



### To Stablemen and Drivers.

The Bible has long been recognized as a pretty good book to preach a sermon from, and as this is intended more as a sermon than as a lecture, we will take for our text the verse, "A merciful man is merciful to his beast," which, by the way, ought to be painted up in "letters of light" in every stable of the world.

Now a street-car horse is not generally an animal calculated to inspire much sentiment, and still less so is the average street-car mule. Poets, from "Mr." Homer to "Lord" Tennyson, indeed, have sung the horse in many a sounding line; but it has always been the horse as a noble abstraction, or the horse in some particularly elevated sphere of action. No poet of ancient or modern times has found in the street-car horse an inspiration to lofty sentiment enshrined in glowing verse. Even the eloquent prose writers have passed him by without a word of eulogy or recognition, and our most esteemed contemporary, though quick to recognize the luminous car and the picturesque possibilities of beauty in luminous harness, has found no source of inspiration in the street-car horse or his humble hybrid cousin with the "bar sinister" on his armorial bearings. The Bible alone is impartial, and in defining the attitude of the "merciful man" towards his "beast" makes no preferences to the injury of the humblest of animals, but in the eyes of the author of our text the meanest mule that splashes the omnipresent limestone mud in the streets of St. Louis and the most abject "critter" that climbs the hills of Kansas City or Dubuque, is entitled to equal consideration with the finest thoroughbred in the stables of Pierre Lorillard or Colonel Marshall. At the hands of the merciful man the Texas mule, too tired to kick even an intermeddling "small-boy," will receive treatment as gentle as would the celebrated beauty that bore the "Prioress" on the pilgrimage to Canterbury, centuries since.

There are a great many drivers born with a deep-rooted theory that car-horses are made for blows and abuse, and car-mules for kicks and curses; and not a few stablemen seem to be trained with the same heresy. The truth is that a horse's strength does not improve with abuse, nor a mule's

endurance with ill-treatment, any more than does a stableman's or driver's.

The heated season is now upon us, when animals and men alike naturally suffer more or less distress, with the very important difference that a man can take care of himself, while a horse depends for care entirely upon the consideration and mercy of those in whose interests he labors. He cannot speak to tell when he is thirsty, overheated or overworked, and it is one of the characteristics of a merciful man to interpret his dumb sufferings, and forestall them as far as possible. We have no theories regarding the quantities of water to be furnished, but we do know that the laws of physiology demand for the horse as for the man, that it should be freest when perspiration is freest. We know also that suffering and annoyance of any kind demand powers that, were they not required to resist such discomforts, could be utilized for hauling cars; therefore, it becomes a matter of economy to provide against such discomforts. So, anything which tends to add to the comfort of an animal, necessarily increases its usefulness. Stablemen and drivers with common sense will know what this means: sponging of the nostrils, frequent cleaning, plenty of drinking water, "easy" treatment, and a thousand and one things of the kind will occur in this connection. But owners and care-takers alike should remember always that "a merciful man is merciful to his beast," and that it pays in more ways than one to be a "merciful man."

### Repairs in the Brooklyn Bridge Cable.

The *Sun* says: Preparations are being made to put in two large new sheaves for the traction rope at the New York end of the Brooklyn Bridge. Advantage will be taken of this interruption of the railroad travel to cut the rope and shorten it when splicing it together again. The rope has now been in constant operation for twenty-one months, dragging heavy trains of two cars each over the bridge each way. There has been some wear, but about the only noticeable effect of the strain has been to lengthen the rope about 1½ per cent. It is said that ropes used by the Chicago street cars last about nine months. The workmen about the bridge assert that the bridge rope is good for two years more.

In speaking of the grip used on the bridge Col. Paine said that the greatest difficulty experienced at first was in closing the little grip wheels on the rope with just the right force. "When the sheave lining was new the wheels scarcely opened wide enough to let the rope up between them, and the toggle joints which brought them toward each other had so little purchase that the men turning the brakes had to use all their power to keep the grip from slipping. But, as the lining wore away, of course the purchase of the toggle joints grew more powerful, and the brakemen, still throwing their weight on the brakes, set the grip six or eight times tighter than necessary. That held the car fast enough, but it indented the sheave linings and wore them unevenly, so that the grip was likely to catch every time at the same spot of the circumference. To overcome this an automatic device was put on the grip, which regulates the pressure on the rope so that it can never be too great nor too small. Before that was adopted the sheave linings wore out in sixty days. They will now last twice as long."

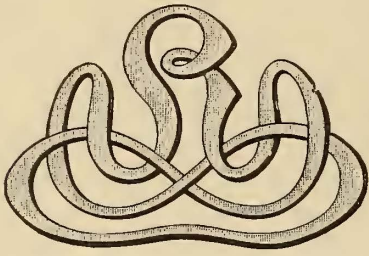
This rope will be strong enough, it is said, when the additional traffic is put on after the tracks are extended across Centre street, New York.

A rope gives way because the wires are worn out by the friction of the grip, but there is no danger that the rope will at any time break apart and allow the cars to run down into the stations.

### An Old Street Railway Man's Opinion.

J. E. Hellman, an old street railroad man, recently said:

"Do you know what the street railroad will do for Broadway? It will make it the great 'shopping' street of the city. The street railroads made the Bowery, Third avenue and Sixth avenue. Broadway has been given up, below Fourteenth street, to such store patronage as came in carriages. It was necessarily limited. Ladies did not like the 'busses. But you will find the street cars will take them to any store on the street. Stewart's old stand will be in a measure restored to its former position. I shouldn't be surprised if a big museum or two came over from the Bowery to animate the class of people who will come there who do not now go to the Bowery.



### American Street Railway Association.

OFFICERS, 1884-5.

*President.*—Calvin A. Richards, President Metropolitan Railroad Co., Boston, Mass.

*First Vice-president.*—Julius S. Walsh, President Citizens' Railway Co., St. Louis, Mo.

*Second Vice-president.*—Henry M. Watson, President of the Buffalo Street Railway Co., Buffalo, N. Y.

*Third Vice-president.*—Edward Lusher, Secretary and Treasurer of the Montreal City Passenger Railway Co., Montreal, Canada.

*Secretary and Treasurer.*—William J. Richardson, Secretary the Atlantic Avenue Railway Co., Brooklyn, N. Y.

*Executive Committee.*—President, Vice-presidents and William H. Hazzard, President Brooklyn City Railroad Co., Brooklyn, N. Y.; James K. Lake, Superintendent Chicago West-Division Railway, Chicago, Ill.; Charles J. Harrah, President the Peoples' Passenger Railway Co., Philadelphia, Pa.; William White, President Dry Dock, East B. & B. R. R. Co.; New York, N. Y.; B. Du Pont, President Central Passenger Railroad Co., Louisville, Ky.

**NOTICE.**—The next regular meeting of the American Street Railway Association will be held in St. Louis, Mo., the third Wednesday in October (the 21st), 1885.

### The Cable System of Motive Power.

The discussion on this subject at the meeting of the Association is given below. The committee's report in full will be found in our November issue, page 6.

Mr. Wm. Richardson: Reference has been made in the report to the originator of the system in San Francisco. In connection with that, it states that certain roads have been built since, namely, as amongst them, and as the latest, the Market street road. I would like to ask of the writer of that report, whether the Market street road is operated under the patent and plans of Mr. Hallidie?

Mr. Holmes replied: As to that question, I should like to say, first, as to the points in that report, I make no mention whatever of patents; second, that there has been instituted, as I understand it, by the parties who own it, a suit by the owners of the Hallidie patents against the Market street road, for the use of the patents which they claim they own. As to that, however, I do not know. There are a number of patents merged in the cable system, as to the merits of which I offer no remarks whatever. In drawing the report, as chairman of the committee, and at the request of the other members, I felt it my duty to make that report, and have done so without the least possible desire in the world to ask this Convention to use its influence in favor of a patent. It was simply to state to you a few simple facts, which are known to all intelligent people of the United States, that the cable lines in San Francisco have been operated successfully for the last ten or eleven years,

and it is very generally known that the lines in Chicago have been operated successfully for the last year or year and a half.

Mr. Sharp inquired: Is the Market street road in operation?

Mr. Richardson replied: I am speaking of the Market street road in San Francisco, which is mentioned as one of those which has been of the latest construction and successfully operated. It was mentioned in the report, that Mr. Hallidie was entitled to the credit of originating this system. I inquired whether the Market street road is not being operated under the patents of that gentleman. The author of the report says that the owner of the Hallidie patent has commenced a suit against the owner of the patent under which the other road is operated; therefore, it cannot be the same. I do not want to ask for names; I do not want to ask about any man's particular invention. I think the writer of that report has kept clear of that. I do not think he could very well have omitted mentioning the fact as to who was the inventor of the system. I would like to ask for information, and I ask it as one whose attention is drawn in this direction. I would like to inquire how many horses are now owned by the Chicago City Railway Company.

Mr. Holmes: One thousand three hundred and twenty-five.

Mr. Richardson: You say you have fifty-seven miles of track all told; are you engaged in further extending the cable system?

Mr. Holmes: Thirteen miles more will be, probably, constructed next season; we are preparing plans now.

Mr. Bolton, of Richmond: How much a mile does the cable cost?

Mr. Holmes: The cost of the cable itself is estimated at twenty-five cents a foot.

Mr. Wharton: What percentage of power is required to propel the cable?

Mr. Holmes: The total amount of power required for ordinary operation is four hundred and seventy-seven horse power. Of that, it takes three hundred and eighty-nine to move the machinery and the cable. The cable weighs two hundred and seventy thousand pounds, showing that the remaining eighty-eight horse power is used for the propulsion of the cars, of which there are two hundred and forty. You must remember the cable is in motion, and two hundred and seventy thousand pounds of cable in motion will tend greatly in itself to move the cars.

Mr. Sharp: How often is your road broken down, either through the cable or the machinery?

Mr. Holmes: The impression has gotten abroad that we have a great deal of trouble in that respect. I will say, directly to that point, that we operated our main cables for nine months, without a single moment's delay on any account. We had, a few weeks ago, a little interruption by the breaking of one of our cog-wheels. This interfered with our running a part of our cables a few days, and that is liable to occur in any machinery.

Mr. Sharp: How many days were you stopped?

Mr. Holmes: From Tuesday until the next Monday morning.

Mr. Sharp: How would you have got along if you had not had any horses?

Mr. Holmes: We should have hired horses in that case.

Mr. Wm. Richardson: I have read the report of the remarks of the gentleman, made at Chicago, and at that time he was asked about the length of service of the rope of the cables, which question, he said, he was not fully able to answer, from the fact of the shortness of the time they had been running, and that he expected that such and such would be the result. Another thing, as to the best size of cable to be used. I would like to inquire if the gentleman will have the kindness to give us this information now.

Mr. Holmes: We find, from the experience that we have had, that we can depend on the rope running without any flaws for the term of twelve months. As to the size, we find an inch and a quarter in diameter to be the most desirable size of rope. We have the Swedish iron rope. We used ropes of Swedish steel, of ten to twelve carbon. We have recently ordered from Germany an improved style of rope, which we hope will give better results. But this subject, gentlemen, is comparatively in its infancy, and experiments are being made all the time; improvements are being constantly developed.

Mr. Richardson: Do you not find that considerable damage is done in the catching on and letting go of the cable by inexperienced hands?

Mr. Holmes: We find by actual experience that old car drivers are the best. During the first month or six weeks that we operated, we had expert locomotive engineers. We supposed that they would make the best drivers, but when the car was stopped they would apply the grips too abruptly; we find the old drivers the best. I am ready to answer any question you may be pleased to ask me, gentlemen.

Mr. Richardson: What I want to know is, as to the amount of wear on the rope by the grip. I think I saw it stated a short time ago, that while the cable was going at the usual rate of speed, they could just as readily as not bring the motion of the car down to three miles an hour in case of necessity. Now, what I want to get at is, as to the effect of the cable passing through the grip at the rate of eight and one-half miles an hour, yet, by the action of the grip, the speed of the car is brought down to three miles an hour. Is there not there an intensity of friction which rapidly destroys nearly everything?

Mr. Holmes: The jaws of the grips are lined with a species of brass, and after it has been used for fifteen minutes, it would be as smooth and polished as glass. The rope itself is kept in a constant state of lubrication. At first we operated with wood in the place of metal, thinking that that would be less liable to crystalize the cables; but we found that the wear was worse on the cables. The wooden dies would wear on the cable much more, and the wood

would wear out quickly, especially after a shower. We find that this metal lining will give us 2,000 miles of service, and then it is necessary to replace it with a new lining. It costs one-tenth of one mill per mile to keep the grips lined up. We also have the pulleys lined with metal, so as to work easily on the rope. We find that it costs about fourteen cents a year each to keep these pulleys in working order. There is a small wheel at each end of the grip; the cable runs on these wheels when the car is standing still. We are running both systems. We find it costs just about one-half to move a car by cable that it does to move it by horses.

Mr. Walsh: What is the relative expense of operation, or cost of operation, between the cable and the horse-car?

Mr. Holmes: The cable can be operated for one-half; that is, the expense of operating the cable cars is one-half that of operating the horse-cars, for the same amount of service.

Mr. Richardson: Will the gentleman who has seen the operation of the cars on the New York and Brooklyn Bridge by cable state to us if there is any difference in the mode of operating the cars of his line and that of the Bridge? Can he illustrate it to us—the system upon which his cars are operated?

Mr. Holmes: There is a radical difference between the system on the Brooklyn Bridge, and that in Chicago and San Francisco. It lies in the grip. The grip is the focus point of the whole thing. Perhaps the gentleman is familiar with the grip on the Bridge? There are four wheels, and the cable is grasped by those four wheels. When the cable touches the wheels a friction is caused, and in that way the car is brought into motion. The effect upon the cable is just as severe as with the grip that we use. We have moved ten cars with one grip, loaded with a thousand people, in a single train, whereas, on the Brooklyn Bridge, it is found impossible, I am told, to move more than one car with one grip. They put on two cars, but they utilize more grips. If they changed their grip, they would do away with their locomotives, and handle all the people they would have to handle without any difficulty whatever.

#### LABOR AND THE GRADUATED SYSTEM OF COMPENSATION.

The Committee's report may be found in our November issue, page 7. Following is a report of the discussion:

Mr. Longstreet: I believe that this is the best system that can possibly be adopted. It gives every man an interest in the business. We certainly would not depart from it for a great deal.

Mr. Wm. Richardson: I would like to ask the author of the report, whether on the road of which he has charge, he uses any device for helping the conductor to keep a correct record of his fares?

Mr. Walsh: We use the fare-box and the register.

Mr. Richardson: We do not like to have anything on the car or used by the conduc-

tor that will shock his moral sense; but we have always considered that this was on the same principle as the merchant who sells goods. The money is received by the clerk, who calls out "cash," and it is given to the boy to be taken to the cashier or the bank teller, who has his account revised at night, and sees that his cash balances. I have always tried to instil this idea into the minds of conductors, that the man whether president, superintendent, inspector, receiver, conductor, or one in any other position in life, where called upon to handle money or do business for any other person or persons, who resents being watched by some legitimate system, is just the man who ought to be watched; and further, that the man who is doing his duty faithfully, whether to stockholders or under a superintendent, as conductor, if he is doing his duty honestly, wants to be watched, being satisfied that those who are interested will better appreciate his services, just for being watched and found to be honest. We are often met with the remark: "This does not make a man honest." Of course it doesn't. Putting a man in a cell in the penitentiary does not make him honest, but it greatly restricts his tendency to the commission of crime—so the register restricts the opportunity for peculation.

