



Volume 1 Issue 2

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HORSELESS CARRIAGE REPLICAS NEWSLETTER

A Publication dedicated to the reporting of news, events, articles, photos, items for sale, etc, having to do with replica horseless carriages. Newsletter published six times a year and special issues when needed.

From The Workshop

Awe Nuts!

By Everett Moore

I want to address the lowliest, most un-exciting part of a homebuilt horseless carriage – the NUT. Because of all the empirical data we have before us, the loss of a nut has caused all the recorded accidents pertaining to our hobby.

To focus harder, it wasn't the nut's fault – it was the failure to secure the nut when in place. This is most commonly done with the old standard split-lock washer. Here, we encounter some shortcomings: 1. It is a separate part from the nut and can be forgotten during the assembly. 2. It is only engaged during the last turn of the nut. 3. When un-fastened, it starts chiseling away on the nut and mating surface.

To better this situation, we must look to a locking nut. One common locking nut is the one that has been deformed to cause interference with the thread of the bolt. Another shortcoming here is how it starts wearing on the thread. It is meant to go on and stay on. The automotive industry uses them in areas where seldom removed and because they are the cheapest.

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Another locking nut is the slotted-head or better known as a castle-nut because of the appearance. They require a cross-drilled bolt and a cotter-pin to secure. You'll find them on an automobile front spindle. The problem we would face would be the cross drilling of every bolt where used and, also, another part, the cotter-pin, could be forgotten.

Now we have arrived at the featured nut, the Nylon Insert Locking Nut! This nut provides the best qualities of any available device. 1. It locks anywhere on the thread – even if left un-tightened, it won't fall off. 2. It doesn't wear on the bolt threads. It has gained enough popular usage that it is readily available and at a cost of only pennies more than a regular hex nut.

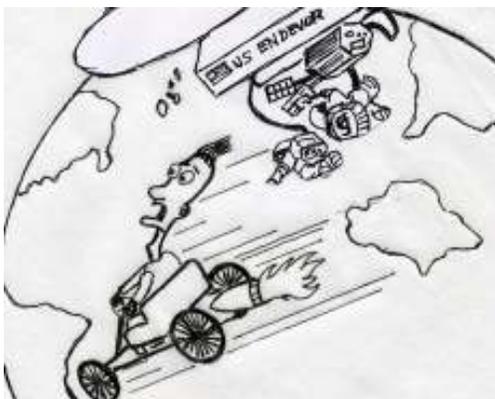
Just a word of caution: when using a Nylon insert nut, use a bolt of sufficient length to allow a minimum of 1½ threads projecting beyond the nut. This is to insure full engagement of the locking insert.

Aircraft and military usage of these nuts require a new nut be used to replace the one removed. Simply an effort to retain the original locking qualities of the nylon insert.

I can already hear someone saying, "Hey, I'm building a brass era car and nylon insert nuts weren't used on the original and I want it to look original." All well and good, but please adhere to fastener security as would be found on the original. If none were used, add them.

Safe driving to all.

From the Shed



Houston...you guys will NEVER believe this...

Across

1..."Game" Kick the _ _ _"

10...To construct a carriage, you are _____.

8...Driving in your first parade is _____.

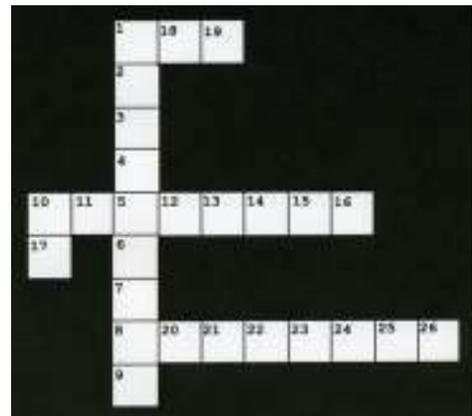
Down

10...Famous Words "To _ _ , or not to _ _".

1....Type of cars we build...

Can you make a sentence with the words?

Answers on page 8



A Body in Motion Tends To Stay in Motion

**By
Bob Kapela**

Newton's first law of inertia, 17th century states..."A body in motion will stay in motion unless/until an unbalanced force is acted upon it". Simply put, if you want to stop your machine in a controlled manner, you have to install brakes, and they have to be sufficient to do the job, every time.

