Automobile News.

A trip from Berlin to Paris has been made by Herr Arthur Reuter, who started from Berlin on the 27th of May, and reached Paris on the 5th of June. The route followed included the cities of Madgeburg, Brunswick, Hanover and Cologne; Aix-la-Chapelle and Liegé; Namur, Givet and Rheims, making a total distance of 715 miles. Herr Reuter stayed two days at Aix-la-Chapelle, and at Liegé; he covered the distance from Liege to Paris in 21 hours.

At the last general meeting of the Automobile Club of France a number of questions were warmly discussed. The opposition party contended that the club should do more for the encouragement of the automobile industry, seeing that it has a large revenue at its disposal, and the other party maintained that it was to meet the expenses connected with the establishment; this and and other questions led to a stormy discussion. After the general meeting, a number of prominent members handed in their resignations as committee men, and decided to found a new club, this to receive the name of Moto Club of France.

An important agreement has been concluded between the seven principal French railway companies and the Belt Railway of Paris, by which the conditions have been fixed for accepting vehicles of all kinds as ordinary baggage. The text of the agreement is as follows: The following will be accepted as baggage under the usual conditions established for baggage of all kinds, especially that their dimensions are such that they may be easily put into the baggage car, namely, motocycles, automobile tricycles and automobile carriages; when unpacked their weight is not to exceed 330 pounds; when packed in boxes, the weight is limited to 220 pounds.

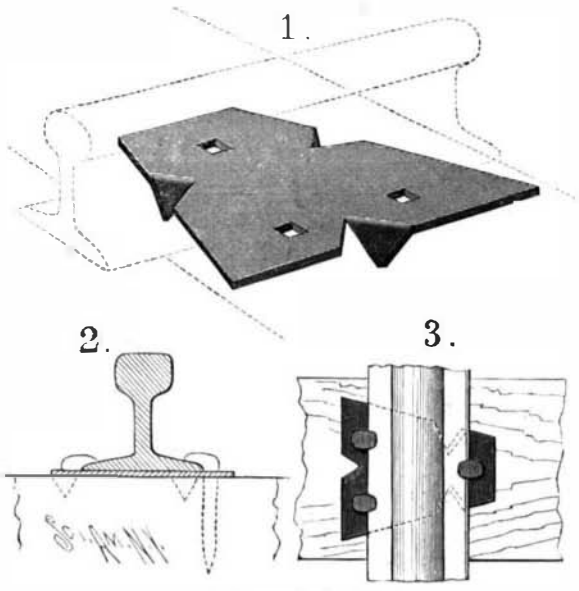
A number of experiments will soon be made by the German army with different types of automobiles for military service; the railway brigade has charge of the matter and are to make a series of trials in the open country, in the neighborhood of Eberswalde, a small town about 25 miles from Berlin; the trials will be made under the supervision of the lieuteuant-general, nine officers of the general staff, eleven captains, two officers of the engineering corps, a number of subordinate officers, artificers and privates. In France a series of grand maneuvers will take place this year in the eastern part of the country, in which a number of different types of automobile will be tried, such as petroleum and electric vehicles, motocycles, besides a number of heavy Scotte traction engines for the transportation of freight and baggage. The experiments are to be carried out on a large scale, and the organization has been entrusted to Mr. Journu, who has been for some time past engaged in the special study of applying the automobile to military purposes.

An interesting automobile fête has been held recently at Vincennes Park, which closed the contest of touring vehicles; it was the first official fête organized at Vincennes by the Exposition Administration, and served in some measure to inaugurate this annex to the Exposition, which is to contain many of the automobile exhibits. The race track around the lake was filled with various types of automobiles, their number being estimated at 300, representing a total value of 3,000,000 francs. The fête consisted of different displays of skill by the conductors, evolutions of automobiles, and tests of the brakes, and a procession of all the vehicles, many of which were decorated with flowers. In the tribune were many persons prominent in automobile affairs, among whom were the Baron de Zuyler, President of the Automobile Club; Messrs. Jeantaud, Forrestier, Krieger, E. M. Mix, Postel-Vinay and others. Most of the machines were of the petroleum type, a notable exception being a heavy covered freight wagon, made by the Postel-Vinay Company, which also constructs the Thomson-Houston material for France. It was conducted by Mr. E. M. Mix, chief engineer of the company. The motors are of peculiar design, and are placed in the extreme rear; the accumulator box is placed between the front and rear axles. The touring races, which were held previous to the fête, were not satisfactory, owing to the restrictions as to speed, etc., made by the authorities, and it has been decided that a fresh competition will take place within a month.