Mr. White: Mr. President, I think my friend is right; but, from my experience, I think it is necessary to keep up the moral sense of the community that ride in our cars. That is the thing to which we ought to give more prominence. We carry gentlemen in our cars—gentlemen of as apparent respectability as you who sit here before me—and who, while they would shrink from the crime of forgery, burglary, or anything of that kind, which would send them to state-prison, yet do not shrink from robbing you or me, and educating our conductors to be the most infernal scoundrels outside the state-prison. I might give you my experience in one particular instance; I found, on three night cars, which we were running for the public accommodation at a loss, that our receipts fell off to next to nothing. I put three detectives on the cars, whom I specially employed, and their instructions were to get on and go east and west, as the line runs, and on every half trip they should change. They were to give me the reports in the morning. Among other reports came one, that upon one half-trip, coming from the Pennsylvania Railroad Ferry, at the foot of Desbrosses street, there got on thirteen men. The conductor failed to collect any fares for a little way, and by-and-by came into the car, and said: "D—n the Company; I might as well have the fares as the Company." Every passenger on the car gave that vagabond five cents! I hold that every man should go to the penitentiary who robs the Company. I do hope, gentlemen of our common fraternity, that you will lift up your voices against that part of the community who lead on and help our conductors to become peculating scoundrels. If we are to keep our state-prisons free from conductors educated on street cars to be thieves, we have got to get some grip on the public.

Mr. Richards of Cambridge: All that Mr. White stated is so. I was told by the ladies, as the representative of the Company, that we have the meanest company on the face of the earth; that we were keeping our conductors and drivers at work too long. Of course when they had said that, they had forgot that the middle class existed. All that Mr. White has said about the people who ride on the cars is actually so. I hold that the conductors are not one-half as much to blame as the class referred to, who call themselves respectable, who attend our churches, and who are ready at any time to ride upon a transfer-ticket twice.

Mr. Richards of Boston: I certainly listened with a great deal of pleasure to what Mr. White said. I suppose it is a matter of fact that our experience is about the same. We are simply dealing with the public. My experience is, that they are the same wherever you find them. As for the various devices that we put into the cars, I never found much difference in them. I have never found but one register, or heard or saw but one, that I would give any amount of money for its patent, or its use. I was sitting in my office one day, busily writing, when a Catholic Father came in to see me, and laid quietly on my desk a one hundred dollar bill. I asked him what that was for. I could not conceive how it could be for me. He said, "That is for your corporation; it belongs to you." "Who is this from?" He raised his hand and simply shook his head and went out. Our old Treasurer, who has been there thirty or forty years, said to me: "We often have that happen; that, undoubtedly, comes from some old conductor who is on his death bed, and that is his confession to the priest, and he is obliged to make restitution, and that is the money." Mr. Chairman, there was a register, planted in here—indicating the heart—by God Almighty, and until we can appeal to that and make that work; until we can appeal to the moral sense of these men in some way, and as Mr. White has said, until we can draw away from them the influences which make them do wrong, all the registers and bell-punches will avail as helps to honesty only. We must bring these men to believe that taking the company's fares is stealing—is theft. The worst part of our duty, as my friends here will bear me out, is when some poor trembling wife, or mother, or sister comes to us, imploring that the discharged conductor be taken back, and in the rigor of our position, we have to say to the dependent one: "You must go; you must go;" and when, with tears streaming down their faces, they appeal to us and say, "For God's sake, what shall I do? Do not discharge my son," or "my brother," or "my husband," as the case may be; when they appeal to the most tender sentiments that animate us as men, then, I think, in refusing such applications as these, we have performed the worst part of our duty. Unfortunately, I have a great deal of that to do; and yet my duty, if that man has done wrong, and has been shown to have done wrong, determines me to carry out the rule, which is embraced in

and spread upon our records, that no man, once discharged from our road for stealing, shall be taken back under any circumstances. If the influences which send that mother or sister to us, if the purity and the better and higher thoughts which send that mother or sister to appeal for him, would animate him, we should have no stealing. I have little faith, gentlemen, that we shall ever find anything that will make men honest. I agree entirely with Mr. White, that there are a great many men who are ready to steal five cents from a railroad, that would not steal five dollars in any other way. They seem to think it cunning and nice to do what they call "beating" the Company or the conductor. There is that public sentiment underlying the community, which seems to make them ready to do that under all circumstances. I admire the denunciation of Mr. White, and wish that his remarks could resound from one end of this country to the other, and throw back this assertion which is made against us, and say to the public at large, "You, yourselves, are largely the cause."

Mr. Wm. Richardson: I have listened with interest to the gentleman who has just spoken. If he can stand all the beseeching of the wives, sisters, or mothers of the discharged conductors, and after listening to their appeals, say no; he can do what I have never attempted to do. When I say to them, It makes me think very meanly of your husband, or brother, or son, or whoever he may be, that he sends you instead of coming himself, it generally brings out the protest: "He did not know anything about it." Then I say, I am willing to tell *him* very plainly what he is discharged for. I give them to understand that they must excuse me from dealing with them. But, sir, I believe in a great many cases our drivers are responsible for the dishonesty of our conductors. The conductor is appointed; he goes to work for his wages. The driver comes to him and says: "Ain't you going to stand treat? I want a piece of pie; I want a cup of coffee." The driver gives the conductor to understand, in a very plain way, that the piece of pie, the cup of coffee or the cigar, he expects him to pay for; and the conductor thinks that what he gets for the driver he ought to get for himself, and before he knows it, he is right into it. As Mr. Richards said, these things—register or punch—cannot make a man honest; but they very greatly restrict his propensities for being dishonest; and they are a safeguard to the young conductor. He can more firmly say to the driver: "I am not going to steal for myself, and I will not steal for you." In the old times, before we had these things, it was the general thing for the driver to expect something from the conductor. I do believe that it is very necessary for us to have something in the way of a check on our conductors. I have very little choice in regard to many of these things, but I think that anything is better than nothing, that shall operate as a check on the conductor or safeguard on the dishonest man.

Mr. Hasbrouck: We have fare-boxes on

our cars only, and no conductors to debauch or be debauched by the public. I rise simply to say, we have some drivers who are also conductors, who have been in the service of the Company from its organization. They were old stage-drivers for the Company which we succeeded, and I would trust them with untold gold. They think as much of their teams as if they owned them, and they have been with us now for twelve years. They are men of family, and consider themselves as part of the concern. I do not believe they would steal a nickel any more than cut off their little finger. Perhaps I am mistaken, but I think not.

Mr. Arnold, of Salt Lake City: Our plan for collecting fares is that we simply trust our drivers. We run short cars, which are called "bob-tail" cars. We have run our cars twelve years. We have never had a fare-box or any other check. When the times are anything like good, we have good receipts; as high as thirty dollars a day. Still, I think I will adopt a fare-box; but, as I say, we have never had any check of any kind. I know that some of our drivers are just as honest as the day is long. I have had some drivers since the road first opened. I do not believe that they ever took a nickel. I have known from passengers that ride on the cars that have tried to tempt them. We get along very well. Our regular single fare is ten cents. We have reduced that, however. That is the only fare we had the first three years. We have reduced it to four tickets for twenty-five cents, and twenty for a dollar. We have no other prices. When we put on the fare-boxes, we will charge the uniform fare of five cents. I think when you trust entirely to their honesty, and try to select the best men you can get, you can do a great deal better than with something insufficient. As to having a check, just as soon as you begin to watch the conductor, he gets suspicious, and he does not do as well for you. I have found out that to be the case where we have tried to watch men. I think only in three instances I have had to discharge a man for dishonesty. That is in over eleven years.

Mr. Cleminshaw: We find that the honest men will not object to being watched. We offer an invitation to an honest man to become dishonest under the old system, where the money went into their pockets, without any device whereby the number of fares collected was registered. I have talked with conductors who have been reported or discharged, and they have told me how they first commenced. In some cases it was buying an apple, getting a newspaper or buying peanuts. They commenced in that way. I think the best system, and the only system, is to well watch all your employees.

Mr. Humphrey: Mr. President, I have been in this business three or four years. I do not know about watching at all. I have this impression, that it is the best thing you can do, to get honest men, if possible. I like to go back to their ancestors; to know whether they come of good stock. I can prove that men riding in our cars, supposed to be honest, and you would take their word anywhere in business, will cheat you

out of a fare; that is one thing which I learned of the community since I touched horse cars. I did not believe that the public were such scoundrels, to get in and try to cheat you out of five cents. So far as our fare arrangement goes, it would be impossible to put any check on the conductors, because we have eighteen different fares in running seven miles! [Great laughter.] So you can judge what a conductor has to contend with, and we all have to contend with.

Mr. Richardson: What do you charge for the seven miles?

Mr. Humphrey: For seven miles, when a man pays his fare in cash, seventeen cents; when he gets tickets, fifteen cents; children, half price. A little further down towards the stream, five cents; and so it goes, all the way through—different prices. I was thinking last night about keeping accounts, when the report on "A Uniform System of Accounts" was being read. There were so many different accounts in the report, that I concluded if I had to keep accounts in that way, it would be necessary to keep a force of clerks to keep our fares all right. I will tell you what I do: I use a register; I require a man to register every fare collected. I know then how many passengers he has carried, and then they have the trip-slips. They take cash fares at a certain point, six cents; the next point, ten cents; and the next, seventeen cents, for which they have slips. Then there are the half fares. Then comes in what we call a "steamboat fare," if the trip is made in the day time. When we run late at night, as we have to run sometimes, we get a double fare. It requires a little common sense to get that all through your head. If any of you will call on me, I will be pleased to show you how we do it. I have got honest men; good, honest fellows, and I find out who bred them! [Laughter.]

Mr. Richardson: In New York and Brooklyn we have at least learned this: Not to go too far back in the ancestry of our men. This much is true—it would not do to say that the conductors of our friend Humphrey are not skilled laborers. [Laughter.]

Mr. Parsons, of Philadelphia: Honesty is such a rare material, not only with conductors, but with others who handle large sums of money, I would like to know, as a matter of information, where these honest conductors are drawn from. I have no doubt that there are men employed as conductors, who are as honest as the sun ever shone upon. I have always found that four-fifths of the public are in sympathy with the conductors, and the other fifth does not care either way. It is only from a system of watching and checks that any result is satisfactory to the management or stockholders. I often heard it quoted that there are three things that are easy to run: "A railroad, a hotel, and a newspaper." I have heard men say: "I should not suppose you wanted men of experience around you."

Nine patents for street railway appliances were granted in May.

### "Spinal Meningitis" in Horses.

At the last meeting of the American Street Railway Association, Mr. White, on request, gave the following as his method of treatment for this disease:

This disease is an epidemic. In New York city, within a few years, it has done a great deal of mischief. In our own stables at one time, we had over sixty cases. The course of treatment, at that time, was belladonna treatment, which proved a sad failure. Since that time, we have had in our stables cases which have not been epidemic. It occurs when we have our most sudden changes of weather. I think it most always ensues upon a weakened condition of the animal, and from sudden changes in temperature, with a little too much work and a little increased strain in a debilitated condition. I turned my attention to some other mode of treatment. I found that a remedy used in human practice was tincture of gelsemium. One day, while reading a scientific work, I found, in connection with the treatment of sciatic troubles, that they had used chloral hydrate. This, exposed to the air, becomes liquid; and it was used with a camel's-hair brush on the sciatic nerves. Leave it in that condition, it was absorbed, but on covering it, a blister would ensue; so, I thought the matter over, and with these two facts presented to my mind, I treated the next case of spinal meningitis which we had, according to my own notions. In the meantime I procured some chloral hydrate and tincture of gelsemium, and consulted a medical work, and found the dose given to a human being, and then I was prepared for the next case. My treatment is as follows:

On the first symptoms of weakness in the hind parts, take the animal from work, put in a quiet stall and place in a sling. Take a good scrubbing-brush, and rub the articulating joints and spine well. Powder one ounce of chloral hydrate and sift it over the spot rubbed; put on two or three thicknesses of paper, and pat the powder to the skin through the hair with the brush used; mix in a pail some good fresh ground mustard for a paste and put over the spot just treated, and cover with a newspaper cover; paste the hind legs to the hocks with mustard, and when legs get warm, wash off and hand rub and bandage well, but not too tightly, with flannel bandages four inches wide, in rolls; give at once fifteen minims of fluid extract of gelsemium, and repeat hourly until the eyes show its effects, when this may be stopped. Give an active cathartic ball, and attend to drawing the water with a catheter. When the ball has operated, give for three days three doses of sulphate cinchonidia forty grains; then thirty grains and twenty grains each for three days; then a few grains, with the usual gentian tonic. Feed any nourishing food the horse will take, clean out all not eaten, and try anything to tempt the appetite. Keep in slings until strong enough to get up and lie down without help. Keep the chloral in ounce bottles ready for use, for all depends on promptness to ensure quick recovery.

I find, as a matter of experience after seven years, that we rarely have a horse we cannot put to work at the end of a fortnight. My own experience leads me to say, I would rather have fifty horses suffering from spinal meningitis than five suffering from epizooty.

In this treatment, it is often necessary to draw the water with a catheter. I have found that to be often the cause that produces paralysis of the bladder, and leaves the horse in a helpless condition. In using the slings, they must be of adequate breadth; and the slings should be of sufficient width as well as length, that the horse may be kept in a comfortable condition.

Mr. Elijah Whitney fully concurred in the course suggested. According to his experience in the use of the gelsemium, it is one of the best remedies in such cases when administered judiciously, and in proper doses. Its action is very prompt and energetic, and requires special care in its use. In combination with *veratrum viride*, or some other appropriate remedy, such as indications require, its happiest results may be obtained with speedy relief and prompt cure.

### The Song of the Open Car.

Oh, what delight,  
On a soft June night,  
To ride in an open car!  
You can stand the expense—  
It's only five cents—  
No matter how poor you are.

Just five in a seat  
Make the fare complete  
When you ride in an open car:  
But some people green  
Will stand in between,  
And so get un-pop-u-lar.

In the three rear pews,  
You may smoke if you choose,  
'Tis the rule of the open car;  
But you'll hear, I'm afraid,  
Some fussy old maid  
Say, "Oh, that horrid cigar!"

See the maiden fair,  
With the rippling hair,  
As she jumps from the open car;  
With her face to the rear,  
She goes off on her ear,  
Like a sky-rocket shooting star.

But enough of this song,  
It's getting too long,  
This song of the open car;  
The very next verse  
Might be very much worse,  
So we'll stop right where we are.

—Somerville Journal.

### Change in Public Opinion.

Commenting on the Broadway road, the *Brooklyn Eagle* says: There seems to be an absolute unanimity of opinion as to the practical working of the road itself. In a single day men have become of one mind through the testimony of their eyes, and the protracted hostility to what is a demonstrated and enormous improvement, is a curious commentary on the shortsightedness of a class who have gained a reputation for conspicuous shrewdness—the merchants of the metropolis. The Broadway retail shopkeepers, with that phenomenon of success, the late A. T. Stewart, at their head, fought the railroad with a fatuous determination which seems incredible.

