

THE ELECTRIC CAB SERVICE OF NEW YORK CITY.

The success of the electric cab on the streets of our city is one of the most significant facts in matters of city transportation. After meeting the preliminary difficulties and discouragements which are inseparable from a new enterprise of this kind, the electric cab has taken its place as a popular means of travel. During the latter part of 1898 there were sixty-two cabs and broughams in commission, and there are now fully one hundred of these vehicles in service.

The central station, of which we show several illustrations, is located on Broadway, between Fifty-second and Fifty-third Streets, and it occupies a building for-

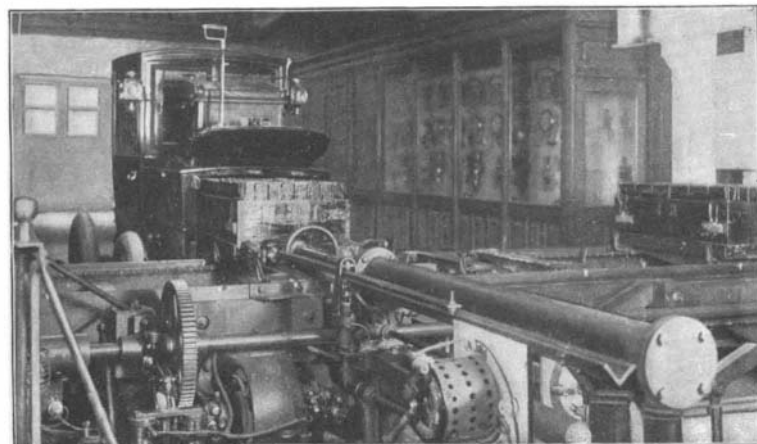
Before giving a description in detail of the general equipment of the station, it would be well to describe the construction of the cabs or broughams, several of which are shown in our various illustrations. In general appearance the body of the hansom cabs and the broughams resembles those of the standard variety, and the designers of the new vehicles have shown good judgment in endeavoring to make the new vehicles as inconspicuous and as familiar to the public as possible.

After considerable experiment with both kinds of tires, the company has decided in favor of 5-inch pneumatic tires in preference to solid tires 3 inches in diameter. The latest pattern of wheel consists of

tween the frames and the motors. In the electric cabs, or hansom, as they should properly be called, the driver is seated behind the carriage proper, and above a special compartment which serves to hold the battery. In the brougham, the battery compartment and the driver occupy the front of the vehicle. The steering is done by a steering-lever which has a motion forward and backward, while within easy reach of the driver are the controller switch and the reversing switch. The latter has an interlocking arrangement which pre-

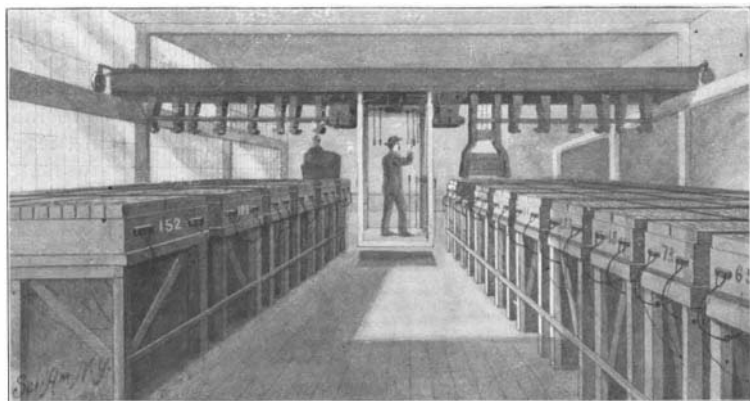


ELECTRIC BROUGHAMS IN THE STORAGE ROOM.



