

again, and the backbone so bent that the wheels interferred, also so twisted that they were not in line. Leaning the wheel against a tree, I sat on the ground behind it, placed my feet against the tire of front wheel, and taking hold of rear forks, pulled till I brought the backbone into shape again. Then getting a stout stick, and placing it before one rear fork and behind the other, I twisted them till they were in line. The bar was bent back and down both this time, but I soon straightened it by standing machine on its head and pushing against forks and backbone both. By this time I noticed that I had torn my pants some on one side, but a pin soon fixed it, and I was ready for further accidents. Ere long the sun began to shine so hot that I felt it necessary to remove my coat. Having done this, I folded it nicely and laid it on the saddle; then taking two pieces of string, I passed the end of one under the coat and forward inside the head, then back outside the piece of fork that forms one side of the head and over the coat, where I tied the two ends together; then the other string the same way, ending up by laying the bundle over the front of the handle-bar, where it hung as nicely as if on a luggage-carrier. A string around it and down to the brake-spoon held it from getting back on the saddle again. At noon I indulged in a big dinner of ham, eggs, sweet potatoes, baked beans, boiled peas, and brown bread, washed down with milk and lemonade, and settled with a nap in a hammock, lasting about an hour. The road after dinner proved very sandy, so I turned the wheel round with small wheel up in the air and pushed it along. Soon I came to where the railroad ran parallel with the waggon road, and there I tried the scheme of leaning the wheel on the ridge between the rails while I walked a rail and rested an arm in the saddle. This required some attention, but the better footing and the arm rest more than repaid the attention.

At bridges I would let the wheel run on the bottom of one rail just above the spike heads, while I walked the other rail or the ties. The sand soon cut the string on the tire, and when cut in one place it all came loose, so that I retied it, and used short pieces of string at short intervals. These did much better, for when one came loose the others were not affected. Began riding on the road as soon as I could, and all went well till I dropped into a rut, and in trying to get out buckled my wheel. Two opposite points of the rim were bent one way, and two other opposite points were bent the other way. I dismounted and laid the wheel down, placing one of the downward bends on a stump, while the other was on the ground; then grasping one of the upper bends in each hand, I attempted to unbuckle it by bearing down forcibly. A few futile attempts convinced me that I was not strong enough, so I turned the wheel up in the air and trundled the machine along on the little wheel. Seeing a man coming along the road towards me, I concluded to wait for him, and while waiting I used my needle and thread on the before-mentioned rent in my clothes. On his arrival I explained my trouble, and with him on one side and I on the other, we soon pulled the wheel into ridable shape, although some out of true. My next accident occurred while coasting a steep hill, and was occasioned by the finger

lever slipping off over the top of the brake-spoon lever. The wheel started away like lightning, but I checked it by placing the hollow of the foot on the tire with the other foot on top of the one. In fact, I checked it too much, for on striking a small obstruction I took a leader. I alighted on my feet about two rods farther down the hill, and on going back to the wheel found one handle-bar so much bent downward that I could not get my leg under it. Putting my foot on the fork, with wheel lying down, I straightened it some; then leaning wheel against a tree, I placed my foot on the hub or pedal (I forget which), and my elbow on my thigh just above my knee; then holding my forearm stiff, I used thigh as a lever, and easily bent handle-bar up to its place. Too easy, forsooth! because it proved to be almost broken off, so much so that I finished breaking it, and then got a stick, which I tied to the other bar with string, letting it project out far enough to form a handle. This served till I reached a village, where a blacksmith welded the bar for me; but on putting it in again it proved too small, so I got some pieces of watch-springs at a jeweller's near by, and drove them in around it till it was tight. Scarcely had I mounted again when I heard a snap, and felt the saddle resting on the backbone. The spring had broken just back of the saddle clip. I went back to the shop and inquired for a piece of rubber. Considerable search revealed a piece of a clothes-wringer. Cutting off about three inches of this, I burned a hole through each end with a hot wire, and then tied it under the remaining piece of string with some string. It made the saddle rather high for mounting, but rode very comfortable. No further accident befell me. On reaching my destination, I enjoyed a large but easily-digestible supper of bean soup. Then, after a cold bath, I retired to sleep the sleep of a weary cyclist. Early next morning I arose and began to repair my wheel. One of the ball-bearings was so full of grit that I took out the balls and cleaned them. Removing the string from the tire, I carefully cleaned the tire and cement, and put in more cement where needed. Then, not having access to a gas jet, and fearing a kerosene lamp would take too much time, I placed four or five candles side by side, and tied them between two short flat sticks, so as to hold them in a row. These, when lighted, soon melted the cement. I also removed the loose handle, and dropping some melted cement in it, stuck it on again, which method of fastening held for a long time. I also found that the lower centres had been cutting and were quite rough, so I kept them filled with plumbago for quite a while afterwards.

