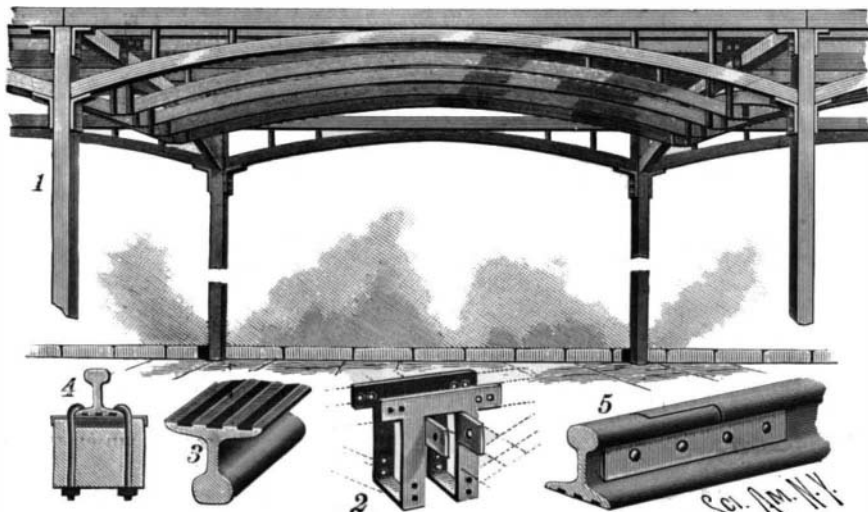


AN IMPROVED ELEVATED RAILWAY STRUCTURE.

A construction designed to combine lightness with strength in the building of elevated railways, while interfering as little as possible with the light of stores and dwellings, and in which provision is made for the deadening of the sound, is illustrated in the accompanying engraving, and has been patented by David D. Toal, of No. 151 Avenue B, New York City. Fig. 1 is a longitudinal view, in perspective, of the improved structure, Fig. 2 showing supports of the interior arched beams and Fig. 3 a bottom view of one of the rails, in which lead cushions are applied. Fig. 4 represents the fastening of the rail to its bed and Fig. 5 shows the meeting ends of rails, made with interlocking tongues. The uprights are designed to be placed as near as possible to the curbing, and thus take but little room from that provided for the ordinary street traffic, and each pair is connected by a straight transverse tie beam supported by an arch beam, longitudinal arch beams also connecting the successive uprights to make a thoroughly braced and trussed structure. The sleepers or track beams are laid longitudinally, and each one is braced and supported by a longitudinal arch beam. In the bottom face of each rail are grooves filled with lead, as shown in Fig. 3, and preferably the entire upper face of each sleeper or track beam is covered by a sheet of dead metal, to obviate jar and noise. Instead of the usual spikes, bolts are employed to attach the rails to the track beams or sleepers, as shown in Fig. 4. The arch beams are designed to allow for expansion and contraction, and the entire structure, including the sleepers or track beams, is of metal. It is claimed that



TOAL'S ELEVATED RAILWAY STRUCTURE.

with this construction the cars may be run over the center of the street without being objectionable to the residents or those doing business along the line of the road, and that any desired speed may be obtained without danger, whether steam, electricity, cable, or other means of propulsion are employed.

Largest Brandy Still.

The largest brandy still in the world is at El Pinal vineyard, in San Joaquin County, not far from Stockton, says the San Francisco Call. Part of it has been built about four years and the other part was finished only a short time ago. As is well known, El Pinal vineyard has always made a specialty of brandy and sweet wines. It was the intention of the proprietors to do this when they went into business, and for that reason they had the largest still built that was ever put up. That was, as has been stated, about four years ago, and even then it was ahead of anything in existence. It could produce more brandy in twenty-four hours than any other still in the world, and it has not been surpassed since. But even that was not enough to supply all the alcohol needed in their business, so another still was built and made to work in connection with the original one. The two are really one still, as they are used, and have about three times the capacity of any other still in the world.

This enormous machine is located in a building by itself, and part of the year is kept running day and night. It is very complicated in its workings, so that a description of that part of it cannot be attempted here. It will be sufficient to state that the grape juice or wine is pumped from vats to a tank on top of the hill. From there it simply passes through a series of heated chambers in the form of a vapor and comes out in the shape of brandy.

It can be tested in the different chambers and the change noted. In the first chamber it is little more than warm wine, and it gradually gets stronger and stronger until it is sharp to taste. From the time the wine leaves the tank until it comes out as grape brandy only ten minutes is occupied. In the old method of distilling it used to take about three hours.