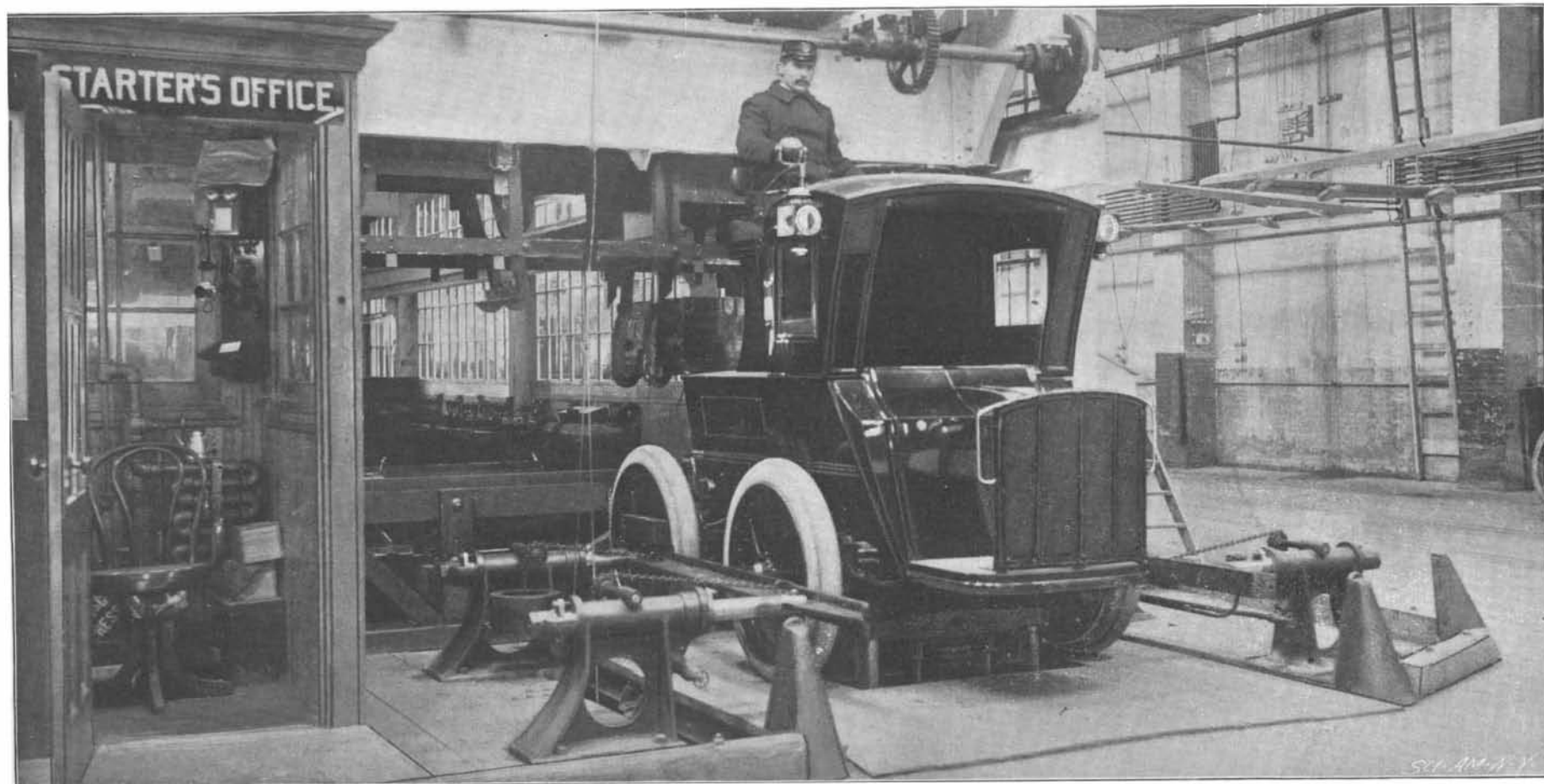
RELOADING AN ELECTRIC BROUGHAM.

Discharged battery has been withdrawn to table and carried to the right, and hydraulic ram is thrusting new battery into the brougham.



THE CHARGING TABLES.

Electric crane has just picked up a fresh battery.



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Charging Platform—Cab in position, electric crane bringing up fresh battery from the rear.

merly used as a bicycle academy, which has a frontage of 75 feet on each thoroughfare and is 200 feet in length, extending the full depth of the block. The Broadway front of the building is devoted to the offices of the company, the room for the drivers and the repair shop, while the rest of the floor is given up to the charging platforms, the battery room, and the storage of vehicles which are in reserve ready charged for use on the streets. The upper floor of the building is devoted to the storage of vehicles not in use and serves also as an erecting and repair shop. Elevators are provided for lifting the batteries and general material to this floor,

two 1/8-inch stamped and dished steel plates which are bolted to the hubs with their convex faces outward and converge toward the rims, thereby forming a hollow, disk-shaped wheel center. The diameter of the wheels is 36 inches; the tires are ordinarily pumped up to a pressure of 60 pounds to the square inch, although pressures as high as 100 and 150 pounds to the square inch have been tried experimentally.

The cabs are driven by two Westinghouse waterproof, ironclad motors capable of exerting four horse power combined. They are geared in a manner similar to that in use for railroad motors. Flexibility is obtained by interposing rubber cushions and springs be-

vents the motors from being reversed until the speed has been reduced to nothing. The controller provides for speeds of 6, 9, and 15 miles per hour, and the reversing switch, which is operated by the foot, is normally in the go-ahead position. There is also an emergency switch which shuts off the whole current on being kicked by the driver's foot. When this switch has been opened, it is in such a condition that no passerby can possibly turn on the current.

