

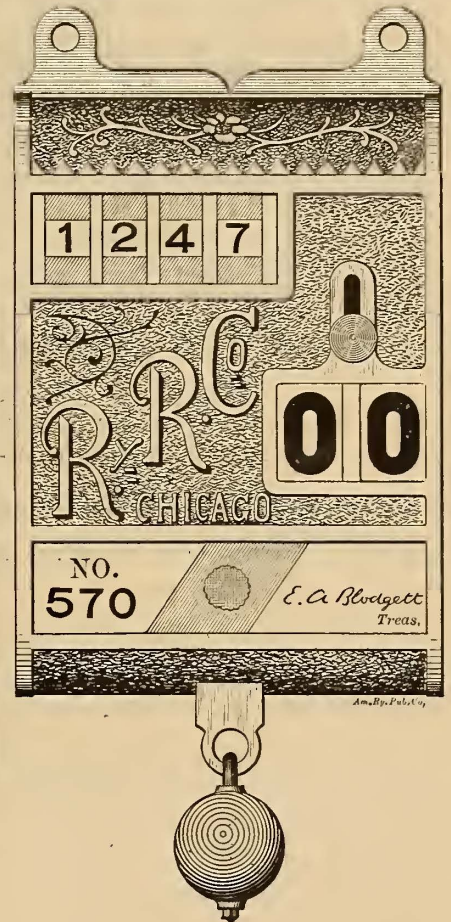
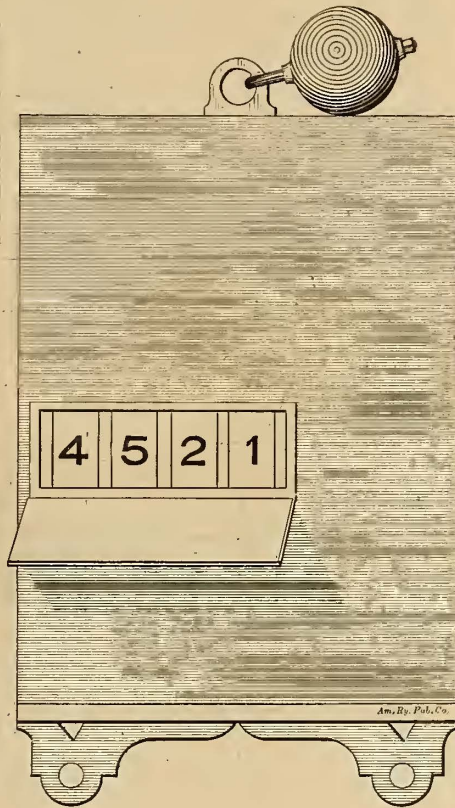
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# THE STREET RAILWAY JOURNAL

VOL. I. NEW YORK: 32 Liberty Street.

SEPTEMBER, 1885.

CHICAGO: 12 Lakeside Building. NO. 11.



THE MEAKER PORTABLE FARE REGISTER.

## Conductors and the Collection of Fares.

EDS. STREET RAILWAY JOURNAL:—

The aggregate yearly revenue, accruing from the transportation of passengers upon the street railways of this country, is a sum so vast, that it cannot be comprehended by human intellect; but great as is the total amount, 'tis collected in dribblets, five cents at a time! Truly an emphatic example that we should

Think naught a trifle, though it mean appear:  
Small sands, the mountains; moments make the year;  
and trifles—life.

The collection of fares, the employment of honest men, the safeguards put forth to deter the weak from becoming dishonest, and to detect those who steal, are matters of such great moment, that they are discussed at each succeeding convention of the American Street Railway Association.

I have given a cordial welcome to the

STREET RAILWAY JOURNAL, and congratulate the editors upon its value to the street railway interests of this country; but to the latter, I would say, "Help the editors by contributing to its columns the facts gained in your experience." It will then become a power in the land, and of inestimable advantage to all who have to do with street railway interests.

I am willing to do my part, as its columns will prove, and I further venture these remarks, upon so important a subject as that under consideration.

To secure a satisfactory conductor, the company must pay a fair salary. Adam Smith wrote in his "Wealth of Nations," "The proper performance of every service seems to require that its pay or recompense should be, as exactly as possible, proportioned to the nature of the service. If any service is very much underpaid, it is

very apt to suffer by the meanness and incapacity of the greater part of those who are employed in it. If it is very much overpaid, it is apt to suffer, perhaps, still more by their idleness and negligence."

Treat your employees fairly and justly. If the management of a road has established a reputation for harsh and unfair treatment of employees, good men will be loath to enter its service. Allow the men time for meals. Do not require an unreasonable number of hours' service. And above all, when you have secured the services of a good, honest man, do not be hasty in discharging him.

Upon the question of honesty of mankind in general, I believe the world has changed, and for the better, since Shakespeare wrote

AY, sir; to be honest, as the world goes, is to be one man picked out of ten thousand.

Honesty is a matter of education, no

natural to mankind, and our friend Humphrey, of New Hampshire, showed his New England shrewdness, when he said, "When I employ a conductor, I ask him, 'Who got you?' 'Who was your father?' 'Who, your mother?'"

Other things being equal, the man who as a child was taught to tell the truth, to be honest and true, to do unto others as he would they should do unto him, will not steal your nickels.

Montaigne, that profound student of human nature, wrote three hundred years ago,

"Plato, reprehending a boy for playing at some childish game, 'Thou reprovost me,' said the boy, 'for a very little thing.' 'Custom,' replied Plato, 'is no little thing.' Our greatest vices derive their first propension from our most tender infancy; *our principal education depends upon the nurse.*"

The italics are mine.

In employing a conductor, therefore, the superintendent should, so far as possible, ascertain something of his family and past life. Upon the large roads it is impossible to do this, save through references, for "men can be estimated by those who know them not, only as they are represented by those who know them," wrote the great Samuel Johnson.

Yet an experienced observer can frequently judge the character of an individual by a careful scrutiny of his countenance.

At a glance thou judgest well; years could add little to thy knowledge, When honesty's open brow, or the weazel face of cunning, is before thee.

Having made your selection and employed an honest man, "lead him not into temptation." Throw safeguards about, so that if he wavers, he may not fall. The universal adoption of some check upon the conductor's honesty, proves its necessity, and the roads employ a fare register of some kind, supplemented by a detective system. These registers are classed under two heads. "Stationary" and "Portable." The committee of the A. S. Ry. A. reported, 1884, that "having carefully investigated the several kinds of registering devices now in the market," they considered "good portable machines undoubtedly superior to stationary ones for several reasons," which they proceeded to give.

I believe a portable register to be preferable, and think the conductor should turn in all collections every round trip, having thus less opportunities for speculation.

The register patented by J. W. Meaker is the best that has been brought to my observation. It surpasses in simplicity and accuracy, not containing wheels, clock work or any complicated mechanism to get out of order. The motion is transmitted by strong, endless chains sliding in grooves. It weighs about one-half as much as the Benton, a decided relief to the conductor. Examination of the interior is prevented by a sealed lock, which is in fact a large display seal, inserted by the company using this register. This enables

the company in case a register is lost or stolen or a counterfeit used, to detect the same at all times, as these seals are duly numbered and signed by an officer of the railway, thus making it necessary to commit a forgery in order to use an unauthorized register. The coloring or lettering of these seals can be at any time changed at trifling expense, thus permitting a ready detection of any spurious register. This can be done as often as the railway thinks desirable, and then it has virtually new registers, so far as detection is concerned. The total reading is shown in bold figures, either on face or back, or the trip on face and total on back, &c., &c. The accompanying cuts show some forms of this register so plainly that no description can be necessary.

AUGUSTINE W. WRIGHT.

Car Transit by Endless Cable.

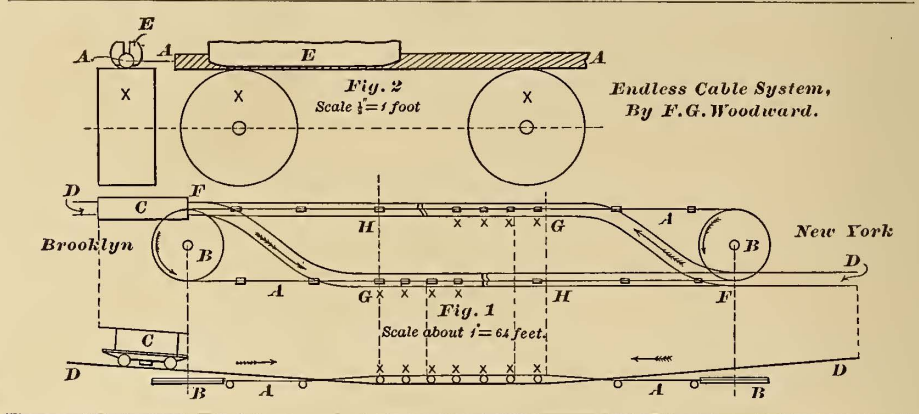
A correspondent of the *American Machinist* (to which journal we are indebted for the accompanying engraving) says:

In an article upon this subject in the *Machinist*, it is stated, among other things, that if the cable moves with a con-

slightly in contact with these plain carriers, provided it escapes the grooved carriers along the line.

It is suggested, in the article above referred to, that "the cable might be raised to the range of the grip" by the weight of the car acting upon a suitably arranged lever at the foot of the incline. But in view of the slight elevation of cable necessary to meet the conditions of the case, it might be better to carry the cable permanently elevated, as indicated in the sketch. The plain carriers, X, should be placed close enough together to keep the cable A straight with the track for a distance of 25' to 30', or a sufficient distance to give the brakeman ample time to operate the grip. The grip should be a simple clamp of considerable length, as shown at E, Fig. 2, lined with hard, slightly elastic rubber, conforming to the shape of the cable, as shown in end plan, Fig. 2, so as to preserve the integrity of the cable.

It will be observed that the cable is here represented as carried on a single sheave, B, at each end of the line, the diameter of the sheaves being equal to the distance between the centre of the tracks D, and the sheaves being so placed as to carry the



tinuous speed of eight or ten miles an hour the car should have a like headway at the instant it is attached to the cable, in order to avoid all shock and wear and tear of cable and gripping device. To bring about this important condition of things, the following scheme is presented: The desired headway may be given to car C by a slight incline, H D G, at each end of the line, the momentum of the car being sufficient to impel itself up the incline from H to any desired position above the switch F, the car being held at this position by the car-brake till ready to start for the other end of the line. The car, then, being released, will move by its own gravity down the curve to the opposite track to G, attaining at this point of its progress a speed equal to that of the cable A. The brakeman now grips the cable firmly, and the car continues without slip or shock to the other end of the line, where the same process is repeated. The cable is held up to the range of the grip by a few plain-faced carriers, X, as shown.

The grip is formed somewhat as shown at E, Fig. 2, and being so attached to the car as to be capable of slight vertical play, no harm can result if the grip passes

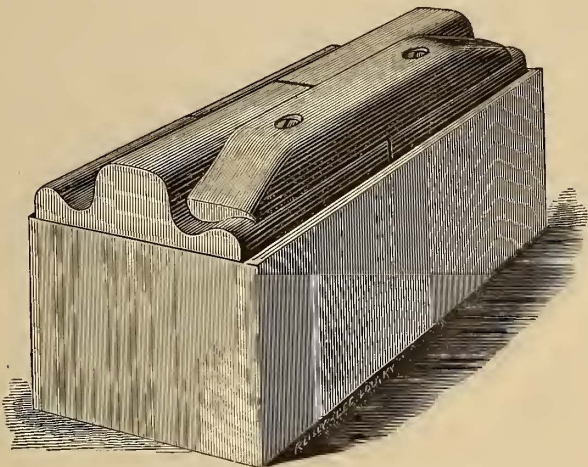
cable level with its working position along the line, as shown. In cases where conditions are favorable, this method of mounting the cable would be preferable to the more complex arrangement, as it would absorb much less money and power. One of the sheaves should be so mounted as to serve as a tightener to adjust the tension of the cable, and compensate for its variation in length from change of temperature. With due attention to timing the cars, so as to balance their work on the inclines, their absorption of power would be quite uniform and not excessive. The tractive power of wire cables working over large sheaves has been tested pretty thoroughly for driving heavy machinery, and has been found ample for pretty severe labor when applied simply as an open belt; and in cases where excessive tractive power is needed, a single turn of the cable around the sheaves has given ample adhesion for every emergency.

F. G. WOODWARD.

"MAN-WHO-HUGS-HIS-GIRL-IN-THE-CAR" is still around with his scalp untaken. The probabilities are that said scalp will remain where it is until M-w-h-g-i-t-c marries Girl-who-Loves-to-be-Squeezed-in-the-Car.

**Littell's Car Replacing Splice Bar.**

We have several times, in the STREET RAILWAY JOURNAL, and in its predecessor, the street railway department of the JOURNAL OF RAILWAY APPLIANCES, called attention to the fact that the ends of street railway rails are not united in such a manner as to afford a smooth and easy passage over the joints, avoid jar and concussion, and prevent the rail ends from being broomed and battered. The object of the invention\* here



LITTELL'S CAR REPLACING SPLICE BAR.

illustrated is to make a proper rail-end joint, and at the same time afford a ready and convenient means of replacing a car upon the track when it has from any cause been derailed.

It consists of a metal bar secured upon the outside flange of the abutting ends of centre-bearing rails. The top of the bar is beveled transversely to conform to the bevel of the wheel tread; and the ends are so cut away and beveled lengthwise as to enable the wheel flanges to readily get on them and run up thereon so as to restore the car to the track. The lower side of the bar is moulded to fit the upper side of the rail flange, so that the pressure of the wheel on its upper inclined side shall aid in locking the joint plate in its operative position. As the bar rests on top of the rail flange, and its upper inclined face is in the same plane with the rail head, the tendency is to bear the weight of the wheel and car, sufficiently beyond the rail ends to prevent their being inordinately depressed so that they shall be driven into the stringer, and the car jarred. The joint-bar is fastened by spikes (which we do not by any means recommend, unless barbed), screws, or bolts, passing through suitable longitudinal slots, allowing for expansion and contraction of the rails.

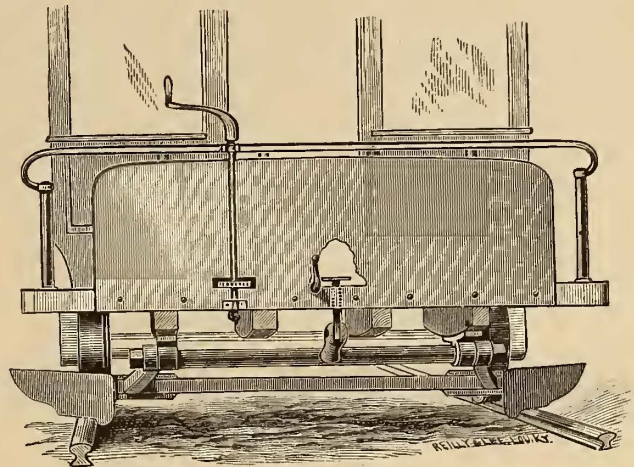
\* Hardin H. Littell, Louisville, Ky.

**Littell's Track Scraper.**

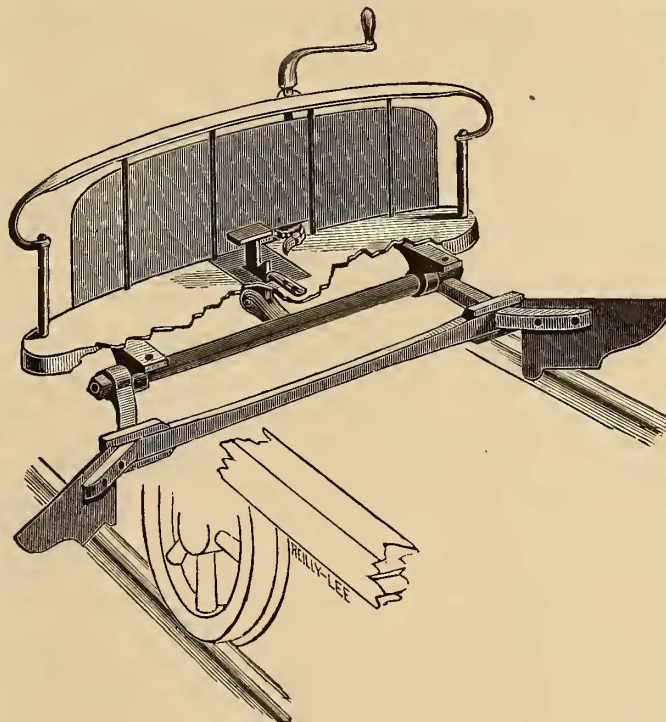
The illustrations represent with sufficient detail and accuracy a track scraper for street railways, the intention of which is to provide a cleaner that can be easily and

quickly operated when used, for removing snow, stones, &c., and yet be strong enough to withstand shocks.

To the frame of any ordinary street car is attached a transverse rock shaft, across the front of the under part; working in hangers bolted to the beams. At the centre of this rock shaft projects an arm, having at its end a rectangular recess. In this recess is pivoted a foot-lever working in an elongated slot in the platform and in a



LITTELL'S TRACK SCRAPER. FRONT VIEW.



LITTELL'S TRACK SCRAPER. REAR VIEW.

plate acting as a guide therefor. A suitable ratchet device keeps the scraper up when not wanted. To prevent jarring out of the ratchet, there is a wedge fitting in the slot and chained to the dashboard. From the rock shaft are arms at a diverging angle, and again bent to another diverging angle, at which point the scrapers are secured. These arms and scrapers are held in line with the track by a stay brace, forming an essential feature of the invention. It has at each end a steel end head, and straps which can be slipped on the steel ends over the scraper arms. This cross bar stiffens the frame and keeps the scrapers in position.