Stewart said that the street would be blocked by the cars and made impassable, although he could see daily for himself that the confusion was caused by the slow and lumbering omnibuses which he insisted upon keeping there; while, as appears to-day, the swifter cars, confined to a narrow channel, not only make no block themselves, but actually clear the way for other travel. He said that pedestrians, if tracks were laid, would be afraid to cross the street, his dull eye refusing to see that the lawless and vagrant stages were a constant menace and terror to women and children and even to men. He said that private carriages would not and could not draw up at his store if cars were put upon the street, although as he drove uptown he passed the doors of his rivals where the finest carriages in the city could be seen while cars constantly ran by; and although on some thoroughfares these rivals and successors are in the full tide of prosperity, with an elevated railroad in front whose rush and clatter they would now on no account remove. Stewart and those who agreed with him—as almost all the Broadway shopkeepers below Fourteenth street did—opposed the railroad because it would drive off their trade. Their opposition succeeded. The stages remained, but the trade slipped away. Looking at the matter from the vantage ground of a later day, it is hard to conceive that these business men could have made so tremendous a mistake.

Every one of their objections was conclusively answered in the busy hours of a single day. There was less noise than ever known on a week day. There was no block. The traffic of the street by the cars and by other vehicles, was conducted with astonishing smoothness, swiftness and order. When it is remembered that what surprised and delighted the Broadway wayfarer yesterday was not an elevated road, or in any sense what is known as rapid transit, that it was a means of travel in city use for more than thirty years simply employed in the place where it was wanted, there could not be a better demonstration of the folly of defying the plain rule that methods of travel, new or old, should follow the natural and established lines of travel.

There are those who believe that even the horse railroad may restore to the lower part of the great New York highway something of its old character and business. Perhaps it is too late for that; but it is not too late for us of Brooklyn, provided we lose not another hour, to profit by the lesson of Broadway.

If some clever writer, whether of fact or fiction, is hunting for a subject with a flavor of old time and yet with a present interest, let him now put together the "Diary of a Broadway Stage Driver" or something to that effect. It would afford wide scope for description and reminiscence, and scores of lively stories could be woven from the glimpses a driver gets of his daily passengers, their tastes, habits and caprices. We charge nothing for the suggestion except, if the work be really good, that we be allowed advance sheets for purposes of making extracts, says the *Commercial Advertiser*.

### Citizen Train on Tramways.

[It was supposed that Citizen Train lost his Tramway Millions when, a quarter of a century ago, he sacrificed "Millionairedom" for the Union? but he claims that Oakey Hall says he is still entitled to his tramway royalty!

An exchange of Postal Cards resulted in an interview which makes the spicy Introductory to Citizen Train's "History of Street Railways through Cosmos," promised for the STREET RAILWAY JOURNAL! (provided "Psycho-Affinity" is strong enough to draw copy from Madison square? As G. F. T. is nothing if not original, we type him as he talks!]

STREET RAILWAY JOURNAL. Though your postal card evades us, saying you will not be interviewed, perhaps you will pencil us (as the children whom you love so dearly, and whom alone you permit to "interview" you, are not yet out of school,) a Yes or a No to the paragraph in our April issue, concerning attitude of Louis Napoleon when you undertook to benefit Paris by street railways?

G. F. T. If you will take a seat on that bench over there (some 20 yards away) and pencil your questions, I will gladly answer so courteous a journal! The silence of the press on what Cosmos wishes to know, ("Psycho-ism") is most remarkable event of "Typo Age." Yes That Napoleon story of Paris is true! He was a thick-headed, stupid old man, who showed his Balloon Force at Sedan ("falling on his sword,") and in allowing his Doctors to hack him to pieces at Chiselhurst!

#### Success, Not Failure?

STREET RAILWAY JOURNAL. This paragraph from an English exchange suggests failure rather than success in England? The success was in sowing the seed, we thought, though others reaped the harvest:

Tramways are rapidly increasing in number and popularity in England, and yet when George Francis Train tried to introduce them some years ago he encountered the bitterest hostility! In London street railroads are not to be found in leading streets, which, indeed, are too crowded for them. The rails are laid down with much greater care than here, but it is beyond dispute that carriages suffer!

G. F. T. Yes! I lost them fighting for the Union against all Europe, (*vide* Peterson, five vols., "Union Speeches," '61-2?) and getting into Dozen Jails!

JOURNAL. Have you copies of your Street Railway Publications when introducing Tramways (in 1860) in Europe, Asia, Africa, Australia and South America? I hear that the *Engineer* credits you as "Pioneer and Argonaut" of the Street Railway system in foreign lands?

G. F. T. Yes! My late private secretary for two decades (living now I believe in Omaha,) has all these works! I have a thousand Auto-letters from notables in Europe (ten auto-books) endorsing my "Tramway Boom." But your space is too valuable for details! Some other time if you like I will type "History of Street Railways" for your JOURNAL? (When "Psycho-Affinity" commands?)

STREET RAILWAY JOURNAL. As we keep

posted on Street Railways the world over, you may not have seen how great is your English success at the end of twenty-six years. These official figures show Tramways are becoming popular in Great Britain. The length of line open for public traffic, 1884, is given 752 miles, against 671 miles, 1883; and number passengers 1884 was 330,794,405, against 295,721,171 ending June 30, 1883. The total capital paid up 1884 was £11,008,121, against £9,929,789 in 1883. On how much could you reckon up your claims for royalty when you chose to present your bill? It is said that Oakey Hall in his *Brooklyn Eagle* letters asserts your claim to be good.

G. F. T. Oh, yes! "Psychos" never make mistakes? "Promoter," (as well as Patentee). My rights flow on like the beautiful river. Five hundred pounds royalty per mile was what I got for Darlington, Staffordshire, and Birkenhead roads! And Marble Arch, Victoria Street, Kensington Gate, and Westminster lines in London! On 800 miles completed, my share is four hundred thousand pounds! (Two Million Dollars.) But what could I do with so many stamps? Yes! only score of years ahead of time. Ask Geo. Augustus Sala if my claim is not *bona fide*?

(Why not collect this for Palace Home of street railway laborers, conductors, drivers, who will come to grief? See *New York Herald*!)

JOURNAL. What year was your debate with the British Association (the late Lord Derby in the chair) at Oxford, on the "Introduction of Street Railways into Europe?"

G. F. T. 1860! What changes since then! Yes! If you some day wish to refer to my address I will send for it. But my speech on opening Birkenhead Railway in August, 1859, you will find in full in *New York Herald* about middle of September, that year! It foreshadowed quarter of a century progress which you describe in STREET RAILWAY JOURNAL.

Yes! All my lines are now running, though ripped up then! The Birkenhead road alone stood fire? Even our old car factory at Birkenhead is still under way (like Stephenson's concern), employing several hundred men and furnishing cars for all the world! Its chief is my old Australian clerk of 1853, and English partner of 1860, George Starbuck, Jr., an American from Nantucket! Here are official figures of growth of ideas there since I sacrificed five millions to checkmate Yancey, Lord John Russell and Napoleon in acknowledging the Confederacy!

#### Too Late for Cheers.

Approbation and sympathy  
I courted long! They never came!  
And then I roamed through land and sea  
And forced Cosmos to honor name!  
(In enterprise of Manhood, Fame?)  
And now that Fame in cheers come round,  
And friends are coming far and near,  
My ears are deaf to hollow sound,  
That echoes Falsehood's Demon cheer!  
Cosmos cut off! *Too late! Too late!*  
The world not I is desolate!  
That little baby talks to me  
Life language that I understand?  
And when I press its little hand  
'Tis "Lifehood's Electricity!"  
(The freedom of true Liberty?)

### Wonderful Progress?

STREET RAILWAY JOURNAL. Do you note any great improvements in street railways? any important changes since your Birkenhead road in 1859?

G. F. T. Yes and no! Fall in cars and rails  
Of course is change! The price of Cars  
To one-third off, of rails one-half!  
But no Street Railway ever falls  
To keep up with the Telegraph  
In far off towns (of stripes and stars),  
Two hundred millions every year  
Use surface roads here in New York,  
(And hundred millions on the "L,"  
Besides, who do not care to walk,  
Where Rapid Transit rings the bell!)  
Just think of it? In Canada  
And States Five Hundred Street Railway  
Companies make dividends pay,  
Labor for driver, horse and car!

Some forty thousand working men  
Employed, some Twenty Thousand cars!  
One hundred thousand horses make  
An army! Three thousand miles bars,  
(Atlantic to Pacific sea)  
To represent rail energy  
And success what men undertake,  
To enterprise street rails again!  
Fourteen hundred millions each year  
Passengers on our railways here!  
Two hundred millions money spent  
To iron rail the Continent!  
Two hundred thousand tons of hay,  
And twenty million bushels grain  
To feed street railway stud to-day,  
Each year to add to labor gain!  
These changes are astounding facts  
To mark the JOURNAL's railway tracks!

#### No Bell Punches Then!

STREET RAILWAY JOURNAL. You did not, I suppose, invent the "Bell Punch?" (That is a decided change?)

G. F. T. No doubt! Stamp a man with Stripes and he will see Stars. This is "age of spotters." Everybody is watching somebody!

I said "No change!" "No change!" Oh, yes!  
In ways and means to watch the change.  
In checks and points to score success,  
By giving Cash Box closer range!  
New system confidence bereft,  
Organizes Street Railway theft!  
No "Alarm Register" to tell  
Its tale when I first started cars!  
No "Automatic Alarm Bell!"  
No "Fare Collector" (behind bars)  
"Self-made conductors" were unknown  
In Auld Lang Syne! "Bell punches" then  
Were rare (as "spotters" on the men!)  
Apply same "Rules" to "Rings" and "Boards"  
To corporation "Chiefs and Kings,"  
And "Private pools of public borders"  
Might dividend shareholder Rings!  
(With "Punch Bell Change" in changing things!)

Street Railways had no Infancy!  
Same Cars and Rails are used today  
I introduced! John Stephenson  
Made my first Car! His Industry  
I imported at Birkenhead  
Where Cars are built (on his Platform)  
And now they build them there instead!  
(Where Dividends are sure to pay?)  
Both kinds of Rail as Patentee  
And Cars I used! (What History?)  
Please interview John Stephenson  
(Johnson just passed my Beach in Square)  
Whose Railway Car (last page upon)  
Exactly Copies Car sent there?  
Changes indeed? Your Journal shows  
(Type! Paper! Editorial Brains!)  
How rapidly Street Railways grow  
(Dozen "Ad" Pages of Railway Trains)  
Rail Enterprise and Energy  
Street Railway typed both sides the Sea!

STREET RAILWAY JOURNAL. Just one more question! What year did Napoleon shut you out of Paris?

G. F. T. Just quarter of Century ago (one fourth one hundred years)! See my

book (illustrated) in French, on Street Railways, 1860!

Ask Olive Logan (Mrs. Wirt Sykes)  
 Then Mrs. DeLille! (Friend of Moequard)  
 What Louis said about my car  
 Stephenson made! (and Czar's dislikes?)  
 See James McHenry (with me then),  
 The livest of our Railway Men?  
 Count DeMorny endorsed my plan  
 (And Walewski and Persigny?)  
 But Bonaparte was not the Man,  
 Though I was backed by Eugenie!  
 Paris is "Cosmos Ville De Luxe"  
 (He said) "We want no 'Yankee Spooks'!"  
 Yes! Europe! Asia! Africa!  
 Australia! South America!  
 Credit "Street Railway Boom to Me"  
 As Argonaut and Pioneer  
 Of "Cosmos Tramway History!"  
 (As in your Journal Courtesy!) G. F. T.

**The Broadway 'Bus.**

The New York *Tribune* soliloquizes sensibly, as follows: "In a few weeks the Broadway 'Bus will be but a memory. At the edict of Jacob Sharp it will have faded into the limbo of the past, and have become a subject for the folk-lore of the future. Yet this imminent change need not evoke gloomy thoughts. The Broadway 'Bus, to say sooth, can well be spared. In fact, it could have been spared some time ago; and there are those who go so far as to maintain that its room would have been better than its company at any moment since its first introduction. For it must be acknowledged that the Broadway 'Bus is not a Thing of Beauty. It combines more ugliness and discomfort than were ever crowded together in one vehicle. During all the years it has lumbered and rumbled down Broadway it has elicited the liveliest expressions of amazement from strangers within our gates—amazement, for the most part, that so progressive and inventive a people should tolerate a mode of conveyance as far behind the age as an old mail-coach is behind a Pullman drawing-room car. Of all kinds of public conveyances ever devised it is the most clumsy and inconvenient.

The passenger is almost sure to knock his head both getting in and out, and if he does not also tread on the feet of his fellow-sufferers on both occasions he and they may congratulate themselves. The arrangements for shooting passengers out into the mud suddenly are unsurpassed, unless it be by the facilities for compelling them to plunge wildly forward toward the horses when they enter. The Broadway 'Bus is cold in winter and stuffy in summer. It has a perennially frowsy smell; a flavor of remote antiquity; of the strange period when people used straight, hard-seated, high-backed chairs, and otherwise mortified the flesh in their domestic arrangements. Its exterior always suggested the idea that the inventor of the machine had designs for a circus band-wagon floating through his powerful mind when he conceived this chaste and unique creation, and that these reminiscences were fused with hazy glimpses of the decorations of a dime museum. But he repressed these vagrant fancies, and confined the working of his artistic imagination rigidly to the ornamentation of the external panels. No hint of comfort or convenience was per-

mitted to interfere with the grim realism of the vehicle as a whole. The Broadway 'Bus may be said to have typified that awkward period of the Republic's adolescence when it was thought necessary to advertise our democracy in all ways and when somehow the admission of any concession to public convenience was thought to savor of bloated aristocracy.


In fact the Broadway 'Bus perpetuates the *sans culotte* cra of the great American Republic; an interesting but yet a raw and crude time, when we were still not accustomed to our own institutions, and were inclined to suspect all the world of looking askance at us. All that feeling has passed away, but the Broadway 'Bus has remained as a landmark and an anachronism to remind us of bygone days. And yet, though there never was such a grotesque old rattle-trap, and though its name will go down like that of the piratical old party mentioned by Byron, "linked with one virtue and a thousand crimes," no doubt there are many New Yorkers who will regret the disappearance of the familiar vehicle, and will fondly recall the associations with which its noisy career has been bound up. What, too, will become of the Broadway 'Bus drivers?

Will they take office under Sharp? Will they ring up fares on the new surface railroad, instead of knocking them down on the high boxes of their old stages? Or will Sharp found a Home for Decayed 'Bus Drivers, and allow them to end their days peacefully driving the last of the Broadway 'Busses round and round in the back-yard, and tumbling one another out in the mud after the good old fashion? We know not how this will be, but it is certain that the days of the Broadway 'Bus are numbered, and that before autumn puts on her splendid robes of gold and russet and crimson the place that knew it shall know it no more."

