

## EDITORIAL CORRESPONDENCE.

FORT WORTH, DALLAS.

## Fort Worth, Tex.

This city, although one of the youngest in the State, is one of the most progressive and enterprising, and having had a marvelous growth thus far presages, what its people claim, that it is to be the metropolis of Texas. It became an incorporated town in 1872 without a single railway; was incorporated as a city in 1876 with a population of 1,100, but now has a population of about 33,500 and is an important railway center, having nine lines of steam railway connecting with all parts of the country.

The water works system is very complete and was recently erected at a cost of \$160,000, and is apparently of sufficient capacity to supply the city for many years to come. The building is a handsome brick structure, and is located near the city limits on the west side of the city, and supplanted the old station which was on the north side. The equipment is of the Holly type, and consists of two vertical, triple expansion, condensing engines of 950 H. P. each, which have a pumping capacity of 8,000,000 gals. in twenty-four hours. The water supply is obtained from thirteen artesian wells which are located in the neighborhood of the station, and from which the water flows through a connecting pipe to a large cistern or reservoir from which it is lifted by the pumps and forced directly into the main. The water is said to be of exceptional purity.

In public and office buildings, handsome homes and school and church edifices, Fort Worth is distinctively rich. The new city hall, one of the finest municipal buildings in the State, cost upwards of \$125,000. The government building or post office cost \$275,000, while the new car house, now in process of construction, is to cost \$425,000. All these structures are of native sandstone or granite, and are admirably designed. There are thirty manufacturing establishments, while the public improvements in the line of sewers, water works and sanitary appliances are first class in every particular, the city being regarded as one of the healthiest in the Union.

## STREET RAILWAYS.

The street railway lines embrace about forty miles now in operation which are controlled by four companies, some of the tracks formerly operated having been abandoned. The gauge of all the lines is four feet, and on all the T rail, spiked directly to the ties, is employed. This construction is admissible in the business streets as only macadamized pavement is employed, the wearing surface of which is composed of a species of gravel which, because of its cementing qualities, forms a durable roadway, and which is found in great quantities along the river bottom.

## North Side Street Railway Company.

This company operates, under a lease, the lines of the Fort Worth Street Railway Company, and embraces twelve and one half miles of track, all of which is now being electrically operated. This company, like many others, having been unfortunate and having suffered from the hard times, was compelled to place its affairs in the hands of a receiver, and the property has recently been sold and the management reorganized. For a considerable period the affairs of the company have been in the

hands of N. Harding, receiver, and the operation of the lines managed by G. B. Hendricks, who has been able to show quite a saving over operating expenses. The lines of the North Side Company were the first to be electrically equipped in the State of Texas, having been started April, 1889. The original equipment consisted of Rae motors, but these were supplanted in 1890 by the General Electric F 30 type. The average number of cars now run is twelve, and these are all of Brownell make, and are mounted on Bemis trucks, and all have a double motor equipment. The Lappin brake shoe is employed, and is said to be giving excellent satisfaction.

One car is equipped with an anti-oscillating device which was illustrated and described in our February issue, and which was a joint invention of B. F. Cholor of Fort Worth, and G. B. Hendricks. The device seems to accomplish all that is claimed for it so far as we could ob-

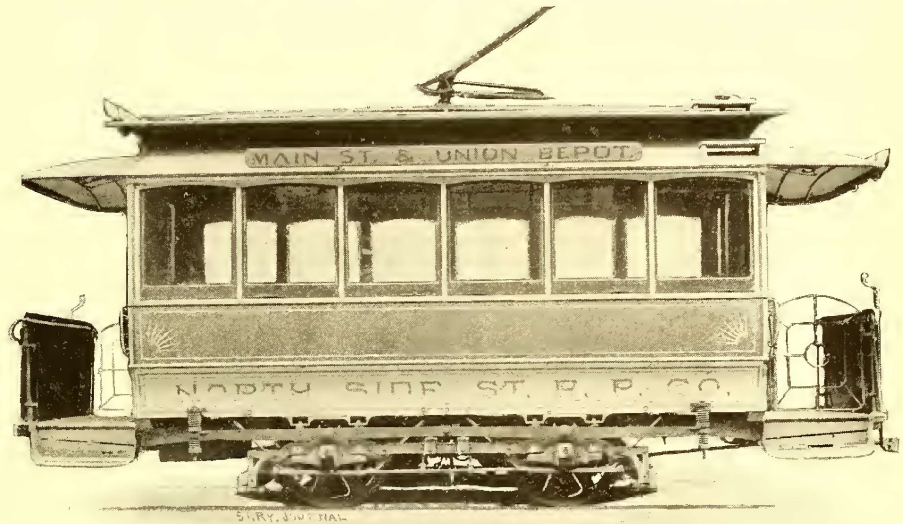


FIG. 1.—CAR WITH NON-OSCILLATING TRUCK—NORTH SIDE RAILROAD CO., FT. WORTH.

serve, and it prevents teetering even on a rough track and when the car is running at high speed. The device consists of a pair of levers composed of flat rolled bars or bars of malleable iron, which are placed on each side and just under the car body. These levers are fulcrumed at the journal box, and joined by a bolt near the middle of the car. The outer ends are attached to the car sill by means of a yoke and pair of vertical spiral springs which can be adjusted to any desired tension by means of the bolt which holds them in place. Any tendency of the car body to go down at one end operates with the same force to pull down the other end, and corrects the tendency to teeter. The device can be attached to any pattern of truck at a comparatively small cost.