One of the cranks was loose, and had worn the key-seat on the axle considerably. After filing the seat till it was straight again, it proved too deep for the key, so I placed a piece of watch-spring in as a sort of bushing. My last job was to true the wheel. Using cords from the ceiling, I suspended it by the handles with the wheel an inch or so off the floor; then spinning the wheel, I gradually brought a piece of chalk near the rim, resting my hand against the fork as I did so. The points where the rim was most out of true, were indicated by the chalk marks. Repeating this action on the other side and then on the top, so as to see if wheel was

round, I soon learned the exact condition of the wheel. Where marked on one side, I tightened spokes on the other, and where marked on top I tightened spokes on both sides, taking care to be patient and not tighten the spokes too much at a time. After giving them a third or a half turn, I would rub off the chalk, rechalk and tighten again. Towards the last the spokes got so tight that I feared the threads would be injured, so, instead of tightening on the side opposite the mark, I would loosen on the same side. At last I got it true within an eighth of an inch, and was satisfied. My tour was ended.

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### TRICYCLING IN ENGLAND.

A friend of mine sends me the following account of a trip on a tricycle which he recently took. My friend is a portly gentleman, not given to excessive toil. An account, therefore, of his cycling experiences will, I think, prove useful to many who may feel inclined to follow his example, and who are not concerned to go at railroad speed from one end of the island to another in order to make a better record than some other muscular enthusiast:

As a member of that numerous and influential family, the old boys, I am desirous of giving the result of a journey lately taken on a tricycle from the West Riding of Yorkshire to the neighborhood of London, in order to encourage others who, like myself, may be holding on with tenacity to the extreme fringe of youth that is to say, men of about fifty years of age, who wish to combine enjoyment with a fair amount of exercise.

It is no part of my province to give an itinerary of my journey, my object being to furnish a few hints which may be found useful to others who contemplate a similar outing.

I will only suggest in the choice of a machine that I would recommend for safety one with a front steering wheel and with a riband break (a double-acting break for choice), and the use of a saddle, not a seat, the smaller the saddle the less it being likely to chafe.

If you carry your luggage with you the less the amount the better. A small basket or portmanteau, which can be fixed at the back of the machine to contain toilet necessities, a flannel shirt, and a change of underclothing is all that is necessary. Strapped at the top should be a waterproof cape and overalls. The best dress to wear is a Norfolk jacket of woollen tweed, riding-breeches of the same material, flannel shirt, woollen stockings, and stout shoes.

In buying the equipments necessary for the journey, it is better not to put yourself in the hands of any universal purveyor; a Jack-of-all-trades is seldom good all round. I speak of this to my cost. I did not carry any lamp, and was therefore not tempted, as I should otherwise have been on one or two days, to continue my journey after dark; for a heavy man (I weighed before starting over 14 stone), there is an element of danger in travelling on an unknown road after dark—leave that for the youngsters, who wish to do an impossible number of miles in a day. In a hilly country your machine will climb the hill, but it is a nice change of exercise to walk up the steepest, and