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### ROOM STILL FOR THE TROLLEY.

Reports that a novel and practical system of electrical railway, invented by Mr. Edison, and alleged to be superior to all others, was about to be introduced have caused much annoyance to the promoters of the trolley system; many street railway companies ripe for a change to the trolley countermanding their orders and postponing their plans, and town and village authorities declining to sanction changes from horse to trolley till the value of the new system could be ascertained.

With commendable diligence Mr. Edison has described for public information the field which he proposes to cover. He has authorized the statement that the new system is designed exclusively for roads of heavy traffic, in large cities, where the expense of the original installation is warranted by the traffic, and where the trolley system will not be permitted. "The new system," the statement continues, "will not be applicable, in a commercial sense, to long roads operating less than fifty cars simultaneously. It must, therefore, be understood that, outside of the large cities, the best system that can be advocated is the trolley."

This statement will doubtless give much relief to the trolley people, not, however, because of fears on their part that he would supplant their system with something better, for it cannot be said, once apprised of his proposed method of application, they entertained such fears, but the admission on such high authority that a portion, indeed, it may be said the major portion, of the street railway field, notably that pertaining to inter-urban traffic, is yet within the legitimate domain of the overhead trolley motor, is calculated to remove aldermanic doubts and loosen and render street railway managers again complacent.

### WOODEN SHOES AND CLOGS.

There is a considerable demand for wooden shoes in this country, especially in the Western States and Territories. They are worn by those who have become accustomed to the use of that kind of foot covering in the land of their birth and have not yet adopted the shoes generally worn here, and they are also used by persons who are employed in damp, sloppy places. Workers in tanneries, dyeing establishments and chemical works find them a better protection for the feet and more comfortable than shoes made of leather or india rubber. They are also worn by women when doing their scrubbing, and also on wash days.

The largest manufactory of wooden shoes in the United States is located at Grand Rapids, Michigan, and there are two similar establishments in the same city.

The products of these factories are shipped to nearly every State in the Union and to various points along the Pacific coast. The shoes are made from basswood logs sawed into suitable pieces for the various sizes. These blocks then undergo the process of shaping; the tool used being a very sharp, short-handled carpenter's ax. They are then brought under a trimming tool fastened into a block not unlike a butcher's block. The last-named tool, or knife, is about two to three feet long and shaped like a cooper's paring knife. Some workmen acquire a great deal of skill in manipulating the shoes, and the process of manufacture attracts visitors. After being properly shaped, the shoes are fastened for boring the cavity, which is done with odd-shaped tools, very sharp, and which are imported from the Netherlands especially for this purpose. These tools can only be handled successfully by the most skilled workmen. After shaping and boring the shoes are rubbed with sandpaper and in some instances polished. Some wooden shoes are made to order in most elaborate style, being engraved or painted and made very light in weight.

A good workman is able to produce from ten to twelve pairs of the ordinary shoes per day, and the principal factory at Grand Rapids has made between ten and twelve thousand pairs during the past year. Wooden shoes are not packed in boxes for shipment, like those made of leather, but, after joining them in pairs with twine, they are strung on sticks, a dozen pairs together, each lot bearing a tag with the name of the person to whom they are consigned.

The wholesale price for the ordinary shoes is \$3 per dozen pairs, while the small sizes vary from 15 to 20 cents per pair, and there is also a common grade of toy shoes which sells at the last named price.

Clogs are made at a number of places in this country. One family in Philadelphia, five in number, including boys and girls, are expert makers of these articles. Clogs, which are known also as pattens, are wooden soles to which shoe or boot uppers are attached. In the midland counties of England large quantities of them are produced. There the sole and heel are made of one piece from a block of maple or ash which is two inches thick and a little longer and broader than the desired size of shoe. The outer side of the sole and heel is fashioned with a long chisel-edged implement called the clogger's knife or stock.