As we have already stated, the charging of the batteries and the reloading of the electric vehicles is done on the main floor of the building. The batteries have sufficient capacity to run the cabs for a distance of

from 25 to 30 miles, at the normal rate of speed of about 8 miles per hour. The vehicles are of two classes—those which are maintained continuously upon the streets and those which are kept at the station subject to calls. The former class returns to the station for charging before the batteries show signs of exhaustion, while the station cabs are recharged every time they return from service. Entrance is had to the charging-room by an entrance at the right-hand side of the Broadway front, and the cabs leave the station by means of another door at the left of the building. There are two charging platforms, with a starter's office located between them, as shown in our illustrations. The cab is backed onto platforms and adjusted upon them both laterally and vertically by means of hydraulic rams, which brings it into the correct position to receive a fresh battery. On each side of the charging platform is a lateral adjusting-bar, operated by a pair of horizontal hydraulic rams. The adjusting bars are of the same height as the hubs of the wheels. As soon as the cab has been backed on the platform, the bars move forward from opposite sides and align the cab with great accuracy opposite the loading table for the batteries. Other hydraulic rams beneath the platform raise the cab, so that the floor of the battery chamber in the cab shall be exactly on a level with the table. A hydraulic ram on the opposite side of the table now moves forward, and, by means of a grappling device, withdraws the discharged battery onto the table. The table consists of several sections, and it is capable of transverse movement across the battery room. After the empty battery has been deposited, the table moves transversely the width of one section, thereby removing the spent battery and bringing a charged battery in front of the cab. The hydraulic ram now moves forward and thrusts the battery into the cab, where it is automatically brought into contact with the wiring to the motors.

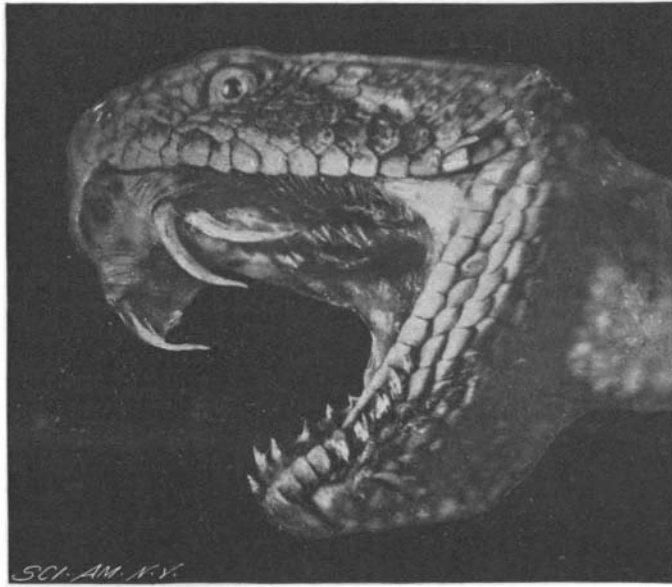
The charging of the batteries is done upon eight rows of tables which extend down the length of the charging room. The empty batteries are carried to these tables and the charged batteries are taken from them to the cabs by means of an overhead electric traveling crane. After the battery has been withdrawn from the cab to the transfer table (which is really an endless traveling link belt electrically operated) it is carried laterally by the table into line with the particular row of tables desired, when it is picked up by means of four hooks which are let down from the electric traveling crane, raised to the desired height, and then carried down the room by the crane and deposited in place. The operation is reversed in transferring the charged batteries to the cabs. The traveling crane is completely controlled in all its motions by an operator who stands in an operating cab suspended at the mid-length of the crane, and which travels with it throughout the full length of the room.

The electric cabs have proved to be particularly popular for certain classes of work. Physicians and all who have occasion to make hurried journeys are very frequent and constant patrons of the new service, while there are several of the cabs that are retained by business men who find it more convenient and even more expeditious to go "down town" by electric cab than by the other means of travel. The cabs, moreover, have proved in the recent snowstorms that they can keep going long after the horse-driven cabs have given up the attempt. We are indebted to Mr. G. H. Condict, the chief engineer of the company, for courtesies extended in the preparation of this article.

A WRITER in *The Medical Age* says that typhoid fever patients should not be filled up with milk, which is administered as liquid food; for, while it seems to have the form of liquid, yet, as a food, it is not liquid, but solid. The article states that bread and butter, mashed potatoes, or even pumpkin pie are not capable of filling the small intestines with such immense indigestible boluses of substance as result from milk. It is also a fine culture medium, and it is marvelous to see how rapidly bacteria are propagated in it.

A CURIOUS CASE OF ABNORMAL DEVELOPMENT IN A RATTLESNAKE.