Among the electric automobiles especially remarked at the eighth annual exposition which has been recently held at Brussels, is the four-seated phæton constructed by the Lefert Company of Ghent. It is capable of making a run of 43 miles at a speed of 19 miles per hour. The body of the vehicle is constructed of polished Canada birch, giving it a pleasing appearance. It is provided with a motor of the Lundell type, of 3½ horse power, which is supplied by a set of forty-two Tudor batteries. The weight of the vehicle is 1,200 kilogrammes and that of the accumulators, 600. The capacity of the batteries is 150 ampere hours at a rate of discharge of 13 amperes, at a discharge of 22 amperes, 110 ampere hours are given. A large electric gong, whose contact is operated by a pedal, gives a loud signal and replaces to advantage the trumpet with rubber bulb generally used in Europe. Two pedal brakes are provided, one of which, the weaker, acts directly upon the differential, the other being a strong brake of the band type. The different speeds are obtained by the displacement of a lever whose operation is very simple and the four points are used for the starting or for the speeds of 9, 18 or 25 miles per hour. Another type of electric automobile, shown at the exposition, is a hotel omnibus of eight places, built by the Société l'Electrique. Its rear axle is provided with two Westinghouse motors of 4 horse power. The accumulators used are of the Julien make of an improved pattern; of these 40 cells are used. The total weight of the omnibus is 4,180 pounds, and the accumulators weigh 1,540 pounds. The capacity of the batteries is 150 ampere hours; a speed of 9 miles per hour may be reached, which permits the omnibus to cover a distance of 25 miles without recharging.

A COMPENSATION TIE-PLATE.

To prevent the uneven settling of rails in softwood or partly-decayed railroad ties and reduce the consequent tilting of rails or spreading of track in curvature a tie-plate has been designed and patented by Mr. Henry Herden, Chief Engineer of the Buffalo and Susquehanna Railroad, Galeton, Penn., in which the two ends of the plate when in position under the rail, present different areas of contact with the tie at the inner and outer edges of the rail base. These contact areas conform more proportionally to the different loads to which the ties at the base of the rail are subjected, the greater loads taking effect at the outside of the rail. The plate having greater area at the outside of the rail will offer more resistance to penetration into the wood than the opposite end, causing the plate to settle more uniformly, whereby, it is claimed, that the rails are assisted in maintaining their position at right angles to



A NEW TIE PLATE.

the surface of the tie when soft wood is used or material which has become defective from age or service, and that tilting of the rail and spreading of track is prevented. The life of the ties as well as of the rails and wheels is therefore prolonged. The economical distribution of material in this plate reduces its weight, there being no surplus material used next to the inside of the rail, as our illustrations show. The plate is provided with three triangular lugs, cut out and bent at right angles to the plate and designed to penetrate the fibers of the wood in a diagonal direction.

The Operations of the Kiel Canal.

The administration of the Kiel Canal, Germany, has lately published a report for the year included between April 1, 1898, and March 31, 1899. The number of vessels which have passed through the canal during that period reached 25,816, of which 11,005 represent steam vessels and 14,811 sailing vessels, etc. The total tonnage is estimated at 3,117,840. These figures show an increase over the preceding year of 2,708 vessels and 648,000 tons. The receipts of the canal during the year amount to about $400,000, which is an increase of $80,000, or 20 per cent. As to the different nations using the canal, Germany naturally takes the lead with 87 per cent of the total number of vessels, and 68 per cent of the tonnage; England has about 9 per cent, which is an increase over the preceding year. Denmark and Sweden have respectively 6·9 and 5·7 per cent, showing a slight diminution. Russia, whose proportion was 2·54 per cent in 1897–98, has now 2·29. From a financial point of view, the situation is considerably better than for the preceding period, the deficit being but $108,000 against $245,000. The receipts have increased about 26 per cent and the expenses diminished 9 per cent. The report brings out the fact that as the Kiel Canal has been constructed mainly from a strategic point of view, it is not to be expected that it will give any considerable profit; nevertheless, the constant increase in the revenue leads one to expect that the receipts may in time come to equal and even exceed the expense of maintenance.