**Elevated R. R. Smokers.**

The good people of Brooklyn seem not a bit "backward in coming forward." An item in the *Sun* says: "A petition, signed by several hundred patrons, has been presented to the Elevated Railroad Company asking it to place a smoking car on each of the trains." Well, if the Elevated Railway Company comes to the conclusion that the introduction of these luxuries will pay it in gold dollars and cents, very probably the petitioning patrons will get what they want. But it does look very much as if Mr. Jacob Rehm knew what he was talking about when, sometime last winter, he told a Chicago reporter that if you give the public one accommodation it was sure to demand another; "if you heat the cars, the next thing they will want is Axminster carpets and satin cushions." Who can tell that, having got their smoking cars, the Brooklyn petitioners will not demand dining cars and buffet cars on the line. Strange, what a sense of proprietorship the payment of ten or twenty cents a day will start in imaginative minds; and yet, there is a long, long difference in definitions between the terms "patron" and "proprietor."

**Brake Rod for Street Cars.\***

The object of this invention is to prevent the breaking of treet-car brake rods, and it consists in a brake-rod made with a  bend at its rear end. The brake-beam is placed upon the short arm of the brake-rod, and the two arms are connected at the forward side of the said brake-beam by two links, so that the bending of the rod from the turning of the brake-beam will be made to occur in the body of the rod.

Heretofore the brake rod has been made straight and passed directly through the brake-beam, and the constant jarring crystallized the iron, and thus made it brittle, so that when the brake was applied and the brake-beam was raised and turned by the friction of the brake-shoes against the wheels, the tendency of the brake-rod to bend at the forward side of the brake-beam and the weakening of the rod by the screw-thread caused the said brake-rod to break at that point.

\* Matthew Van Tassel, 86 Woodbine St., Brooklyn, E. D.

**Correction.**

MESSRS. EDITORS: We note in your issue of June, the statement that the contractor for the Broadway Surface R. R. is Wm. Wharton, Jr. This is an error, we being the contractors, and Mr. Wharton, as an officer of this association, is looking after our interests in New York in the matter of this contract and others which we have there. Mr. Wharton is not in business on his own account in any way, nor has he been since 1881. You will be good enough to have the necessary correction made, and oblige,

Yours truly,

WM. WHARTON, JR., & Co., Limited.  
 PHILADELPHIA.

[The item alluded to was printed as furnished us. Had Messrs. Wm. Wharton, Jr., & Co., Limited, been kind enough to furnish the information themselves, the error would not have occurred. Ebs.]

**Recent Patents.**

The following list of patents relating to the street railway interests, granted by the U. S. Patent Office during the month of May, 1885, is specially reported by Franklin H. Hough, solicitor of American and foreign patents, 925 F street, N. W., Washington, D. C.:

- 317,394.—Car starter—J. Lowbridge, Allegheny, Pa.
- 317,085.—Cable railway—G. B. Bryant, Philadelphia, Pa.
- 317,008.—Cable railway—J. H. Pendleton, Brooklyn, N. Y.
- 317,086.—Cable railway grip—G. B. Bryant, Philadelphia, Pa.
- 317,139.—Cable railway mechanism—T. L. Johnson, Cleveland, O.
- 317,140.—Cable railway system—T. L. Johnson, Cleveland, O.
- 317,282.—Street railway switch—O. Bangs, New Haven, Conn.
- 318,274.—Street car—W. D. Mayfield, Fort Worth, Texas.
- 318,717.—Street car driving gear.—F. G. Freese, Philadelphia, Pa.

### Street Railway Insurance.

Senator Daggett's bill (Senate Bill 309), of which we gave the full text in our last issue, page 166, has at last (June 9) received Gov. Hill's signature, and by the provisions of the act, the American Street Railway Mutual Insurance Association has now a corporate existence. The incorporators are William White, Pres., Dry Dock & East Broadway & Battery R.R. Co., N. Y., and member of the present Executive Committee Am. Street Ry. Assn.; Chas. J. Harrah, Pres. of The People's Pass. Ry. Co., Phila. and member of present Ex. Com.; Jas. W. Foshay, Pres. Broadway & Seventh Ave. Ry., N. Y., and last year Pres. N. Y. State Street Ry. Assn.; Calvin A. Richards, Pres. Metropolitan R.R. Co., Boston, and now Pres. of the Amer. Assn.; William H. Hazzard, Pres. Brooklyn City R.R. Co., and now 1st Vice Pres. N. Y. State Assn. and member Exec. Com. Amer. Assn., last year Pres. Amer. Assn.; D. F. Longstreet, V. Pres. & Gen. Man. Union R.R. Co., Providence, and last year V. Pres. Amer. Assn.; Wm. Richardson, Pres. Atlantic Ave. R.R. Co., Brooklyn; Alex. H. Davis, Pres. Louisville (Ky.) City Ry. Co. (of which road H. H. Littell, the first Pres. of the Amer. Assn. is Gen. Manager); Charles Clemenishaw, V. Pres. Troy & Lansingburg R.R. Co., Troy, N. Y., and now Pres. N. Y. State Assn.; Samuel Little, Treas. Highland Street Ry. Co., Boston; Hon. G. Hilton Scribner, Pres. Cent. Park, North & East Riv. R.R. Co., N. Y.; Thos. Lowry, Pres. Minneapolis & St. Paul Ry. Co.; Henry M. Watson, Pres. The Buffalo (N. Y.) Street R.R. Co., and now 2d V. Pres. Amer. Assn.; John B. Parsons, Pres. Lombard & South St. Ry. Co., Phila.; and Wm. J. Richardson, Sec. The Atlantic Ave. R.R. Co., Brooklyn, and now Sec. & Treas. of both the Amer. & N. Y. State Associations.

The standing of the corporation is thus assured beyond cavil by the prominent positions of the incorporators, and we take pleasure in commending it to the confidence and support of our readers.

The varying insurance laws of the different states made it absolutely necessary that the corporation should be chartered under the laws of some one state, and as the recognized authority in such matters of the N. Y. State Superintendent, Hon. John A. McCaull, places the standing of companies chartered under the laws of this state higher than those chartered elsewhere, New York was preferred by those interested. The idea of the institution, however, is to make it National in scope, and it is thought that it will be able to save a great deal to the street railways.

The present rate of insurance on street railway property ranges from 75 cents ( $\frac{3}{4}$  of one per cent) up to five per cent, while the total losses—basing the calculation on reports from 190 companies—have not averaged one dollar in three dollars of premium paid in. It is readily seen that a mutual association could effect a saving of at least 50 per cent to those interested.

Another feature worthy of note is the absolute stability of the capital, which cannot

fall below \$500,000.00, and which it is anticipated by the projectors of the enterprise will cover the legal limit of two million dollars when once the methods and plans of the institution are understood. The lowest legal limit for other insurance companies in New York and Brooklyn is \$200,000.00 capital, and it does seem somewhat ridiculous for street railway companies with a property running up into the millions in value, to insure with concerns whose entire capital stock could not repay the loss of a single item of losses on stables.

### Light Shades vs. Dark Colors on Cars.

At the Master Car Painters' Convention, the economy of painting cars light instead of in the, at present, more fashionable dark colors was strongly urged. Painting being so considerable an item in the first cost of a car, and it being a protection to all other parts of the work, it must be watched carefully and treated at the proper time. Twenty-five years ago, most cars were painted a light color—yellows of different shades being generally used. White lead was the foundation and the finish of the car. But a change came in the color of cars, competition brought out new colors, a ground work was introduced for the sole object of setting off the decoration on the outside of the car to greater advantage. Economy was not thought of; but a change was made from the straw colors to the umbers or darker shades, which involved an expense of one-third more in the first cost of painting, while the life and service of the car was one-third less than it had been with the light colors.

Just as soon as a change is made from a lead finish to any of the popular shades, such as umber brown, chocolate, Pullman color, olive and Quaker green, Tuscan red, or, in fact, any color where no lead enters into the mixture, we lose at once the wearing quality, for it is the exposed surface of a paint that tells. This is the protection to the entire body, and a lead foundation will not help the finishing color if composed of the pigments we have named, but carry the lead all through and we have a durable surface; we have a car that will pay for the labor expended on it. No other pigment bears more oil than a pure white lead; pure linseed oil combines with it better than with any other of the vegetable or earth pigments. A lead pigment is more durable and forms a denser coating than any other employed in the paint-shop. A solid body, and one that has depth to it, is the main object in a paint. A coat of Tuscan red may have coloring-matter sufficient to cover the work, but that is simply a stain; there is no wear in it; lead gives a solid foundation, and will hold out the varnish well on its surface.

Heat is the great enemy of paint, and such colors as are in general use on cars draw the sun's heat, which burns the oil and the life out of the varnish and paint. By repeated tests of light and dark colors, we find that white presents the coolest surface in a hot sun, and black the hottest. A grad-

ual scale may be run up, and the heat-absorbing power increases as the colors become darker, the effect being to expand and soften the darker colors. A continual heat would make the paint and varnish elastic, and while in this state, were it suddenly exposed to cold air, the contraction would crack the painted surface; but take a light color and put it to the same test, and we find that it does not draw nearly the same amount of heat.

Light color has less absorbing power, hence its durability and less liability to injury by solar heat, than dark shades, or the reds which are so common on coaches the last few years, and which suck in the heat and moisture, making but feeble resistance to the attack of storm, having no solid body to resist the sudden changes of weather. The life of a dark color on a car, particularly in the Southern States, is less than half what a buff or a straw color is. The dark color in one case referred to is of an olive shade, which I am informed the heat soon changes to a deep black olive, and frequently the dark cars have to be repainted after only twelve months service, the paint being too far gone to revarnish, while the buff-colored cars run from eighteen months to two years, and then clean up well and are revarnished.

The shades of color suitable for cars, that will resist the deadening effects of solar heat the best are the various shades of straw, lemon, cream, deep gold, old gold and buff. Many shades may be made between a pure white and an orange, in all of which white lead predominates, and the best brands of chrome yellow and yellow ochre with venetian red. No shade of color should have the strong yellow cast that we have seen on some roads; it should always be toned down, which enriches it.

Light colors retain the oil a greater length of time; and that dark colors absorb and retain heat has been proved by numerous tests.

Did you ever see two women board a street car? No. Well, they do it somewhat after this fashion: "Is this our car, Celia?" "No, Martha, I don't think it is. I think that is ours just back of it." And they wait until the car has passed them, and then hail it with their parasols. This proves ineffectual, so several men begin to whistle for it on their fingers. It is at last brought to a standstill, and one of them says, "Now, you get on first." "No, I won't: you get on." "I shan't do it." "But you must." "There, now, I've let my handkerchief in that store, oh, dear!" "Can't you wait, conductor, while she goes back to look for it?" "Oh, never mind, I will call there again tomorrow and see if it has not been found. Now, you get on, Celia." "No, you!" "This car goes up Columbus avenue, doesn't it, conductor?" Conductor—"No, ma'am," and then he pulls the string.—*Boston Record.*

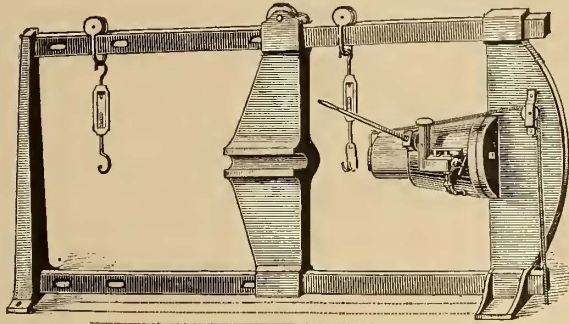
The DeKalb Avenue line in Brooklyn is making some needed improvements in its Washington street bridge terminus.



**Hand Power Hydraulic Wheel Press.**

This is a light but powerful wheel press, designed for use in small shops, and especially adaptable for street railway use. They are made in two sizes, namely:—60 ton press for 30" wheel—weight about 1,800 lbs.; and 100 ton press, for 36" wheel—weight, about 2,500 lbs. In these jacks the valves are made large, and drop into the seat, instead of being small, and dropping away from the seat, or lying upon the side, a very familiar form of construction.

The piston is entirely enclosed, thus pre-



HAND POWER HYDRAULIC WHEEL PRESS.

venting all grit or foreign material getting into the pump and cutting it or preventing its working. The cylinder and bottom, on which it rests, are made from one piece of steel, thus relieving the reservoir casing of strain and dispensing with one packing and making a jack which is claimed to be stronger and lighter than one having a wrought-iron cylinder. Accessibility of parts and ease of repairing are points claimed in its favor by the manufacturers.\*

\* Watson & Stillman, 470 Grand Street, New York.

**New York City Owns its Streets.**

Judge Ingraham, in the Superior Court, (New York City,) recently dismissed an action brought by a Mr. W. P. Abendroth, a merchant owning property at No. 282 Pearl street, for an injunction restraining the Manhattan Railway Company and the New York Elevated Railway Company from maintaining their elevated structure in that street.

In his opinion the judge declares that even though it was proven that the elevated structure deprives the plaintiff of light and air, no *property* having been taken from him by the defendant, Mr. Abendroth has no ground on which to bring suit.

To substantiate his assertion of non-ownership, the judge goes back to the earliest history of the city, and the line of reasoning is interesting. He points out that the absolute fee vested in the Crown, and that no one had a present or reversionary title in the soil of the public highway on the ground that he was the owner of the lands through which it was laid. By the Dougan charter and also by the act of March 7, 1793, all the title of the people in the streets or highways of the city became vested in the city.

"It is clear," the judge proceeds, "that the owners of property abutting on this

street at the time of the conquest of the city by the English, as distinct from the other inhabitants, had no right or property in Pearl street, and unless it appears that they acquired some interest in the street since that time, no property of the plaintiff has been taken by the defendants." The city, he says, has remained the absolute owner of the street, and, subject to the control of the Legislature, can make any use of the street not inconsistent with the right acquired by the public by the dedication. This gave to the abutting owner no property in the street. As distinct from the

public, he acquired no easement in the street itself. Therefore there is nothing in the case of Mr. Abendroth on which could be predicated a decree in his favor.

This opinion may prove of value in other instances, where individual selfishness, obstinacy or greed obstructs the course of improvements calculated to benefit the general public.

**Notes and Items.**

BRENNHAM, TEXAS, has a new street railway.

THE CENTRAL RY. of Los Angeles, Cal., is building four new cars.

THE LYNN & BOSTON (Mass.) Co. is adding more horses and cars to its equipment.

THE BROOKLYN CITY RAILROAD is having built by Stephenson forty-three new cars.

THE LAMPASAS (TEXAS) CITY RAILROAD Co. has added two new summer cars to its equipment.

THE JAMESTOWN (N. Y.) STREET RAILWAY Co. will extend its line across the creek, to the village of Brooklyn.

THE ERIE CITY PASSENGER RAILWAY Co., Erie, Pa., intends extending its tracks one mile during the season.

THE GULF CITY STREET RAILWAY AND REAL ESTATE Co. has built a new street railway in Galveston, Texas.

THE LEWIS AND FOWLER Register is used on the new cars of the Calvary Cemetery, Green Point & Brooklyn Railroad.

THE BROCKTON (MASS.) STREET RAILWAY Co. is about extending its tracks 4.65 miles, and will considerably increase its stock.

THE OMAHA (NEBRASKA) HORSE RAILWAY Co. is making some improvements in its property. Character of same not stated.

THE LOUISVILLE (KY.) CITY RAILWAY Co. has twenty-one new cars now building, and is just completing about ten miles of new track.

THE SOUTH FERRY RAILWAY Co., of New York City, will build four open cars and about five box or close cars during this season.