The cars are provided with Brownell fare boxes and operated without conductors. On the Main Street line which connects with the Union Depot, and on which the cars are run to connect with the incoming trains, an assistant superintendent collects the fare at the depot when there is a crowd, and deposits the amount in the box. Special attention is given the depot traffic, an agent being on hand on the arrival of trains to inform incoming passengers that the cars pass the principal hotels, while these agents also assist the passengers in regard to baggage transfer.

The power station is located on the west bank of the river, just north of a bridge over which the track descends from the bluff and crosses over the bottom to the stock yards, a few miles west of the city. The

station equipment consists of a 500 H. P. Hazleton boiler having two furnaces, which are provided with Roney stokers to which the coal is delivered from hoppers, first being elevated by chain and spiral conveyor. The fuel consists of Indian Territory and Texas coal costing from \$2.35 to \$2.55 per ton delivered, and it requires about four tons per day to operate twelve cars for seventeen hours. There is also an auxiliary equipment of two tubular boilers of 275 H. P. each.

The power is supplied by a 300 H. P., cross compound, condensing Hamilton-Corliss engine having cylinders  $13 \times 30-48$  ins. The power is transmitted from the fly-wheel by nine one and a quarter inch continuous ropes to a countershaft. From this shaft the power is supplied by leather belts back to three D 62 Thomson-Houston generators. In the early installation of the plant ropes were employed for transmitting power to the generators, but these were abandoned and belts substituted. The feedwater is obtained from an artesian well 275 ft. in depth located some little distance from the station, in which the water rises within thirty feet of the top, and from which it is pumped into an elevated tank holding about 10,000 gals., the steam for operating the pump being conducted to the well through a one inch pipe. The water is said to be absolutely pure so that no scale forms in the boilers. The condensing water is obtained from the river. The home made oil separator has been devised by the engineer of the station, which consists of a six inch iron pipe about two and one half feet in length, which is filled with coils of old baling wire; the water being led into this, the oil collects on the wire, and is led off through the waste pipe.

#### EMPLOYEES.

Motormen are paid \$1.50 per day, and have every fifth day off. Country bred men and men with families are said to make the most efficient motormen. A very strict watch is kept over the men by the manager and his assistants, and they are discharged when anything goes wrong. If men are seen to enter saloons or are found drunk, whether on or off duty, or are found to be associating with bad characters, it is a cause for discharge. The use of profane or vulgar language or any discourtesy to passengers is also regarded as a cause for discharge. Strict discipline has resulted in securing a very desirable class of men.

Motor armature repairs are made in the company's shops, but generator armatures are sent to the St. Louis Machine & Oil Company, St. Louis, for repairs.

The franchise of the company was given for ninety years from 1876. New franchises are now granted for fifty years.

#### The Fort Worth & Arlington Heights Street Railway Company.

This line was originally constructed by the Chamberlain Investment Company for the purpose of developing Arlington Heights, a suburb of Fort Worth, about five miles distant, and embracing a tract of 14,000 acres. The line is single track and about six and a half miles in length, which starts at the Union Depot, foot of Rusk Street, runs along this street, paralleling the lines of other companies to 7th Street, then turns west on 7th Street, crosses the Clear Fork of the Trinity River, and continues along Arlington Boulevard, which is 125 ft. in width, across the river bottom, and ascends the heights over a grade, for about a mile, of 4.2 per cent. Four cars are run at present on a headway of from seven-

teen to twenty minutes. On the level strip of line, across the valley, a very high rate of speed is attained. The trip, including stops, is usually made in about thirty minutes.

Thirty-five pound T rail is employed, and outside the city limits the construction is of the ordinary steam railway type with gravel ballast.

The rolling stock consists of over five closed cars and seven open cars, mostly built by the Pullman Company, there being two closed and one open car which were built by the Woeber Brothers of Denver. Three types of motors are employed, there being two equipments of Edison fifteen horse power motors, three of Thomson-Houston of same capacity, and three equipments of Westinghouse twenty horse power motors.

The cars are provided with fare boxes of the National type and with registers of the same make. The motormen collect the fares, deposit them in the boxes, and ring up the registers. In summer, when the traffic is heavy,