In appearance the largest brandy still in the world is simply a conglomeration of tanks, pipes and boilers. The capacity of this still is enough to make a person wonder what becomes of all its products. When run-

ning full time it can convert 15,000 gallons of wine into brandy in a day. This will make 4,000 gallons every twenty-four hours, or enough to keep about 40,000 men in a state of intoxication during that time. In a month there would be enough of brandy on hand to intoxicate 1,700,000 men, or about the entire population of New York. But, as it happens, very little of this brandy is sold as brandy. It is used to fortify sweet wines, so that they will be in condition to keep until ready to send to market. The alcohol acts as a preservative of the grape juice the same as it would of anything else. It keeps it from turning sour.

A GIANT TRICYCLE.

In this age of "big" things one is always prepared for the construction of mammoth engines, ships, buildings and public works, and the rage for the superlative seems to be universal. It has even invaded the bicycle world, where at least one would think size and weight were at a discount, and, moved by its inspiration, a New England firm has produced the colossal—no other word justly describes it—tricycle shown in the accompanying engraving.

It is driven by eight men, which is, it is true, only two more than are mounted on a sextuplette; but whereas the latter weighs approximately as much per man as an ordinary single machine, the tricycle weighs about 300 pounds to the rider, the total weight, with the men mounted, being about a ton and a half. The front wheel is six feet, and the rear wheels are eleven feet in diameter. The frame consists of two parallel trusses which are arranged side by side and finish at the front in a cross truss to which the steering head is attached. The steering is done by one man. Each side wheel is driven by the four riders which are nearest to it, and a curious feature in the machine is that it is geared down instead of up. This was rendered necessary by the great dead weight which had to be moved. Even if the crank sprockets and the wheel sprockets had been the same size, the gear would have been 132, whereas it has been geared down to 54. The left hand chain and sprockets can be clearly seen in the engraving. The total length of the machine is 17 feet.

The tires are pneumatic tires, made exactly in the same way as the ordinary Vim

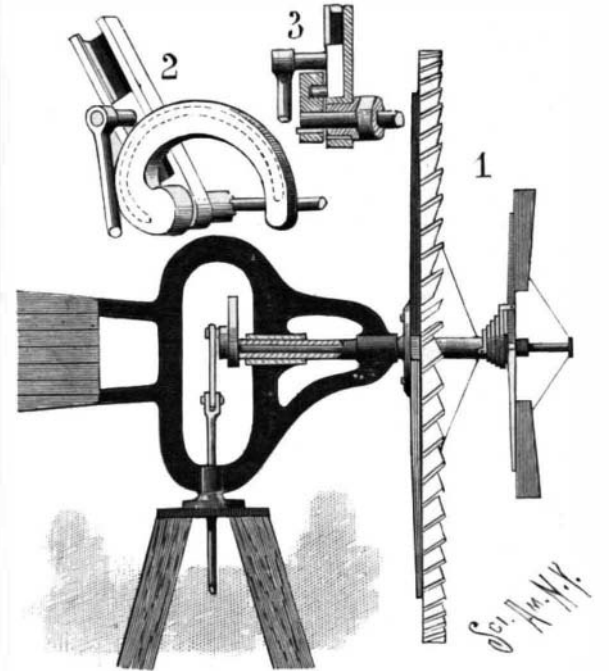
roadster tire, and they are, therefore, single tubes. This "Jumbo" among cycles has been put to practical test on the roads, having been ridden from Boston to Brockton, Mass., a distance of 25 miles, and from there to Concord, N. H., 125 miles distant. We can realize that it has found its proper field of work when we are informed that it has done duty in many torchlight parades, political and otherwise.

It should be mentioned that the front tire is eleven, and the rear tire eighteen inches in diameter, the latter being about half an inch thick on the tread. The large

wheels have spokes half an inch in diameter, and the small wheel spokes are one-quarter inch diameter.