Many Horseless Carriage Replicas being built today are based on the early Ford automobiles. Fifteen million Model T's and earlier models utilized the same basic braking system. The right hand foot pedal tightened a cotton lined steel band wrapped around one of the drums of the planetary transmission. This was a fairly effective brake at the time, mostly due to the low weight of vehicle, its "robust" design, fairly low speed and mostly conservative driving habits of the day, when compared to today's habits. Between the transmission brake drum and the rear wheels, if an unusual failure occurred; broken drive shaft, differential tooth failure, sheared axle key, etc., the driver had no braking effect whatsoever. The very small cast iron parking brake shoes that expanded inside the 7" diameter rear brake drums had negligible stopping power.

Things changed when the "Ruckstell" two speed differential, an aftermarket device, giving the Model T four forward speeds, became available. This was a very useful and popular device, but had a couple of problems; on a standard installation, both hands were required to be off the steering wheel to operate it. While in motion, one right hand on the right hand throttle lever and one right hand on the right hand "Ruckstell" shift lever, to carefully synchronize the engine speed so the gears would mesh.

Other aftermarket accessories were soon made available, notably a left hand shifting lever mounting, and/or a foot operated throttle control. These made the shifting easier, as it was obviously difficult to do two things at once with one right hand. There were strict procedures for up shifting and down shifting, while in hilly terrain.

A more serious problem could occur when the "Ruckstell" became worn due to prolonged operation in low gear. When the mechanism started to wear and/or the shift mechanism became loose, it was possible for the "Ruckstell" to stick "between gears" (neutral).

When this happened, there were no main brakes whatsoever and the driver could be in great danger. A famous modern day Model T historian was fatally injured this happened in recent times.

Installing “Rocky Mountain Brakes”, another aftermarket device, consisting of 12” diameter drums, “piggy backed” onto the standard rear drums, with an exterior, friction lined steel band was the solution to the above “no brakes when in neutral” problem. The cam lever arrangement on the brake mechanism made it sort of “self tightening” in forward, unfortunately it also made the brakes fairly non existent in reverse.

Knowledgeable owners kept the original brakes in operating condition along with the “Rocky Mountain Brakes” for reverse, etc. Ford Model T’s never had front brakes, the steering axle, front suspension, etc., was not designed to withstand the resultant torque placed on them from a braking system.

This brings us to the present times and how builders are installing brakes. It is possible that there are machines out there, with hydrostatic transmissions, utilizing only the internal brake of the transmission. This is unsafe, as the internal brake is very small. All modern autos, trucks, trailers, etc., have the brakes installed directly at the wheels. This is the proper spot and the builder should ensure that a robust brake system is installed, right at the wheels, eliminating jackshafts, chains, keys, couplings, etc., between the brakes and the wheels.

I was driving in a small parade last year. Ahead of me was a church group with young members, walking. They were wearing carpenters aprons, filled with candies, and were tossing handfuls to the kids in the watching crowd. Some fell on the pavement in front of me. I was very thankful and relieved that my machine (Pioneer 4) had hydraulic brakes when a little tyke darted out in the roadway directly in front of me to retrieve a piece of candy.

Think about it...Be able to stop

Treadmill Motors Recycle For Replicar Use

By
Gene "Wild Bill" Elliot
Gig Harbor, WA

During the late 1980's and early 1990's there was a push for many of us "yuppies" to get back to the land and again use old technology. We soon found that our lifestyles had led us to soft bodies. It seems like everyone I know invested in a treadmill to try and get back into shape and still be able to watch our TV shows.

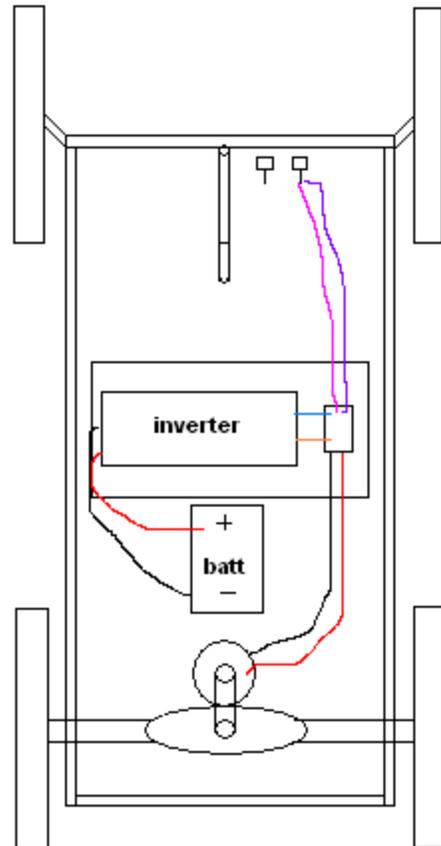
Today I see many of these treadmills, some well worn and others not at all, sitting in second hand shops and many along side the curb waiting for the recycle truck. It seems a shame for such an expensive item to get crushed or maybe end up in the landfill.