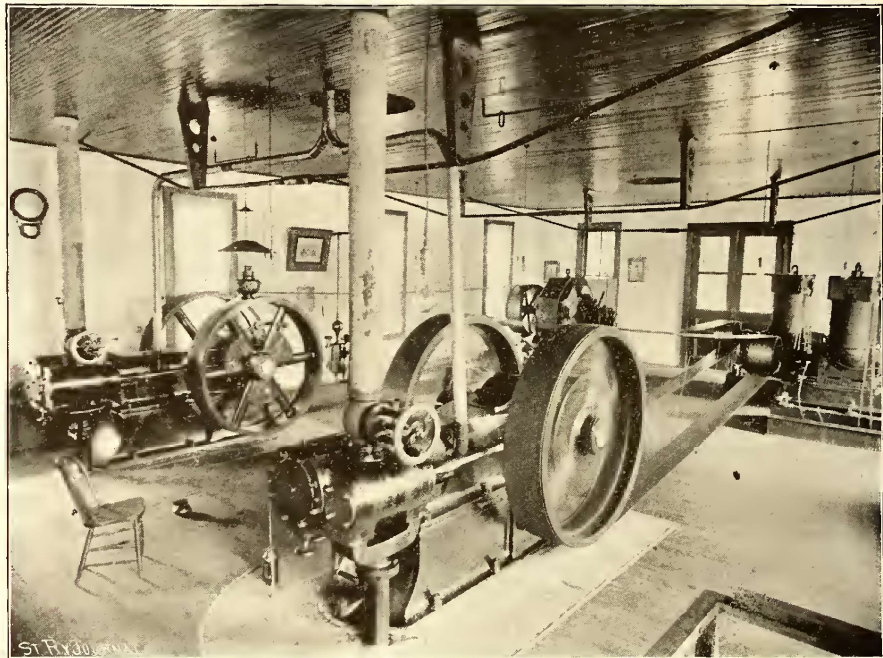


FIG. 2.—INTERIOR OF POWER STATION—FT. WORTH & ARLINGTON HEIGHTS RAILWAY.

conductors are employed. Motormen are paid \$45 a month.

The cars are equipped with electric heaters, of which three different types are employed, and the New Departure bell is employed for signaling.

The car barn is located at the terminal of the line at Arlington Heights, and consists of a wooden structure, of tasty design and of ample capacity for storing all the company's cars. There are pits and the usual appliances for the car and motor repairers. One portion is partitioned off and furnished for the superintendent's office, and adjoining it is the store room.

The power station, which is a small, brick structure, is located on the Clear Fork of the Trinity near the bridge where the line crosses the river and at the city limits. The equipment consists of three Heine safety boilers of 110 H. P. each, having Roney mechanical stokers, and the usual steam pressure carried is 125 lbs. Texas coal is employed, which costs delivered \$1.40 per ton, and it requires about six tons per day to operate the four cars. There are two Ideal engines of 125 H. P. each, and three Edison generators of fifty kilowatts each.

To the usual ventilating tube of these engines, the superintendent has attached a four inch tin pipe, which connects with one at the ceiling and passes out at the roof and serves to carry off the oily vapors which, without this precaution, condensed and settled upon the belting and the machinery.

Arlington Heights is a very attractive locality and is rapidly building up. The elevation is about 135 ft. above Fort Worth, giving a very commanding outlook, as noted in the introduction to the notes. There are quite a number of very fine homes, while the streets are broad and well graded and graveled, and are bordered by young trees, which have been recently planted. The principal attraction of the location is "Ye Arlington Inn," one of the finest all-the-year-round hotels in the locality, and which is patronized not only by tourists, but also by the commercial travelers who prefer it to the city hotels, as the service is superior to that found in most cities. It is easily reached, as the cars are run to meet all trains, while an agent is at the depot to superintend the transfer of baggage and look after the comfort of the travelers.



S. HORN,  
SUPERINTENDENT FT. WORTH & ARLINGTON  
HEIGHTS RAILWAY CO.



GEO. B. HENDRICKS.  
GENERAL MANAGER NORTH SIDE RAILWAY CO.,  
FT. WORTH.

The exterior of the inn presents a pleasing semi-colonial design. The structure is four stories high and is built of a combination of pressed brick, red sandstone, and natural wood. There are numerous broad verandas and private balconies. The interior finish and furnishings are apparently of the best the experience could suggest, but our space will not allow a description in detail. Beautiful plants and shrubs adorn the lawns about the hotel, while on the north the bluff slopes off abruptly to the valley park 200 ft. below, and in this direction one of the loveliest views is had of the surrounding region. The settlement is provided with an electric light plant, a water works plant and all the sanitary requirements of a modern city. The street railway company runs a freight and express car back and forth between Ft. Worth and the Heights several times a day, for the purpose of transporting groceries and other freight, which is delivered from the station by wagons to the residents, free of charge.

The town of Arlington Heights was laid out with the most liberal proportions, and a large sum of money has evidently been spent in its development, there being a lake, parks, and other attractive features; and had it not been for the general depression in business affairs, it would have doubtless become a large residence city equal to the expectations and plans of its promoters. It is only a question of time, however, when it will thus develop and make a handsome return for the investment.

The Fort Worth & Arlington Heights Street Railway Company is a separate corporation from the Investment Company, although some of the parties are interested in both enterprises. H. W. Tallant whose death is recorded elsewhere in this issue, was president of the street

railway company. The operation of the line, however, for a long period has been superintended by S. Horn, who also has a general oversight of the lighting and water plants and the other property of the Investment Company. Mr. Horn was formerly with the North Side Street Railway Company, and supervised the original electric equipment of that system.

City Railway Company.

About three years ago the lines controlled by this company were electrically equipped, the Detroit motors being employed. These motors are still running, but the cost of keeping up repairs is very great. Formerly the system embraced sixteen miles of track, but only ten miles are now being operated. The rolling stock consists of fourteen motor cars, only four of which are being regularly operated, and those are run with fare boxes, without conductors.

The power for operating the system is rented from a neighboring lighting plant, the company's plant having been sold, as it was found to be cheaper to rent power than to operate the plant.

Motormen are paid \$1.50 per day, and have every fifth day off. Trackmen receive the same wages.

D. P. Quigg is superintendent, and in charge of the local affairs of the company. The lines will, doubtless, soon be sold, and possibly consolidated with some of the other systems.

The Polytechnic Street Railway Company.