Both the patentees\* are prominent street railway superintendents, which perhaps entitles the device to special consideration.

\* Harvey M. Littell, St. Paul, Minn.; and Hardin H. Littell, Louisville, Ky.

**Failure of the Philadelphia Cable Road.**

The road is constructed through 12 miles of the principal streets of the city, and has cost the projectors \$600,000, but it is esti-

mated that \$1,250,000 more will be required to correct mistakes. When the iron conduits through which the cable passes were laid, iron rods were run through the stringers and bolted to the top of the conduits just below the slot where the grip passes down to the cable under the street. Every change of temperature has been found to affect the width of the slot and hinder the passage of the grip. (*Sci. Am.*)

[It is no more than right that we should call attention to the fact that the failure of the Philadelphia road is the result of experimenting on too large a scale with devices intended to supplement the successful but patented appliances used in San Francisco and in Chicago.

The expenses of tearing out the unsuccessful conduit will many times overweigh the royalty on the successful (but patented) devices, and there is more than a probability that the Chicago plan will be adopted after all. The New York Cable Commission has reported in favor of the Chicago system for the proposed cable roads in this city.]

**Steam vs. Horses.**

On the North London (England) tramways the cars are run alternately with steam power and by horses. That the public favor the use of steam is shown by the fact that many more passengers ride on the cars operated by steam than on those drawn by horses.



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### The Convention.

The next regular meeting of the American Street Railway Association will be held at the Southern Hotel, St. Louis, beginning Wednesday, October 21.

Manufacturers of street railway appliances who wish to exhibit samples at the convention will do well to address the publishers of the STREET RAILWAY JOURNAL for particulars.

### The Consequences of Strikes.

There is a story on record, which it will do well for the recent strikers in Chicago to remember and apply. It is concerning a certain "smart Aleck" who undertook to saw a limb off a tree, and having with more zeal than knowledge straddled the limb with his feet against the trunk, he very wisely and efficiently proceeded to saw off the limb between himself and the tree.

This is the general result of strikes in which employees with real or fancied grievances undertake to combine brute force with organized opposition, and to produce results by momentum rather than inertia.

There has rarely been a cause that was just, which could not be settled by just means, or which warranted the employment of force before persuasion had been tried. The more honest the difference between employer and employee, the less justifiable the use of obstructive force or forcible obstruction on the part of either party to the dispute.

The general consequences of strikes in which force has been employed by either side as a means of coercing the other to an immediate settlement, are a reversal of public opinion in favor of those who have been actively coerced. A quiet lock-out or an

orderly strike may leave the general public divided and moderate in opinion; but the instant that coercion appears on the scene, the public mind has sown therein the seeds of distrust for the party which finds it necessary to substitute force for reasons. Ever after, should subsequent differences arise, the side which before made use of force is assumed to be wrong, "on general principles," and without the merits of the case being gone into.

The Chicago strikers have by their action prejudiced the public mind against the employees of street railways all over the country, in whatever future quarrel they may be involved with their employers. The employees are now assumed to constitute the party of lawlessness and disorder.

This is a pretty state of affairs, but one for which the strikers have no one but themselves to thank; and other employees who might at some future time want to "go out," have no one but those west-side strikers to thank.

In view of the occurrences of that most unfortunate period, we should not be a bit surprised if street railway companies should at an early date decide to demand as security against the repetition of such lawless conduct, that employees should on entering service sign an agreement by which they bind themselves under security to accept discharge at a moment's notice and without assignment of reason, and at the same time to give at least a week's notice should they wish to quit.

The justification for such a form of contract is evident. Concerted, simultaneous quitting on the part of a large number of employees produces serious loss to the companies and inconvenience and loss not only to the purely local public, but to the general public as well. But the discharge of one to a hundred employees by a company doing as large a business as the West Side, could hardly affect seriously either the company or the general public, or the working classes from which the employees are drawn.

If now it were a question of the forfeit of a week's wages to any employee leaving without a week's notice, and if this were supplemented by an additional forfeit on the part of his bondsman, concerted inimical action would be less likely than under the present system to take place on a large scale.

The rule, like that of savings banks, about giving two weeks' notice of withdrawal of deposits, could be held in abeyance until its enforcement appeared necessary or desirable.

It would, beyond all question, be a one-sided arrangement; but so is the demanding a deposit by the employer as a security for his return in good order of property entrusted to his care; but the dangerous attitude assumed by the strikers and their friends, and their incendiary speeches and hostile actions, in the past, would warrant its adoption.

We think that the strikers will be proved to have sawed off the limb between themselves and the tree.

### Legislation Concerning Fares.

[THE AMERICAN JOURNAL OF RAILWAY APPLIANCES, issued by this Company, has the following, which is particularly applicable to Street Railway matters, their rates of fare, franchise, etc., being more frequently affected by legislation than steam roads as a rule.]

If there is any one thing in railroading which is more absurd than another, it is the fixing of railway fares and limiting of railway profits by legislative enactment. This applies as well to urban as to State or interstate lines, to steam roads and to horse railways. Of the two branches of this absurdity, which is also an injustice, that limiting the profit is the most prominent, as it is now known.

*Post facto* legislation has been recognized as, and decided to be, unconstitutional and unfair. What shall we say of its reverse? of fixing the selling price, entirely ignoring the questions of cost and of amount of business? The item of interest in the expense account remains practically the same from decade to decade; but every other fluctuates. Popular whims and senseless competition advance the grade and cost of service. A foolish labor agitation may send up the wages account and the item for fuel anywhere from ten to twenty-five per cent. Climatic changes and seasons of famine and flood may greatly increase the operating expenses, while at the same time decreasing the amount of traffic. Civil or foreign war may demoralize the whole business. It is the duty of every railroad management to provide for contingencies and emergencies, and it should be its privilege to advance its rates in the face of increased expenses or risks, just as it is compelled to reduce them in the face of competition.

The State which imposes a limit to the charges without guaranteeing a monopoly, is calling for "the cake and the penny too."

The effect of such legislation is too often the bankruptcy of the original projectors and the purchase of the plant and franchise (?) at such a discount as to yield the purchaser most of his dividend in the form of saving from one-half to two-thirds the interest on bonded indebtedness.

In one of our exchanges we find the following paragraph:—

"Whether the price charged for any article sold or any service done is reasonable or not depends upon two things: (1) The cost to the one who sells the article or performs the service, (2) What the article or service is worth to the one who wants it. To make either of these the measure without reference to the other is unjust."

This does not go far enough. It does not consider the question of what has been the previous loss upon the business. All such legislation, if it be permitted at all, should be with some proviso referring to past losses and future risks. It might be provided that all profits over 10 per cent. or 15 per cent. should be paid into the State Treasury, after deducting and distributing back interest; in other words, the interest limit should be averaged.

Furthermore, if the State has any right to tinker with the dividends, and if it has a right to insist that insurance companies shall have a reserve for the protection of the investors, why should it not call for such a reservation before limiting the profits?

There is still another aspect in which to consider this question. Such limiting or meddling legislation is practically inoperative, and is a public temptation to and premium upon evasion, lying, and perjury. We know of roads actually yielding nearly double the legal limit, and yet always returning as having made within one per cent., or one-half a per cent., or a quarter of a per cent. of the limit. Such coincidences would be amusing if they were not demoralizing.

**The Musical Street Car.**

O [horse-car] shall I call thee Bird  
Or but a wandering voice?

—WORDSWORTH.

To the genius and æsthetic taste of a contemporary we owe the discovery of the Luminous Harness, and the invention of the Luminous Car. It is now our privilege and pleasing duty to definitely announce to the street railway world the near advent of the Musical Street Car. We have already more than hinted at the probable early appearance of this crowning glory of the Pearl street sanctum; but we have been unable to say with anything like certainty that this bright child of thought was soon to be in our midst.

Ring out, wild bells, to the wild sky,  
and announce that soon, with sweet current like the

Liquid lapse of murmuring streams,  
the musical street car will be winding its tuneful way among the narrow ways of the metropolis, and the inhabitants will be

Hanging upon its notes like a bee upon a  
Jessamine flower.

Yes! We are soon to have the musical street car!

We feel that we are happier than we know.

We are soon to have the tuneful street car,

Bright gem, instinct with music, vocal spark.

Forth from the car-sheds will issue these melodic vehicles,

In perfect phalanx, to the Dorian mood  
Of flutes and soft recorders.

*Paradise Lost.*

No more the jarring, jangling, common car which has so long

Filled the air with barbarous dissonance.

In time to come, the musical car shall pass along,

Untwisting all the chains that tie  
The hidden soul of harmony;

and its sweet strains will carry the romantic soul of the passenger to

\* \* where the Attic bird

Trills her thick-warbled notes the summer long;  
and,

In notes by distance made more sweet,  
will so enchant the pedestrian that by the time it reaches him, he will give up his economical ideas, save his shoe leather, and yield his willing nickel.

O Music! sphere-descended maid,  
Friend of pleasure, wisdom aid!

Thou art now the patron saint of the street railway.

The desire of the dude for the car,  
Of the night for the morrow,

shall henceforth be sung with redoubled emphasis, redoubled appropriateness.

The methods by which the musical car will discourse sweet melody have not as yet been made public in all their interesting details; but we have learned enough to feel justified in saying that there will be a strong and powerful spring, which will act as a reservoir of power, and drive the mechanism of the itinerant music box, when the car is not in motion. When the car is in motion, either forwards or backwards, direct connection by gearing with the forward axle will either drive the music-box mechanism, or wind up the reserve springs, according as the stop is "on" or "off."

The number of tunes which each car can play will be gauged very largely by the length of the route, and by the varying character of the population in the districts through which the car passes.

Thus, as the car pervades the Irish quarter, it will play "Wearing o' the Green," "Dad's Dinner Pail," and "Lanigan's Ball."

For the Italians it will discourse, during the day-time, "*No, non e ver,*" and "*Il sospiro del mio cor,*" and at night, "*Canti, Ridi, Dermi.*"

The ex-dwellers in *la belle France* will be regaled with "*A mon pays,*" "*Partant pour la Syrie,*" and "*La Marseillaise;*" and these will give place to the "*Wacht am Rhein,*" and "*Hey du lieber Augustine,*" for our good German citizens.

The "Scots wha hae wi' Wallace bled," and "Maxwilton's braes are bonnie," will greet the ears of those who bless the Duke of Argyll; and the sons of St. David will be moved to tears as though by green leeks, at the sound of the "*Llangwyllysteddfoedwryplastanybulch à gogpenma-cwrw,*" and "*Cfarthfa gyf gnagawis bo staffacaserstwrwg.*" But this last will be played only on state occasions and high feast days, as the pins for these airs have to be made of specially prepared "Acme" steel, hard and tough, liquid forged and duplex hammered.

If by our next issue we can arrange to make a trial trip upon one of these great boons and wonderful inventions, we shall do so and report the results. We earnestly hope that we shall be able to do this, at least before the annual convention of the American Street Railway Association.

**"Back to Back" Seats.**

We have been for some weeks looking into the question of the "back to back" seats usually found in open cars, and have come to the conclusion that as at present constructed and arranged they are a constant source of annoyance and the occasional cause of altercations between passengers. The reason is that two passengers sitting back to back are apt to touch one another with their shoulders. This is un-

comfortable, in warm weather, to any one, and to ladies it is often very annoying to be either jostled or touched so intimately. About one man in five sits on the small of his back and hangs on by his shoulder-blades. It is evident that those on both sides of the present thin, low back cannot do that without touching. Sometimes we have been touched by the shoulders of our *dos à dos*, although our back was nearly an inch and a half from the back of the seat. Some passengers throw their arms over the seat back. Often one wants to know if the other is trying to crowd him out, or has paid for two seats; and sometimes the altercations are rather hot and even become scuffles.

The remedy is to put between every pair of stanchions, above the seat backs, two or more rods, such as are put over the backs of the front and rear seats.

**To each Conductor.**

You have been chosen as a representative of your company to the public. Your company relies upon your honesty in collecting and accounting for its money, your civility in the treatment of its customers, and your ability to manage your car. Are you faithful to the trust? Are you careful to collect and account for a fare for each person who rides on your car? Or are you tempted to retain some of the company's money and call it "knocking down," and smooth it over to your own conscience on the grounds that the act is common, that your pay is small, and that the company distrusts you, and treats you as though you were dishonest? Don't confuse yourself by calling things by wrong names. The conductor who keeps back five cents or five dollars intentionally *steals* the amount so kept. He is a *thief*. His wife has for a husband, and his children have for a father, a *thief*. He is guilty of more than the common thief, he has both stolen and betrayed a trust. Do the fare register and bell punch brand you as a thief? Not at all. The officers and clerks of your company have in their books the same sort of checks placed upon them, and are held to account by the stockholders as you are by the officers. Not because dishonesty is the rule, but to guard against possible crookedness, as well as error.

Defalcations are frequent, but for every thief thus brought prominently before the public eye there are thousands of honest men in places of trust who value honesty more than gold.

Are you always civil? The passenger looks upon you as a representative of your company, and you should seek to promote its interests by treating each passenger in such a way as to retain his custom. It is in your power to greatly increase the importance of your position, and to thus further the interests of yourself and your company.

NOW IS THE SEASON when railroad officials receive baskets of Maryland peaches from unknown!!! friends, Eh, Col?

## Fare Collection.

We have in previous issues of the STREET RAILWAY JOURNAL\* published editorial and contributed articles upon this subject, as well as the report and discussion thereon at the last annual convention of the American Street Railway Association.

With a view to informing ourselves still further as to the general usages in this connection, we sent out circulars and blank forms to every street railway in the United States and Canada, asking these two questions:—

(1) What system of checks on conductors, if any, do you use?

(2) How do you like it?

The following companies report, without comment, using the bell-punch:—

Mt. Adams & Eden Park Incline (Cinc.).

Sutter St. (San Francisco).

Thirteenth and 15th Sts. (Phila.).

Citizens' (Pittsburgh, Pa.).

Pittsburgh & West End (Pa.).

The following companies report using the bell-punch, and make comments thereon:—

Globe (Fall River, Mass.): "Very well, owing to variety of fares."

Easton & S. Easton (Pa.): "Very well."

Newport & Dayton\* (Ky.): "First rate."

Dayton (Ohio): "During the summer much better than none, but not infallible."

Woodland Avenue & West Side (Cleveland, O.): "Fairly well."

South Covington & Cincinnati (Ky.): "Satisfactory."

Cincinnati† (O.): "Well pleased with it."

Columbia & Cincinnati (O.): "Best we can find."

Middlesex (Boston): "Has been in use for a number of years, and we consider it the best device there is at present."

Salem & Danvers (Mass.): "Fairly well."

Perkiomen Ave. (Reading, Pa.): "Very well."

Reading (Pa.): "Like it only because it insures more accurate book-keeping."

Union† (Providence, R. I.): "Satisfactory."

Pittsburgh, Oakland & E. Liberty (Pa.): "Good."

Harlem Bridge, Morrisania & Fordham (N. Y.): "Do not like it much."

Holyoke (Mass.): "Very well."

Portland (Me.): "Consider it is as good as any check in use where there are different rates of fare."

Washington & Georgetown (D. C.): "Very well."

Worcester (Mass.): "Have used it ever since the road was operated by the present company—some ten or twelve years."

Troy & Lansingburgh (N. Y.): "Perfectly satisfied."

Naumkeag (Salem, Mass.): "We think it is the best thing in use for roads having more than one fare."

Stillwater & Indianville‡ (N. Y.): We like it."

North Beach & Mission (San Francisco): "Satisfactory."

Central (of San Francisco): "Best ever tried."

People's of Luzerne Co. (Scranton, Pa.): "Better than nothing."

Citizens' (of Springfield, Ohio): "Very well."

Syracuse & Geddes (N. Y.): "Works well."

Lynn & Boston (Mass.): "Best thing out yet."

Genesee & Water St. (Syracuse): "Like it well."

Telegraph Hill† (San Francisco): "Consider it the best for our use."

The "bell-register" is reported by the Phillipsburgh Co. (Pa.); and "registering punches" ("liked very well") by the Newark & Bloomfield Co. (N. J.)

The following roads report, without comment, using "drop boxes" or "fare boxes:"

Duluth (Minn.).

Wayne & Fifth Sts. (Dayton, O.).

Chillicothe (O.).

Charleston‡ (S. C.).

Glenwood & Green Lawn (Columbus, Ohio).

Battle Creek‡ (Mich.).

West End & Atlanta (Ga.).

Akron (Ohio).

Citizens' ¶ (of Springfield, Ills.).

Federal St. & Pleasant Valley (Pittsburgh, Pa.).

Ogden City§ (Utah).

South Nashville (Tenn.).

Nashville & Edgefield¶ (Tenn.).

New Orleans & Carrollton (La.).

Crescent City (N. Orleans).

Madison (Wisconsin).

Lynchburg (Virginia).

City (of La Crosse, Wis.).

Kingston (Ontario, Canada).

Jackson (Michigan).

Citizens' ¶ (of Indianapolis).

Hamilton (Ohio).

Johnstown‡ (Pennsylvania).

Columbia‡ (Washington, D. C.).

Winnipeg (Manitoba, Canada).

Metropolitan ‡ (Washington, D. C.).

Utica & Mohawk (N. Y.).

Shreveport¶ (La.).

Citizens' ¶ (of St. Joseph, Mo.).

Fourteenth St. ‡ (Oakland, Cal.).

Omaha‡ (Nebraska).

The following roads use fare boxes and send in comments thereon:—

Denison‡ (Texas): "Think of doing away with same soon, and substituting small boys to collect fare."

Winona (Minn.): "Have no particular system of check on drivers."

Elmira & Horseheads\*\* (N. Y.): "Probably the best arrangement for amount of travel we have."

