Automobile News.

Work has begun at Hartford on an automobile which is intended to tow canal boats on the Erie Canal. It will be built on entirely new plans, and it is intended to be powerful enough to tow from six to ten canal boats at once. It will cost more than $4,000, and if it is successful other boats will be built.

According to the tests conducted by the Liverpool Self-Propelled Traffic Association, a car capable of carrying a load of 3 tons 12 cwts. was actuated at a cost, for fuel, wages, etc., of a cent a mile. The average cost for keeping such a vehicle in repair and also the expense of operating it amounted to $1,980 per year. It makes the average cost 3 cents per net ton per mile. Horse-driven wagons cost 18 to 24 cents per ton mile for doing the same work.

One hundred thousand francs have been voted for the construction of a track and a grandstand at Vincennes for the use of automobiles. Special prizes will be given in addition to the medals and diplomas which will be awarded by the exposition. The carriages and wagons will be divided into four classes, heavy trucks, cabs, victorias, and voiturettes. The last class will include tricycles and motocycles. An electric charging station will be provided near the race course, so that the electrical machines will have no difficulty about the supply of motive power when they need it.

A public hearing on the admission of automobiles to Central Park, New York, was held before the Park Commissioners on November 9. Fifteen advocates and ten opponents appeared to make speeches. Ten minutes was allowed the first three speakers on each side and five minutes to the rest. One of the best-known horsemen in New York, Mr. Lawson N. Fuller, said that he had driven four, six, and eight horses around automobiles without inconvenience. "A good driver in two days could accustom any horse to an automobile. Ninety-nine runaways out of a hundred are due to carelessness on the part of drivers. Green horses soon become accustomed to city noises, and there is no reason for keeping automobiles out of the parks." Ex-Magistrate Simms said: "The same question has been agitated in regard to the locomotive, the bicycle, and the elevated railroad. The horse became accustomed to all these. It must get use to the horseless carriage. The automobile must win in the end. There will be a legislative enactment, if the owners do not gain their rights in any other way." Some of the opposition, such as liverymen, etc., protested against giving horseless vehicles permission to enter the park. The decision of the board will be announced later.

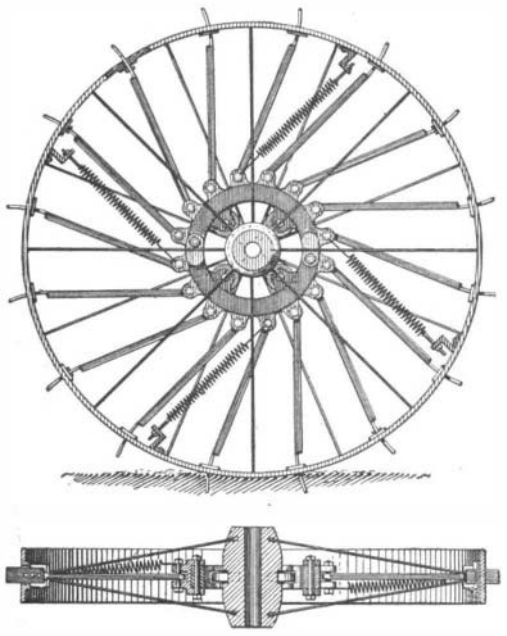
The automobile parade of November 4, in New York city, while not as extensive as might be desired, was important as showing how much public interest is shown in the new vehicles. When The Chicago Times-Herald race of 1895 is remembered, it demonstrated that the progress was substantial. The run was organized by The Automobile Club of America, and the course was about twenty miles, all on Manhattan Island. The parade formed at the southern side of the Waldorf-Astoria, and the start was made at 2 P. M. without confusion or delay, and for many blocks along the line of the run there was quite a crowd, and along the entire route there was a sprinkling of spectators. About thirty vehicles took part in the run, and they were all of well-known American types and makes with a few foreign carriages and motocycles. Most of them were of the open top variety. The drivers of the carriages and their guests were dressed in ordinary costumes, herein showing their good sense, for most French automobile outfits are ugly in the extreme. The carriages all behaved admirably, and while they ran through crowded streets the trip was made without accident and no horses were frightened. Electricity served to drive fifteen of the carriages, there were at least seven gasoline-driven vehicles, while four were propelled by steam. The latter were generally considered by the crowd to be the most picturesque on account of the exhaust, which was all but noiseless. Adjutant-General Avery D. Andrews led the procession and reviewed the carriages at Grant's Tomb in Riverside Park.