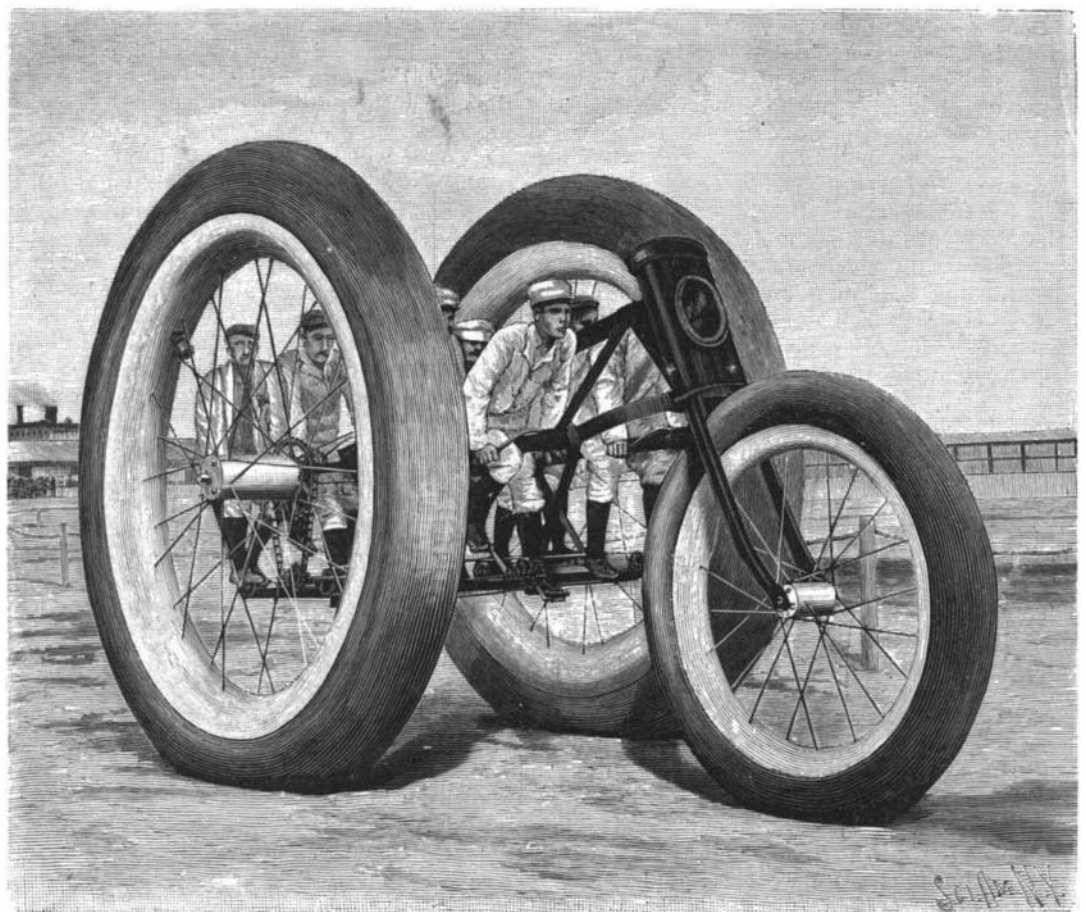
A WINDMILL POWER TRANSMITTING GEAR.

The illustration represents a gear of strong and simple construction for regulating the length of the stroke according to the force of the wind, and transmitting the power of the windwheel to a pump or



HOFFNER'S WINDMILL POWER TRANSMITTING GEAR.

other machinery without much friction. The improvement has been patented by William C. Hoffner, of Prospect Park, Cal. The windwheel has a hollow shaft journaled in suitable bearings on the windwheel frame turning on the upper end of the tower, in the usual manner, and on the shaft is a crank arm in which slides a block carrying a wrist pin engaged by a pitman connected with the upper end of the pump rod, as shown in Fig. 2. The position of the sliding block and the wrist pin changes according to the wind, the stroke being less during a light wind than in a heavy wind, and a full stroke being given only during a strong wind. To regulate the position of the block, it is provided with a pin located below the wrist pin, and which, as shown in Fig. 3, projects into a cam groove in a cam on a shaft mounted in the hollow windwheel shaft, and carrying at its outer end a small windwheel, a spring being interposed between the hub of the small wheel and that of the large one. This spring has an adjustable tension, and is strong enough to offset the power of the small wheel in an ordinary breeze, the wrist pin then remaining in an innermost position, but with an increased force, to rotate the small wheel faster than the large one, the cam is moved to shift the sliding block and the wrist pin outwardly, thus lengthening the stroke of the pump rod. As the wind diminishes the spring pulls the small wheel back, and the cam draws the sliding block inwardly to shorten the stroke, which is thus automatically regulated, according to the force of the wind.



A GIANT TRICYCLE.