With another instrument a groove is made about one-eighth of an inch deep and wide around the side of the sole, and by means of still another tool, called a

hollower, the contour of the inner face of the sole is adapted to the shape of the boot. The uppers of heavy leather, machine sewed or riveted, are fitted closely to the groove around the sole, and a thin piece of leather binding is nailed all round the edges, the nails being placed very close in order to give a firm, durable fastening. These clogs are also worn by people whose calling brings them into damp places.

Expensively made clogs are in demand. These have finely trimmed soles and fancy uppers, while there are clogs used by dancers on the stage which cost from \$2.50 to \$6 a pair.

The towns of Mende and Villeport are centers of wooden shoe manufacturing in France, and here about 1,700 people find employment in this industry.

### Liquid Oxygen is Magnetic.

Professor Dewar has lately made a highly interesting communication to the Royal Society. Faraday, more than forty years ago, proved that oxygen alone among known gases is magnetic, and Professor Dewar sought to determine what effect a temperature of 180 degrees C. below zero would have upon its behavior in the magnetic field. Having previously ascertained that liquid oxygen does moisten or adhere to rock crystal, and consequently maintains in contact with that substance a perfect spheroidal condition, he poured the liquefied gas into a shallow saucer of rock crystal, and placed it between the poles of a powerful electro-magnet. He expected some such result as the total or partial arrest, under magnetic stress, of the violent agitation caused by ebullition of the spheroidal mass. But on the magnet being excited, the whole mass of liquid oxygen was literally lifted through the air and remained adherent to the poles until dissipated by the heat of the metal. The feeble magnetism of oxygen at ordinary temperatures had become a force to which no solution of a magnetic metal offers any parallel. Thus was strikingly and beautifully exemplified the relation between magnetism and heat, of which the entire loss of magnetic qualities suffered by iron at a red heat is a familiar illustration. The experiment, interesting and suggestive in itself, derives an added interest from the fact that the electro-magnet employed is the historic instrument with which Faraday carried out many of his classic investigations.

### A New Power Wanted.

A writer in the *Sewing Machine News* is not satisfied with steam or the more recently adopted electric power, and wants somebody to invent something better. It will be done. The atmosphere is full of electricity, and, when overcharged, relieves itself in thunderstorms, and as these storms occur in hot weather, it would go far to prove that heat is at the bottom of it, and, if such be the case, why could we not devise some plan to produce and concentrate it at once by the use of gas or coal oil? That lightning has an affinity for coal oil is shown by the number of times large tanks are destroyed by it. The man that can devise some means for operating a motor cheaply that can be used in both city and country, can take his ease for the balance of his life. It would be well if some genius would turn his attention to something outside of the beaten paths of steam and electricity, and see if, in looking for one object, he is not overlooking another equally good.

Since air is the motive power that keeps so many animate machines in motion, why should it not be brought in use to move inanimate ones? We know that air presses a ton's weight upon every foot of exposed surface. Now, if we could, by some means, mechanical or otherwise, exhaust that air from one end of a cylinder having a square foot of exposure, we should have a ton's pressure upon anything filling the cylinder, which would force it to the end, and if this could be repeated at the other end, we should have the action of the piston of the steam engine reproduced.

Since the first steam engine owed all its efficacy to atmospheric pressure, would it not be well to see if the same means cannot be devised to utilize air, not in a compressed form, but by exhaustion at one end of the cylinder or in some other manner? If this could be done, either mechanically or otherwise, it would displace all other modes of transmitting power and could be used as well on the desert as in the city.

In the rush after electric motors, let us not lose sight of the fact that electricity is only one of the many physical forces by which we are surrounded, and that all such forces must be artificially excited.

### Remedy for Whooping Cough.

Common thyme, which was recommended in whooping cough three or four years ago by Dr. S. B. Johnson, is regarded by Dr. Neovius (*The Lancet*, May 9, 1891), as almost worthy the title of a specific, which, if given early and constantly, invariably cuts short the disease in a fortnight, the symptoms generally vanishing in two or three days. He gives from one ounce and a half to six ounces per diem, combined with a little marsh-mallow sirup. He never saw any undesirable effect produced, except slight diarrhoea. It is important that the drug should be used quite fresh.