Electrical Notes.

Electric lights are being installed experimentally in the Imperial Court, at Tokio, Japan.

A New York company is to establish a factory in Milan for the purpose of the manufacture of electric traction material.

It has been found by experiment that a thick coating of nickel can be obtained by using the ordinary plating solution and passing both alternating and direct currents through the bath.

A wireless telegraph service has been opened between the German island of Borkum and the Borkum Reef Lightship, in the North Sea. Ships are reported by this means between the hours of 6 A. M. and 8 P. M.

A Viennese dentist while experimenting at the Hygienic Institute at Wurzburg, claims to have discovered the successful application of electricity for the destruction of bacteria. It is said that the treatment is very simple.

The overhead trolley system not only damages underground pipes, but it also injures trees. Wherever a cable touches a branch it rapidly decays and the tree eventually dies. Serious complaints of this nature are made at Bay Ridge, N. Y.

The South Chicago Street Railway Company has introduced whiskbrooms and clothes brushes on its cars. They are kept in a small cabinet in the forward end of the car, and passengers are invited to use these articles on the rear platform.

The technical school for the textile industry at Aix-la-Chapelle has recently been fitted with machinery for dyeing, bleaching and printing fabrics. The machinery is on a considerable scale. Electrical bleaching is also done, platinum-iridium electrodes being used. Great attention is paid to the strengthening of the fibers before and after testing.

The principal switch towers and cabins on the London and Northwestern Railway are to be provided with electrical motive power for working the switches and signals. At present it requires some time and considerable exertion to pull the weight of a long length of rod or chain. The new system will enable the switches to be worked much more rapidly.

All vessels passing through the Suez Canal must satisfy the agents of the Canal Company that they have on board one electric searchlight of a power sufficient to illuminate the channel for a distance of 4,000 feet ahead, and constructed so as to admit of rapid splitting up of the beam into separate segments with a dark sector in the middle, and also, says The Electrician, with electric lights capable of lighting up a circular area 700 feet in diameter.

A miniature electric railway is in course of construction in a small private park at Macon, Mo. The railway is a mile in length and the gage is 3 feet 2 inches. Each car will accommodate eight passengers, and the train will be lighted by incandescent lamps. Current will be supplied from a nearby academy power plant. The railway is being built for the benefit of children of wealthy families, one of which owns the park through which the line runs.

In the yards of the Atchison, Topeka and Santa Fé Railway, at Fort Madison, Iowa, electricity is used to light the signals. The ordinary switch lamp is used with an 8-candle power incandescent lamp inside fitted to a socket. The current is brought to the signal post or switch stand in underground conduits, and is arranged so as to enter the lamp at the top. The experiment is said to be highly satisfactory, and it does away with lamp tenders. The electric lights are very safe from extinguishment by wind or the jar of a passing train.

A brief digest of an article relating to electroscopes appears in the Elektrotechnische Zeitschrift, the author describing a vacuum electroscope which he had had constructed for experimental purposes. The apparatus has the form of a pear about 12 cm. in length, its top consisting of a hollow aluminium ball which rests upon an aluminium wire welded into the glass. The wire projects into the interior of the electroscope, where it takes the form of a flat ribbon, to which the broad pendulum leaves are attached, these latter being of aluminium foil about 1 cm. long and 1½ mm. broad. In the lower portion of the glass bulb are two platinum wires welded into the sides of the bulb, the distance between them amounting to about 0·4 mm. Experiments with the instrument proved the vacuum to be a perfect insulator, and that intensive electrostatic effects might be obtained in the same. The ordinary electroscope experiments succeeded when applied to the apparatus, though the heavy charges on the glass walls which occurred during these experiments had a disturbing influence. When the apparatus was observed in a dark room, no trace of luminosity was apparent in it during the occurrence of strong electrostatic effects. Discharges of electricity into a vacuum are therefore dark, from which it may be concluded that the phenomena of light are dependent upon the presence of ponderable material.