERTIFICATION

This certifies that

YOUR NAME HERE

is a certified engineer at the Maricopa Live Steamers

This certification expires on
May 31, 2016

Engineer cards expired on May 31st, so now it is time to take your test

It can be taken online at Maricopalivesteamers.com