This company takes its name from the Polytechnic Institute which is located two miles and a half from the Union Depot, from which the tracks run out to the Institute, and the cars are operated by animal power. Only one car is run, except on Saturdays and Sundays, when two cars are operated. It takes, ordinarily, one hour to make the round trip.

The region is rapidly building up, and the line will eventually, doubtless, develop into a good paying one. Steps are being taken preparatory to equipping the line with electric power.

At present the affairs of the company are being managed by E. Fosdick, with Harry G. Borny as secretary.

The Mistletoe Hill Railway,

which was operated by animal power, has been abandoned, although the tracks remain in the streets. The same is true of the Riverside Street Railway. The original car equipment of the latter line consisted of two thirty-six foot, eight wheel, straight side cars which were equipped with the Rae motors. These cars are at present stored at the barn of the Fort Worth & Arlington Street Railway, at Arlington Heights, and will doubtless be re-equipped and operated in the near future.

Dallas, Tex.

What was said above regarding northern Texas and the advantages of Fort Worth in its relation to the surrounding region, climatic conditions, etc., is equally true of Dallas, for this city is located thirty-five miles due east from Fort Worth on the line of the Texas Pacific Railway, and between the two cities a spirited, but friendly, rivalry exists. Dallas, however, is some years older than Fort Worth and has the start of her rival in population, in amount of business done, and in the general appearance of her business streets and public buildings, and somewhat of an advantage in the development of street railways.

The city occupies a plateau three miles square on the east bank of the Trinity River, about 350 miles above its

entrance to Galveston Bay. The elevation provides for good natural drainage, which is supplemented with about sixty miles of sanitary sewers and four miles of storm water sewers. In this connection should be mentioned a very excellent water works system, costing \$800,000, which gives an abundant supply of water, which is drawn partly from the river and partly from artesian wells. In time, it is expected, the entire supply will be drawn from wells, the quality from the latter being soft and pure. The amount of water pumped by the station is 41,030,000 gals. per day, and there are two large settling reservoirs, with a capacity of 135,000,000 gals., while a third with 750,000,000 gals. capacity will be built. There are fifty-six miles of water mains, with all the necessary hydrants and connections.

About thirty miles of the city streets are paved, the material employed being chiefly *bois d'arc* sawn and round blocks laid on a gravel foundation. *Bois d'arc* is a native wood practically indestructible, and is used in the East as a dye wood. The city is in shape like a fan. Some of the streets, unfortunately, as in many Southern cities, are

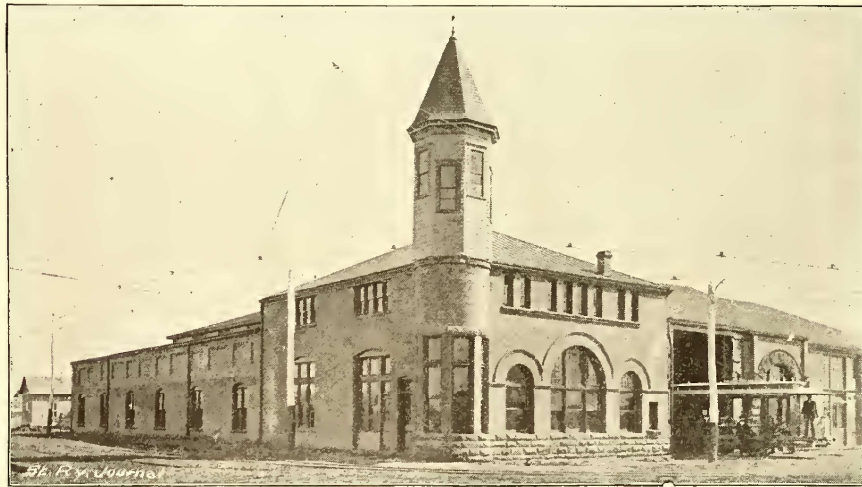


FIG. 3.—CAR HOUSE—QUEEN CITY RAILWAY, DALLAS.

narrow and do not run at right angles or parallel. This is occasioned by the land having been held originally under Spanish land grants, measured by metes and bounds, or located by warrants, before the state survey.

All the public improvements in Dallas, have been developed on a liberal scale, and with a view to providing a healthy and desirable residence city, placing the city in the front rank of Southern cities in this respect, and showing remarkable enterprise for so young a city. The first settler is said to have located here in 1841, but the place was not incorporated as a town until 1856, and in 1858 the records of the first census ever taken show a population of only 1,299. For the last twenty years, however, the population is said to have doubled every four years, and now, it is claimed, the number of its people is 61,000, including the suburb of Oak Cliff, which is on the opposite side of the river. The first railroad, that of the Houston & Texas Central, entered the city in 1872, the Texas Pacific followed in 1876, and now there are five trunk lines, with twelve outlets by rail. Not only does the city enjoy excellent railway transportation, but by improvements being made in the Trinity River, which include a system of locks and dams, water transportation, it is expected, will soon be had with the Gulf of Mexico, which will doubtless serve to keep freight rates at a low figure for all time to come. The river is virtually only a canal carved out by nature with steep but uncaving banks, and with sufficient depth for small steamers and freight barges. Already a steamer is plying daily between Dallas and McCommas' Bluff, thirty-five miles below. From its location (there being an immense area of rich and productive land tributary to it) and its solid and substantial growth thus far, Dallas claims to be the Queen City of the Southwest, and may

well do so, for the possibilities of the city, as a manufacturing center, are both brilliant and innumerable. It is already a great commercial and distributing center full of ambition and the genius of modern life, so that it is bound to grow to a still greater extent within the next few years. In this connection it is worthy of note that Dallas is the headquarters for Texas and part of the Indian Territory, for the trade in agricultural implements and farming and mining machinery, there being nine houses engaged in this line, with an aggregate of sales last year amounting to \$7,000,000.