WALTER A. JONES, of J. M. Jones' Sons' car works, will sail for Europe on the Cunard steamer Servia, July 11, for a three months' vacation.

THE CHICAGO WEST DIVISION RAILWAY is building a new car house for its Milwaukee Ave. Line. The building will be 125' x 175', of brick and stone, two stories.

THE METROPOLITAN RAILROAD, Boston, is building thirty-five open cars. Track is being extended two miles to Winthrop, and one mile to West Roxbury Park.

THE SECOND AVENUE (N. Y.) R.R. Co. has withdrawn its application for permission to build a track in Fifty-seventh st., to connect its lines in Second and First aves.

J. M. JONES' SONS turn over their Schenectady shops to the New York Central Sleeping Car Company July 1, having sold them to that company some weeks since.

THE PITTSBURGH (PA.) & WEST END PASSENGER RAILWAY Co. contemplates making considerable extensions of track and additions to its equipment during the next year.

THE GREEN POINT AND LORRIMER STREET (Brooklyn) RAILROAD. Twelve new open and twelve closed cars built by J. M. Jones' Sons will be equipped with the Randall gear and Lewis & Fowler register.

THE BRIDGEPORT & WEST STRATFORD (Ct.) Street Railway is likely to be built at an early day, as the sum of twenty thousand dollars has already been subscribed to the stock of the proposed enterprise.

MR. WM. RICHARDSON, Pres. Atlantic ave. R.R. Co., Brooklyn, has secured a permit to erect a \$50,000.00 stable for the company's new Bergen St. line, at the corner of Boerum place and State street, Brooklyn.

J. M. JONES' SONS, West Troy, have just delivered to the Brooklyn City Railway four elegant cars for the Fort Hamilton steam road. These cars have improved trucks, vacuum brakes and all the modern improvements.

THE SIXTH & SAN FERNANDO STREET RAILROAD Co., of Los Angeles, Cal., has been merged into the Central Railway Company of that city, and the line is now "making ten minute time, instead of fifteen or twenty minutes, as heretofore."

THE JOHN STEPHENSON Co. is building cars for the Beaver Valley Street Railway; the Minneapolis Street Railway; a large order for the Forty-second St., Manhattan & St. Nicholas Avenue Railroad, and various other American roads; also for Monte Video, Lisbon (Portugal) and various roads in Mexico.

THE NEW BROADWAY (N. Y.) SURFACE RAILROAD has ordered seventy-five new cars, a part of which are to be built by the John Stephenson Company, and the remainder by a Western company. We believe Andrews & Clooney make the wheels; on a part the Vosespring and the Bemis gear will be used, and on others the Stephenson super gear.

THE DOVER (N. H.) HORSE RAILROAD, 2½ miles long, running from Sawyer's Mills to Garrison Hill, having proved successful, business men are now agitating its extension from Garrison Hill to Great Falls, 4 miles. The cost would be about \$25,000.

THE IRON STEAMBOAT Co. has its boats running regularly to Concy Island, and probably ere this reaches the eye of the reader will have its Long Branch line in operation. Its boats have all been thoroughly overhauled and are now in first-class condition.

DR. MORRIS MATTSO, who died on June 14th, at his residence in New York City, was a director in the Second Avenue Street Railroad Co. He was the inventor of several well-known surgical appliances (including the "Mattson syringe"), and leaves a fortune of nearly half a million.

THE CHICAGO WEST DIVISION RAILWAY, among other additions, is building an extension to its North Milwaukee Ave. Stables, with stalls for 200 horses. The building is of brick and stone, 167' x 138', two stories. The stalls will all be on the ground floor, the second being used for forage, etc.

THE use of metal checks instead of paper tickets on the Brooklyn Elevated road is being watched by the New York Elevated road managers with interest, and may, eventually, be adopted here. They are considered much safer and more handy, except where transfers are given.—*N. Y. World.*

THE SOUTHERN RAILWAY Co., of St. Louis, Mo., has bought, since April last, seventy head of horses, and is still buying. About two-thirds of a mile of street occupied by its tracks are soon to be reconstructed with granite paving, and the company will relay its tracks (7¾ miles) with over 100 tons of Johnson steel girder rails, fifty-two pounds to the yard.

AN item in our last issue relative to the Bemis Car Box company and the Baltimore Car Wheel company, though obtained from what was deemed a reliable source, was without authority from either company, and we find upon investigation had no foundation in facts, and that the litigation referred to was decided by the courts July 14, 1884, in favor of the defendant.

THE DENISON (TEXAS) STREET RAILWAY Co. contemplates building about one mile of additional track, making about four miles total, including turnouts, and putting on two additional cars, with an adequate number of mules, during the present season. The company now has sixteen mules and will increase the number to twenty or twenty-two very soon.

HOBOKEN.—The large steel cable, intended to operate the cars on the North Hudson County Railway Company's elevated road between the Hoboken Ferry and the brow of the hill, arrived yesterday [June 10th]. It was made by Roebling & Son, is 12,000 feet in length, and exclusive of the wooden drum upon which it is coiled, weighs twenty-four tons. It is said to be the longest cable ever made.—*New York Tribune.*

PRESIDENT JOHNSON, of the Electric Railway Company of the United States, just returned from a trial of the New Edison Motor, said to a *Mail and Express* reporter: "I must say that the various devices which were experimental now perform their several functions admirably, and I have sent the following cable message to Mr. Cyrus W. Field, in London: 'Motor now working perfectly. Reversing apparatus frictional devices fulfil our expectations. No sparking. JOHNSON.'"

B. J. HUGHES, a New York car conductor, who brought suit against a certain Mr. F. J. Warneck to recover \$10,000 for slander, received a verdict of \$125.00. The conductor, in pursuance of his duties, collected extra fare from Mr. Warneck, a passenger on his car, when the latter called him a "thief." Warneck was ejected from the car, and on complaint to the company, the conductor was discharged. The damages will not cover the conductor's salary from the time of discharge.

THE BROADWAY (N. Y.) SURFACE RAILROAD Co. having been unable to secure right of way from the Belt Line and the Church Street and South Ferry Line, through State and Whitehall Streets to South Ferry, Mr. James Richmond says: "Our lines are being laid to-day around the circle of Bowling Green, so that we shall run there and back without breaking connection, and shall connect them at Bowling Green with South Ferry with the stages taken off Broadway. The stages will carry passengers free."

M. M. GREEN, PRES. HOCKING VALLEY RAILROAD, is reported to have said, in a recent interview:—"The cable railroads of San Francisco beat all the surface street roads in existence. They run up hill and down, sometimes at an angle of forty-five degrees, with perfect ease and great rapidity and security. The cars are some of them fifty or sixty feet in length. They can increase or decrease the speed through their clutch on the cable, and when they come to a clear space they shoot ahead with great rapidity. The cable roads of Chicago are mere trauways compared with the San Francisco cable roads."

THE HIGHLAND STREET RAILWAY, Boston, is connecting its stables with repair shop by a 1000 foot wire rope, to transmit power for feed cutting. Track, cars, and horses are in excellent condition. Clark's power grooming machine has been in use for some time and is found to do the work nicely. Most cars are equipped with the Shattuck journal box, which is claimed to be an improvement on the Higley gear, oil being in bottom of box feeding upward; the box is cast in one piece, with removable lid. One of these boxes has made a record of 21,600 miles without oiling. The company's car, "Governor Rice," is fitted with the Chaplin roller bearing, said to give excellent results in securing a positive reduction of friction.

MR. GEORGE P. FRICK, who died at his residence in this city yesterday [June 9th] was one of Baltimore's representative business men, and contributed in many ways to the city's growth and prosperity. He was

a gentleman of great energy and rare administrative capacity, as was shown in his management of the street-car system popularly known as the "Frick Line," which he inaugurated and pushed to successful development, and in his direction of the affairs of the Baltimore and Ohio Telegraph and Express organizations, as well as of other important enterprises. Mr. Frick was personally known to a large number of our citizens, and was held in high esteem for his integrity and many amiable qualities.—*Baltimore Sun.*

THE HALL'S SPRINGS LINE.—The Baltimore City Passenger Railway Company, which some time since negotiated the purchase of the Hall's Springs line, is engaged in putting the tracks in order, but is not yet ready to put on its cars. President Bowie says his company bought the line, has built new cars and bought the horses and harness to equip it. But all of the stock of the old Hall's Springs Railway Company has not been turned over to his company, and the line will not be operated until that is done. Several times the date has been set for this final stock transfer, but there has always been some hitch in closing the transaction. He would be ready in a week to put cars on the line, and there will be no delay on the part of his company. He expects the old stock will be all in within the next few days. While any of that stock remains outstanding the City Passenger Company cannot completely own the line, and the road will be at a standstill until all the shares are in President Bowie's hands.

#### Wanted, a Safety Brake.

At the last meeting of the American Street Railway Association the necessity of having a reliable safety brake for steep hills was urged by Mr. Bolton, who said: "A difficulty that we have in our roads, and many others have the same, and we can get no help for, is that, with our special brake for steep hills, we cannot stop the cars. With our ordinary brake, we can stop a wheel, and after that the car slides. We have not been able to find any device to assist us in the matter. We have used sand. We have sand-pipes on every one of our cars. After the wheel stops revolving, the car slides. In approaching the foot of the hill, we go down there at lightning speed; and what we want is something in the way of a safety brake; something to put on after the other has failed to stop our cars. Our head painter was in Pittsburgh a short time ago, and he mentioned something he saw out there, that struck me as the best I ever heard of. I wrote there, but have received no reply. It is under the car. If any one present knows anything about it, I should be glad to hear from him."

No satisfactory answer to his question having been received, we would be glad to hear from any of our readers who have dealt successfully with this difficulty. Rushing down steep grades is injurious to stock, destructive to equipment and dangerous to human life, especially where streets cross the track at or near the foot of the hill.

### Feeding and Care of Horses.

[We print below a letter from a correspondent who desires enlightenment on the matter of feeding. We also print interviews with several local companies on the same subject. This matter is so important that we would be glad to have the practice of each of our subscribers, with record of general results. Eds.]

MESSRS. EDITORS: I should like to see a little more written upon the subject of the best and cheapest way of taking care of and feeding street car horses.

My horses make twenty miles per day. I feed nothing but straight feed, such as corn, oats and hay—the best the market can afford.

The build, as well as the disposition of a horse, have a great deal to do with the feed required to keep him up and still not over-feed him. A horse possessed of an even temperament will not require the same feed as one of a nervous temperament.

My horses are all in fine trim and good health, and I have fed from April 1, 1884, to April 1, 1885, for less than seventeen cents a head.

It appears to me that a great mistake is made generally in feeding street car horses; I think the safest and best way is to come as near as possible to the original intention of nature—let him do his own grinding, and he will last much longer. As for mash feed I am opposed to it, on these grounds: A street car horse does not walk, but is compelled to trot, and that will jolt the feed through him in an unnatural condition, which will tend to weaken a horse. For a slow draught horse, soft feed will do, but not for a horse whose regular gait is faster than a walk.

I am young in the railway business, and like all new beginners have it all to learn, and shall appreciate it if you will find space in your JOURNAL for these few remarks. They may be the means of bringing out ideas from some of the older and wiser railway officials, from whom I might learn something about the care and feeding of horses as well as railroading in general.

WM. DAVIS,

Supt. Oakwood Street Railway Co.  
DAYTON, O.

[In relation to this subject, Mr. Charles H. Meeks, Superintendent of the South Ferry Road, New York City, says: "I think the best results can be had by grinding feed in all cases, and it must be borne in mind that, while the horse trots on the road, he is liable to lie down soon after feeding at night. For forty horses we use each day about 650 pounds of hay (cut say about four inches long), one bag ground oats, seven bags ground corn, one bag middlings, wet, salted and well mixed. We feed three times a day, giving a light feed at about 4 A. M., full feed at 9 A. M., and full feed again at night."

Mr. Peter Petrie, General Foreman of the Atlantic Avenue Railroad Co., Brooklyn, interviewed on the subject, says: "We have two stables and about 1,100 horses. We feed ordinarily three times a day, but

in severe weather we feed four times, without, however, increasing the total quantity of feed allowed daily per horse. About five o'clock A. M. we give half a peck of oats to each horse, and this is the only 'straight' feed we give. At 10 A. M. we give a mixed feed composed of ground corn and cut hay, and between 5 and 6 P. M. we feed again with the same mix. The total quantity of feed daily per horse is half a peck of oats, twelve pounds of cut hay and fifteen pounds of corn meal. When horses are changed on long trips, we give them while standing, a little long hay, but we feed oats only in the early morning, while the horse is cool. Our experience with whole corn is that while a driving horse or an animal that does but little work will possibly chew it thoroughly at his leisure, a working horse will swallow the corn before it is properly masticated, and thus retard digestion. Whether it is that they have not the sense or are too tired to masticate thoroughly, I am not prepared to say, but it is a fact that they swallow the food half ground, and do not digest it perfectly; so you can see that there is not only health but economy in feeding ground corn. In the event of a horse contracting the 'lampers' from eating only 'soft' feed, of course we feed a little whole corn as a corrective, but as a rule, it saves in horses' stomachs and feed bills to grind the corn and cut the hay."

Mr. Daniel F. Lewis, Secretary and Treasurer Brooklyn City Railroad Co., said: "We give our stock only cut feed and ground meal, composed of one part of oats to two of corn. Of this meal we give an average of seventeen pounds per day to each horse, with an average of ten pounds of cut hay per horse, mixed with the meal. We feed three times a day, morning, noon and night. As the oats we feed is ground up in the meal, we feed no clear oats except to sick horses. We have 3,100 head, and out of that number the average of those not working at all is under forty. The average travel for each horse is about seventeen miles a day, though in the hottest weather we have relays to relieve the teams, and allow them a little breathing spell. We water frequently along the line, and in the water mix a little oatmeal, which we find to be very grateful and more refreshing to the horses than clear water. The average cost of feed per horse per day from June 1, 1884, to June 1, 1885, did not exceed thirty cents."

Let us hear from others. Eds.]

### Obituary.

A Baltimore dispatch, dated the ninth ultimo, announces the death in that city of Geo. H. Frick, a prominent resident and president of the North Baltimore Passenger Railway Co., at the age of fifty-eight years. The Baltimore Sun of the 10th of June, contains quite a lengthy résumé of Mr. Frick's life, from which we extract the following, concerning his street railway experience:—

"Mr. George P. Frick, president of the North Baltimore Passenger Railway Company, died about 4 o'clock yesterday morning at his residence, No. 400 Park avenue,

of fatty degeneration of the heart, from which he had been suffering for a couple of months. Mr. Frick was 60 years of age, and a native of Baltimore. He was a son of the late Judge William Frick, who had a distinguished public career. He was a graduate of St. Mary's College in Baltimore, and in early manhood entered upon mercantile life, having been for a number of years a member of the wholesale dry goods house of Geo. P. Frick & Co.

