

## Three Months' Use of a Steam Carriage.

By "A COUNTRY DOCTOR."

After many months of anticipation, and after having read a great deal on the subject, I finally took the step toward the possession of one of those machines characterized by Dr. Wood, of Dublin, as "infernal, unmanageable engines," the deal being consummated July 22, 1901.

The evening before taking possession of my machine I was in doubt as to my future. Much time was spent in speculation, and I had many misgivings as to the number of horses I should frighten, visions of women and children being dumped over the side of their carriages, consequent suits for damages, etc.

Having a certain amount of business to attend to, I started on the old reliable bicycle, and began to prepare for the fray. A machinist (who owns an automobile) was engaged to accompany me to run my machine home and to give me some instruction in its management; he failed to put in an appearance and an expert was hired for the task. The machine purchased was an "up-to-date, second-hand steam machine, of popular make, and all right," I was told.

By the way, I failed to say that I live in one of the old New England towns called "hill towns" (and they are hilly, too) about 60 miles from Boston. We left Boston at 3.30 p. m., and it seemed to me that we fairly flew to Waltham, a distance of 10 miles, we were told, reaching the town at 4 p. m. There are only good roads down there.

Just sixty minutes after the start, when we had traveled 17 miles, our air gave out; we found that our pump for this purpose was leaking, and thus our troubles began. After a lot of inquiries we found a "large" bicycle pump, fully 10 inches long according to our vision. Well, we used it, and after a good deal of exertion we obtained about 45 pounds of air. We had no trouble until the next town was reached, a distance of about 17 miles, when our gasoline began to run low. We bought 3 gallons and started out again. After traveling 4 miles more our cylinder oil was nearly run out. My chauffeur said that it would last, but the pounding was certainly not agreeable to the ear. We drove along 12 miles farther over dusty roads, when we reached the house of a medical friend, who kindly furnished us with water, oil and air, and with whom we stopped for a little while. We arrived in the town from which I started, and began to make professional calls, and rolled into my stable at 10.30 p. m.

The following morning the gentleman who had come with me taught me how to light the burner and get up steam; then he proceeded to teach me how to steer and operate the throttle, and after an hour or so I assumed control, and my experience began.

## THE HORSELESS AGE

On the two following days a distance of 30 miles was made successfully, without mishap. On the third day, having gained a certain amount of confidence in my machine, I invited one of my daughters to accompany me. All went well till we nearly reached the top of a steep hill, when the steam pressure suddenly fell and the vehicle stopped. I found that I was without gasoline—2 miles from home and with a passenger. I hired a man to go to my home to get a couple of gallons of the fuel, and when he returned I proceeded to heat the torch and light up. After having raised steam to working pressure I noticed that the boiler was entirely full of water and also the cylinders, and a peculiar noise occurred at each stroke of the pistons. I did not know what to do, so I ran the vehicle about for a while slowly, and it soon began to act right. We got home safely.

A little later I noticed that the engine was pounding, and my engineer, upon investigation, found one of the crank-shaft bearing cups broken and several balls fractured. These parts were repaired, and when I took the vehicle out again it ran beautifully, so that I again invited my daughter to a ride. We ran along for about a mile, when I missed the water in the glass. Investigation showed that I had forgotten to open the valve to the tank. The water was, however, not yet entirely out of the boiler, and by the use of the auxiliary pump the boiler was saved from a burn-out.

The next day my engineer (a very clever mechanic, chief engineer of a near-by electric railroad plant, who looks after my machine) cleaned the machine and covered the engine with a leather cover to keep the dirt out, which it does to perfection. The next day I did all my driving (25 miles) with the machine without mishap.

On August 1 I gave a ride to several small children who were attending a birthday party of my youngest daughter, thereby greatly enhancing their pleasure. That same day I also frightened my first horse, but no runaway occurred and no serious trouble, except that it did ruffle the feathers of some drivers, who, to use their own language, did not like the d— thing.

I had a house built in the rear of my buildings, 10x12 feet, and, as it is on the side of a hill, I have a nice place to keep the gasoline under the floor. I just roll in a barrel, and for drawing the gasoline I use a device of my own invention (though others may have had the same idea). Two holes are drilled in the bung of the barrel and pipes inserted, one leading simply into the barrel and the other to the bottom thereof; the two pipes are led into the room above, the one going to the bottom of the barrel having a hose attached. Air is forced into the barrel through the short pipe and the gasoline flows into the tank of the carriage through the longer

one. There are valves in each pipe which are closed when no gasoline is being drawn. I find this a clean and safe method of keeping gasoline. I also had water pipes laid to the house at trifling expense. These things may seem trifling to write about, but if a person wants to run a steam carriage he wants all these little conveniences, or the time spent in getting ready for a run will be considerable and the horse will be the quicker.

On August 3 I fired up successfully and started out to make some calls, taking my son with me. We had traveled about a mile, when, while turning a curve, we met a horse attached to a load of ice. The horse shied and became detached from his load, but nobody was injured. I took the driver in my carriage to get another rig to get home with.

After traveling about half a mile farther something began to buzz and creak, and investigation showed that the rear wheel was coming off. At first I did not know just what to do. Well, my son went home for a horse and a mechanic and some tools, and I proceeded to make some calls near by. When these were made I investigated the trouble with my carriage, and found that tightening the nut on the end of the axle would remedy it. This was done, and I fired up again and started on the home journey, meeting my son and the mechanic with a team, who seemed not at all pleased that their services were not required. The machine went well for the next 12 miles with one passenger.

As the machine is always cleaned and filled with fuel and water and the oil cups filled as soon as I come in from a run, it is always ready in the afternoon. So this same day I thought I would see how quick a start could be made. That "haste makes waste" was never better exemplified than by this venture. A little oil was dashed on the slides and cranks, the torch was quickly heated, the gasoline turned on and a match applied—there was a whisk and a flash, and a brilliant conflagration about that prized carriage for a short time. An account of the damage done included the loss of a few eyebrows and whiskers and of a little paint, and courage.