#### STREET RAILWAYS.

The railway lines of the city embrace fifty-one miles of track, and are controlled by five companies, which operate by both animal and mechanical power. Nearly all the lines make the Exposition or Texas State Fair Grounds an objective point, and as the neighborhood is well built up, cars are run throughout the year, but during the Fair season cars are run on very short headway. The location is about two miles east from the business center of the city. The tract embraces 120 acres and is ornamented with shade trees and shrubbery. There are two race tracks, one a mile long, while the buildings are of magnificent proportions and pleasing in design.

#### The Queen City Railway Company.

There are embraced in this system, which has absorbed the North Dallas Railway, about ten miles of track, and the lines are operated under the direction of A. W. Childress, president of the company, and C. L. Wakefield, secretary and treasurer, who also acts as executive officer, with R. S. Wakefield as assistant superintendent. The principal line on Elm Street, the retail street of Dallas, was originally planned for a cable road. The material was distributed over the entire distance, three and two-tenths miles, and about a mile and a quarter of conduit and track construction was completed in 1891, when the work was suspended, and the line was electrified in 1893, the work of reconstruction having been begun in March, and the line started the first of August. In rebuilding the cable portion the slot rails were removed, a portion of the concrete and the tops of the yokes were broken off and the ties for the new construction placed on the remaining concrete bed with a gravel cushion between. A forty-five pound T rail is employed, which is spiked directly to the ties, which are of long leaf yellow pine 6 × 8 ins. × 7 ft. long, and cost in this market \$40 apiece. In the paved streets the rail is spiked directly to the ties and short tie blocks are used. So far the track is standing up exceedingly well. The overhead construction is especially fine, all the latest insulating devices being employed, and No. 0 trolley wire is employed. Along the business street the trolley is protected by three guard wires placed about two feet above the trolley, suspended from different eyebolts and the span wires are then thoroughly insulated. Three No. 0000 feed wires are employed, and two No. 0000 return wires connect the track with the station. The rails are joined by a single No. 00 copper bond wire. A pressure of 525 volts is carried, and the loss has been found to be only 2 per cent. The power is rented from the Dallas Electric Light Company, for which the street railway company pays \$3 per day per car, which are run usually about eighteen hours. The overhead work is in charge of W. C. Ure, the electrician, who was foreman in charge of constructing the overhead lines.

The rolling stock consists of six open and twelve closed cars of the latest design, and very attractive. Twelve of these were manufactured by the American Car Com-

pany, and the other six are mounted on McGuire Columbian trucks, having a six foot base and on which a thirty-three inch wheel is employed. Car bodies were manufactured by the St. Louis Car Company, and mounted on Bemis trucks, on which a thirty-six inch wheel is employed. There are twelve equipments of W. P. 30 Thomson-Houston motors and six single equipments of F No. 40 Thomson-Houston motors, both types of which are standing up excellently well under the traffic. Both rawhide and wave pinions are employed, which are purchased for the most part from Davis & Cougill, of Omaha. On some of the lines a seven minutes headway is maintained, and on others it is twenty minutes. The speed is from eight to twelve miles an hour, and on some of the divisions the cars make an average of 120 miles a day, on others 115 miles. The lines of the company run to the Exposition Grounds, at which the racing tracks are said to be second to none in the country.

The cars are run without conductors and are provided with fare boxes. The motormen are paid twelve and a half cents an hour, trackmen \$1.50 per day. The fare is five cents, and transfers are issued at two points, one being at an extension and the other at a crossing. Children's tickets, good for children under ten years of age, are sold fifty for \$1.50; these tickets are also good on school days for school children of all ages. All passes are in the form of tickets, so that every passenger has to deposit either ticket or fare. The conditions of the franchise are that on one street a payment of \$500 a year is required, on another \$600, so that the annual payments to the city amount to \$100 per car per year, on the basis of eleven cars now in service.

The car barn occupies what was designed to be the cable power station, and is a handsome brick structure located at the corner of Peak and Elm streets within the city limits. To accommodate the electric cars, it was necessary to raise the roof over the storage tracks about four feet. There are six storage tracks and one pit for repairs, capable of accommodating five cars.

One portion is set off for a washing room, in which a concrete floor is provided. In the portion which was designed for the power plant the foundations which were prepared for the engines and machinery remain, as do also the walls of the tension runs. A portion of this section has been provided with a floor, and is used for a store room and a repair shop, and a portion of the front of the building was designed for the company's offices, but has never been finished, and is now occupied by the trainmen. Against the wall outside the office room a large blackboard is provided, on which the names of the motormen and leaving time are written. This board is supported by hinges and can be swung back against the wall, being so arranged that both sides of the board are utilized for names.

By a recent regulation of the company the motormen are now all uniformed in gray cadet suits and helmets of the same color for summer. The neat appearance of cars and station, the politeness of the employes and excellence of discipline, reflect creditably upon the management. Each employe is practically a "drummer for business" for the road, which speaks well for the friendly feeling which exists between them and the management.