Mr. Frick was best known to the Baltimore public as the principal in the organization of the North Baltimore Passenger Railway Company, of which he continued president until his death. He had strong faith in street railways as a sure means of developing the city and as property in which to invest capital. In 1872 he organized the North Baltimore Railway Company, which from a small beginning has grown to large proportions, and its several routes are called the Frick lines by nearly every one. Among the incorporators with Mr. Frick were James L. McLane, Wallace King, C. Oliver O'Donnell, Cumberland Dugan, James W. Tyson, James A. Gary, Daniel J. Foley, and Chas. E. Dickey. The company started about ten cars, and their line ran from the center of the city to Boundary avenue, near Mt. Royal reservoir. The lines of the company are now operated to Waverly, in Baltimore county; to the York road, at Huntingdon avenue; to the neighborhood of Druid Hill Park by way of Linden avenue extended; from the Eastern section of the city, at the Johns Hopkins Hospital, on East Monument street, to a western terminus at Fulton and Edmondson avenues; on South Howard street to Camden stations; and along Fremont and McMeechen streets, connecting the Edmondson avenue and Linden avenue lines. About sixty cars are running every day, and the Frick company has followed the policy of steadily pushing out into other territory. A few years ago Mr. Frick assumed the general management of the telegraph and express organizations of the Baltimore & Ohio Railroad Company, which enterprises were then in formative stages. He worked with these a couple of years, but the street railways in which he had such large pecuniary interests demanded closer attention from him, and he retired from the Baltimore & Ohio service. Mr. Frick, with Mr. James L. McLane and other gentlemen, were the originators of the United States Electric Light Company of Baltimore, and he continued to have a leading interest in it. He was a director in the Merchants' National Bank, a zealous member of the Baltimore Board of Trade, and took a conspicuous part in other enterprises. With Mr. Frick strong will, indomitable energy and courageous faith in the ultimate good results to follow from his business ventures were characteristics. In his death the city has lost a public spirited, progressive citizen. The board of directors of the North Baltimore Passenger Railway Company held a meeting on June 9th, and took appropriate action upon the death of their president and general manager."

For this account we are indebted to Mr. S. L. Bridge, Sec. Baltimore City Pass. Ry. Co., who kindly sent us a marked copy of the paper containing it.



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### The Next Association Meeting.

It will be well for each of our readers to remind himself at the present time that the next regular meeting of the American Street Railway Association is but little more than three months away, and to prime himself thoroughly with good ideas for that occasion. No one who has not been present at one of these meetings will have any idea of the kind of men of which this organization is composed. We confess to a reversal of our own opinion, only two years since, and to our astonishment at the very superior class of men it embraces. A union of intelligence, culture and experience of this high order, in an association organized for the purpose of improving methods and simplifying practice, cannot fail to result in great general utility; and more so in proportion as those interested give their attention to the objects in view. These objects are defined in the constitution (Article II.) as follows:

"II. The object of this Association shall

be the acquisition of experimental, statistical and scientific knowledge, relating to the construction, equipment and operation of street railways, and the diffusion of this knowledge among the members of this Association, with a view of increasing the accommodation of passengers, improving its service and reducing its cost; the establishment and maintenance of a spirit of fraternity among the members of the association by social intercourse, and the encouragement of cordial and friendly relations between the roads and the public."

Nothing could be broader, and we refer to the proceedings of the last convention to show how thoroughly these ideas are being carried out. But until every street railway company in North America becomes a member of the Association, its full usefulness cannot be attained, and on January 1st of the present year not more than five per cent of the total number had sent in their memberships. Let it be remembered that always in such an organization as this each member becomes possessed practically of the knowledge, judgment and experience of every other member, and as "in a multitude of counsellors there is wisdom," every street railway man must become a wiser street railway man from his association with others in his line. No one, though he were wise as Solomon and judicious as Rhadamanthus, can know it all; but certainly an association including all, must know all that is known. We cannot too heartily commend the association and urge our readers to fall in line and help it along.

### The New Broadway Line in Operation.

Sunday, June 21, at 1:30 P. M., the cars commenced running to the Battery. The new line has been leased to the Broadway and Seventh Avenue Company for nine hundred and ninety-nine years, the latter company assuming the liability for the interest on \$2,500,000 of the bonds issued by the new company.

Stages will be run from Bowling Green to South Ferry to accommodate passengers who wish to reach the Broadway cars. No fare will be charged. There will be no stages run on Madison avenue or Twenty-third street and Ninth avenue, but there will be a line running up Fifth avenue from Fourteenth to Fifty-ninth street.

There will not be as many people thrown out of employment as has been generally supposed. Although the new line purchased altogether about two hundred and fifty stages, there were 150 drivers employed, and many of these will be retained on the Fifth avenue and South Ferry stages, while others will be employed on the cars and in the care of the 1,400 horses which were purchased with the stages.

The new cars will not be ready for five or six weeks, and for the present about 100 of the old Broadway line will be put on to start with, beginning at five o'clock in the morning and run at a minute and a half headway.

Cars will still be run along Church street and University Place, but the number will

be gradually reduced as the travel decreases along that route. The new road will be under the management of President Forshay, of the Seventh Avenue line.

### Our Street Railway Directory.

Not having as complete returns as we desire from the companies unreported in our last issue, we omit the directory from this number. While requesting officers of those companies to send in early and complete returns, we would urge upon their attention the desirability of being correctly represented in the directory of our paper—the only street railway journal in America. It has become the recognized authority of this great interest, and is consulted and read by all interested in the building, equipment and maintenance of street roads. As such, it is to the interest of stockholders, purchasing agents, manufacturers, dealers and builders—and, in fact, all parties concerned—that this directory should be complete; and we again urge those who have not sent in full particulars to do so as soon as possible. The directory will reappear in our August issue.

### Self-Countersinking Wood Screws.

We recently saw, among the effects of an inventor some six years deceased, some self-countersinking wood screws which struck us as being highly desirable for car builders and for other workers in wood. The head of each screw was so cut as to form a conical cutter, with two cutting edges, the intent of which was to make a conical countersink in the wood exactly the size of the screw head, so that the latter would seat itself flush, or even lower if desired. In the latter case there would be a better job made than where a separate countersinking tool was used, as there would be no possibility of the countersinking screw head cutting out a cone of larger base than itself.

We do not know whether or not the device was patented. It is worth looking into.

THE NEW YORK *World* somewhat reminds us of a certain Hibernian of ancient fame who, on being asked his politics, professed himself "agin the government." After doing its worst to defeat the much needed Broadway surface road, it now (June 15th) suggests that "it would be well for the property-owners to apply for an injunction against the operation of the railroad until a decision on its legality has been rendered by the Court of Appeals;" also, scorning to give the gentleman the whole name to which he is entitled, it calls the projector "Jake" Sharp. Decidedly the *World* is "agin" Mr. Jacob Sharp and the Broadway Surface Road. Meanwhile some of the best and quickest street railway work ever accomplished, has been done on this line. It is no small feat to lay tracks on a thoroughfare like Broadway, without closing it to travel. We venture the prediction that two years from now the *World* would be as strongly "agin" the abolition of the line, as it is now "agin" its establishment.

**Blisters and Cracks in Paint and Varnish.**

Our readers will remember an interesting and valuable article by a chemist, published in our December issue, page 6, on "Colors vs. Oils, Dryers and Varnishes." The following on "Blisters and Cracks" will be found equally valuable and instructive, by car painters and others interested.

Looking at a piece of wood, iron, or any painted or varnished substance under a microscope we find numerous pores, extending through them.

The function of these air holes, or so called "hydraulic pumps," is, to inhale atmospheric moisture, thus producing either a contraction or an expansion; and there being a constant change in the air, a friction of one or the other takes place, through which the cells wear out, and destruction takes place. Thus we find that all articles left exposed to the weather, decompose twice as quick as those kept under cover.

To prevent this decaying we must fill up these cells, so as to form a compact substance, through which no more inhaling can take place, and especially on painted woods and iron. Every piece of wood or iron should have a heavy coat of raw linseed oil on either side, and should not be touched, at least for a few days, in order to allow the hydraulic pumps to saturate the wood or iron thoroughly. The oil becoming hardened forms a basis for paint.

Some painters, after having sand-papered the oiled wood, wash the same with a solution of coach japan and turpentine (equal parts), so as to fill the least pores left open by the oil.

The writer had a case about a year ago, with a certain safe company. The paint would peel off after it had been put on a few months. The matter was referred to me, and the advice was to give the iron a heavy coat of raw linseed oil on either side, and wait at least a week before putting the cement into the frame. They have had no trouble since. The trouble had been that the cement entered the pores of the iron, and oxidized the same, causing the paint to fall off.

After the above process, the car, coach or wagon is ready for a coat of lead.

In applying the different coats of paint, a great many painters make mistakes, from which many bad results occur, as, for instance, blistering or cracking.

All paints should be applied so that the lower coats should have the least quantity of oil, and, as you add more coats, the paint should be mixed with more oil, so that the rays of the sun would strike the lower coats at an angle of 45°. These remarks may also be applied to varnish. The coloring varnish contains the least oil, rubbing varnish more, and finishing varnishes double, and sometimes even more than double, the quantity of oil used in rubbing; thus making the last coat most elastic and giving the undercoats time to expand in harmony with the upper.

We may divide blisters into three classes, namely:

- (1) Wood or acetic acid gas blisters.
- (2) Oil blisters.
- (3) Varnish blisters.

1. *Wood or Acetic Acid Gas Blisters.*—All woods contain more or less acetic acid, and, if not perfectly dry, the acid will form a gas, which is produced through heat, and pressing upward makes a blister on the surface of the paint or varnish.

2. *Oil Blisters.*—If too large an amount of either raw or boiled oil is used in paint, the work will have blisters, especially with raw oil, as the myristine of the oil cannot escape quickly enough before a skin is formed and a blister is raised.

3. *Varnish Blisters.*—If a new car, buggy or wagon is run out into the heat of the sun or from a cold place into a warm one, the pores of the varnish will at once expand, and, should the vehicle strike cold air, it will chill, and be very apt to blister the first time it is exposed to the sun, simply because the pores of the finishing coat closed too suddenly, not permitting the moisture of the atmosphere to escape. The sun striking it, heats the closed-up water-cells and raises a blister.

Cracking and checking of paint and varnish is a certain sign of want of oil, that is, the oil once existing in the paint has disappeared, and the paint, having nothing more to keep it together, shrinks and cracks.

A great many painters say, it is impossible to fill up cracks, but it can be done if these directions are followed. As stated above, the oil in cracked work has performed its duty, and disappeared. It consequently must be replaced before any paint can be applied; therefore, before doing anything else, give your cracked coat one or two coats of raw linseed oil, in fact, feed it with oil as long as it will absorb it. Then let it stand until dry, sand-paper and you are ready for painting.

The theory is, that, if you do not oil the buggy or coach first, the oil contained in the newly applied paint, will be pumped into the empty cells of the cracked parts and soften them; the new paint, being deprived of its oil, will sink when dry, and the cracks will appear again.

W. Z.,

Chemist of King Varnish Co.

AKRON, Ohio.

A constant complaint is made by passengers about the small size of car windows, both on street and steam roads. On steam roads the small-size windows of old are fast going out of use, and the ones now put in are none too large to suit the patrons. On street and surface roads and on the cars of the elevated roads, where during the hours of heavy traffic many are obliged to stand, passengers cannot get a glimpse out of the car without stooping, on account of the small size of the windows, and where the windows are of anything like a satisfactory size the top part is often of ground glass or obstructed by the double blind with a short lift. Curtains are far preferable to blinds, if of proper material and design. They ought not to hang loose, but should have a rod and guides to keep them in position, and dress to the side of the window rather than to the top.

**The Cold Street Cars.**

Street cars should be warmed, it is true, but between an overheated car and a cold one the latter is preferable. There is no place like a railway car, as it is usually warmed, for taking cold. The temperature within railway cars is too often like that of an oven, and the passenger entering it or going out from it into the cold does so at his peril. On suburban trains prudent passengers will stand in the middle of a car rather than sit near a door that is opened at every stop. This is the great objection to street car heating, as in this case both front and rear doors are open frequently, and often both at the same moment. Riding in cars heated by a stove, with a temperature unequal in the various parts of the car and varying from time to time, and necessarily exposed to draughts, would be injurious to the health of passengers.

But it is possible to make street cars comfortable in cold weather without this drawback. There should be no stove within the car, but a system of pipes upon the floor, beneath the foot-board. These, fed by steam or hot air from an anthracite or oil-burning furnace on the front platform, would raise the temperature of the car evenly in all its parts, and permit an evenness of heat throughout the day. People who ride in street cars in cold weather dress warmly, and do not remove their wraps. It is not for their bodies that they need heat. The temperature of the car need be only slightly higher than that of the air outside if they can keep their feet warm. Here the warm pipes would be invaluable, and from them passengers could derive comfort while sitting in and breathing an atmosphere sufficiently cold to render draughts harmless.

The pipes which warm the entire railway car are fed by a furnace requiring no more space than the ordinary parlor stove. A street car could be made comfortable by pipes warmed from a furnace so small that it would not be an inconvenience upon the front platform.

The driver could easily give it what little attention it would need during trips, and could keep his own feet warm upon one of the pipes, which should also be extended to the conductor's station upon the rear platform.—*Chicago Herald.*

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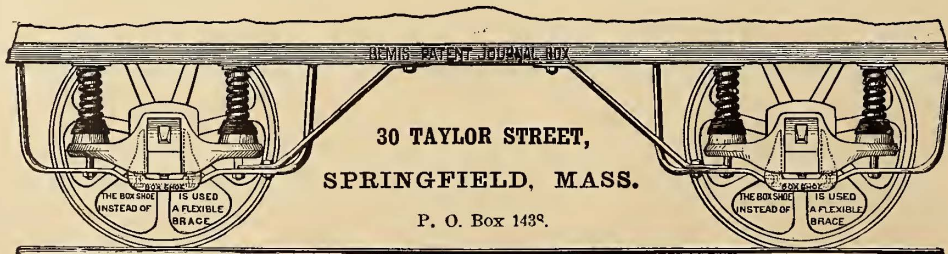
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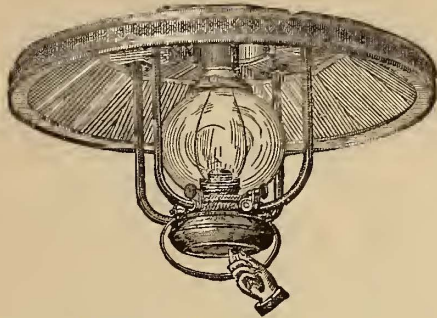
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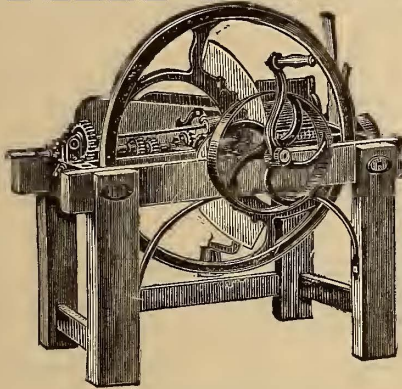