Oakwood (Dayton, O.): "Tried bell-punch; no good. Fare box in our judgment best way of collecting fares."

Chester‡ (Pa.): "Like it very well, but think of using the register in addition."

Enterprise (Charleston, S. C.): "Entirely satisfied."

Bridgeport (Ct.): "No other check; we like this method."

Baltimore & Powhatan‡ (Md.): "Like it."

Rockford‡ (Ills.): "As good as anything we know of."

Red Oak (Iowa): "Like it well."

Quincy (Ills.): "Like them pretty well."

Nashville¶ (Tenn.): "Like it reasonably well."

Dauphin & Lafayette (Mobile, Ala.): "Very well."

Harrisburgh‡ (Pa.): "Seem to be satisfactory."

Toronto (Canada): "Have been in use only a short time."

Salt Lake City‡ (U. T.): "Like them well."

St. Catherine's (Ontario, Canada): "Satisfactory."

Anacostia & Potomac River (Washington, D. C.)‡‡: "Well."

Gainesville (Texas)¶: "All right."

The roads here named report "No Conductors," and we may perhaps assume them to use drop boxes:—

St. Charles St. (New Orleans).

Toledo Consolidated (Ohio).

Dallas (Texas).

Chattanooga (Tenn.).

Houston (Texas).

St. Paul (Minn.).

Sioux City (Iowa).

East Saginaw (Mich.).

Ottumwa (Iowa): "Checks. Entirely satisfactory."

Paterson & Passaic (N. J.): "Drivers use envelopes."

As regards registers, the following companies report using them, but do not say how they like them:—

South Brooklyn Central (N. Y.)‡‡.

Ashtabula (Ohio)‡‡.

Norfolk City (Va.)‡‡ ¶¶.

Kansas City (Mo.)‡‡.

Lindell (St. Louis)‡‡.

The following companies report using registers, and express their opinions about them:—

Milwaukee§§: "On open cars during summer. Shall try it for first time this season. Have previously used 'Hornum,' which answered our purpose very well."

Elizabeth & Newark (N. J.)‡‡‡: "Very good."

Fort Wayne & Elmwood (Detroit)¶¶: "Satisfactory."

Denver‡‡: "Very well."

Chicago§§: "Best of any known to us."

Cleveland\*\*\*: "Very well."

East Cleveland‡‡‡: "Like it very much indeed."

Cincinnati Inclined Plane‡‡: "Very much."

Prospect Park & Coney Island (Brooklyn, N. Y.)‡‡: "Satisfactory."

Baltimore‡‡: "Very well."

People's (of Baltimore)‡‡: "Could not do without them."

New Williamsburgh and Flatbush (N. Y.)‡‡‡: "Good."

Highland (Boston)‡‡‡: "Gives good satisfaction."

Brooklyn, Bushwick & Queens Co. (N. Y.).

\* Vol. I., No. 3, Jan., 1885, pp. 54, 55; No. 4, Feb., pp. 75, 77; No. 6, Apr., p. 110; No. 7, May, p. 147; No. 8, June, p. 164.

† The "Buffalo," ‡ The "Railway Register," †† "Crocker punch and slips," ††† Slawson's, ¶ Johnson's, § Clawson's (supposed to be Slawson's, Eds.),

\*\* Beadle's new boxes, ††† Stevenson's; presumably Slawson's.

Atlantic Ave. (Brooklyn)¶¶¶: "Like it better than any other register. It is the latest invented, and is used exclusively by this company."

Brooklyn Cross Town¶¶: "Like it well."  
Metropolitan (of Boston): "First rate."  
Brooklyn City (N. Y.)¶¶: "Gives perfect satisfaction."

Third Ave. (N. Y.)¶¶ §§: "Very good."

City & Suburban (of Savannah, Ga.)¶¶: "Are satisfied with it."

Richmond (Va.)¶¶: "With close attention. Can't say we like it."

Quebec (Canada)¶¶ ¶¶: "Two cars have the Lewis & Fowler and the rest the Hornum. Most approve of the L. & F."

People's (Phila.)¶¶ ¶¶: "Prefer the Lewis & Fowler dial."

Lombard & South Sts. (Phila.): "Gives general satisfaction."

Pittsburgh & Birmingham (Pa.)¶¶: "Like it very well."

Hestonville, Mantua & Fairmount (Phia)¶¶: "Very well."

Transverse (Pittsburgh)¶¶: "Well."

Union (Pittsburgh)¶¶: "Satisfactory every way."

Central City (Peoria, Ills.)¶¶: "Like it very much."

Peoria (Ills.)¶¶: "Very well."

Pittsburgh, Alleghany & Manchester (Pa.)¶¶: "Do not deem it a perfect safeguard, but we find it useful and it gives satisfaction."

Dry Dock, E. Broadway & Battery (N. Y. City)¶¶: "Well."

Central Park, North & East River (N. Y. City)¶¶¶: "Very much."

Second Ave. (N. Y.)¶¶: "Like it better than any other article seen."

Forty-Second St. & Grand St. Ferry (N. Y.): "Work satisfactorily."

New Haven & Centerville (Conn.)¶¶: "Very well."

Broadway & Seventh Ave. (N. Y.)¶¶: "Very satisfactory."

Minneapolis¶¶: "Works well."

Lowell§§: "Think we like the punch quite as well."

Steinway & Hunter's Point (N. Y.): "Fairly."

Jersey City & Bergen¶¶: "Very satisfactory."

North Hudson Co. (N. J.)¶¶: "Very well."

Des Moines (Iowa)\*\*\*: "Very well."

Wilmington (Del.)¶¶: "Well. Have saved company money. Would not be without them."

Trenton (N. J.)¶¶: "Very well."

Benton-Bellefontaine (St. Louis): "Think it is good."

Southern (St. Louis)§§: "Think it is good."

Saginaw (Mich.)§§: "Like it well."

Clay St. Hill (San Francisco)¶¶: Yes.

Springfield (St. Louis)¶¶: "Have just adopted them."

Cass Ave. & Fair Ground (St. Louis)¶¶: "Still room for improvement."

Central (Los Angeles)¶¶: "Very much."

South Side (Pittsburgh)¶¶: "Works satisfactorily."

Jamaica & Brooklyn (N. Y.)¶¶: "Good."  
Louisville (Ky.)¶¶: "Pleased with it."  
The following companies employ different devices:—

Grand Rapids (Mich.): No conductors, except on dummy line; and there, bell punch; "only system tried."

Southern (St. Louis)§§: Register and "officers." "Fairly well."

Omnibus R. R. & Cable Co. (San Francisco): Bell punch and slips on one line, fare box|| on Howard St. line. "Consider the bell punch best."

Potrero & Bay View (San Francisco): Alarm registering punches and fare boxes. "Satisfactory."

Market St. (San Francisco): Alarm registering punches and fare boxes. "Satisfactory."

Fifth Ward (Syracuse): "Fare boxes|| and registers¶¶. "Best system we know of."

City (Trenton, N. J.): Boxes|| and registers¶¶. "Like same very much."

Keokuk (Iowa): "Have fare boxes and April 1 put in registers¶¶ as additional check. Think it an improvement."

City (Mobile): "In closed cars, boxes; in open cars, punches. Not satisfactory, but the best we can do."

Niagara Falls & Suspension Bridge: Bell punch and register¶¶. "Very well."

Frankford & Southwark (Phila.): Pistol punch and registers¶¶. "Better than anything else, as they can't beat the device, but steal by ignoring it only."

Rochester City & Brighton (N. Y.): Use mostly one-horse cars with fare boxes|| and registers¶¶. "Satisfactory in the main."

City (Altoona, Pa.)¶¶: "Have conductors only part of the time; during the Summer months use register; like it."

Boone & Boonsboro (Iowa): "Fare boxes and stationary registers; good system."

Columbus Consolidated (O.): "Bell punch (alarm register) on all conductor cars and fare boxes on the others; like both well."

Cumden (N. J.): "Prunt's system."

Birmingham (Ala.): "Use celluloid check."

Citizens' (Phila.): "Have detectives."

Oshkosh (Wis.): Tickets; no conductors; "all right."

Lewiston & Auburn (Me.): Fare boxes on regular lines.

People's (Springfield, Mo.): "Use boys for conductors, and tickets; not entirely satisfactorily."

Brooklyn, Bushwick & Queens Co. (N. Y.): Register§§§; inspectors meet every car; "pretty well."

Charles River (Cambridge, Mass.): Register§§ and inspectors; "consider it the best."

Superior St. (Cleveland, O.): "Register in cars; have open and private spotters; like it well."

North Chicago: Register§§ and detectives.

Coney Island & Brooklyn (N. Y.): Register¶¶ and private spotters; "open to discussion."

Topeka (Kan.): Register¶¶; require blanks furnished drivers to agree with register.

The South Ferry Co. (N. Y.): Use inspectors.

On the Baden & St. Louis Ry. (Mo.), the drivers make slip reports every trip.

The Montreal Co. (Canada) uses fare boxes and detectives; "answers better than all clocks and registers combined."

Paterson (N. J.): Fare boxes and slips. "Very well."

New Bedford & Fairhaven (Mass): Fare boxes on most of the cars.

Greenville (S. C.)||: Envelope system and fare boxes.

Bourbon County (Fort Scott, Kansas): Fare boxes and printed tickets.

Emporia (Kan.): Drop box|| with their own attachment, "which we find necessary."

Evansville (Ind.): Cars mostly double enders; fare box|| in each end; no conductors; "registers¶¶ some benefit as a check."

Citizens' (Baltimore): Drop box|| without conductors, except in open cars in Summer, and they have registers.¶¶

Aurora (Illinois): Drop boxes with envelopes; "the best where no conductors are employed."

City (San Francisco): One-horse cars have fare boxes; use bell punch on two-horse cars; "both give good satisfaction."

Kingston (Rondout, N. Y.): Drop boxes; no check upon conductors except the watchfulness of the Superintendent.

Lawrence (Kan.): Two drop boxes|| in each tight car; with open cars use conductors with no system of checks.

Lafayette (Ind.): Fare boxes¶; also, drivers are required to punch slip register for each fare.

Zanesville & McIntire (O.): Use tickets put into fare boxes; drivers collect fares; evenings and all Sundays run four Summer cars, weather permitting; use conductors only on Summer cars.

Sedalia (Mo.): Use drop boxes|| on three cars; "like them first rate;" on the other three use conductors.

Houston, West St. & Pavonia Ferry (N. Y. C.): No conductors; all two-horse bob-tails; "are just now considering question of indicators;" have fare boxes.||

Springfield (Mass.): Bell punch, and are trying register.\*\*\*

The following roads report without comment, that they have no checks on conductors:—

- El Paso (Texas) S. Ry. Co.
- Lampasas City (Texas.)
- Stoneham (Mass.)
- Terre Haute (Ind.)
- Central (Toledo, O.)
- Urbana & Champaign (Ills.)
- Wheeling & Elm Grove (W. Va.)
- Waltham & Newton (Mass.)
- Haverhill & Groveland (Mass.)
- Hannibal (Mo.)
- Laconia & Lake Village (N. H.)
- Longview & Junction (Tex.)
- Merrimack Valley (Lawrence, Mass.)
- Mohawk & Ilion (N. Y.)
- Cream City (Milwaukee, Wis.)

¶ Lewis & Fowler's. ¶¶ Hornum. §§ Benton's. || "Standard." \*\*\* Demorest's. ¶¶ Marshall's Classifying. ¶¶ Chesterman. ¶¶¶ Richardson's "Time Alarm." §§§ Monitor.

Meridian (Miss.)  
 Canal & Claiborne Sts. (New Orleans.)  
 City (of Poughkeepsie, N. Y.)  
 Gate City (Atlanta, Ga.)  
 Aurora (Ills.)  
 Van Brunt St. & Erie Basin (Brooklyn,  
 N. Y.)  
 Columbus (Ga.)  
 Greencastle (Ind.)  
 Grand River (Detroit.)  
 Dubuque (Iowa.)  
 Enterprise (Miss.)  
 Fort Smith (Ark.)  
 Fort Worth (Tex.)

The following roads report having no checks on conductors, and make the comments annexed to their names:—

Washington St. & State Asylum (Binghamton, N. Y.) "Do not like it!"

Mohawk & Ilion (N. Y.): "We had a pay-box on cars two years; did not like it; passengers would not pay, when a crowd on cars. We took it out. Should like to sell the thing."

City (Los Angeles, Cal.): "Satisfactory."

San Antonio (Tex.): "Run on general average, from which we receive more satisfaction than any other."

Central (of Syracuse, N. Y.) keep a record and examine the same of each conductor's receipts, and if he falls behind, without good reason, discharge him. We treat conductors as if they are honest, until proved the reverse.

Norwalk (Conn.) "We pay our men enough to keep them honest."

Coast Line (Savannah, Ga.) "The best system of checks is to keep good men, pay them fair wages, and show them they are men and not a gang of thieves."

There is more than a probability that the words "check" and "register" have been understood somewhat differently by different companies; and probably some devices appear under two names; but we prefer not to "edit" the statistics received.

Wherever the maker or patentee of a device has been named by the company reporting, we have been careful to announce it as reported to us. Where we have known what device is used, but it has not been named by the company reporting, we have not mentioned the name.

Looking hastily over the report, we find that 237 companies have reported. Of these, 37, or say, 15.6%, use only the bell punch;\* 50, or 21.1%, use drop boxes; 59, or 24.9%, "registers;" and 46, or 15.1%, use either combinations of two systems, in one car, or different systems on different cars.

There are but 35, or 14.8% of the companies reporting on the subject, which use no check of any kind upon the conductor.

There are ten companies, or 4.2% of those reporting, who state that they have "no conductors," but they do not positively state whether they use drop boxes, or the driver acts as conductor.

We extend thanks for our readers and for ourselves, to those who so courteously reported in this matter. Perusal of their replies can not fail to prove interesting and profitable.

\* Two of these report "bell register" and "registering punches" respectively.

### Extra Conductors.

Almost any one taking a seat favorably placed for observation in one of the Broadway cars, N. Y., will probably note that after the car is fairly full, at least 15% of the fares are not "rung in." Some of these are probably not collected; some probably collected and not turned in. The cars make good time and most of the rides are short distances, and consequently there are more passengers for a given length of time than on cars of almost any other line in N. Y. City. Consequently the conductor has a poorer chance to collect fares, and a better opportunity to collect others without turning them in or ringing them in.

Perhaps a good way out of this would be to have two conductors, one at each door. Each would collect as many fares as he could, and ring up his own collections on his own register or alarm. Passengers should be asked for their fares at once on entering, even on the platform. They would then get in the habit, as a general thing, of having their nickels ready; and there being two conductors, probably all the fares would be collected, and all turned in that were collected. The extra man would be for collections only.

### Starting too Soon.

Absence makes the heart grow fonder.  
*Bayley.*

What vigor absence adds to love.  
*Flatman.*

These lines often come with great force to what is left of our mind after struggling all day with editorial duties. They are generally inspired by the rear view of the dashboards of the cars on several of the Brooklyn lines, which have a most disgusting habit of starting on a time-table ingeniously calculated to miss the maximum possible number of ferryboats, rapid transit and Long Island Railroad trains, and cars crossing their track. We hear frequent complaints from others about the same thing, and feel justified in suggesting that it would be money in their pockets if some of these lines would take a look at their time-tables and see if they could not make it so that passengers would not have to wait so long. We are satisfied that many passengers travel less frequently, particularly in bad weather and after dark, by reason of imperfect connections of street car lines.

The same remarks hold good for many steam railroads throughout the United States.

### Fare Collection.

The amount of room taken up by the rehearsal of facts connected with the Chicago strike, and of comments thereon, prevented our giving in the August issue of the STREET RAILWAY JOURNAL, quite a quantity of matter which we have in hand, concerning Fare Collection and other subjects. By our next issue we hope to have disposed of all accumulations of "copy." Our readers will excuse our calling their particular attention to the great desirability of their carefully reading and critically commenting upon the communicated articles and editorials upon such important topics.

### Conductors vs. Clerks.

Car conductors call for sympathy and higher wages; or if they cannot get both, higher wages anyhow; and to some extent they have interested a certain class of public sympathy; posing as representatives of the poorest paid and hardest worked of all wage-winners.

It might be well worth looking into (especially by those who pile paving blocks and beer kegs upon car tracks as a means of testifying their sympathy with car conductors), to see which gets the hardest work and the least pay, the average car-conductor or the average clerk. The confinement of the latter is an offset to the long hours of the former; his requisite acquirements are greater, his work demands intelligence, education, experience and certificates of good character and good habits, far beyond those offered by, or asked for in, the candidate for the conductorship.

The wages of the clerk are low, because the supply is greater than the demand, and for no other reason. They will probably continue low, for the same reason. The same may be said in reference to the conductor, who, take it all in all, is as well off as the clerk, if not better off; and certainly gives more trouble to his employers.

### Send in Items.

THE STREET RAILWAY JOURNAL has so far been able to give its many and widely scattered readers, a great many items concerning street railways, present and future. For these items it has to thank friends nearly all over the country, who have supplemented the assiduous efforts of the regular news-gatherers of the journalistic staff. If now every one connected with street railways will remember to send us a memorandum of whatever comes to his notice, concerning street railways and their kindred interests, the STREET RAILWAY JOURNAL will be, in the matter of news, as infallible as it is now welcome.

### Spotters in the Olden Days.

In Ingoldsby's "Lay of St. Nicholas" we find the following lines:

Th' accusing Byers flew up to Heaven's Chancery,  
 Blushing like scarlet with shame and concern;  
 The Archangel took down his tale, and in answer he  
 Wept. (See the works of the late Mr. Sterne.)