Here is one method of recycle that will delight many seeking a decent motor for their electric replicar build or even to power some other home brew invention in the shop.

By using a regular household 9V DC battery connected to the red & black wiring and no load, the motor should run. As you are collecting parts, you will also want to take the motor controller, the large transformer looking device (choke), the front roller, pulley and belt. (The console has little use, although does have a key device and a few other electronics that might be useful to some?)

For my "first build" I have decided, to do so on a budget. (Saying this I mean really cheap! <grin>)

I started looking at motors, controllers, batteries and all the related things that make for an electric car. No way was this going to be really cheap! Well I thought some more and here are my thoughts to stay within cheap!



Use the treadmill motor and the original speed control, by adding a potentiometer, a deep cycle RV battery and an inverter.

I purchased a good priced battery at our local Costco, but many places can be found to purchase! I found an inverter at Harbor Freight which was rated well above the requirements of the motor on sale for under \$80.00.

Yes, I know it will seem weird to many to run a 90V DC motor from a 12V battery through an inverter producing 115V AC, through a speed controller that converts the AC back to DC and is variable between almost 0 volts DC to 90V DC.....(Dizzy Yet?) Photos to come as the build progresses....

Working with electric motors, batteries, disclaimer and advice!

The first rule of working with electricity is to prevent shock! Understand what you are doing or get help. This author should not be held responsible for injury or death and is not an engineer or electrician and should be considered a mad scientist or an experimenter. I have not yet researched how to prevent a potential hazard but caution should be applied same as when working with anything electric! The use of ‘Ground Fault Protection’ and following manufactures guides is recommended. Even low voltage DC current can harm you! Higher DC or AC current can kill! Unplug and disconnect, use a meter and double check, a loaded gun is no more dangerous than a charged circuit! Test, test and test again, know what you are doing or get professional help!

Experiment at your own risk and be safe.

We Do Not Want To Hear OOOPS!



Submitted by:
Gene Elliott
Gig Harbor, WA
“As Copy Left”
“Open Source”

Trailer Safety

“Loading & Unloading”

By
Lee Thevenet

There comes a time in every ones life when he or she has to admit to an act of “stupidity” or simply “not thinking”. Most of you reading this, in all probability would never openly admit to doing this, for fear of being ridiculed, but this act could have easily cost me my life.

The transport trailer I have to carry my carriage to and from events doubles as a garage and space saver while in my shop. I can house the trailer and one carriage in the place of one vehicle while protecting both from the elements.

Because of the weight, the trailer never moves an inch unless coupled to the towing vehicle. After one of the recent local parade events, I simply backed the trailer containing the carriage inside my fenced in back yard and left it there so I could do some “Spring Cleaning” in the shop.

One day about two months ago, the wife mentioned (while we were sitting outside) that the new registration certificate had arrived by mail. Having the trailer key on my person, I unlocked and opened the trailers side and rear drop gate and asked if she would get them so I could put them in the (Zip Lock) pouch attached to the interior wall. I also told her that while she was gone, I would unload the carriage to check the fluid levels, in preparation of a parade event the upcoming weekend... and that is when “stupidity or not thinking” kicked in...

I got up in the seat with my head slightly leaning to one side to clear the roof, started the engine, put her in reverse and as I had done many, many times before and started backing up slowly, completely forgetting that the tow vehicle was not coupled to the trailer...well as the rear wheels got onto the lowered tailgate ramp, weight shifted to the rear, the front of the trailer went up, the rear went down, causing the carriage to come down at a steeper angle while pinning me up against the rear roof and door opening header where the spring assembly is.

The full weight of the carriage bearing on my chest impaired my breathing to the point that I could hardly breathe or yell for help. Not being able to push the carriage forward, because of the weight and steep angle, I could do nothing to free myself & was slowly being smothered by my own creation.

Fortunately for me, my wife was home, did not have trouble finding the registration papers, the phone did not ring, or anything else that could have happened to delay her return.

As she came out of the rear of the house, she noticed the front of the trailer up in the air and came running over to where I was. Quickly she asked if she should summon some one to help. Close to passing out, I remember answering that there was no time for that and to please push forward on the carriage as much as possible to remove some of the weight off of me.

Using my feet against the floorboard while pushing forward on the steering wheel and with her pushing and rotating the right rear wheel forward, we were able to move the carriage what seemed like a foot in distance but was only a couple of inches. She managed to place a small block that is used to help block the wheel when moving the trailer, behind the wheel she was next to. With the weight off of my chest, I was able to squeeze out from behind the steering wheel and out of the trailer.