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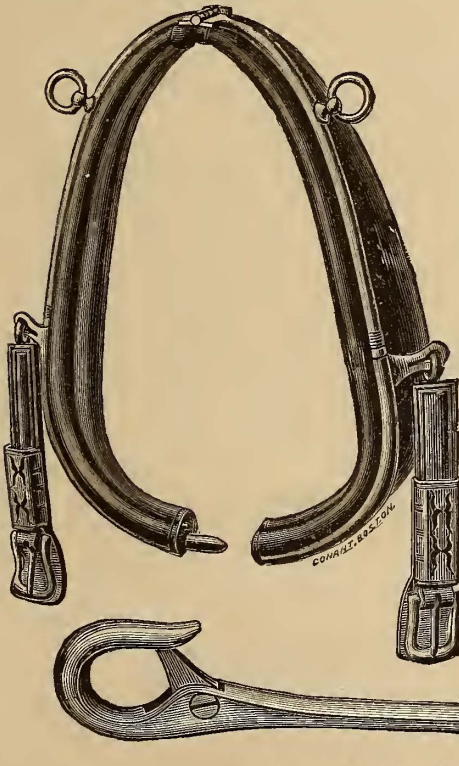
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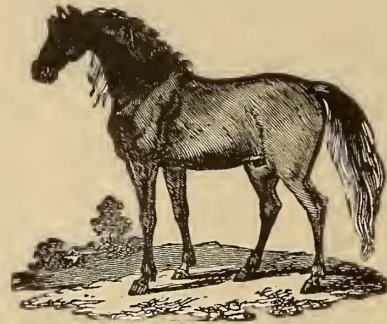
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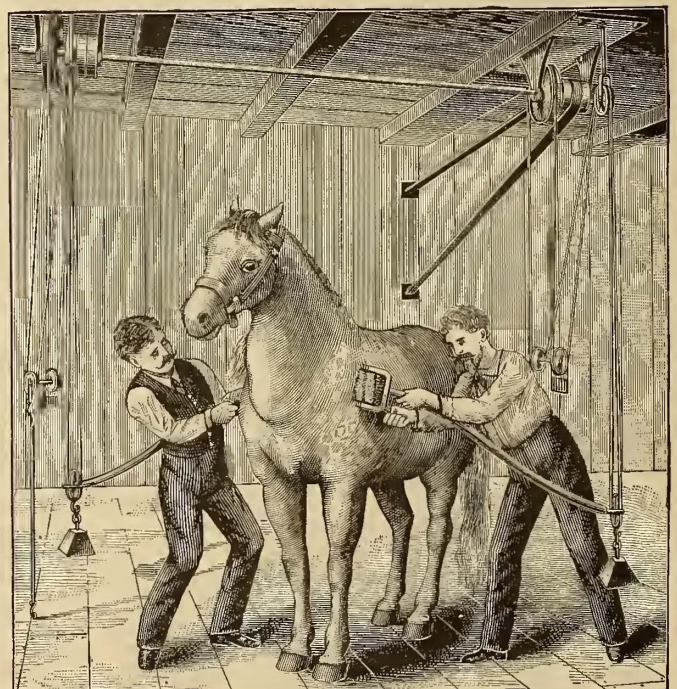
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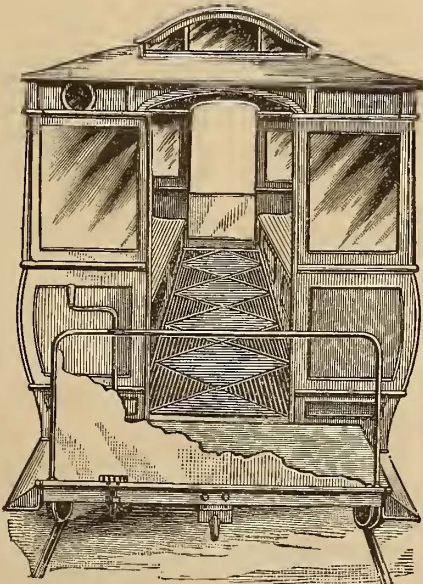
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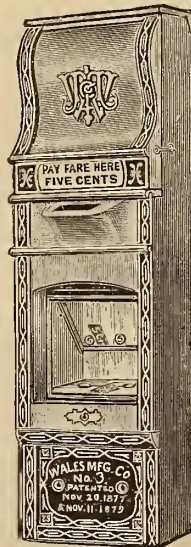
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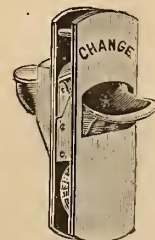
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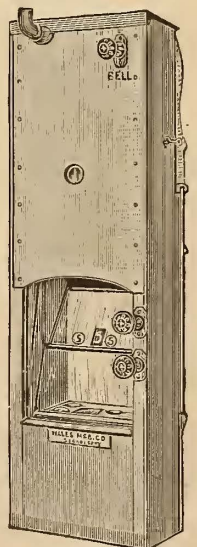
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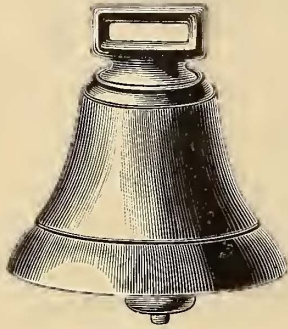
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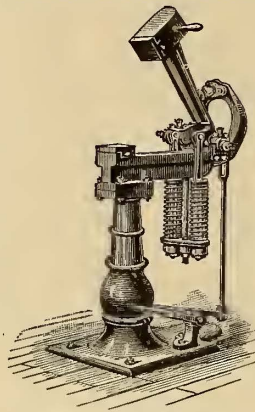
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Is specially adapted to making light forgings, for welding in dies having impressions cut to the shape of the work required. They are superior to power hammers, as the hammer is under perfect control as the Smith's hand hammer, and are used in the carriage business for welding Dashes, Shifting Rails, Top Props, shaping and forming ALL SMALL WORK equal to drop forging, and are in use by the principal manufacturers of the United States. Send for circulars. Address,

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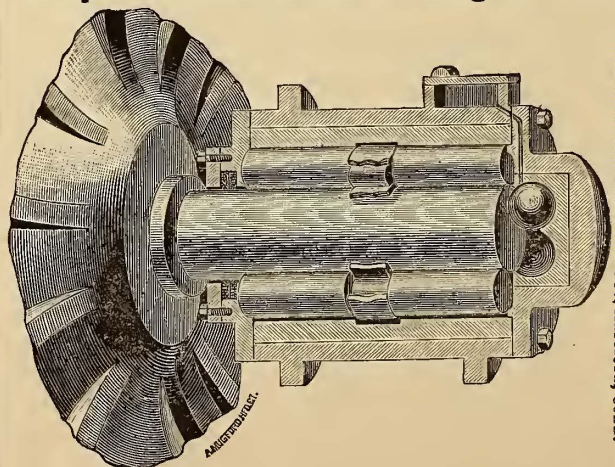
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25 Second-hand, One-horse Street Cars, single and double enders, 14 and 16 feet over all. Running gear in good order. Lamps and fare boxes complete. Reason for selling, change to 2-horse cars. Apply to

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Railway Builders, Manufacturers' Agts. for Steel Rails,

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Have been in use for four years, proving durable and showing great saving in draft. By use of ball, take curves easily; will start and draw with one-half the power of plain journals. Steel Rods, 1 1/8 in. diameter, 8 in. long, run on brass. Manufactured by THE CHAPLIN MANUFACTURING CO., Hartford, Conn.

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Special attention given to laying Switches, Curves, Turnouts, Connections and Turn-tables; also Building Tracks for Excavation, Grading, Mining and Factories.

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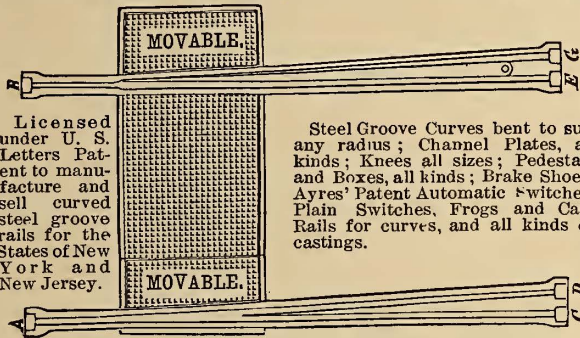
**STEEL STREET RAILS.**  
The Pittsburgh Bessemer Steel Co., Limited.  
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Section No. 17  
46 lbs. per Yard

**A. AYRES,**  
Manufacturer and Patentee.

Send me full size section of rails to be used at points A, B, C, D, E, G.

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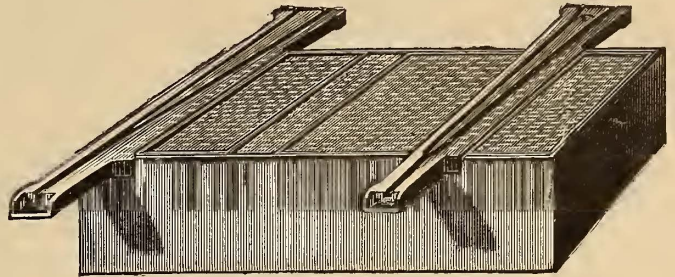
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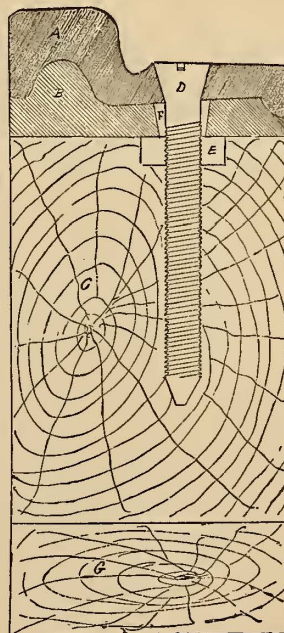
**H. DOUGLASS'**

**Patent Automatic Switch**

FOR STREET RAILROADS.

WRIGHT'S

**PATENT JOINT FASTENING.**



The accompanying cut shows a cross section through joint. *A* is the rail, *B* the joint chair, *C* the stringer, *D* the patent screw fastening, *E* the nut, *F* a slot in chair allowing rails to contract and expand. The chair cannot settle and the rail ends are held level with each other, preventing the many evils of ordinary construction.

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**NORTH CHICAGO CITY RAILROAD,**

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For Horse Railways, Omnibus Lines, Etc.

The Advantages

OF THE

## ROPE TRACE

are its ready application to Horse-Car service, or to any other purpose where cheap harness is required. It only costs about half as much as leather traces, while at the same time one set of ROPE TRACES will (when used on horse cars) take the place of three or more sets of leather traces, as the Tugs remain attached to the car all day, no matter how many changes of stock are made. The relief horses having hoods attached to their hames, all that is necessary is to unhook the tugs from the working team back in the fresh horses, hook on the tugs, and the change is made. Railroad men will at once perceive their adaptability and economy from the above facts. They will also last longer than leather traces, and require but very little care. From their durability and cheapness they are also especially adapted for all kinds of farm use and heavy teaming, as farmers, etc., can easily repair them.

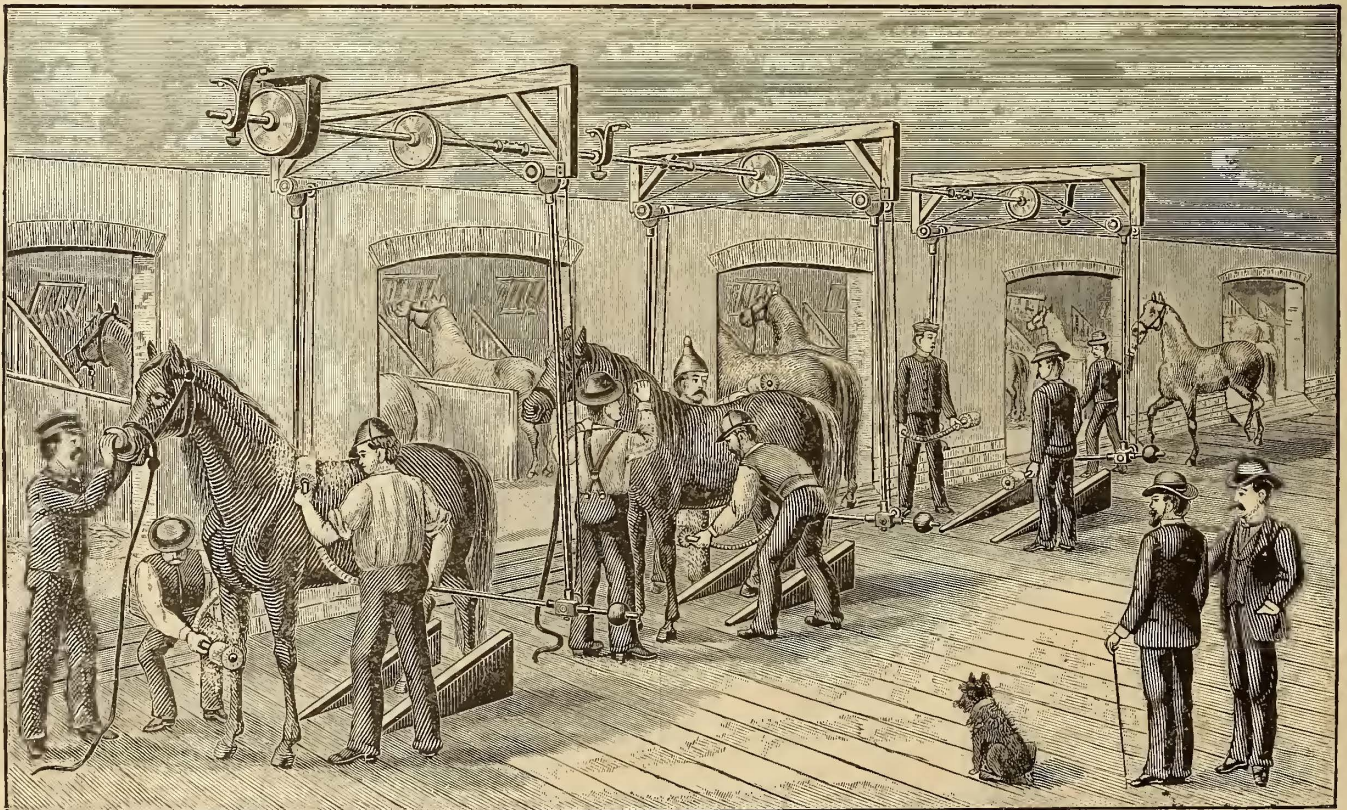


Patent No. 171,232, December 21, 1875.

In use on the Chicago West. Div. R'y.; Louisville City R'y Co.; Milwaukee City R'y; Transverse R'y Co., Pittsburg, Pa.; Citizens Street R'y Co., Pittsburg, Pa.; Pittsburg and Birmingham, Pittsburg, Pa.; Central City R'y, Peoria, Ill.; Grand Rapids R'y; Minneapolis St. R'y Co.; St. Paul City R'y; Houston City R'y, Texas; Superior Street R'y, Cleveland, O.; Cincinnati City R'y Co.; Fifth Ward Street R'y, Syracuse; Detroit City R'y.; Ft. Wayne and Elmwood St. R'y, De roit, Mich.; Galveston City R'y; Springfield City R'y, Springfield, Ill.; Toledo St. R'y, Toledo, O.; Adams St. R'y, Toledo, O.; Atlanta Street R'y, and others, in all on about 100 Street R'ys in United States and Canada, and a large number of other prominent Street R'y Companies throughout the Country. Send for descriptive Circular containing testimonials, prices, etc., to

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TO STREET RAILWAY COMPANIES AND OTHER STOCK OWNERS.