#### The Dallas Consolidated Traction Co.

The cars of this company are operated both by animal and electric power, there being twenty-two cars regularly run by mules, two animals to a car, and ten electric cars. On a portion of Main Street both systems run over the same track. The company owns in addition quite a number of open and closed cars, which are not, at present, being operated. A fire on December 5 last destroyed the Main Street car barn and stables, together with twelve motor cars, fourteen other cars and eighteen mules.

The electric portion of the system began operating

in October, 1890, and in October, 1892, the entire system was placed in the hands of a receiver, and has since been operated under the direction of the Court. S. P. Cochran is receiver, and, although having had no previous experience in street railway business, has managed the business admirably and in an economical manner, showing good returns. His principal assistants in the management are J. L. Sale, purchasing agent, and Wm. Dresser, superintendent. Recently an addition has been made to the electric mileage by the equipment of 21,000 ft. of double track and 24,000 ft. of single track. This extension was over an outlying district, the formation being black prairie soil, while the overhead equipment is supported on center poles hewn and painted. The overhead construction, which has now been in service for about four years, began to show signs of failure, so is now being thoroughly overhauled.

The rolling stock was principally manufactured by the St. Louis and Laclede car companies, and the cars are mounted on Bemis, Brill and St. Louis trucks. The original



FIG. 4.—CAR ON COMMERCE STREET—DALLAS, TEX.

motor equipment consisted of both Thomson-Houston and Edison machines. There are six motors of the old F 30 type, and six equipments of the Edison No. 6. More recently four G 8 Thomson-Houston motors have been added. The power is rented from the Dallas Electric Light Company. The Street Railway Company furnishes the generators which consist of two of the Thomson-Houston D 62 type, and one Edison generator.

Fare is five cents. Tickets in books of 100 are sold for four cents to working girls and school teachers. Tickets in books of fifty are also sold to school children for three cents, good at any hour and any day. Transfers are issued at two points. The cars are run without conductors, fare boxes of different makes being provided.

Ordinary employes receive \$1.25 a day for the first four months of service, \$1.50 for the second four months, and \$1.75 after this. They are allowed one day off every fifth day with full pay. Thirty-three regular drivers and motormen are employed, and fifteen extras. The officers claim to have a very excellent class of men, quite a number having been in the company's service for seven years. The cars are run usually until eleven o'clock at night, and on Saturday and Sunday nights until twelve o'clock.

Since the fire a car barn has been improvised from the Live Oak Street stable, which has been remodeled, and a portion is being equipped for a repair shop. On one of the poles in front of this barn a switch is provided with which the barn wires can be cut out and in. When it becomes necessary to run a car out or in the barn an attendant throws the switch lever and holds it in position until the car is in place, when the current is cut out. This arrangement is a precaution against the possibility of fire from the current or from a lightning discharge.

Quite a number of the one horse cars are being fitted with a single motor, and are to be operated for the sum-

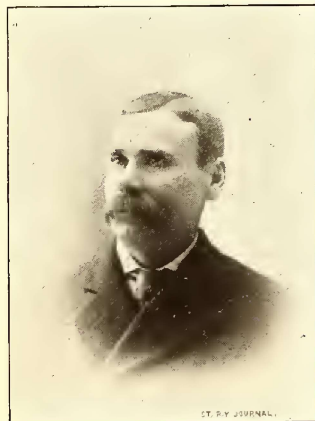
mer traffic. None of the grades on the line are very severe, the surface being generally level.

The cost of feeding the animals is about \$14 a day. Prairie hay is fed together with oats and corn unground. Mules cost usually from \$40 to \$50, and those standing about fourteen and a half hands high are preferred.

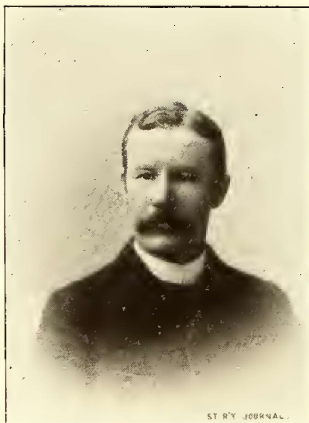
The track construction consists of T and Johnson girder rail. The girder rails were formerly laid on chairs in the paved streets, but these have been taken out and a three inch block substituted. The paving, which is of *bois d'arc*, as before noted, cost \$1.25 a square yard, and there is also considerable macadam pavement on the streets through which the lines pass.

**The Dallas Rapid Transit Company.**

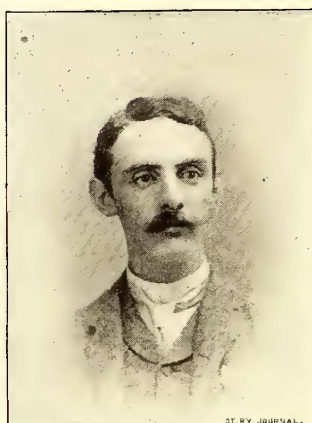
The lines of this company, which are now in the hands of a receiver, were built about four years ago for the purpose of developing suburban property on the east side of the city. The system forms an irregular loop of about seven miles, half of which is in the city and the other half through a sparsely settled district on the east side of the limits, together with a line crossing the loop near the cen-



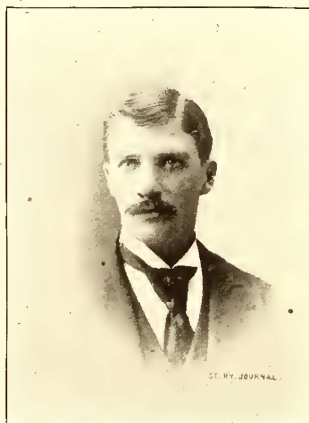
**A. W. CHILDRESS,**  
PRESIDENT QUEEN CITY RY. CO.,  
DALLAS.