The photograph which we present herewith was sent to us by Dr. R. Menger, of San Antonio, Tex., and is a lifelike representation of the head of the much dreaded rattlesnake, the *Crotalus horridus*. The original reptile was a very large rattlesnake and was killed by a friend of Dr. Menger in the hills of Helotes, about eighteen miles northwest of San Antonio. The rattles and the head of this snake were presented to him and he prepared the fangs, etc., to show their relation to the poison glands. The head was supplied with four fangs, two full grown and two others near



ABNORMAL DEVELOPMENT OF A RATTLESNAKE'S FANGS.

them in the front region of the upper jaw. The exposure was taken by lamplight. The fact of the snake having four fangs is interesting. In all rattlesnakes there are, besides the poison fangs, rudimentary fangs which, upon the loss of the old fangs, develop and supply their place. In this case, however, the development has been abnormal, and the second pair of fangs have developed before any loss of the old fangs has been sustained.

AN INTERESTING EXPLOSION OF GAS.

We have at different times referred to the danger of explosion caused by escaping gas, and we have rarely heard of a more complete ruin than that caused by an explosion of gas at Fort Wayne, Ind., on February 26, at the residence of Mrs. Mary Nichter, in which her son was severely injured, and the house was almost totally wrecked. The house was a two-story brick building with an ordinary cellar below the ground floor. A few days before the accident an inspector from the gas company made an examination of the premises and pronounced everything to be all right. It is believed that the frost coming out of the ground caused a break in the pipe, disabling the service connection and allowing the gas to escape into the cellar

through a duct in the earth along the service pipe. The boy went

overcoat, extinguishing the flames, and it was found that he was severely burned, and he was removed to a hospital. The explosion set fire to the house, but the flames were promptly extinguished by the fire department. The houses in the neighborhood were shaken by the violence of the concussion; the south, west, and north walls of the ruined house from foundation to eaves were heaved outward, greater violence being manifested near the ground. The east wall was also destroyed, but does not appear to have been pushed outward with so much force. Bricks were projected through the shutters and glass of an adjoining house. Above the first floor the brick walls were torn off from the framework of lath and plaster. Portions of the walls were sustained by windows, and in some cases where the walls were destroyed the glass in the windows was not shattered. The main force of the explosion was upward. The carpets in the sitting room were ripped and raveled, furniture was demolished, and scarcely anything on the ground floor was spared destruction. On the second floor there was also considerable destruction. The roof was unsettled and had to be shored up by the firemen. A freak of the explosion occurred in the small pantry, where the dishes on the shelves were not disturbed, although the wall back of them was destroyed. This should be a lesson to all. In case a gasleak is discovered, if it is thought to be serious, all openings, such as doors and windows, should be utilized to permit of the escape of the gas. On no account should a light of any kind be taken into a room or building where the presence of gas is suspected. We are indebted to Mr. August Zagel, of Fort Wayne, for the photographs from which our engravings were made.

The Berlin Geographical Congress.

The Geographical Congress which will be held in Berlin at the end of September will be particularly important, in view of the practical geographical work which the congress considers it desirable to undertake. Several subjects will be brought before it. It is proposed to introduce international uniformity in the methodical treatment of the various subjects, such as the problem of the tides, the conventional signs on maps, the nomenclature and delimitation of oceans and seas, the attachment of the scale to every map, the mode of arranging meteorological tables, etc. There are also suggestions for joint international work in collecting materials of every kind referring to floating ice, earthquakes, to the reclamation of arid lands, etc., to the exploration of the Antarctic regions, and to the execution of the international geographical bibliography. It is probable that a very important subject, which dates from the meeting at Berne, will be finally disposed of at Berlin. This is Prof. Penck's well-known project for the construction of a map of the world on the scale of 1 to 1,000,000. All papers and proposals to the Congress will be submitted to the Scientific Committee, whose decision, as a rule, will be final. This will tend to prevent the programme of the congress from being overcrowded. Propositions or suggestions should be presented in writing before June 1, 1899, and should fully discuss the motives, and should be accompanied by the statement of the ways and means which may appear likely to lead to the accomplishment of the scheme.

Saluting a Phonogram.

It will be remembered that Queen Victoria spoke a message of friendship and good will to the Emperor Menelek, of Abyssinia, after the recent victory in the Soudan. The message created a marked impression on his Majesty. The royal words were delivered on a Sunday, the phonograph working excellent-



FRONT OF HOUSE WRECKED BY GAS EXPLOSION.



REAR OF HOUSE WRECKED BY GAS EXPLOSION.

ly. The tones of her Majesty's voice were reproduced with remarkable clearness, and Menelek was so pleased that nothing would satisfy him but to hear the message at least a dozen times. First he would listen to the words as they came from the trumpet of the phonograph, and then he would use the ear tubes. When his curiosity and delight had been satisfied, he relapsed into solemn silence, and ordered the royal salute and remained standing while seventeen guns were fired. Menelek himself has tried to send a message by the phonograph, so that he appreciates the difficulty of securing a satisfactory record.