It appears that this Byers was in the habit of noting what stage drivers overloaded, and of reporting them to the Justices, so that he might get a portion of the fine imposed. He was, in fact, an amateur—or rather an independent—spotter.

### The Convention.

The next regular meeting of the American Street Railway Association will be held at the Southern Hotel, St. Louis, beginning Wednesday, October 21.

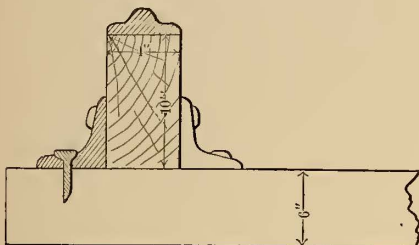
Manufacturers of street railway appliances who wish to exhibit samples at the convention will do well to address the publishers of the STREET RAILWAY JOURNAL for particulars.



**Lateral Stiffness of Street Railway Track.**

Concerning lateral stiffness of street railway tracks, particularly in reference to the knees, which are supposed to prevent the longitudinal stringers of the ordinary construction, from turning upon the cross-ties which support them.

The centre-bearing or the side-bearing rail is laid on a stringer which is intended to give vertical stiffness and support to the

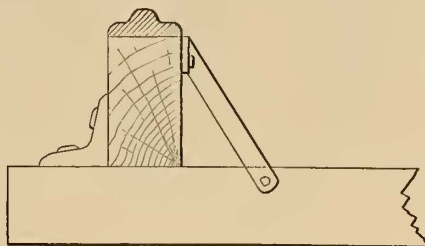


track, and has, in consequence, a height greater than its width, say in the proportion of 8 or 10 to 4. The tendency of the direct weight of the car when standing still on a straight track which is in cross-level, is, supposing the gauge tight, simply to bend the rail and stringer. The tendency of the car when running is to crowd the rails sidewise, and to widen the gauge and turn the stringer upon the cross-tie. To resist these last tendencies, of the car when running, there are employed cast iron knees which are spiked to both the tie and the stringer, every other knee brace being with and the other without. The tendency of the sliding stresses is to shear all the vertical spikes, tear the cross-tie fibers out by sliding them lengthwise, and draw the horizontal spikes of the inner knees from the stringers. The tendency of the turning of the stringer on the cross-timber is to close the outer knees, open the inner knees, slightly bend and slightly draw both the vertical and the horizontal spikes of the outer knees, draw the vertical spikes of the inner knees from the cross-ties, and bend and slightly draw the horizontal spikes of the inner knees from the lengthwise stringers.

We see knees 4" high and 3" base working against the leverage of a stringer 10" deep. While the opening and closing action is inappreciable, the vertical holes in the cross-ties are, by the endwise crushing of the fibers of the wood, made longer and a trifle wider, so as to permit sliding of the stringer and opening of the gauge. By cross-wise crushing of the fibers of the stringers, the spike holes in the stringers are enlarged so as to permit turning or tilting of the stringers. The spikes get loose; water enters around them, rusts the iron, rots the wood; the holes still further enlarge, and the track gets out of gauge and rickety.

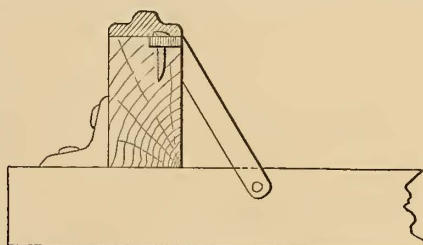
It is our impression that it would be much cheaper to substitute long, flat, wrought iron, diagonal tension-braces or tie-braces, on the inside, for the short cast iron braces or knees, which are mostly only useful to resist compression; and to arrange the fastenings so that there would be

no tendency to draw spikes. A flat brace 2" wide, 1/4" thick, and 14" to 15" long, reaching from the edge of the cross-tie, to which it would be fastened by a horizontal spike, to the top of the side of the stringer, where it would be twisted so that its upper end would lie flat against the upper part of the side of the stringer, and it



would be fastened to the stringer with a horizontal spike—would much more effectually resist turning of the stringer, than the short inner cast-iron knee.

By slightly boxing out the top of the stringer so that the upper end of the flat tie-rod could be turned over and spiked with a vertical spike to the stringer before the rail was put on the stringer, the resis-



tance to turning would be even greater than where the upper end of the tie was spiked by a horizontal spike to the side of the stringer.

We have not had time nor opportunity to get estimates on cost of making and putting in these properly applied tension pieces, as against the compression pieces at present wrongly used and improperly applied as tension-members; nor as to their probable time of lasting and keeping the track firm; should like the opinion of our readers on the whole subject.

**What Are Taxes For?**

In view of the recent Chicago riot, the question arises—What are taxes for?

The answer is simple: partly to pay for water, paving and other such matters, necessary to health, comfort, proper transaction of business, and easy intercourse, and pleasant to the senses; and partly to pay for jails, police, militia, and other guardian agencies which protect the law-abiding from the vicious, and the intelligent from the uneducated.

The people who pay most of the money for jails and police are not those who mostly occupy the one or require the attention of the other.

A decent, law-abiding citizen pays taxes for years, that in the event of a burglary, or an assault, or other crime against him, he may find prompt and efficient protection. When that protection is called for, he wants it at once; he wants it badly, he wants it to be ungrudged.

A conductor and a grocer quarrel on the

street about money matters. One thinks himself aggrieved and threatens to settle his grievance by "taking it out of the hide" of the one who he thinks has charged him too much, or not paid him enough. Suppose that in such an event the one threatened with assault and obstructed in his on-going should call in a policeman, and be told by the latter that it was not a case of interference by him as the representative of the law, but that the one threatened with assault should stay where he was and have the matter settled by arbitration.

If the conductor were the assaulted party, what would he think of the officer who allowed him to be obstructed in his passage, and threatened with physical injury, simply on account of a difference of opinion on money matters?

The analogy between such a case and the Chicago West Side strike and riot is quite strong.

In this case the railroad company has been for years paying heavy taxes, part of which were to be used for the company's protection in case of an emergency. The emergency arrived, and the protection was not afforded. The authorities are to be censured for their failure to punish all offering obstruction and violence; and we hope that the city will be sued for the pecuniary damage resulting to the company and to citizens from the obstruction to transit, during the aggressive part of the strike.

**The Memphis Strike.**

The concessions made by the Chicago West Division Company to the recent strikers on that road have speedily borne fruit in Memphis, as will be seen by an account in another column of a strike in that city. We regret to say that the result in Memphis is quite as damaging to the interests of the street railway companies of the country as was that of the Chicago strike. In both cases the strikers *gained by a strike*, what, by other means, they were unable to obtain. This too, notwithstanding in both instances violence was used by the employees. It is not our intention to criticise either company in the conduct of its private affairs, which the well-known ability of each renders it perfectly competent to manage, but in behalf of the street railway community we do regret that Superintendent Lake, of Chicago, was not allowed to maintain what seems to us to be a position well taken.

Whatever course the individual interests of these companies may have seemed to justify, their action has gone far to produce the pernicious impression that strikes are profitable to the strikers.

**Special Rates to the Convention.**

An effort will be made to procure special rates of fare, special sleeping cars, &c., to the St. Louis Convention. A party will probably start from New York on Monday, Oct. 19th. We should be glad to hear from any or all who intend going from or *via* this point.

### A New Cable System.

President W. H. Hazzard and Directors Seymour L. Husted, James Howe and W. M. Thompson, of the Brooklyn City Railroad, and Messrs. Fitzgerald and Lynch, of the De Kalb Avenue line, have recently been in Cleveland, O., inspecting a new cable system of propelling cars. It is known as the Johnson patent and is just being introduced. Mr. Hazzard is very favorably impressed with it, judging from the following notes, which we take from the *Eagle*:

According to Mr. Hazzard and the samples of cable brought back by the committee, the appliances differ in almost every particular from those commonly used in the few cable roads now in operation. The cable consists of two wire ropes made up of six one-quarter inch strands, wrapped around a half-inch cotton cord and held an inch apart by steel clamps or cross bars placed at five-inch intervals. This runs over wheels set at a slight angle, not more than an inch below the slot in the roadway, in a conduit just large enough to hold it. The grip is a big wheel half an inch thick, just fitting in the slot, and looking much like an overgrown buzz saw, the teeth of which do the gripping. As the car starts the wheel revolves its teeth, fitting between the cable bars, and when once braked up the car runs at the full speed of the cable. By loosening the brake so that the grip wheel can revolve slowly the speed of the car may be diminished. The conduit can be cleaned by merely dropping the cable to its floor, and letting it run for a few moments. This sweeps the dirt into pits placed at intervals whence it can be readily removed. No difficulty is observed in turning corners. The lot in which the trial took place was a square holding five hundred feet of track. All the cars were pulled around its four corners without trouble.

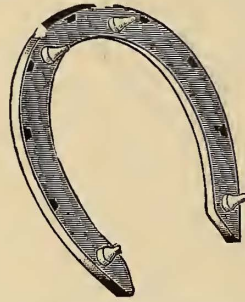
"It is the best cable contrivance I have yet seen," said Mr. Hazzard. "Will we adopt it? Ah, that I cannot tell. Our committee will consider it. The question of the adoption of any system has not yet been reached by us. We inspect everything which seems to possess practical value. The system I have outlined to you possesses many advantages, apparently. We would not need to cut our cross ties to utilize it, the conduit being so small, and it is estimated that our lines would be equipped with it at a cost of not more than \$40,000 per mile, including everything."

### The Neverslip Horse-Shoe.

We illustrate herewith the "Neverslip" horse-shoe. This is a new method of shoeing especially adapted for winter use. The best shoe, applied in the best manner, is a very important matter, both for economic and humane reasons. The manufacturers\* of this shoe claim to have solved the question in the most satisfactory manner, judged from either standpoint. The characteristic feature of this horse-shoe is the removable,

\* The Neverslip Horse-Shoe Co., 36 India Wharf, Boston.

steel-centred and self-sharpening calks. These are made of a core of fine steel within an outside of the best of iron—a combination which should give calks great strength and durability. From their peculiar structure and shape, the iron tends to wear away



faster than the steel wherever they penetrate the ice or ground, and the calks always remain sharp. Besides the sharp calks, two other shapes—the blunt and half-blunt—have been devised for use where sharp calking is not required, but where some calking is needed.

They claim the following special advantages:—It never slips in any direction. The horse soon learns this fact, and consequently, whether pulling or trotting, will always do his best. It saves the horse from sprains and bruises which consequently result from insecure footing. It avoids the injury to the horse's feet caused by a too frequent re-setting of the shoes. It greatly lessens the danger of injury from calking. It saves the time, both of the horse and owner, as the insertion of new and sharp calks is the work of only a few minutes. It is safety and comfort both to horse and driver.

### Inter-State Industrial Exposition of Chicago.

The Thirteenth Annual Exposition of this organization will open Wednesday, September 2, and close Saturday, October 17, 1885.

Twelve years of success have placed these annual Industrial and Art Exhibitions beyond rivalry.

The population of Chicago alone numbers at least 650,000. Its commercial and manufacturing enterprises and general business are in the hands of intelligent, energetic, aggressive business men. The region tributary to the city in past years has given an attendance at the annual expositions of about 400,000 paid admissions, or nearly 10,000 persons daily for 40 days.

The management do not try to make the annual expositions sensational or amusement shows. They are intended, rather, for the substantial education of those who study them, in all that relates to mechanic and fine arts, to natural history and to all other departments of human activity which may properly find a place in such exhibitions.

### Busy Broadway.

Four men were recently stationed at Fulton street and Broadway, before Mr. Sharp got his permit from the Court to lay his track, to count the vehicles passing through Broadway at that point

from 7 A. M. to 6 P. M. The total number was 22,308 for the period of eleven hours—about 2,000 an hour, thirty-three a minute, or one every two seconds. The largest number of any one kind of vehicles was of single and double trucks, 7,384; the smallest number was two; these were ambulances. There were 3,390 single and double express wagons. The 2,310 stages and the 1,022 cabs were next in order of quantity, peddlers' wagons numbering 938, produce wagons 446, rag trucks 375, carriages 354, coal carts 324, and venders' wagons 300. Then there was a drop to hacks 288, and butcher wagons 223. The variety of vehicles was striking, there having been eighty kinds according to the schedule. Every conceivable article of transfer appears to be poured into Broadway.

### Another Car Drivers' Strike.

A Memphis dispatch dated Aug. 18, says: "The drivers on the several lines of the Memphis Street Railway Company struck this morning, and travel has been greatly interrupted. The cause of the dissatisfaction was the issuing of an order by the company reducing the pay of all drivers who have not been in the employ of the company for six months, from 12½ cents per hour to 10 cents. The strike was general, and commenced at 6 o'clock. The company managed to send out a few cars on each line, but by 7 o'clock the strikers began to interrupt travel by throwing the cars from the track. The police were called on, but the meagre force was unable to give the necessary protection, and stranded cars were to be seen in all directions. Three or four arrests were made, and each car running is being guarded by police officers. Three of the new drivers were assaulted, but so far no serious injury has been done to them.

"The striking drivers held a meeting, and a committee of five was appointed to confer with the street railway company with a view of compromising matters and restoring wages to the old rates. The committee reported to-night that the officers of the company refused to treat with them. Cars were run during the afternoon by raw hands, but at 8 o'clock to-night were all withdrawn. Everything is quiet, and the strikers hope to carry their point by peaceful means. No disturbances occurred during the afternoon, and in all probability none will happen to-night, although the strikers have the sympathy of all the trades unions of the city."

Later advices are to the effect that the drivers demanded ten cents per hour for new drivers for the first month, eleven and a half for the second, and thirteen and a third thereafter. A telegram of the 20th states:

"The drivers have accepted the terms of compromise made by the officers of the street railway company, and travel was resumed on all the lines this morning. The terms agreed upon are ten cents per hour for the first month, eleven cents for the second, and twelve and a half cents for the third and succeeding months; thirteen and a half cents to be paid to all drivers who have been in the employ of the company for the period of one year.

**Compressed Air Motors Wanted.**

[We have the following communication from the secretary of a street railway company, who can be addressed through our columns.]

EDITORS STREET RAILWAY JOURNAL:—

Would you be kind enough to give me the address of any company manufacturing compressed air motors?

Or I would like to enter into correspondence with some expert on the subject of compressed air as a motive power.

Within a convenient distance of our track for the whole length (over five miles) there is abundance of water-power which could be utilized for compressing air; and if you can place me in the way of communicating with any parties that will assist me to find a substitute for horses, you will confer a favor.

I am convinced that we cannot use a steam motor, as its weight would prevent us using it on our track as at present built.

We have some grades of 6' and 7' to the 100', running 1500' in one case and shorter distances in the others; with slight curves in every case.

Gauge of track (inside distance between rails) is 4' 8½"; one mile is T rail and four miles flat; all iron; weight, 30 lbs. per yard. Crossties are 6" wide, 4" deep, 48" apart from centre to centre for the flat rail, and 24" for the T rail. Shortest curves are 45' radius.

The service required is to haul one car, weighing, with its loading, 6,000 lbs., up the grade of 7' per 100'. Each car weighs, empty, about 2200 lbs. The wheels are fastened on axles; the journals run in oil boxes; rate of speed, six miles per hour.

The Baldwin Locomotive Works have built a considerable number of pneumatic locomotives, most of which have been designed for use in mines; and will send, on application, a copy of their catalogue of mine and pneumatic locomotives, which contains some description of them. A pneumatic tramway locomotive would require to be somewhat more complicated, and should be fitted with an inter-heater and special cut-off valves, in order to secure greater efficiency from the air under compression. The Baldwin Works built some time ago a locomotive having the special features of construction invented by Mr. Robt. Hardy, which was operated experimentally on the elevated roads in New York; and say that the same features have been applied with much success to tramway service. Mr. Hardy now has a pneumatic car running from Brooklyn to the town of Steinway; and the builders say that they have been favorably impressed with its operation, and that if our correspondents desire, they could undertake the construction of tramway cars of separate motors, incorporating these special features.

We have no data as to the cost of operating. So far as we know, the above is the only instance in which pneumatic power is used upon tramways in this country. The cost of the machinery would depend entirely upon the work to be done, namely, loads to be hauled, length of line, and the curves to be overcome.

An exchange says of this motor: The machinery of this motor was originally built at the Grant Locomotive Works for a street railroad in Paterson, N. J., but for

some reason the company did not accept it. John Stephenson built the car, and it is a model of convenience for the purpose it was built for. The chambers for holding the compressed air, are placed under the seats, under the car, and in any place that affords room without taking any passenger space. Air of high tension is used, and its pressure is regulated by a reducer before passing to the cylinders. When the chambers have been filled, the car will run twelve miles before the pressure becomes exhausted.

A representative of this journal called upon Mr. Hardy for the purpose of getting information for our correspondent, but returned with the statement that Mr. Hardy would give no particulars; from which we conclude that he does not care to do any business.

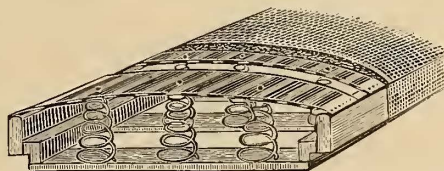
**Electric Railway in Philadelphia.**

An experiment is about to be made in Philadelphia, though not much can be learned from trial trips with a single car. It does not need any demonstration that a single car or train can be run in this way, but the interesting question to be determined is the controllability and economy of the system when a dozen or a score of cars are being run on the same track. It would be a good thing now to have some other railway company try compressed air on one of the improved systems. The air reservoir cars have just been introduced in London with apparent success, and there is the California system of distribution, supplementary to the reservoir system, which still awaits trial on a commercial scale. With a cable, an electrical and a compressed air railway, all operating at the same time, our passenger railway companies would have a good opportunity to compare all the various systems of car propulsion. With or without the distributing plant, compressed air costs the least for experimental trials.—*Phila. Ledger.*

[The system mentioned is that of the Bidwell Electric Railway Company, which will build a line from Dauphin street to Laurel Hill, which will be peculiarly satisfactory as an experimental road, on account of its numerous heavy grades and curves. The company is in the market to purchase a hundred H. P. engine, and will use an improved dynamo. The system showed very good promise at the Electric Exhibition of the Franklin Institute.—Eds.]