Needless to say, we both stood there shaking & holding each other, while realizing how this could have easily ended my life. I blame the fact of being too much at ease in doing something that I routinely did, not thinking clearly and being in a hurry when I shouldn't have, all contributing to an act of just plain stupidity.

By honestly reporting this to my fellow HCR members and lovers of cars, be they originals or replicas, hopefully this will prevent anyone from being injured or like me, nearly losing ones life....

In Addition: The above true incident happened the week before the first HCR News made it to your monitors and the event I was wanting to prep the "N" for was the 4th of July parade in Marksville, La. When I think that the first issue could have well carried my obituary... and for those who did not read the post... a happy ending was in the cards. I survived the incident and we went on to capture the parade first place award...



Building carriages can be fun!



Crossword Answers

Building My First Car
The 1903 Curved Dash Oldsmobile
By
Terry Wright

I had just finished machining and putting together a model steam engine. And I began designing a steam engine that would propel a small auto. So I began my search on the Internet for plans of a car that might be suitable for this purpose. That is how I began on the endeavor to make a Horseless Carriage. I changed my mind for the time anyway on the steam engine. When I started designing the drive train, boiler, burner etc. it just presented more of a challenge than I wanted to deal with at this time.

I found and ordered plans for the 1903 Curved dash Oldsmobile that Lee Thevenet had drawn up and put together. I couldn't wait to get those plans and begin to study them and determine if it was something that I was capable of doing. After looking at them for a while I decided to give it a shot. I grew up working for my Father in his Service station (1956) when I was 10 years old. He later opened an auto repair shop and did that until he retired. He could do anything I believe, and he taught me so much. So I have always enjoyed trying to make something. I have a fairly well equipped garage that I enjoy in my retirement. I repair family, friends, and a few neighbors' lawnmowers, autos, trucks, scooters, ATV etc.

I purchased a neighbors Honda four-wheeler when the repairs were to be more than it was worth. It had a 300 cc engine, five forward gears, reverse, electric start, alternator, clutch all housed in one unit. This was my first component for the CDO. I paid \$400.00 for it.

I have a friend who is in the auto crushing business; he gave me a set of springs off of a one-ton Chevrolet. They were 2 ½ inches wide, just what I needed. After taking them apart, I cut them to size with a chop saw, bent the master leaf to 45-degree angle. I then put two leaves at a time in the vise, heated them up cherry red, and bent both at the same time to the correct angle using the master as a guide.

Once I had them bent I put them in the vise on my milling machine and drilled the holes in the master leaf. I then used it as a guide and drilled the middle leaf. I then used the middle leaf as a guide to drill the small leaf.



It really wasn't that hard to drill. I used 400 RPM and plenty of coolant.

Next I cut the 1" (I used 1 1/4") since that is what I had. 1/8" thick bar. I drilled 1/4" holes and then inserted 1/4" carriage bolts through the strip and the shortest spring. I cut the bolt of allowing 1/4" of protrusion on the backside of the spring. I put it on the anvil and rounded it over with a hammer.

I went to my steel supplier today and bought the angle iron, and some other steel that I needed for this project. They also have a salvage yard, and I was able to find some boiler tubing 2" outside, and 1 1/2" inside. Just perfect for the front axle. The cost, \$20 a pound = \$4.00. I spent a total of \$223.00 for all the steel, and some shop time cutting to size.

I had the steel supplier cut a 3" piece of 4x6 x 1/4" steel tubing for me to make the steering pivot. I used those two pieces of steel to hold the angle iron that would become the side rails in the frame together so I could correctly align the springs.



I marked the angle iron for one set of springs front and rear, and carried it over to my mill and drilled the 3/8" holes. Once this was done I installed the spring to that one side. I then put the other set of springs beside this set and marked the axle mounting holes with layout dye, and scribed a straight line through the holes.





After I had the springs properly aligned I marked the other side rail, and drilled it also on the mill. I installed the last pair of springs on the rail to make sure they were properly aligned with the other pair, and then removed the springs so I could weld the frame.

I laid the angle iron out on four firebricks so I could weld it. I measured from one corner to the other, and then the other way to make sure it was square.

After welding and smoothing out the joints, I turned the frame over and installed the springs.





Next I am going to make the engine mounts.

Well fellow builders, it looks like that is all for this issue. Don't forget, we invite all of you to submit your personal stories, articles, construction pictures or items for sale.

E-Mail to thev@centurytel.net

Don't think what you have to say is of no value, that thought, idea or perhaps just a way of doing a job better or safer is what we are after. There is something new to learn everyday...☺

Keep On Building!