An Instrument for Locating the Direction of Sound.

A new instrument has been designed by Mr. Cowper-Coles, of London, for readily locating the direction of sound and for projecting sound long distances. It consists of a reflector mounted on an arm which can be readily turned on its center and depressed or elevated by the operator. When it is desired to ascertain the exact direction from which a sound emanated the apparatus is turned on its axis, and as soon as the reflector is opposite the source of the sound it is heard much more intensified in the receiver. Two instruments are used to carry on the conversation between two distant points or ships. The sound waves are thrown from one reflector to the other, the sound being focused in one instrument in the receiver when the operator speaks into the flexible tube, while the operator working the other instrument places the tube attachment to the receiver to his ear.

A TRACTION-WHEEL OF IMPROVED FORM.

The traction-wheel which we illustrate is the invention of Clarence Groseclose, of Sylvia, Kan., and is particularly adapted for traction-engines, automobiles, and harvesting-machines. Surrounding the hub of the wheel is a ring carrying rollers which bear upon the bottom of a groove formed in the hub. Arms pivoted to lugs on the outer side of the ring extend



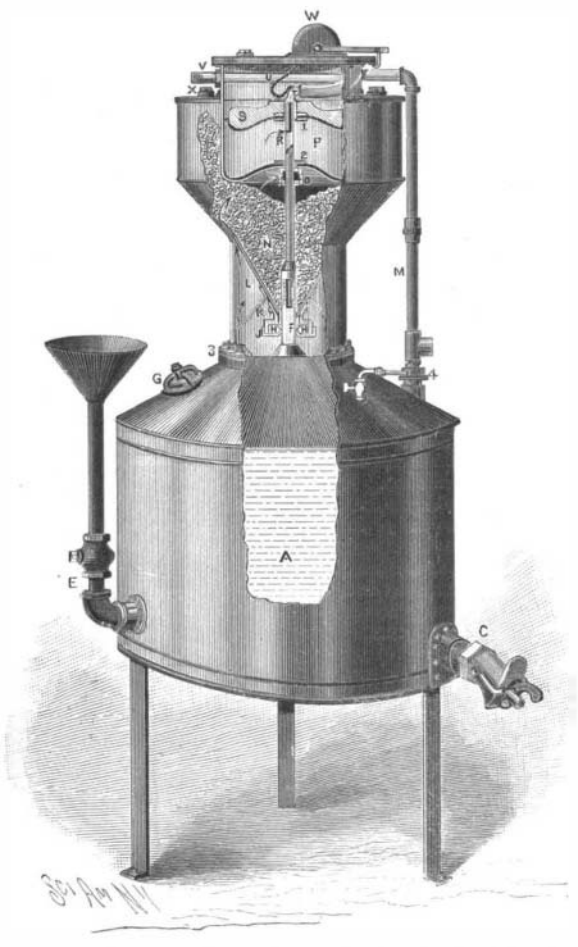
THE TRACTION-WHEEL IN SIDE ELEVATION AND SECTION.

outward tangentially to the ring and carry at their free ends blades which project through openings in the rim and which adapt themselves to the nature of the ground—hard or soft—over which the wheel must travel. Some of the blades are provided with stop-pins passing through holes in the arms; the blades are thereby prevented from moving too far outward. Springs are connected at their inner ends to the ring and are adjustably secured at their outer ends to brackets on the rim.

Should the wheel travel over hard ground or bridges, the blades, as they engage the ground or floor, will be forced inward, causing the ring to rotate on its bearing-rollers. Upon reaching soft ground the blades will be moved outward by means of the springs, acting upon the ring, so that they will engage in the ground. By arranging the arms at a tangent, the bearings formed upon the ring will be at one side of its vertical center line, thus insuring the rotary movement of the ring mentioned.

THE "BECKLIGHT" ACETYLENE-GAS GENERATOR.