**Sectional Seat Spring with Drop-Down Frame.**

This seat\* has spiral springs riveted to an elastic slatted top with spring steel



cross-pieces between; is in spring edge form; and is here made with "drop-down" frame.

\*Hale & Kilburn Manufacturing Co., 48 N. 6th st., Philadelphia.

**Personal.**

R. G. MATTERN of Pittsburgh, new southern and western representative of the firm of Andrews & Clooney, is now making his first western trip in his new capacity.

F. H. ANDREWS, of Andrews & Clooney, is spending a few days in the Adirondacks. Mr. Clooney has returned from the west.

**Notes and Items.**

[All our readers are particularly requested to send us, at the earliest possible moment, notes concerning actual or proposed improvements in street railways. It is by this means that the STREET RAILWAY JOURNAL will increase its usefulness to each one who receives it.]

DENVER, COLO., has eighteen miles of street railway tracks.

BARTOW, FLA., wants a street railway, according to one of our exchanges.

THE MIDDLESEX (Boston) RAILROAD's new belt line is running very successfully.

THE HAMILTON (O.) STREET RAILROAD Co. has ordered a number of new cars.

THE LEWIS & FOWLER MFG. Co., Brooklyn, has the sole agency for the Otis safety coupling pin.

TAMPA, FLA. The capital stock, \$50,000, of the Tampa Street Railroad Co., Tampa, Fla., has all been taken.

THE COLUMBUS (O.) CONSOLIDATED STREET RAILROAD has adopted the Lewis & Fowler register on one of its lines.

THE SEATTLE (Wash. Ter.) STREET RAILWAY Co. proposes to extend its line one and one-fourth miles very soon.

THE COLUMBUS (O.) CONSOLIDATED RAILROAD has ordered ten new cars of the Brownell & Wight Car Co., St. Louis.

THE NEW YORK & HARLEM ROAD—A. Skitt, Supt.,—has ordered of Andrews & Clooney a snow plough and a snow sweeper.

THE PEOPLE'S PASSENGER RAILWAY Co. of Philadelphia is equipping its new cars with the Josephine D. Smith centre lamp.

A NEW ADJUSTABLE SLOT for cable railways has been tried with satisfaction in Philadelphia; it will be fully described in these columns.

THE JOHN STEPHENSON Co.'s forty-three new cars for the Brooklyn City R.R. Co. are lighted with Josephine D. Smith's centre lamp.

DALLAS, TEX. W. H. Prather and others, of Dallas, Texas, have incorporated the Dallas Land and Street Railroad Co.; capital stock, \$100,000.

THE DAVENPORT (Ia.) CENTRAL R.R. Co. will expend some \$3,000 in rolling and live stock, and repair road-bed and track quite extensively this season.

ALFRED EDGERTON has resigned the office of Superintendent of the Albany (Street) Railway. Mr. John W. McNamara, President, will also act as Superintendent.

THE DAYTON (O.) COUNCIL has ordered work to be resumed within thirty days on the new street railroad in that city, and that the road be completed in six months.

THE JOHN STEPHENSON COMPANY report abundant orders from all quarters for new street cars, and anticipate an active and excellent business for the Fall and Winter.

JOSEPHINE D. SMITH'S CENTRE CAR LAMPS are used in the new cars of the Green Point & Lorrimer Street (Brooklyn) Railway; and also in new cars on the Broadway (New York) road.

WE HAVE HEARD THE GOURDIER Rubber Cushioned Bar Horse Shoe recommended

for use upon street car horses; and it is our intention to examine it and refer to it again in a future number.

A NEW TWENTY-TWO TON CABLE is to be put into the conduits on the eastern end of the Market street, Philadelphia, line. A new method (not stated) is to be employed in putting it into place.

THE ATLANTIC AVENUE R.R. Co., Brooklyn, N. Y., takes out licenses for ninety-two cars—eight more than it ran last year. The city license is \$20.00 a car, so the company pays this year \$1,840.00.

THE LANE NATIONAL CABLE RAILWAY Co., capital stock \$300,000, has been organized in Covington, Ky., by H. N. Lane, G. B. Kerper, S. M. Lemont, Albert G. Clark and John Kilgour, to manufacture cable railway machinery.

THE BROOKLYN ELEVATED R.R. The iron for the extension and ferry terminus at the Bridge pier is being rapidly delivered and put into position. Many old houses and business blocks had to be altered or taken down to make room for the structure.

GREENPOINT (Brooklyn, L. I.). M. W. Conway is relaying track on Greenpoint avenue, from the Ferry to Manhattan avenue, for the Bushwick R.R. Co.; using 60 lb. steel centre bearing rail. The street is repaved for about a mile with granite blocks (Godet patent).

THE TRACTION COMPANY, in Philadelphia, appears to have stolen a march on the local law-makers, so that it will *not* be compelled to lower its fares from six cents to five cents, as was intended. The local law-maker as well as the local passenger, is, consequently, moved to wrath.

THE CONTRACTS FOR SUPPLYING THE IRON for the Glens Falls, Sandy Hill & Fort Edward R.R. have been taken by Messrs. Humphreys & Sayce of this city. The road will be running in about thirty days. This road is 6 $\frac{3}{4}$  miles in length, and connects the above named cities.

ANDREWS & CLOONEY, New York, have completed their contract for furnishing iron work for switches, curves, entrances to depots, &c., for the cable road of the Third Avenue Railroad Company. The contract amounted to over \$10,000.

THE CHRISTOPHER STREET & JAMES SLIP FERRY RAILROAD COMPANY organized Aug. 8th, with the choice of the following officers:—President, Samuel F. Pierson; Vice-President—A. H. Welch; Secretary—Nathaniel S. Smith; and Treasurer—A. W. Spear.

BROOKLYN, L. I. The Broadway R.R. Co. is about to commence a new branch road on Ralph avenue from Broadway to Atlantic avenue, about two miles, using 60 lb. centre bearing rail. M. W. Conway has the work by contract. A good deal of other street railway work is pending.

ANDREWS & CLOONEY are building snow sweepers for the Charles River road, Boston; Naumkeag, Salem; Union Depot road, St. Louis; Third and Fourth avenue roads and Broadway road, New York. There are over 200 of these sweepers now in use

in New York, Brooklyn, Philadelphia and Pittsburgh.

PHILADELPHIA, or at least the northern portion of that city, needs very badly a cross-town line, to connect Tioga with Richmond and Frankford, on the one hand, and the Falls or some other Schuylkill river point, on the other. It might be run advantageously by any one of the three northern suburban lines.

NO MORE TRACKS ON FORTY-SECOND ST. A permanent injunction was granted July 21 by Judge Ingraham in the Superior Court restraining the Forty-second Street & Manhattanville Railroad Company from laying its tracks on Forty-second street. The injunction was granted on the application of the Third Avenue Railroad Company.

FRANCHISE FOR A NEW STREET RAILROAD. The committee on railroads has reported in favor of granting a franchise to the Wall, Fulton and Cortlandt Street Railroad Company to construct and operate a surface railroad from Fulton, Wall and Cortlandt street ferries. The report was accepted, and an ordinance passed granting the franchise.

MESSRS. HUMPHREYS & SAYCE, of No. 1 Broadway, N. Y., dealers in iron and steel rails, report a greatly stimulated inquiry for steel rails within the last few days. They say that inquiries for upwards of a hundred thousand tons are in the market, and that the price has consequently stiffened about two dollars a ton within the last ten days.

THE GOODENOUGH HORSE-SHOE COMPANY, 156 & 158 East Twentieth street, issues a handsome, elaborately illustrated pamphlet, quarto size, which very fully sets forth the merits of its system of shoeing, and is supplemented with many testimonials from some of the largest horse users in the country in support of its methods. Parties interested may obtain the pamphlet by addressing Charles W. Russell, Manager, at the above address.

THE COLUMBIA AVENUE LINE of the Philadelphia Traction Co. is using two cables of 1 $\frac{1}{2}$ " wire rope, respectively 19,000' and 10,000' in length. They are run by two 260 H. P. engines, carrying 40 lbs. of steam. The engineers are Joseph Craig and George Armitage, the latter a member of the Chester, Pa., National Association Stationary Engineers.

WM. WHARTON, JR. & Co., LIM., Phila., have just finished a handsome new office building, in connection with their works at Twenty-fifth street and Washington avenue. Mr. Samuel, of this company—formerly our national representative to the country of the "Sublime Porte"—is now summering somewhere "far down" east, on the coast of Maine. Mr. Samuel is not one of those whom the stringent laws of that State are likely to trouble.

ELECTRIC ELEVATED ROAD IN CHICAGO. The Chicago & Cook County Railway proposes to build an elevated road on State street from Adams to Sixty-third street and along Forty-third street to the Stock-yards branch. It will pay land owners \$10 a foot for right of way from Adams to Twenty-second street and \$5 per foot from Forty-

first street to the Stock-yards. On State street it will pay \$2 per foot to Sixty-third street, making a total of over \$100,000.

BROOKLYN STREETS. Fourth avenue, from Flatbush avenue to Union street, is being repaved. Granite is being laid in the centre to a width of 24'. The Smith street car line is taking up its track in York street and relaying it in Prospect street, from Jay to Main streets, making a double track on the latter, and both streets are being repaved with cobble stone. A part of Park avenue has just been repaved, the grade near Nostrand avenue being raised about two feet.

BROOKLYN (N. Y.)—City Works Commissioner Fleeman has been advised by the Law Department that he can issue a permit to the Prospect Park & Coney Island Railroad Company to open Park avenue, from Vanderbilt avenue to Broadway, for the purpose of extending its road. The company has a right under its charter to make the extension, as that instrument covers the whole of Park avenue. The road on Park avenue now turns into Vanderbilt, and extends thence to Culver's Railroad depot, at Ninth avenue and Twentieth street. The Commissioner will issue the permit.

BRIDGEPORT, Ct. Work was commenced on a new horse railroad on August 17. The road is two miles long, commencing at the depot of the New Haven & Hartford R.R., and runs along Stratford avenue to East Stratford, with a branch on East Main street to the Singer Sewing Machine Factory. M. W. Conway, of Brooklyn, is the contractor, and D. F. Hollister is President. The company will use cars built by the John Stephenson Company. The road will be in operation Sep. 10.

THE KINGS COUNTY ELEVATED RAILROAD COMPANY handed the consents of the owners of property abutting on Fulton street from Hudson avenue to East New York to Mayor Low of Brooklyn, Aug. 14th; and they are now in the hands of the Corporation Counsel. They do not cover the whole route, and it appears that several details are omitted, such as ward, lot and block numbers, all of which must be furnished before any verification is made by the city's legal adviser. Gen. Stewart L. Woodford is counsel for the road, which is all ready to build, having placed its stock to the extent of some \$1,200,000. The right of way asked for was given it some years ago, and taken away again on account of inaction of the company.

THOMAS L. JOHNSON, President of the Cleveland St. Railway Co., and inventor of the new cable system, has examined the plant of the Brooklyn City Railroad Co. with a view to the use of his system on its road. He will prepare a minute estimate of the expense of putting his system on Fulton street from the Ferry to East New York. The estimate will cover every item pertaining to the road from the cost of laying conduits and establishing the driving plants with their big boilers and giant engines to the wear and tear on the grip, so that the exact cost of building and maintenance may be ascertained beyond question. No system yet shown Mr. Hazzard and his associates has appeared to possess so many advantages as this of Mr. Johnson.

THE BROOKLYN ELEVATED RAILROAD COMPANY is seeking permission to extend its road down Myrtle avenue. President Uhlman says the company is in earnest, and if the right to build is granted the road will be in operation in Myrtle avenue in six months. Before starting, the company will consult the property owners as to what sort of a road they want. The majority of the property owners in Myrtle avenue are said to be opposed to the proposed road, and should the city authorities give their consent they will fight it in the courts.

LOUISVILLE (KY.). Probably no city in the world is better equipped with street car lines than is Louisville. Few streets do not contain tracks, and by a very liberal arrangement of "transfers" it is said that one can make a complete circuit of the city for the payment of a single fare. The fare is five cents on all lines. The street cars are drawn by mules, without exception, and the cars move at a rate of speed which seems remarkable to one accustomed to riding behind the fagged-out horses which draw the cars in most cities. The two miles from Main street to the Exposition grounds is usually made in from fifteen to twenty minutes.

BESSEMER STEEL RAILS. At a convention of producers, held at Long Branch last week, which embraced all the leading manufacturers of the country, an agreement was entered into restricting the production of steel rails in the U. S. to 750,000 tons per annum. It was also a general understanding that ruling prices should be enhanced to something like \$30 per ton. It seems to be the general opinion among leading iron men that the lowest prices have been reached, and that henceforth better prices will obtain. Locomotive and other railway equipment participate in the stiffening of prices.

THE BROOK AVENUE RAILROAD Co. applied Aug. 15, to the Aldermen for permission to construct and operate a surface railroad from One Hundred and Twenty-ninth street and Harlem River to Third avenue, to the Harlem River bridge, across it to North Third avenue, to the Southern Boulevard, to Lincoln avenue, to One Hundred and Thirty-fourth street, to Brook avenue, to One Hundred and Forty-ninth street, to Robbins avenue, to Westchester avenue, to Forest avenue, to One Hundred and Sixty-seventh street, to Union avenue, to Stebbins avenue, and thence to place of beginning. The application was referred to the Committee on Railroads.

NEW CARS ON BROADWAY. The new cars of the Broadway surface road carry great numbers of admiring passengers. They are very handsome and are equipped with several novelties. The new car is light yellow in color and is lettered "Battery *via* Broadway to Central Park" on each side at the top, and just above the wheels the single word "Broadway." The interior is brilliant with brass trimmings and is well lighted at night. The top is composed of panels of perforated maple. Numerous ventilating transoms of red ground glass open through the roof on each side and

over each door, bearing the word "Broadway." The windows are very wide, there being but seven on a side, instead of eight, as has heretofore been the rule. Passenger electric signal stops run through the car, the straps being within easy reach. Beneath each platform is a curved guard-rail which acts as a fender or "cow-catcher."

BALTIMORE UNION PASSENGER RAILWAY. The electric motors on this road made six trips between Roland and Huntingdon avenue recently, carrying over forty passengers each time. The round trip was made in twenty-five minutes, allowing five minutes for stoppage at Woodberry. A number of people went out merely for the pleasure of the trip, and came back during the driving rain. No difficulty is experienced on the heavy grades from slipping, as in steam locomotion. The directors of the road held a meeting in the afternoon at the office at the stables of the Baltimore & Hampden Car Company for the purpose of devising a plan for encasing the electric rail. Several accidents to live stock have occurred at points along the track, and it is feared that damage suits might result to the company if the rail is left uncovered. The board decided to place deep strips of timber on each side of the central rail, which will effectually screen the electricity from all contact.

PETITIONING FOR CABLE ROADS. A petition, signed by nearly seventy thousand *bona fide* names, in favor of the cable road system, has been presented to the Board of Aldermen. The petitioners complain that the present means of transit in this city are totally inadequate, and that the charge of a second fare when a change is made from one line of cars to another is an injustice. The New York Cable Railway Company, says the petition, proposes to remedy these causes of complaint by building several trunk lines of railway from Kingsbridge and the Harlem river to the Battery, with cross-town branches, connecting with all the ferries on both sides of the city, and to charge a fare of five cents, without any extra charge on change of cars. In view of the benefits the cable road will confer on the working people, whose fares constitute the largest part of the revenues of the railroad companies in this city, the petitioners request the Board of Aldermen to consent to the application of the company to construct and operate its system of railways.

ELEVATED ROAD TO HAMILTON FERRY. Brooklyn has still another elevated road scheme to talk about in the proposed road to connect Hamilton Ferry with Gunther's road. E. B. Litchfield and Wm. Ziegler, with other well-known capitalists, are in the syndicate. Starting at Hamilton Ferry the new road will run up Hamilton avenue to Sackett street, up Sackett to Bond, along Bond to Butler street, up Butler to Fifth avenue and along the last named thoroughfare to the end of Greenwood Cemetery, where it will gradually connect with the existing surface tracks of the Brooklyn, Bath & Coney Island Railroad. It is confidently asserted by those interested that, in addition to the Coney Island

travel, which the new route would surely monopolize, the route will be a paying one from South Brooklyn, New Utrecht and Bath traffic all the year round. Bath and other places along the line of Gunther's road are rapidly growing in population, and it is confidently affirmed that, with continuous connection with Hamilton Ferry, that section will become more eligible than East New York as a place of residence.

NEW SURFACE CAR LINE TO HARLEM, *via* Madison avenue. Work has been progressing for some time on the extension of the Madison avenue line northward from Eighty-sixth street to the Harlem river, and cars commenced running over it on Aug. 1. About thirty of them are now in use on that section of the road. Some of them run from the car stables at Thirty-second street, but as a rule transfers are made at Eighty-sixth street, though no extra fare is required. The running schedule has not yet been perfected, but cars above Eighty-sixth street are run on about five minutes headway. During the summer months only sixty cars are used on the older portion of the line, and they are run on three minutes headway. This month this number will be doubled, and cars will be run through to Harlem without change. The opening of the extension is an event of importance to residents of the section adjacent to Madison avenue in Yorkville and Harlem. Real estate men say it will not only cause rents to be raised along the line but also increase the value of property.