This machine for grooming may be driven by any known power, and can readily be placed for use in any stable or out-building. It can be operated by an ordinary groomer; its work is perfect; its action simple and effective. Stock owners will readily realize the importance of the machine. The perfection and rapidity of its work, and the benefits derived by its use, commend it to those interested in the care and use of all classes of thoroughbred and work stock. The most vicious animal readily submits to its use. Machine Grooming is found to be less expensive than hand grooming, saving in food and medicines, and materially increasing the value of the animal.

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This Grooming Machine is in daily use in some of the largest Street Railway Companies' stables, and has always given perfect satisfaction. Among those using it are the City R'y Co., Chicago, Ill.; Detroit City R'y Co., Detroit, Mich.; Central City R'y, Peoria, Ill.; M. W. Dunham, Wayne, Ill.; West Division Street R'y Co., Chicago, Ill.; Lindell Street R'y Co., St. Louis, Mo.; Pleasant Valley R'y Co., Allegheny City, Pa.; Marshall, Field & Co., Chicago, Ill.; Leroy Payn, Chicago, Ill.; Saginaw City R'y, Saginaw, Mich.; Pittsburg and Birmingham R'y Co., Pittsburg, Pa.; and a number of others who have given testimonials as to the perfect work of the machine. For prices, circular and other information apply to

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J. W. FOWLER, President.

THE

DAN'L F. LEWIS, Treasurer.

# LEWIS & FOWLER M'F'G CO.

P. O. BOX 102.

BROOKLYN, N. Y.

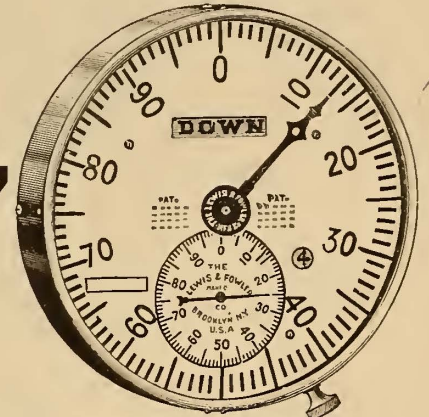
Patentees and Manufacturers of

IMPROVED

## "ALARM"

PASSENGER REGISTER.

HIGHEST PRIZE



SILVER MEDAL, CHICAGO, 1883.

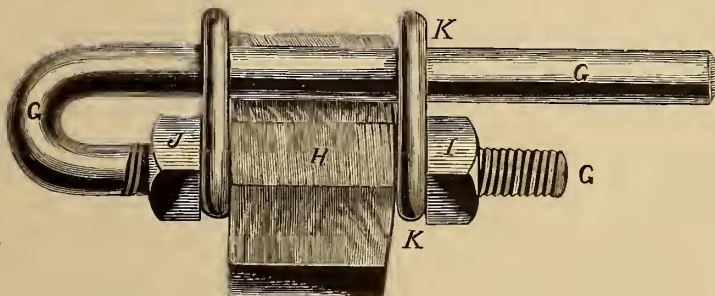


—SOLE AGENTS AND MANUFACTURERS—

VAN TASSEL'S

## Patent Brake Rod

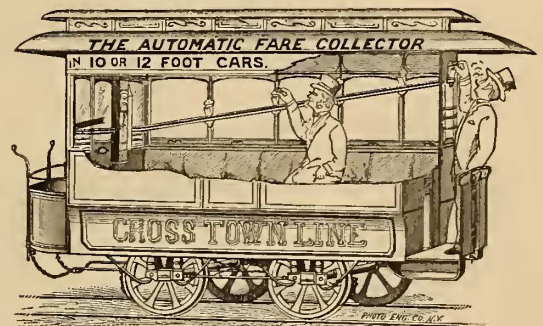
FOR STREET CARS.



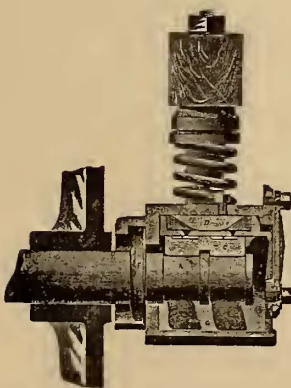
SMALL'S

## Automatic Fare Collector.

FOR FARE BOX CARS.

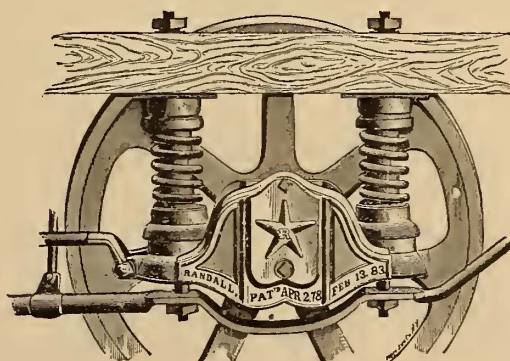


## "RANDALL'S" PATENT CAR AXLE AND BOX.



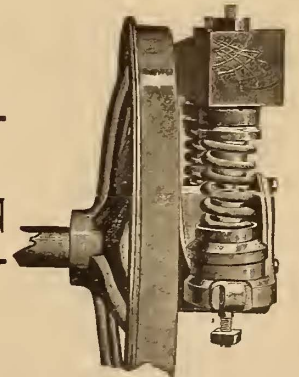
SECTIONAL VIEW.

DUST  
TIGHT.



FRONT VIEW.

ANTI-  
FRICTION



END VIEW.

Agents for ORIENTAL METAL for Street Car Journal Bearings.

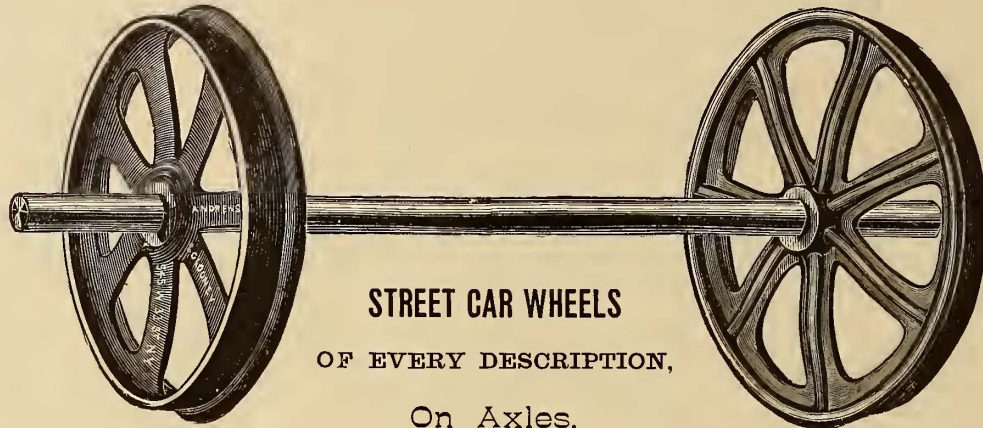
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F. T. LERNED, GEN'L AGT.

B. A. CLOONEY.

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OF EVERY DESCRIPTION,  
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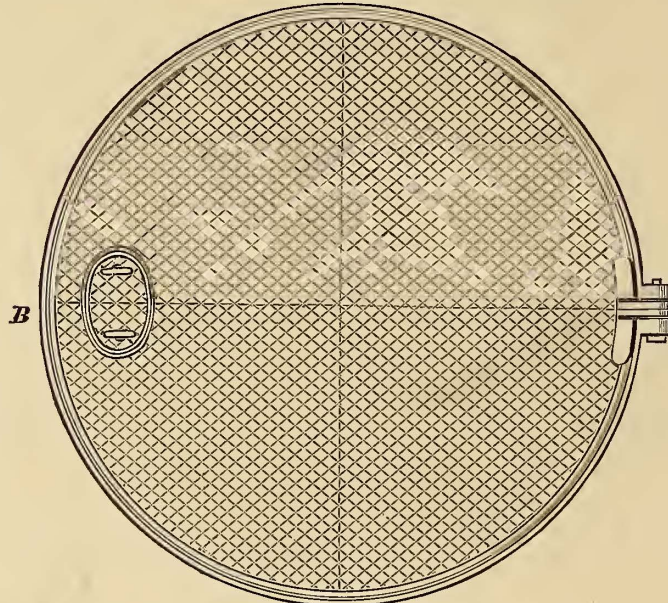
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## SPRINGS

Of Every Description.



Street Railway Turn-table.

Car Wheels,  
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Brake Shoes,  
Pedestals,  
Boxes,  
Brass Bearings  
AND  
Castings

of all Descriptions where great  
Strength is Required.

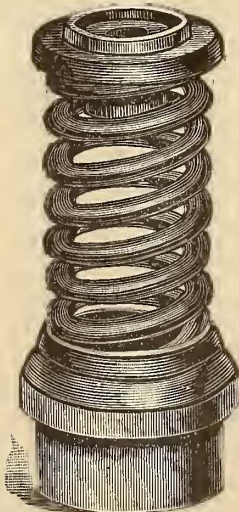
Also,

SWEEPERS, SNOW PLOWS,

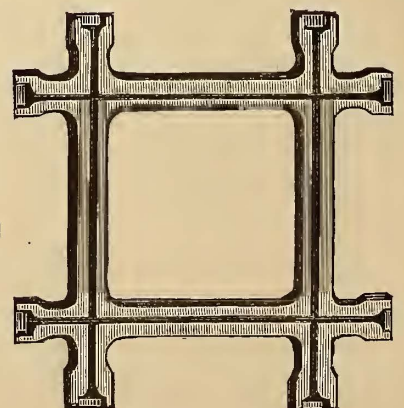
TURN-TABLES,

Track Work, Automatic Switches, Etc.

STEEL GROOVE RAILS AND MACHINERY



Street Car Springs.



Street Railway Crossings.

SEND FOR ILLUSTRATED CATALOGUE.

# RICHARD VOSE,

13 Barclay Street, . . . New York,

PATENTEE AND MANUFACTURER OF

## Graduated Street Car Springs. RUBBER CONE.

Patented, April 15th, 1879.

ADAPTED TO THE  
STEPHENSON,  
BEMIS,  
RANDALL,  
HIGLEY,  
BRILL,  
JONES,  
BALTIMORE,  
—AND—  
ALL OTHER BOXES.



- No. 0, for 10-ft. Light Cars.
- No. 1, for 10-ft. Cars.
- No. 2, for 12-ft. Cars.
- No. 3, for 14-ft. Cars.
- No. 4, for 16-ft. Cars.
- No. 5, for 16-ft. Cars.  
(Single Pedestal.)
- No. 1, Cushion, for 16-ft. Cars.
- No. 2, Cushion, for 12 and 14-ft. Cars.

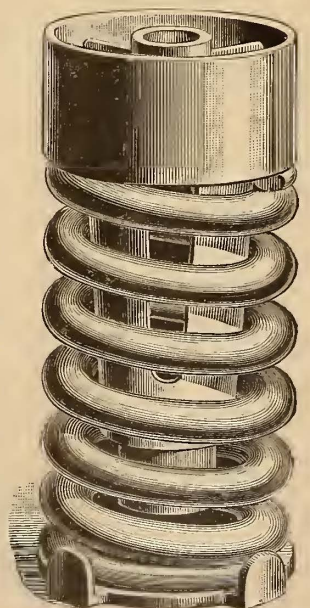
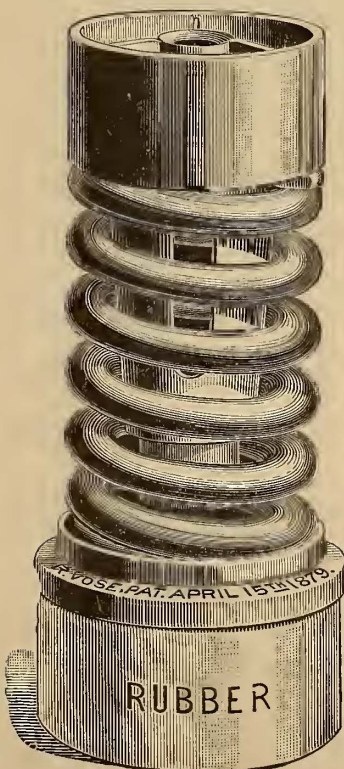
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Patented April 15, 1879—August 5, 1884.

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for HORSE CARS has induced the inventor to bring this class of Springs as near perfection as possible, and after a series of experiments and tests now presents for favor what he claims to be the *MOST PERFECT SPRING FOR HORSE CARS* ever offered. It is exceptionally *SOFT AND EASY* with the *EMPTY CAR* or with the *GREATEST LOAD*. It is believed to be the *MOST DURABLE*, being constructed upon a principle that seems to insure that the Spring must *ACTUALLY WEAR OUT*. The very *Finest Quality of Crucible Cast Steel* will always be used in these Springs.



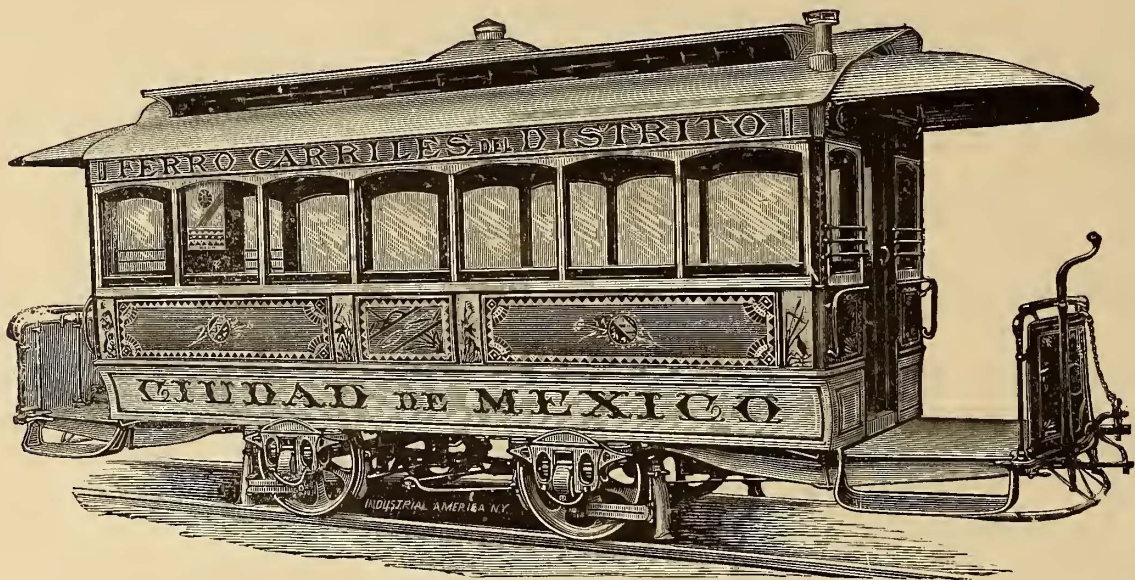
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(LIMITED),

**New York.**

## TRAMWAY CARS

MEDAL OF FIRST CLASS, WORLD'S INDUSTRIAL COTTON EXPOSITION, NEW ORLEANS, 1885.



**LIGHT ELEGANT, DURABLE.**

*Every Description.*

*Best Materials.*

*Minimum Prices.*

ORDERS QUICKLY FILLED. CAREFUL ATTENTION TO SHIPMENTS.

**All Climates Suited.**