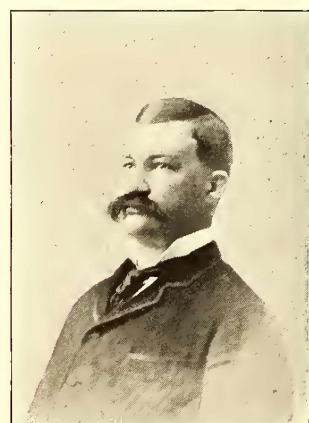
**SAM'L P. COCHRAN,**  
RECEIVER DALLAS CONSOLIDATED  
TRACTION CO.



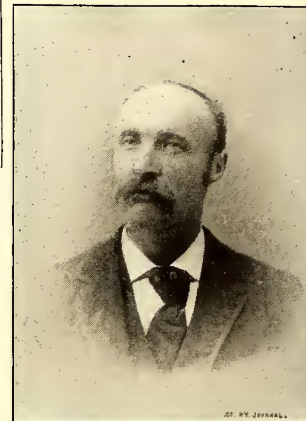
**J. L. SCALE,**  
SECRETARY DALLAS CONSOLIDATED  
TRACTION CO.



**R. S. WAKEFIELD,**  
ASSISTANT SUPERINTENDENT QUEEN  
CITY RY. CO.



**C. L. WAKEFIELD,**  
SUPERINTENDENT QUEEN CITY  
RY. CO.



**GEO. D. HARTSON.**  
SUPERINTENDENT DALLAS RAPID  
TRANSIT CO.

ter, of about three miles. The portion outside the paved streets is virtually a steam track, being laid with T rails, and much of the way through private property. By economical management the system is paying expenses, and as soon as the city takes on a new growth it will doubtless prove a paying proposition.

Like all the other lines of the city, the loop passes along the front of the Exposition Grounds.

The power station is located on the eastern part of the line well in the country two miles from the post office, and near the line of the Texas Trunk Railway. The system is being operated under the supervision of George T. Hartson, who in his capacity combines superintendent, electrician, chief engineer, bookkeeper and master of repairs. Mr. Hartson has had a long experience in electric street railway work, having been employed on the early Sprague electric road in Richmond, Va.

The rolling stock consists of ten motor cars, but only six are run regularly. Some of these were built by Lewis & Fowler, some by the Pullman Company of Detroit, and others by the St. Louis Car Company. All are mounted on the Manier truck. The motor equipment consists of

eight Edison double reduction motors and two equipments of Westinghouse motors. In the repairing of generator and motor armatures the superintendent uses an insulating material which he prepares himself, composed of asbestos paper, treated with boiled linseed oil and coach japan varnish, and for the ends of the armatures he employs duck which has been treated in the same manner. This is prepared and hung up in sheets and used when required, and thus far has proven a very durable material.

The cars are equipped with National fare boxes and are run without conductors. Motormen are paid \$1.50 per day for twelve hours' work.

The car station is a plain wooden structure located in the suburbs, as noted above, and has an equipment of tubular boilers and two Armington & Sims eighty horse power engines which are belted direct to two fifty kilowatt Edison generators. Texas and Indian Territory coal is em-

ployed for fuel, the former of which is \$1.25 a ton and the latter \$2.50 per ton, and the daily expense for coal consumed for the operation of six cars is about \$6.00. In addition to the ordinary switchboard equipment, the superintendent has provided several home made lightning arresters. One of

these consists of carbon pencils, with the points separated about one sixteenth of an inch, which has proven very efficient, but the peculiarity of the device is that when there is a heavy load on the line a blue flame or arc is noted between the points, but when the load is light, although the voltage remains

the same, no arc appears. Two other lightning arresters on the switchboard are made of serrated copper plates about eight inches in length after the style of some of the early lightning arresters, except that the plates are longer than those usually used. In case the plates are melted together across the gap by an arc the connection is cut out with a knife. The trolley wire, which is composed of No. 4 Birmingham gauge copper, has grown crystallized by four years of service and frequently comes down. The experiment is being made of using a three-eighths inch steel wire for a trolley, and leading in a current from the feeders at short intervals, the object being to get a strong trolley wire that will not come down by its own weight. The economy of this construction is not yet apparent. A new splicing joint has been devised by the superintendent for repairing broken trolleys. It consists

of a cast bronze rod having lugs near the center, and flat, concave ends. The ends of the trolley wire being bent, they are hooked over the lugs, and the wings of the joint are then turned over to embrace the wire, making



FIG. 5.—TROLLEY WIRE CONNECTOR—DALLAS, TEX.

a smooth track for the trolley wheel. A cast iron trolley wheel is being employed on some of the cars, which has proved very durable, and, in the opinion of the superintendent, is just as efficient as those of brass. The income of the line being limited, the superintendent has demonstrated the old adage that "Necessity is the mother of invention."