A NEW FARE REGISTER. A new organization has been effected in Boston, entitled the Boston Electric Register Company, with office at Room 31, Phoenix building, 54 Devonshire street; officers as follows:—

Pr sident, Richard M. Johnson; Sec. & Treas., George J. Morse; Directors, Richard M. Johnson, George J. Morse, Hobart M. Cable, William Meehan, Thos E. Faunce.

The company has organized for the purpose of developing and introducing an electric device to be used by conductors on street railways for registering fares.

The device consists of an electric battery and system of wires enclosed in the framework of car, with push buttons at convenient places for completing the circuit, and thus by electrical rapidity operating the indicating register.

In order to place the push buttons, which resemble ordinary electric bell buttons, out of reach of careless or malicious persons, they are counter-sunk in the framework of the car, still easily accessible to the conductor. The device registers half fares, tickets, and cash fares, on separate dials, and working with electrical rapidity and certainty, seems to be an absolute safeguard to the habit prevailing among conductors, of "ringing ahead of register," "rapid ringing," &c. In a later number of the STREET RAILWAY JOURNAL we shall probably describe this invention more fully; meantime a complete working model may be seen at the company's office.

THE ELEVATED ROADS are being connected with the Bridge in New York by an extension of platform, so that passengers from up-town for the bridge or passengers on the bridge for up-town will not have to go down stairs to the street and climb up stairs again for the cars.

# OFFICIAL LIST OF THE STREET RAILWAYS IN THE UNITED STATES & CANADA.

Compiled from data furnished the editors of "The Street Railway Journal," by the officers of the various roads.

[The following is a complete list of the Street Railways of the United States and Canada, so far as we have received the official returns from the various roads. Will those roads not reported kindly fill out the blanks sent them and mail to us without delay, so that they may be properly represented in the STREET RAILWAY JOURNAL?]

ABBREVIATIONS—m, miles; g, gauge; lb r, pounds rail to the yard; c, cars; h, horses; mu, mules. Officers' addresses are the same postoffice as the company unless otherwise specified.

**AKRON, O.**—Akron St. Ry. & Herdic Co. 2½ m, 6c, 31 h. Pres. Ira M. Miller, V. Pres. James Christy, Treas. B. L. Dodge, Sec. F. M. Atterholt, Supt. John T. Metlin.

**ALBANY, N. Y.**—Watervliet Turnpike R.R. Co. 7½ m, 26-45 lb r, 27 c, 143 h. Pres. Chas. Newman, Sec. & Treas. P. Way, Supt. M. C. Foster.

The Albany Ry. 10 m, 4-8½ g, 33-47 lb r, 51 c, 194 h. Pres., Supt. and Treas. John W. McNamara, Sec. Jas. H. Manning.

**ALLENTOWN, PA.**—Allentown Pass. R.R. Co. 3½ m, 6 c, 22 h. Pres. Samuel Lewis, Treas. & Sec. Joseph E. Ballet, Supt. Russel A. Thayer.

**ALTON, ILL.**—Alton & Up. Alton Horse Ry. Co. **ALTOONA, PA.**—City Pass. Ry. Co. of Altoona. 3½ m, 5-3 g, 43 lb r, 17 c, 38 h. Pres. John P. Levan, Sec. & Treas. L. B. Reifsnider, Supt. John J. Buch.

**AMSTERDAM, N. Y.**—Amsterdam St. Ry. Co. 1½ m, 4-8 g, 25 lb r, 3 c, 10 h. Pres. Henry Herrick, Treas. David Cady, Sec. M. L. Stover.

**ANNISTON, ALA.**—**ASHTABULA, O.**—Ashtabula City Ry. Co. 4 m, 4-8½ g, 40 lb r, 6 c, 60 h. Owner & Prop. Jno. N. Stewart.

**ATCHISON, KAN.**—Atchison St. Ry. Co. 5½ m, 4-8½ g, 20-30 lb r, 19 c, 60 h. Pres. & Gen. Man. J. H. Beeson, Treas. H. M. Jackson, Sec. J. P. Adams.

**ATLANTA, GA.**—West End & Atlantic R.R. Co. 2m, 4-8½ g, 20 lb r, 6 c, 34 mu. Pres. J. D. Turner, V. Pres. L. Langston, Sec. & Treas. B. H. Brumhead, Man. & Purch. Agt. Jno. S. Brumhead.

Atlanta St. R.R. Co.  
Gate City St. R.R. Co. 2½ m, 4-8½ g, 16 lb r, 7 c, 26 h. Pres. L. B. Nelson, V. Pres. L. DeGave, Sec. & Treas. John Stephens, Solicitor, A. Remharat.

Metropolitan St. R.R. Co.  
**ATLANTIC, N. J.**—Atlantic City Ry. Co.

**AUBURN, N. Y.**—Auburn & Owasco Lake R.R. Co. 1½ m, 4-8½ g, 28-30 lb r, 3c, 12 h. Pres. D. M. Osborne, Sec. & Treas. C. B. Koster, Supt. B. F. Andrews.

East Genesee & Seward Ave. Ry. Co. 1½ m, 4-8½ g, 30 lb r, 6 c, 25 h. Pres. David M. Osborne, Sec. & Treas. C. B. Fosters, Supt. B. F. Andrews.

**AUGUSTA, GA.**—Augusta & Somerville R.R. Co.  
**AURORA, ILL.**—Aurora City Ry. Co. 5 m, 4-8½ g, 28 lb r, 7 c, 10 h, 30 mu. Pres. H. H. Evans, V. Pres. S. W. Thatcher, Sec. A. J. Hopkins, Treas. E. W. Truth, Supt. J. B. Chattee.

**BABYLON, N. Y.**—Babylon Horse R.R. Co. 1½ m, — g, — lb r, 2 c, 3 h. Pres. W. F. Norton.

**BALTIMORE, MD.**—Baltimore & Pothwam Ry. Co. 6 m, 5-4½ g, 4 c, 17 h. Pres. & Treas. E. D. Freeman, Sec. H. B. Clark, Supt. I. M. Ketrick.

Baltimore City Pass. Ry. Co. 40 m, 5-4½ g, 46 lb r, 154 c, 1000 h. Pres. Oden Bowie, Treas. John Bolgan, Sec. S. L. Bridge.

Baltimore Union Pass. Ry. Co.  
Baltimore & Catonsville Ry. Co.  
Baltimore & Halls Spring R.R. Co.  
Baltimore & Pimlico & Pikesville R.R. Co.

Central Ry. Co. 5½ m, 5-6 g, 40 lb r, 22 c, 180 h. Pres. Peter Thompson, Sec. & Treas. Walter Bliakstone.

Citizen's Ry. Co. 20 m, 5-4½ g, 46 lb r, 34 c, 360 h. Pres. Jos. S. Hagarty, Treas. Wm. S. Hammersley, Supt. C. C. Speed.

Monumental City Ry. Co.  
North Baltimore Passenger Ry. Co.  
People's Pass. Ry. Co. 6½ m, 5-4½ g, 42-45 lb r, 30 c, 200 h. Pres. R. E. Hamilton, Treas. Gustavus Ober, Sec., Supt. & Pur. Agt. Wm. A. House, Jr. Office, Fort Ave. & Johnson St. Soon move to Druid Hill Ave.

York Road R.R. Co.  
**BATTLE CREEK, MICH.**—Battle Creek Ry. Co. 5 m, 3-6 g, 28 lb r, 8c, 18 h, 3 mu. Pres. & Owner, A. J. White, V. Pres. H. H. Brown, Sec. Chas. Thomas, Supt. John A. White.

**BAY CITY, MICH.**—Bay City St. Ry. Co. 7½ m, 4-8½ g, 18 lb r, 13 c, 35 h. Pres. James Clements, Treas. Wm. Clements, Sec. Edgar A. Cooley.

**BEAVER FALLS, PA.**—Beaver Valley St. Ry. Co. 3½ m, (now building). Pres. M. L. Knight, Sec. & Treas. J. F. Merriman, Supt. of Construction, J. C. Whitia.

**BELLAIRE, O.**—Bellaire St. R.R. Co.  
**BELLEVILLE, ILL.**—Citizens' Horse Ry. Co.  
**BELLEVILLE, ONT., CAN.**—Bellville St. R.R. Co.

**BEREA, O.**—Berea St. Ry. Co. 1½ m, 3-6 g, 28 lb r, 2 c, 2 h. Pres. C. W. D. Miller, V. Pres. T. Chinchward, Sec. & Treas. A. H. Pomeroy, Supt. A. W. Bishop.

**BINGHAMTON, N. Y.**—Washington Street & State Asylum R.R. Co. 4½ m. 4 g, 16-25 lb r, 13 c, 23 h. Pres. B. H. Meagley, V. Pres. Geo. Whitney, Sec. C. O. Root, Treas. F. E. Ross.

Binghamton Central R.R. Co. 3½ m (2½ laid), 3 g, 28 lb r, 6 c (not in operation). Pres. Geo. L. Crandall, V. Pres. Nelson Stow, Sec. & Supt. Chas. O. Root, Treas. H. J. Kneeland.

Binghamton & Port Dickinson R.R. Co. 5 m, 4-8½ g, 20-30 lb r, — c, — h. Pres. Harvey Westcott, Sec. & Treas. G. M. Harris, Supt. N. L. Osborn. (Leased to Mr. Osborn).

Main, Court & Chenango St. R.R. 5 m, 4-8 g, 40 lb r, 10 c, 25 h. Supt. & Lessee, N. L. Osborn.

**BIRMINGHAM, ALA.**—Birmingham St. Ry. Co. 3½ m, 4-8 g, 16 lb r, 4 c, 12 m. Pres. E. F. Roden, Sec. & Treas. J. H. Williams.

**BLOOMFIELD, N. J.**—Newark & Bloomfield R. R.  
**BLOOMINGTON, ILL.**—Bloomington & Normal Horse Ry. Co.

**BOONE, IA.**—Boone & Boonsboro St. Ry. Co. 1½ m, 3 g, 20 lb r, 3 c, 10 h. Pres. L. W. Reynolds, Treas. L. B. Hodges, Sec. & Supt. A. B. Hodges.

**BOONSBORO, IA.**—Twin City & Des Moines River Motor St. Ry. Co.

**BOSTON, MASS.**—Highland St. Ry. Co. 19 m, 4-8½ g, 50 lb r, 187 c, 925 h. Pres. Moody Merrill, Clerk R. B. Fairbairn, Treas. Samuel Little, Supt. J. E. Rugg.

Lynn & Boston. 34½ m, 4-8½ g, 25-48 lb r, 114 c, 514 h. Pres. Amos F. Breed, Treas. & Sec. E. Francis Oliver, Supt. Edwin C. Foster.

Metropolitan R.R. Co. 80 m, 4-8 g, 50 lb r, 700 c, 3,600 h. Pres. C. A. Richards, Sec. H. R. Harding, Treas. Chas. Boardman. Office, 16 Kilby St.

Middlesex R.R. Co. 26 m, 4-8½ g, 50 lb r, 150 c, 700 h. Pres. Chas. E. Powers, Treas. & Supt. John H. Studley. Address, 27 Tremont Row, Boston.

So. Boston Ry. Co. 13 m, 4-8½ g, 42-50-60 lb r, 193 c, 900 h. Pres. Chas. H. Hersey, V. Pres. Jas. C. Davis, Sec. & Treas. Wm. Reed, Supt. Daniel Coolidge.

**BRADFORD, PA.**—Bradford & Kendall R.R. Co. 1½ m, 4-8½ g, 38 lb r, 3 c, 4 h. Pres. James Brodey, Sec. N. B. Parsons, Gen. Man. & Supt. Enos Parsons.

**BRIDGEPORT, CONN.**—The Bridgeport Horse R.R. Co. 5 m, 4-8½ g, 42 lb r, 14 c, 70 h. Pres. Albert Eamer, Sec. & Treas. F. Hurd, Supt. E. F. Lasbar.

**BROCKTON, MASS.**—Brockton St. Ry. Co. 3½ m, 24 c, 97 h. Pres. W. W. Cross, Treas. & Sec. Z. C. Keith, Supt. H. B. Rogers.

**BROOKLYN, N. Y.**—The Atlantic Avenue R.R. Co. of Brooklyn. 24½ m, 4-8 g, 60 lb r, 244 c, 882 h. Pres. William Richardson, Sec. W. J. Richardson, Treas. Newburg H. Frost.

Broadway R.R. Co. 10 1-10 m, 4-8½ g, 45-50-60 lb r, 166 c, 657 h. Pres. W. H. Husted, V. Pres. Edwin Beers, Sec. & Treas. Robert Sealey, Supt. Joshua Crandall.

Brooklyn Cross Town R.R. Co. 8 m, 4-8½ g, 40-60 lb r, 72 c, 400 h. Pres. Henry W. Slocum, V. Pres. Ezra B. Tuttle, Sec. & Treas. John R. Connor, Supt. D. W. Sullivan.

Bushwick R.R. Co. 20 m, 4-8½ g, 45-50-60 lb r, 172 c, 600 h. Pres. Frank Cromwell, V. Pres. Wm. H. Husted, Treas. & Sec. S. D. Hollowell, Supt. Wm. M. Morrison.

The Brooklyn Bushwick & Queens County R.R. Co. 6 m, 4-8½ g, 42-47 lb r, 41 c, 117 h. Pres. Richard H. Green, V. Pres. James W. Ellwell, 59 South St. N. Y. Sec. John D. Elwell, Treas. Wm. W. Greene.

Brooklyn City R.R. Co. 44 m, 4-8½ g, 60 lb r, 761 c, 3,045 h. Pres. William H. Hazzard, V. Pres. William M. Thomas, Sec. & Treas. Daniel F. Lewis, Asst. Sec. Francis E. Wrigley.

Brooklyn City & Newtown R.R. Co. 11 m, 4-8½ g, 45-60 lb r, 128 c, 419 h. Pres. Louis Fitzgerald, N. Y. City, Sec. & Treas. H. A. Schuz, Supt. H. W. Bush.

Calvary Cemetery, Greenpoint & Brooklyn Ry. Co. Coney Island and Brooklyn R.R. Co. 11 2-5 m, 45 lb r, 4-8½ g, 103 c, 316 h. Pres. James Jourdan, Sec. Ed. F. Drayton, Supt. William Farrell.

Coney Island, Sheepshead Bay & Ocean Avenue R.R. Co. Pres. A. A. McClemer, V. Pres. Daniel Mone, Sec. John McMahon, Sheepshead Bay, Treas. Horace Valkylnh.

Crosstown Line, Hamilton Ferry to Bridge.  
Grand St. & Newtown R.R. Co. 8½ m, 4-8½ g, 45-50 lb r, 72 c, 250 h. Pres. Martin Joost, Sec. & Treas. Wm. E. Horwill, Supt. Walter G. Howey.

Grand Street, Prospect Park & Flatbush R.R. Co. 4½ m, 4-8½ g, 50 lb r, 75 c, 244 h. Pres. Louis Fitzgerald, 120 Broadway, N. Y., Sec. & Treas. Duncan B. Cannon, Supt. Jno. L. Heins.

Greenpoint & Lorimer St.  
Prospect Park & Coney Island R.R. Co. 4 7-10 m, 45-50 lb r, 4-8½ g, 69 c, 214 h. Pres. A. R. Culver, Treas. A. C. Washington, Sec. George H. Smith, Eng. Supt. R. Schermerhorn, Supt. Robert Attlesley.

Prospect Park & Flatbush R.R. 1½ m, 4-8½ g, 34 lb r, 70 c, 260 h. Pres. Loftis Wood, Sec. & Treas. Sam'l Parkhill, Supt. Loftis Wood.

South Brooklyn Central R.R. Co. 7 m (4½ m laid), 4-8½ g, 60 lb r, 42 c, 192 h. Pres. Wm. Richardson, Sec. Wm. J. Richardson, Treas. N. H. Frost, Supt. James Ruddy.

The New Williamsburgh & Flatbush R. R. Co. 6½ m, 4-8½ g, 47-50 lb r, 74 c, 255 h. Pres. Geo. W. Van Allen, 54 Ann St. New York, Sec. W. B. Waitt, 34th St. & 9th Ave. New York, Treas. C. B. Cottrell, 8 Spruce St. N. Y. City, Supt. Chas. E. Harris, Nost-rand Ave. & Carroll St., Brooklyn.

The Union Railway Co. of the City of Brooklyn (not in operation).

Van Brunt St. & Erie Basin R.R. Co. 1½ m, 4-8½ g, 45 lb r, 7 c, 24 h. Pres. John Cunningham, Sec. & Treas. Edmund Terry.

**BRUNSWICK, GA.**—Brunswick St. R.R. Co.  
**BUFFALO, ILL.**—See Mechanicsburg, Ill.  
**BUFFALO, N. Y.**—Buffalo St. R.R. Co. 17½ m, 4-8½ g, 50 lb r, 96 c, 510 h. Pres. Henry M. Watson, V. Pres. P. Pratt, Sec. S. S. Spaulding, Treas. W. H. Watson, Supt. Edward Edwards.

Buffalo East Side St. R.R. Co. 24 4-5 m, 4-8½ g, 42 lb r, 47 c, 218 h. Pres. S. S. Spaulding, V. Pres. Joseph Churchyard, Sec. H. M. Watson, Treas. W. H. Watson, Supt. Edward Edwards.

**BURLINGTON, IA.**—Burlington City R.R. Co. 2½ m, 4-8½ g, 22 lb r, 9 c, 30 h. Pres. John Patterson, Sec. & Man. C. T. Patterson.

Union St. Ry. Co.  
**CAIRO, ILL.**—Cairo St. R.R. Co.