"Nothing serious," said a passer-by. Well, after surveying the situation for a time with a good deal of misapprehension another start was made, successfully, just twenty minutes after the first attempt. My respect for the man who may have run the first steam carriage using gasoline fuel, without the many safety devices at present provided, had greatly increased.

*(To be continued.)*

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(Concluded.)

During the next few days nothing of importance happened. One day a friend wanted a ride, and we started out all right. We ran smoothly for a few miles, when we came to a short, steep grade followed by a long decline. As we passed over the crest of the hill we noticed a snap, but, not being familiar with the language of failing mechanism, no attention was paid to the warning, and we started down the hill. And we just did nothing but go! I looked about on my side and found the right rear axle and wheel all coming off as fast as possible. Brakes, throttles and reverse all had the same effect. I advised my friend to dismount as cautiously as possible. He did, and so did I. We finally concluded to place the axle back again and see what would happen. We put the screwdriver in the place of the axle pins, which were sheared off, and proceeded homeward. This same trouble occurred several times later on, and to avoid further annoyance from this source I had the axles fitted to the bevel gears with a key, pinned, and also a set screw put in on one side. Since then there has been no

thought given to the transmission gear at all.

My next experience was different. I was going along a good road and reflecting how nicely everything worked when I came to a short, stiff grade on which our road supervisors were making some improvements. They had dumped a lot of soft loam at intervals of about 2 feet all over the hill, and (as they often do in the country) had left it till they had time to smooth it over. I viewed the scene with some curiosity, and, seeing a milk team walloping down the grade, concluded I would not be outdone by a "hay-motor" anyway. My ascent was very successful till near the last pile of dirt, which I attempted to straddle. My engine was still going, but the carriage did not move ahead. A large root had become entangled with the sprocket and had thrown off the chain. It was rather a nasty job to replace it, as it was filled with grit and dust.

A day or so later a young friend wanted a ride. We started off and went nicely for 3 miles, when the water seemed to be pretty low and the pressure was going down. We jumped out and found that the water valve had been left shut and the boiler was burned out. The result was that a new boiler was required and we had to walk 2 miles to an electric car to get home and swap for a hay-motor.

Well, the machinist got the boiler fixed and I went after the machine. I put in a gallon or so of gasoline and started for home (12 miles). As I had to pass through a city where one of my daughters attends school, I concluded to call for her and give her a ride home. Just when passing a machine shop the steam became rather low, going down to 50 pounds. I got down to see what the matter was. The fire was very low; a crowd quickly assembled; I was desperate and decided on rapid moves—mounted the vehicle, gave the throttle a full sweep, and rolled over the curb, down behind the factory, out of sight. The crowd probably thought that this was part of the program, for they did not follow. Inspection showed a shortage of gasoline. A supply of fuel was obtained and another start made. It was getting late, and I decided not to call for my daughter, and fortunately I didn't. I had traveled about a quarter of a mile when the steam began to go down, and I could not get more than 75 pounds. This was on the main street, and there were a lot of acquaintances looking on. It was like a large man standing on your corns gazing into your face and requesting you to "look pleasant, please." As soon as an opportunity presented itself, a back street was turned into, and the next half hour or so was spent in trying to get steam enough to go the next  $7\frac{1}{2}$  miles. It was a beautiful road all the way, and I could not go faster than 30 pounds of steam will carry one. A wood team was pressed into commission for a few miles, and later a friend with a steam carriage came along and

assisted me home, something never required before. In the morning the pipes were cleaned—and all was well.

My tires have not given much trouble till within a day or so. The rear tires are good, and the same ones that came on the machine are still in use. The front tires both gave out last week, almost simultaneously; I would not bother with them, and put on two new Hartfords. These I have always used on my bicycles and they have done good service.

My next "experience" was to find at the top of a long hill near home, with 200 pounds of steam on, that the machine would not move. After many trials (it was 8 o'clock in the evening and quite dark) I jumped in and pushed on the wheels till the vehicle started down grade, and coasted almost home; then I got out and pushed the rest of the way. The next morning I found the little rod which holds the throttle valve away from its seat broken. This rod was replaced with a new one with a sleeve or sliding joint, as a little play seems to be needed in this place, this being the second time that this rod had given out. It has not given any trouble since, except that the adjustment was improper and the thing nearly ran away with me after it was fixed before I found that the throttle was not adjusted.

I have kept an account of all expenditures for the three months the machine has been in my service (or I have been in its service). Some items must be ascribed to carelessness, while others are independent of this. My expense for care and repairs up to date has been \$148.68. The distance traveled is 2,420 cyclometer miles. The changes or repairs made on the carriage are as follows:

The rear wheel spokes were replaced with heavy carriage spokes; two new tires were fitted; also a new boiler, a heavy roller chain and corresponding sprockets, a one-third pint sight-feed oil cup, seat valve for gasoline and a heavy hose connecting the cylinders to the water heater; the bevel gears were keyed to the axles and a torch was fitted to facilitate getting up steam. The expense account does not include the house to keep the carriage in, which cost \$50 and makes a very cosy place.

My children are all (six) delighted with the exhilarating effects of the rides, but my wife (good woman) is not an enthusiast, and has declined to even grace it by sitting in it when invited; she just looks over her glasses and remarks that "hay-motors" are good enough for her.

With the many vexations I would not be without the experience of the summer for the amount invested. Of course, the time is drawing to a close that the carriage can be used in this section, as the pipes of a steam carriage will freeze easily, and the thought comes whether a gasoline rig would not be useful later.