#### The Dallas & Oak Cliff Railway Company.

This company has recently been reorganized. The lines, which embrace eleven miles, are at present operated by steam dummies, but are to be electrified, and it is expected will be operated by electric power within ninety days.

The president of the company is Henry C. Scott, of St. Louis. Vice-president C. F. Carter is in charge of the local affairs of the company and B. F. Sibert is superintendent. This is also a loop suburban line which starts near the Court House in Dallas, runs west parallel with the river for a short distance, then crosses the river bottom and over a long bridge and high embankment, and describes a circle through and around the suburb of Oak Cliff on the southwest side of the river and returns to Dallas over a second bridge further down the river at the foot of Main Street. An effort is being made to secure an entrance into the heart of the city of Dallas from some of the existing lines.

Oak Cliff, as its name implies, occupies an elevated plateau, and is a very desirable residence location. The present population is about 4,500. There are probably in this suburb a larger number of beautiful homes than in any other city of its size in the South.

There are a number of fine school buildings and a female college which occupies a very imposing building, and is one of the most noted schools in the State. As a residence city the location has many attractions, and is bound to grow in proportion to the City of Dallas, so that the railway system will doubtless become a very important one.

#### North Dallas Circuit Railway Company.

Only two cars are operated over this system at present. Power is rented from the Dallas Electric Light Company. The system embraces about four miles of track, laid with a forty pound T rail. The cars are equipped with Thomson-Houston motors. Royal A. Ferris is general manager and in charge of the local affairs of the company.

#### ADIEU TO TEXAS.

We take a reluctant leave of Texas, for our reception and entertainment have been so generous by the street railway men of all the cities we have visited that we have been made to feel quite at home, and take our leave with exalted views of the State, its resources and the size and beauty of its principal cities, with regret that time has not permitted a visit to some of the other cities of the state, which have equally as complete and interesting railway systems as those in the four cities described. We take our leave over the lines of the Texas & Pacific Railway, which occupies the same relation to northern Texas as does the Southern Pacific to the southern counties, and which was described in our last issue. The main lines of this system have a length between New Orleans and El Paso, the western terminal on the Colorado River, of 1,487 miles. There are two branches between the cities, Marshall and Fort Worth, one only about seventy-five miles north of the other and going through some of the northernmost cities of the state.

The passenger equipment is excellent and the service

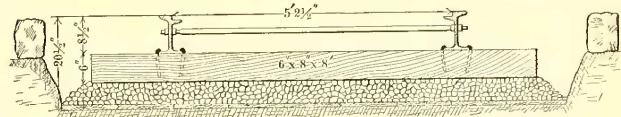
efficient in every particular. The territory through which it passes has many interesting and wonderful features, so that a tour over its lines is very enjoyable and instructive.

C. B. F.

### Track Construction at New Orleans.

We present herewith a sectional engraving showing the type of track construction selected as standard by the New Orleans Traction Company, of New Orleans, La. The rail is eight and a half inches deep, of the Johnson girder type, weighing from ninety-three to 100 lbs. to the yard, and the joints are united by twelve bolt fish plates the bolts being one inch in diameter.

As mentioned in our April issue, the peculiarity of the ground, which being low, is exceedingly wet and spongy, made a special construction necessary, as the soil could not be relied upon to hold the ties in position. The



TRACK CONSTRUCTION AT NEW ORLEANS.

surface of the street is first excavated to a depth of about twenty and a half inches; then as a foundation a covering of one inch cypress plank is placed at the bottom of the trench, and upon the planking is placed a layer of Rosetta gravel from six to eight inches in thickness, and on this gravel bed the ties are placed two feet centers. The rails are spiked directly to the ties, and the space between and over the ties is filled with the excavated material, except where block paving is employed.

The company has recently received fifteen miles of feeder cables, 500,000 circular mills, from the John A. Roebling's Sons Company, of Trenton, N. J. The wire is of the waterproof, triple braided type, and the company will use at present an overhead return, although an underground copper return of some twenty No. 0 wires laid in a wooden conduit may be used later. The rails will be bonded with three No. 0, tinned copper wires.

### Suburban Roads in St. Louis.

There is talk of extending the Manchester Road line of the Lindell Railway Company to the suburban towns and villages of Clifton Heights, Arloe, Gratiot, and others within the city limits, and out into St. Louis County.

The St. Louis & Kirkwood Electric Railway Company has awarded the entire contract for its construction to the Suburban Construction Company. The railway has a private right of way from the southwest corner of Forest Park, St. Louis, to Meramec Highlands, St. Louis County, a distance of about fifteen miles. The company is capitalized at \$300,000. Its city connection will very likely be with the Lindell Railway line at Forsythe Junction.

The Manchester Road Electric Railway is at present constructing its roadbed, and the Forest Park & Clayton Electric Railway Company is ready to start its cars very soon. There are in all six electric roads laying tracks in or already running into the county, the latter numbering four.

The St. Louis County Street Railway has been running its line from the city limits to Normandy for a month past. Its line is operated by horse power, but will be changed to electricity some time in the near future.

An electric street railway was opened to public traffic in Hamburg, Germany, on March 29, 1894. It was constructed by the Union Electric Company, of Berlin, and the overhead trolley system is applied. This street railway has thirty-five kilometers of track and forty-two motor cars, each of them equipped with a General Electric fifteen horse power motor.