**CAMBRIDGE, MASS.**—Cambridge R.R. Co. 43 m, 4-8½ g, 50 lb r, 245 c, 1,410 h. Pres. Prentiss Cummings, Treas. & Clerk F. T. Stevens, Exec. Com. I.

M. Simpson, P. Cummings, O. S. Brown, Clerk of Directors, O. S. Brown, Supt. Wm. A. Bancroft.

Charles River St. Ry. Co. 10 4-5 m, 2-8½ g, 50 lb r, 50 c, 330 h. Pres. Chas. E. Raymond, Corp. Clerk C. E. Haden, Treas. Daniel U. Chamberlain, Supt. John N. Akarman.

**CAMDEN, N. J.**—Camden & Atlantic St. Ry. Co. Camden Horse R.R. Co. 9 m, 5-1 g, 35-47 lb r, 26 c, 85 h. P. es. Thos. A. Wilson, Sec. Wilbur F. Rose, Treas. & Supt. John Hood.

**CANTON, O.**—Canton St. R.R. Co. (new road).  
**CAPE MAY, N. J.**—Cape May & Schellenger Landing Horse R.R.

**CARTHAGE, MO.**—**CEDAR RAPIDS, IA.**—Cedar Rapids & Marion St. Pass. Ry. Co.

**CHAMPAIGN, ILL.**—Champaign R.R. Co. Urbana & Champaign St. R.R. Co. (See Urbana).

**CHARLESTON, S. C.**—Charleston City Ry. Co. 8½ m, 4-8½ g, 38-42 lb r, 22 c, 84 h. Pres. Jno. S. Riggs, Treas. Evan Edwards, Sec. Frank Whelden, Supt. Jno. Mohlenhoff.

Enterprise R.R. Co. 12 m, 5 g, 42 lb r, 14 c, 51 h. Pres. A. F. Ravenel, Sec. & Treas. U. E. Hayne, Supt. T. W. Passallagere.

**CHATTANOOGA, TENN.**—Chattanooga St. R. R. Co. 2½ m, 4-8½ g, 16-25 lb r, 8 c, 50 h. Pres. J. H. Warner, Sec. C. R. Gaskill, Supt. A. B. Wingfield.

**CHESTER, PA.**—Chester St. Ry. Co. 5½ m, 5-2½ g, 12 c, 70 h. Pres. Richard Peters, Jr., Solicitor, Geo. B. Lindsay, Treas. Sam'l A. Dyer, Sec. E. M. Cornell.

**CHICAGO, ILL.**—Chicago City Ry. Co. 87 m, 4-8½ g, 45 lb r, 567 c, 1,416 h, cable dog work of 2,509 h. Pres. C. B. Holmes, Sec. H. H. Windsor, Treas. T. C. Pennington, Supt. C. B. Holmes.

Chicago West Division Ry. Co. 40 m, 4-8½ g, 40 lb r, 620 c, 3,425 h. Pres. J. R. Jones, Sec. George L. Webb, Supt. Jas. K. Lake.

Chicago & Hyde Park St. — m, — g, — lb r, — c, — h. Pres. Douglas S. Clarke.

North Chicago City Ry. Co. 35 m, 4-8½ g, 45 lb r, 316 c, 1,700 h. Pres. & Gen Supt. V. C. Turner, V. Pres. Jacob Rehn, Sec. & Treas. Hiram Crawford, Supt. of Track & Construction, Augustine W. Wright, Asst. Supt. Fred L. Thredy, Supt. Horse Dept. Robt. Atkins, Purch. Agt. John W. Roach, Master Mechanic J. Miller.

**CHILLICOTHE, O.**—Chillicothe St. R.R. Co. 1½ m, 3 g, 16 lb r, 7 c, 10 h. Pres. E. P. Safford, sec. A. E. Wenis, Treas. William Poitanel, Supt. Ewel McMartin.

**CINCINNATI, O.**—Cincinnati Inclined Plane Ry. Co. 3 m, 5-2½ g, 43 lb r, 24 c, 150 h. Pres. Geo. A. Smith, Sec. & Supt. James M. Doherty, Treas. Jos. S. Hill.

Cincinnati St. Ry. Co. 98 m, 5-2½ g, 43 lb r, 254 c, 1,815 h. Pres. John Kilgour, Sec. & Aud. James A. Collins, Treas. R. A. Dunlap, Con. Eng. F. R. Weizenecker, Supt. John Harris.

Cincinnati & Mount Auburn R.R. Co.  
Columbia & Cincinnati St. R.R. Co. 3½ m, 3 g, 35 lb r, 3 c, 6 dummy v. Pres. C. H. Kilgour, V. Pres. John Kilgour, Treas. B. F. Branman, Sec. A. H. Meier, Mt. Lookout, O. Supt. J. J. Henderson, Mt. Lookout, O.

Mt. Adams & Eden Park Inclined R.R. Co. 3½ m, 5-2½ g, 42 lb r, 40 c, 320 h. Pres. & Treas. J. P. Kerper, Sec. J. R. Murdoch, Supt. Chas. Whithin.

So. Covington & Cincinnati. (See Covington, Ky.)  
South Side St. Ry. Co.  
St. Clair Street Ry. Co.  
West Side R.R. Co.

**CLEVELAND, O.**—The Brooklyn St. R.R. Co. 8½ m, 4-8½ g, 52 lb r, 66 c, 375 h. Pres. Tom. L. Johnson, V. Pres. A. J. Moxham, Sec. J. B. Hoefgen, Treas. John McConnell, Supt. A. L. Johnson.

Broadway & Newburg St. R.R. Co. 6 m, 4-8½ g, 10 c, 160 h. Pres. & Supt. Joseph Stanley, V. Pres. Sam'l Andrews, Sec. & Treas. E. Fowler.

Superior St. R.R. Co. 15 m, 4-8½ g, 45 lb r, 46 c, 225 h. Pres. Frank De H. Robinson, V. Pres. John Koch, Sec., Treas. & Supt. M. S. Robison, Jr.

The East Cleveland R.R. Co. 20 m, 4-8½ g, 35-40 lb r, 92 c, 450 h, 1 electric motor. Pres. A. Everett, V. Pres. Chas. Wason, Sec. & Treas. H. A. Everett, Supt. E. Duty. Offices, 1154 & 1158 Euclid Ave.

Woodland Avenue & West Side St. R.R. Co. 17 m, 4-8½ g, 43 lb r, 100 c, 550 h. Pres. M. A. Hanna, V. Pres. C. F. Emery, Sec. J. B. Hanna, Gen. Supt. George G. Mulhen.

**CLINTON, IA.**—Lyons & Clinton Horse R.R. Co. (See Lyons).

**COLUMBUS, GA.**—Columbus St. R.R. Co. 3 m, 4-8½ g, 16 lb r, 6 c, 25 h. Pres. Cliff B. Grimes, Sec. L. G. Schnessler, Treas. N. N. Curtis, Supt. J. A. Gabbough.

**COLUMBUS, O.**—Columbus Consolidated St. R.R. Co. 19 m, 5-2 g, 30-46 lb r, 83 c, 350 h. Pres. A. Rodgers, V. Pres. H. T. Chittenden, Sec. & Treas. E. K. Stewart, Supt. J. H. Atcherson.

Glenwood & Greenlawn St. R.R. Co. 4½ m, 3-6 g, 24 lb r, 9 c, 25 c. Pres. A. D. Rodgers, V. Pres. B. Brown, Sec. R. S. Rockley, Treas. S. S. Rickley, Supt. Jonas Wilcox.

**CONCORD, N. H.**—Concord Horse R.R. Co. 8 m, 3 g, 30-33 lb r, 10 c, 14 h, 2 steam motors. Pres. Moses Humphrey, Treas. H. J. Crippin, Clerk E. C. Hoag.

**CORTLAND, N. Y.**—Cortland & Homer Horse Ry. Co. 4 m (2½ laid), 4-8½ g, 25-30 lb r. Pres. Chas. H. Garrison, Troy, N. Y., Sec. J. M. Milne, Treas. S. E. Welch, Supt. S. E. Welch. (Leased to D. N. Miller).

**COUNCIL BLUFFS, IA.**—Council Bluffs St. R.R. Co.  
**COVINGTON, KY.**—So. Covington & Cincinnati St. Ry. Co. 17½ m, 5-2½ g, 43 lb r, 46 c, 296 h. Pres. E. F. Abbott, Sec. S. C. Bunton, Treas. G. M. Abbott.

**DALLAS, TEX.**—Dallas St. Ry. Co. 4½ m, 4-8½ g, 20-38 lb r, 12 c, 4 h, 72 mu. Pres. Wm. J. Keller, Sec. Harry Keller, Supt. C. E. Keller.

Commerce & Way St. R.R.

**DANVILLE, ILL.**—Citizens' St. Ry. Co. 4 m, 4 g, 20 lb r, 7 c, 35 mu. Pres. Wm. I. Cannon, V. Pres. & Gen. Man. Wm. Stewart, Sec. & Treas. Adam P. Samuel.

**DAVENPORT, IA.**—Davenport Central St. R.R. 2½ m, 4-8½ g, 20 lb r, 10 c, 30 h. Pres. James Grant,

Sec. O. S. McNeil, Treas. S. F. Smith, Supt. R. A. McGugin.
Brady St. Ry. Co.
Davenport City Ry. Co.
DAYTON, KY.—Newport & Dayton St. Ry. Co. 2 m, 5-2 1/2 g, 44 lb r, 9 c, 36 h. Pres. & Supt. W. W. Bean.
DAYTON, O.—Dayton St. R.R. Co. 3 1/2 m, 4-8 1/2 g, 44 lb r, 23 c, 66 h. Pres. J. W. Stoddard, V. Pres. H. S. Williams, Sec. C. B. Clegg, Supt. A. W. Anderson.
Oakwood St. Ry. Co. 3-1 1/2 m, 4-8 1/2 g, 38 lb r, 13 c, 60 h. Pres. Charles B. Clegg, Sec. M. P. Moore, Supt. Wm. Davis.
The Wayne & Fifth St. R.R. Co. 3 1/2 m, 4-8 1/2 g, 34-38 lb r, 5 c, 30 h. Pr-s. Geo. M. Shaw, Sec. & Treas. Eugene Winchet, Supt. N. Rutzahn.
DECATUR, ILL.—Decatur Horse Ry. Co.
Citizens' Street R.R. Co. 2 m, 4-8 1/2 g, 20 lb T r, 7 c, 47 h & mu. Pres. D. S. Shellabarger, Sec., Treas. & Supt. A. E. Kinney.
DEERING, ME.—See Portland.
DENISON, TEX.—Denison St. Ry. Co. 3 m, 3-6 g, 16 lb r, 5 c, 22 mu. Pres. C. A. Waterhouse, Supt. S. A. Robinson.
DENVER, COL.—Denver City Ry. Co. 16 m, 3-6 g, 16 lb r, 50 c, 250 h. Pres. Geo. H. Holt, 10 Wall St., New York City, Sec. G. D. Lull, 10 Wall St., New York City, Treas. & Man. G. E. Randolph.
DES MOINES, IA.—Des Moines St. Ry. Co. 10 m, 3 g, 25-30-38-52 lb r, 18 c, 100 h. Pres. M. P. Turner, Sec. M. A. Turner.
Des Moines & Sebastopol St. Ry. Co.
DETROIT, MICH.—Fort Wayne & Elmwood Ry. Co. 6 m, 4-8 1/2 g, 45 lb r, 30 c, 180 h. Pres. H. B. Brown, V. Pres. Edward Kanter, Treas. George B. Pease, Sec. N. W. Goodwin, Supt. Geo. S. Hazard.
Detroit City Ry. Co. 30 m, 4-8 1/2 g, 40-43 1/2 lb r, 130 c, 700 h. Includes Jefferson Ave. line, Woodward Ave. line, Michigan Ave. line, Gratiot Ave. line, Brush St. line, Cass Ave. line, Congress & Baker line. Pres. Sidney D. Miller, Treas. George Hendrie, Sec. James Heugh, Gen. Supt. Robert Bell, Mast. Mech. John Willis.
Grand River St. Ry. Co. 2 1/2 m, 4-8 1/2 g, 43 lb r, 13 c, 110 h. Pres. & Treas. Jos. Dalley, Sec. J. W. Dalley, Supt. C. M. Dalley.
DOVER, N. H.—Dover Horse R.R. Co. 2-2 1/2 m, 3 g, 30 lb r, 4 c, 14 h. Directors, Z. S. Wallingford, Chas. H. Sawyer, Jas. E. Lothrop, C. W. Wiggins, Harrison Haley, Frank Williams, Cyrus Littlefield, Treas. Cyrus Littlefield.
DUBUQUE, IA.—Dubuque St. R.R. 5 m, 4-8 1/2 g, 21 c, 45 h. Pres. J. A. Rhonberg, Sec. & Treas. B. E. Linehan, Supt. J. J. Linehan.
DULUTH, MINN.—Duluth St. Ry. Co. 3 m, 3-6 g, 30 lb r, 6 c, 7 h, 31 mu. Pres. A. S. Chase, V. Pres. O. P. Stearns, Sec. & Treas. L. Mendenhall, Supt. & Pur. Agt. W. T. Hoopes.
EAST OAKLAND, CAL.—Oakland, Brooklyn & Fruitvale R.R. Co.
EAST SAGINAW, MICH.—Street R. R. Co. of East Saginaw. — m, 4-8 1/2 g, 30 lb r, 14 c, 35 h. Pres. & Supt. W. J. Barton, Sec. W. H. Hark, Treas. J. B. Peter.
EAST ST. LOUIS, ILL.—East St. Louis St. R.R. Co.
EASTON, PA.—The Easton & So. Easton Passenger Ry. Co. 1 1/2 m, 5-2 1/2 g, 45 lb r, 4 c, 20 h. Pres. H. A. Sage, Sec. & Treas. H. W. Cooley, Supt. Elisha Burwell, So. Easton.
The West End Passenger Ry. Co. 1 1/2 m, 5-2 1/2 g, 45 lb r, 6 c, 20 h. Pres. H. A. Sage, Sec. & Treas. H. W. Cooley, Supt. Samuel Berry.
EAU CLAIRE, WIS.—Eau Claire City Ry. Co.
ELGIN, ILL.—Elgin City Ry. Co.
ELIZABETH, N. J.—Elizabeth & Newark Horse R.R. Co. 14 m, 5-2 1/2 g, 4-10 1/2 g, 30 lb r, 24 c, 74 h. Pres. & Treas. Jacob Davis, Sec. & Supt. John F. Pritchard.
ELKHART, IND.—Elkhart City R.R. Co.
ELMIRA, N. Y.—The Elmira & Horseheads Ry. Co. 9-2 1/2 m, 4-8 1/2 g, 25-30-40 lb r, 18 c, 34 h. Pres. & Treas. George M. Diven, V. Pres. Geo. W. Hoffman, Sec. Wm. S. Kershner, Supt. Henry C. Silsbee.
EL PASO, TEX.—El Paso St. Ry. Co. 2 1/2 m, 4-8 1/2 g, 20 lb r, 8 c, 25 h. Pres. G. B. Zimpelman, V. Pres. A. Krockauer, Treas. F. Magoffice, Sec. & Supt. I. A. Tays.
EMPORIA, KAN.—Emporia City Ry. Co. 3 1/2 m, 5 g, 20 lb r, 6 c, 23 mu. Pres. Van R. Holmes, Treas. A. F. Crowe, Sec. & Man. J. D. Holden.
ENTERPRISE, MISS.—Enterprise St. Ry. Co. 1 1/2 m, 3-6 g, 24 lb r, 2 c, 6 h. Pres. John Kampe, V. Pres. E. B. Gaston, Sec. & Treas. Jno. Gaston.
ERIE, PA.—Erie City Passenger Ry. Co. 5 m, 4-8 1/2 g, 30-40 lb r, 17 c, 70 h. Pres. Wm. W. Reid, Treas. J. C. Spencer, Sec. A. L. Lettelt, Supt. Jacob Berst.
EUREKA SPRINGS, ARK.—Eureka Springs City Ry. Co.
EVANSVILLE, IND.—Evansville St. Ry. Co. 12 m, 4-8 g, 28 lb r, 31 c, 190 mu. Pres. John Gilbert, Sec. P. W. Raleigh, Treas. John Gilbert, Supt. W. Bahr.
FALL RIVER, MASS.—Globe St. Ry. Co. 12 m, 4-8 1/2 g, 40-46-47 lb r, 40 c, 160 h. Pres. Frank S. Stevens, Treas. F. W. Brightman, Sec. M. G. B. Swift, Supt. John H. Bowker, Jr.
FORT SCOTT, KAN.—Bourbon County St. Ry. Co. 1 m, 4 g, 22 lb r, 2 c, 4 m. Pres. Isaac Tadden, V. Pres. Benj. Files, Sec. Wm. Perry, Treas. J. H. Randolph.
FORT SMITH, ARK.—Fort Smith St. Ry. Co. 2 m, 3-6 g, 16-28 lb r, 5 c, 16 h. Pres. Sam'l M. Loud, Sec. & Treas. Geo. T. Sparks.
FORT WAYNE, IND.—Citizens' St. R.R. Co.
FORT WORTH, TEX.—Fort Worth St. Ry. Co. 7 1/2 m, 4 g, 25-38 lb r, 16 c, 73 m. Pres. K. M. Vanzandt, Treas. W. A. Hoffman, Acting Sec. & Gen. Man. S. Mims.
FRANKFORT, N. Y.—Frankfort & Iliion Street Ry. Co. 2 1/2 m, 5 g, 4 c. Pres. A. C. McGowan, Frankfort, Sec. D. Lewis, Iliion, Treas. P. Remington, Iliion, Supt. Fredk. Gates, Frankfort.
FREDONIA, N. Y.—Dunkirk & Fredonia R.R. Co. 3 1/2 m, 4-10 g, 25 lb r, 5 c, 8 h. Pres. Wm. M. McClinty, Sec. & Treas. M. N. Fenner, Supt. Z. Elmer, Wheelock.
GAINESVILLE, FLA.—Gainesville St. Ry. Co.