Few industries have experienced a growth so rapid as the manufacture of acetylene-gas generators. When



THE "BECKLIGHT" ACETYLENE-GAS GENERATOR.

the production of calcium carbide was made a commercial possibility by the Willson process, a host of machines sprang up, which, as in most early forms of apparatus, were crude in construction and often wrong in principle. Gradually manufacturers began to investigate and apply the principles which should govern acetylene generation, and which would insure the safe and cheap production of the new illuminant. Of the many forms of apparatus constructed with a view of meeting these requirements, we may mention a machine made by the Acetylene Generator Manufacturing Company, of 106 Bell Block, Cincinnati, Ohio, a machine which is the result of no little study on the part of the inventor and makers.

The "Becklight," as the improved apparatus is termed, consists of a slaking-chamber, *A*, a gasometer, *P*, and a carbide-chamber, *N*, which communicates with the slaking-chamber by an opening having a yielding valve-seat, *H*, adjusted in position by a screw-cap, *J*. Through the valve-seat, *H*, a feed-plunger, *F*, passes, which is connected with an elbow, *T*, secured to a connection, *U*, for the gas-outlet. The carbide feed is locked by means of a lever and sheave connected with the elbow and contained in a housing, *W*. The stem of the feed-plunger, *F*, is provided with four indentations for feeding carbide, and with a passage, *R*, to conduct gas to the service pipes. At the lower end of the carbide-chamber, a condensing-chamber, *K*, is arranged, which also provides a drying-space, *L*, through which the gas passes upwardly. To force the gas through the pipes and regulate its pressure a counterpoise, *S*, is secured to a gas-bag.

In operating the machine, the gas is first shut off from the service pipes and the lever operated to lock the feed mechanism. After the residue is removed from the water-chamber, water is introduced. The generator is then entirely closed by shutting the various valves; and carbide is introduced by removing the plugs, *X*. After releasing the feed-mechanism by means of the lever and sheave, the generator begins to work by pressing gas out of the gasometer, thus lowering the feed-stem so that its indented portion passes the valve-seat, *H*. An opening being formed, the carbide drops in a circle to the water below. The pressure of the resulting gas naturally seeks the point of least resistance, which is that side of the gasometer exposed to the atmosphere. The gas therefore passes up first against the condensing surface, *K*, depositing its moisture on the cold surface, then through the reduced inlet between the lower edge of the surface, *K*, and the outside generator wall, into the drying-space, *L*, thence into the carbide-chamber as shown by the arrows, through or over the carbide, whereby it is both screened and dried, into the passage of the stuffing-box, *O*, and finally through the passage, *R*, the hollow elbow, *T*, and the connection, *U*, into the service-pipe, *V*. If the consumption fall off, the inflated gasometer forms a cushion for the weight, *S*, thus locking the feed-mechanism until the amount of gas in the gasometer, *P*, is reduced.

The weight, feed-stem and gas-bag being integral, no gas can possibly pass into the gasometer without at once closing the feed-opening. The gas is resisted by the weight, *S*; and when the pressure is excessive, the weight is raised.

It will be seen from our illustration that the carbide and slaking-chambers are so arranged with respect to each other that the apparatus is far more compact than most others of the same class. The carbide is fed into the water in small quantities; for it has been found that the gas thus generated is cool and free from the dangerous benzine and other hydrocarbon vapors which always accompany the gas formed by generators operating on the dripping system.

The Current Supplement.

The current SUPPLEMENT No. 1246 has many articles of great interest. "The Strike at Creusot" describes one of the most remarkable labor troubles of the century. The "Schneider-Canet Naval Turret" is an article illustrating in great detail the system which is largely used in French and other navies. "American Railroads—Their Relation to Commercial, Industrial and Agricultural Interests" is an address by G. H. Daniels, general passenger agent of a great railway system. It is a most interesting and important paper. "Gaston Tissandier" is a biographical article dealing with some of the important work of this French scientific editor. "Mechanical Science" is a continuance of Sir William White's important address. "The Pollak-Virág System of High-Speed Telegraphy" is a technical description of the new system. "The Test of the Marconi Wireless Telegraphy in the United States Navy" deals with some of the most important experiments which have ever been tried on the subject. It is illustrated by engravings made on the war vessels. "Stream Measuring in the United States" is continued and is elaborately illustrated.

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