GAINESVILLE, TEX.—Gainesville St. Ry. Co. 2 1/2 m, 3-6 g, 17 lb r, 4 c, 12 h. Pres. C. N. Stevens, V. Pres. J. T. Harris, Sec. & Treas. F. R. Sherwood.
GALESTON, ILL.—Galesburg Horse R.R. Co.
GALESTON, TEX.—Galveston City R.R. Co. 18 m, 4-8 1/2 g, 30 lb r, 68 c, 169 mu. Pres. Wm. H. Sinclair, Sec. & Treas. F. D. Merritt, Supt. M. J. Keenan.
Gulf City St. Ry. & Real Estate Co.
GLOUCESTER, MASS.—Gloucester City R.R. Co.
GRAND RAPIDS, MICH.—Street Ry. Co. of Grand Rapids, Mich. 13 m, 4-8 1/2 g, 30-35 lb r, 21 c, 175 h. Pres. C. A. Otis, Cleveland, O., V. Pres. L. H. Withey, Grand Rapids, Treas. M. S. Crosby, Grand Rapids, Sec. J. M. Weston, Grand Rapids, Asst. Sec. Jas. Pickands, Cleveland, O.
GREEN CASTLE, IND.—Green Castle City St. Ry. Co. 2 m, 4-8 1/2 g, 23 lb r, 3 c, 12 h. Pres. & Supt. D. Rogers, Sec. James S. Nutt, Treas. Rudolph Rogers.
GREENVILLE, S. C.—Greenville City Ry. Co. 1 m, 5 g, — lb r, 5 c, 20 h. Proprietors, Gilreath & Harris.
HAMILTON, O.—The Hamilton St. Ry. Co. 4 m, 3 g, 28 lb r, 11 c, 12 h. Pres. James F. Griffin, Sec. O. V. Parrish, Treas. H. L. Morey, Supt. J. C. Bigelow.
HANNIBAL, MO.—Hannibal St. Ry. Co. 2 m, 4-8 1/2 g, 16-36 lb r, 6 c, 22 h. Pres. & Supt. M. Doyle, Sec. & Treas. James O. Hearn.
HARRISBURGH, PA.—Harrisburgh City Passenger Ry. Co. 2 1/2 m, 5 1/2 g, 42 47 lb r, 15 c, 36 lb, Pres. H. A. Kelker, V. Pres. Daniel Epply, Sec. John T. Enslinger, Treas. R. F. Kelker, Supt. S. B. Reed.
HARTFORD, CONN.—Hartford & Wetherfield Horse R.R. Co. 12 m, 4-8 1/2 g, 45 lb r, 49 c, 250 h. Pres. & Treas. E. S. Goodrich, Sec. Geo. Sexton.
HAVERHILL, MASS.—Haverhill & Groveland St. Ry. Co. 4 1/2 m, 4-8 1/2 g, 30 lb r, 10 c, 19 h. Pres. Jas. D. White, Treas. John A. Colby, Supt. L. R. Mitchell.
HELENA, ARK.—Helena St. Ry. Co.
HERKIMER, N. Y.—Herkimer & Mohawk St. Ry. Co. 1 1/2 m, 4-8 1/2 g, 25 lb r, 3 c. Pres. J. M. Ansen, Sec. Joab Small, Treas. H. D. Alexander.
HOBOKEN, N. J.—North Hudson County Ry. Co. 16 1/2 m, 4-7 g, 50-60 lb r, 116 c, 630 h. Pres. John H. Bonn, Sec. F. J. Mallory, Treas. Fredk. Mickel, Union, Supt. Nicholas Goetz, Union.
HOLYOKE, MASS.—Holyoke St. Ry. Co. 2 m, 4-8 1/2 g, 35 lb r, 8 c, 24 h. Pres. Wm. A. Chase, Treas. C. Fayette Smith, Supt. H. M. Smith.
HOT SPRINGS, ARK.—Hot Springs R.R. Co. 3 m, 4 g, 25 lb r, 11 c, 30 h. Pres. S. W. Fordyce, Sec. C. E. Maurice, Supt. J. L. Butterfield.
HOUSTON, TEX.—Houston City St. Ry. Co. 13 m, 4-8 1/2 g, 20-30-40 lb r, 40 c, 118 m. Pres. Wm. H. Sinclair, Galveston, V. Pres. & Gen. Man. H. F. McGregor, Houston, Supt. Henry Friend, Houston, Sec. & Treas. F. J. DeMeritt, Galveston.
HUTCHINSON, KAN.—Hutchinson St. Ry. Co.
HYDE PARK, ILL.—Ewing Avenue Horse Ry. Co.
ILION, N. Y.—Frankfort & Iliion Ry. Co. 2 1/2 m, 5 g, 25 lb r, 4 c, 6 h. Pres. A. C. McGowan, Sec. D. Lewis, Treas. F. Remington, Supt. Frederick Gates.
INDIANAPOLIS, IND.—Citizens' St. Ry. Co. 35 m, 4-8 1/2 g, 20-33-40-52 lb r, 70 c, 530 h. Pres. A. W. Johnson, Indianapolis, Treas. Tom L. Johnson, Cleveland, O. Sec. A. A. Anderson, Indianapolis, Man. W. T. Steele, Indianapolis, Auditor P. Woodridge, Louisville, Ky.
IRVINGTON, N. J.—Newark & Irvington R.R. Co.
JACKSON, MICH.—Jackson City Ry. Co. — m, — g, — lb r, 11 c, 40 h. Pres. Hiram H. Smith, Treas. Samuel Hopewell, Gen. Supt. Henry H. Smith.
JACKSON, MISS.—Jackson Street Ry. Co.
JACKSON, TENN.—Jackson Street Ry. Co.
JACKSONVILLE, FLA.—Pine St. R.R. Co. 2 1/2 m, 5 g, 25 lb r, 4 c, 18 m. Owner & Gen. Man. G. H. Backinstae, Sec. & Treas. F. W. Backinstae.
Jacksonville St. Ry. Co. 2 1/2 m, 5 g, 25 lb r, 10 c, 36 m. Pres. H. S. Haines, Savannah, Ga., V. Pres. & Sec. Geo. R. Foster, Treas. W. P. Hardee, Savannah, Ga., Supt. G. W. Haines.
JACKSONVILLE, ILL.—Jacksonville Ry. Co.
JAMAICA, N. Y.—Jamaica & Brooklyn R.R. Co. 10 m, 4-8 1/2 g, 56-60 lb r, 29 c, 56 h. Pres. Aaron A. Degrauw, Sec. Martin J. Durea, Treas. Morris Fosdick, Supt. Wm. M. Scott.
JAMESTOWN, N. Y.—Jamestown St. Ry. Co. 2 m, 4-8 1/2 g, 30-42 lb r, 7 c, 9 h. Pres. John T. Wilson, Sec. C. R. Lockwood, Treas. John Langford, Supt. John F. Wilson.
JERSEY CITY, N. J.—Jersey & Bergen R.R. Co. 21 m, 4-10 g, 60 lb r, 73 c, 494 h. Pres. Chas. B. Thurston, V. Pres. Wm. Keeney, Treas. C. B. Place, Sec. Warren E. Dennis, Newark, Supt. Thos. M. Sayre.
Pavonia Ferry Ry. Co.
JOHNSTOWN, N. Y.—The Johnstown, Gloversville & Kingsboro Horse R.R. Co. 5 1/2 m, 4-8 1/2 g, 26 lb r, 6 c, 16 h. Pres. James Younglove, V. Pres. R. Fancher, Sec. & Treas. I. M. Law.
JOHNSTOWN, PA.—Johnstown Pass. R.R. Co. 6 1/2 m, 5-3 g, 41-43 lb r, 13 c, 56 h. Pres. James McMullen, Sec. B. L. Yeagley, Treas. W. H. Rosenleat, Jr.
JOPLIN, MO.—
KALAMAZOO, MICH.—Kalamazoo St. Ry. Co. 10 m, 4-8 1/2 g, 35 lb r, 28 c, 80 h. Pres. Fred Bush, Sec. J. W. Boynton, Treas. P. H. Brown.
KANSAS CITY, MO.—Kansas City Cable Ry. Co. 2 1/2 m, 4-8 1/2 g, 45 lb r, 10 pass. cars, 10 dummy cars. Pres. Wm. J. Smith, Sec. W. H. Lucas, Eng. Robert Gillham.
Corrigan Consolidated St. Ry. Co. 20 m, 4-1 g, 30 lb r, 80 c, 350 h. Pres. Bernard Corrigan, Gen. Man. Thos. Corrigan, Sec. Jas. T. Kelley.
Jackson County Horse St. Ry. Co.
Kansas City & Rosedale St. Ry. Co.
Kansas City & Westport St. R.R. Co.
KEOKUK, IA.—Keokuk St. Ry. Co. 4 m, 4-8 1/2 g, 27 lb r, 10 c, 42 h. Pres. Jas. H. Anderson, V. Pres. Jos. G. Anderson, Sec. R. James Anderson, Treas. & Supt. W. Z. Anderson.
KINGSTON, ONT., CAN.—Kingston St. R.R. Co. 3 1/2 m, 3-6 g, 9 lb r, 10 c, 36 h. Pres. Robert Carson, Sec. & Treas. F. Sargent, Man. William Wilson

KNOXVILLE, TENN.—Knoxville St. Ry. Co. 2 m, 4-8 1/2 g, 22 lb r, 5 c, 2 hacks, 30 h. Pres. W. W. Woodruff, Sec., Treas. & Supt. T. L. Beaman.
LACONIA, N. H.—Lacoma & Lake Village Horse R. R. 2 1/2 m, 3 g, 34 lb r, 5 c, 17 h. Pres. A. G. Folsom, Treas. Edmund Little, Man. Bela S. Kenniston.
LA CROSSE, WIS.—City Ry. Co. of La Crosse, 2 1/2 m, 4-9 g, 24 lb r, 5 c, 16 h, 3 mu. Pres. Geo. F. Gund, V. Pres. B. E. Edwards, Sec. Mills Tourtelotte, Treas. Fred Tillman, Gen. Supt. Joseph Tuteur, Supt. Geo. F. Smith.
La Crosse St. Ry. Co.
LAFAYETTE, IND.—LaFayette St. Ry. 2 1/2 m, 4-8 1/2 g, 35 lb r, 6 c, 38 h. Pres. F. B. Caldwell, LaFayette, Sec. & Treas. E. G. Jones, Decatur, Ill., Supt. F. Greer, LaFayette.
LAKE CITY, FLA.—Lake City St. Ry. Co.
LAMPASAS SPRINGS, TEX.—Lampasas City Ry. Co. 3 1/2 m, 4-8 1/2 g, 22 lb r, 6 c, 15 h. [Owned by Mrs. L. R. Snodgrass.] Gen. Man. Geo. M. Snodgrass.
LANCASTER, PA.—Lancaster & Millerville St. Ry. Co.
Lancaster City St. Ry. Co.
LARCHMONT, N. Y.—Larchmont Manor Co. 1 m, 4-8 g, 25 lb r, 2 c, 8 h. Pres. C. H. Murray, Treas. S. H. French, 38 East Fourteenth St., N. Y. City.
LAWRENCE, KAN.—Lawrence Transportation Co. 3 1/2 m, 4-1 g, 38 lb r, 7 c, 30 h. Pres. H. Tisdale, Sec. W. H. Bangs.
LAWRENCE, MASS.—Merrimack Valley Horse R.R. Co. 5-4 1/2 m, 4-8 1/2 g, 48 lb r, 20 c, 70 h. Pres. Wm. A. Russell, V. Pres. James Walton, Methuen, Clerk & Treas. James C. Eaton, Supt. A. N. Kimball, Lawrence.
LEWISTON, ME.—Lewiston & Auburn Horse R.R. Co. 7 1/2 m, 4-8 1/2 g, 32 lb r, 16 c, 45 h. Pres. Frank W. Dana, Lewiston, Clerk, H. C. Little, Lewiston, Treas. H. C. Packard, Auburn, Supt. E. P. Stunchfield, Auburn.
LEXINGTON, KY.—Lexington City Ry. Co. 5 m, 4-10 g, 20 lb r, 20 c, 85 h. Pres. John Cross, V. Pres. C. R. Diver, Sec. & Supt. Bert. Cross.
LEXINGTON, MO.—Lexington St. Ry. Co.
LIMA, O.—Lima St. Ry. Co.
LINCOLN, NEB.—Capital City Ry. Co. 3 m, — g, — lb r, 5 c, — h. Pres. E. B. Durfee, Sec. & Supt. H. B. Durfee.
LITTLE ROCK, ARK.—Little Rock St. Ry. Co. Citizens' St. Ry. Co. 4 1/2 m, 4-10 g, 20 lb r, 22 c, 80 h. Pres. John Cross, Sec. and Treas. F. C. Reed, Supt. C. R. Diver.
Hot Springs St. Ry. Co.
LOGANSPOUR, IND.—Logansport Ry. Co. 2 m, 4 g, 25 lb r, 6 c, 29 mu. Pres. Frank G. Jaques, Sec. M. Jaques, Supt. Wm. P. Jaques, Office, Urbana, Ill.
LONDON, CAN.—London St. R.R. Co. 3 m, 4-8 1/2 g, 30 lb r, 12 c, 30 h. Pres. V. Cronga, Sec. Jas. H. Flock, Supt. Henry Thos. Smith.
LONG ISLAND CITY, N. Y.—Steinway & Hunter's Point R.R. Co. 26 1/2 m, 4-8 1/2 g, 47 lb r, 60 c, 150 h. Pres. Wm. Steinway, Supt. Steiny Hall, N. Y. City. V. Pres. Henry A. Cassebeer, Jr., Steinway, P. O., Long Island City, N. Y. Sec. & Treas. Chas. F. Tratbar, Steinway Hall, N. Y. City.
Dutch Kills & Hunter's Point R.R. — m, — g, — lb r, — c, — h. Pres. R. J. Gleason.
Long Island City & Newtown Ry. Co. 3 m, 4-8 1/2 g, 45-55 lb r, 25 c, 60 h. Pres. Isaac Buchanan, N. Y. City, Sec. Geo. S. Crawford, Brooklyn, N. Y., Treas. Patrick J. Gleason, Supt. Michael Conway.
LONGVIEW, TEX.—Longview & Junction St. Ry. 3 1/2 m, 3-6 g, 2 c, 4 h. Pres. F. T. Rembert, Sec. R. B. Levy, Treas. F. L. Whaley, Supt. C. W. Booth.
LOS ANGELES, CAL.—Boyle Heights R.R. Co. Central R.R. Co. and the Sixth & San Fernando St. R.R. Co. 7 m, 3-6 g, 16 lb r, 13 c, — h. Pres. E. T. Spencer, Sec. F. X. Palmer, Supt. J. A. Fairchild.
City R.R. of Los Angeles. 4 1/2 m, 4-8 1/2 g, 36 lb r, 9 c, 75 h. Pres. I. M. Hellman, V. Pres. W. J. Brodrieh, Sec. John O. Wheeler, Supt. W. H. Hawks.
Los Angeles & Aliso Ave. St. R.R. Co.
Main St. & Agricultural Park R.R.
LOUISVILLE, KY.—Kentucky St. Ry. Co. 5 m, 5-2 g, — lb r, 22 c, — h. Pres. T. J. Minary, Sec. & Treas. Thos. Donigan.
Central Pass. R.R. Co.
Crescent Hill Ry. Co.
Louisville City Ry. Co. 63 m, 5 g, — lb r, 199 c, 1300 h. Pres. Maj. Alexander Henry Davis, Syracuse, N. Y., V. Pres. St. John Boyle, Sec. & Treas. R. A. Watts, Supt. H. H. Littell.
LOWELL, MASS.—Lowell Horse R.R. Co. 6 m, 4-8 1/2 g, 28-47 lb r, 28 c, 100 h. Pres. Wm. E. Livingston, Gen. Man. J. A. Chase.
LYNCHBURG, VA.—Lynchburg St. R.R. Co. 2 m, 5-1 g, 26 lb r, 6 c, 31 h. Pres. Stephen Adams, Treas. John L. Adams, Supt. William M. Payne.
LYONS, IA.—Clinton & Lyons Horse Ry. Co. 4 1/2 m, 3-8 g, 19-30 lb r, 15 c, 40 h. Pres. D. Joyce, V. Pres. & Man. R. N. Rand.
MACON, GA.—Macon & Suburban St. Ry. Co. 6 m, — g, 20 lb r, 10 c, 50 h & mu. Pres. T. J. Carling, Sec. & Treas. H. R. Brown, Office, 151 Second St.
MADISON, IND.—Madison St. Ry. Co. 2 1/2 m, 4 g, 15 lb r, 7 c, 8 h, 10 mu. Pres. Jacob Wendle, V. Pres. Peter F. Robenilus, Supt. & Treas. Chas. F. Tuttle.
MADISON, WIS.—Madison St. Ry. Co. 2 1/2 m, 3 g, 23 lb r, 6 c, 24 h. Pres. E. W. Keyes, Sec. Jas. R. Zearing, Treas. Ludus Clark.
MANCHESTER, N. H.—Manchester Horse R.R. 4 1/2 m, 3-1/2 g, 27-34 lb r, 12 c, 41 h. Pres. S. N. Bell, Treas. Frederick Smyth, Clerk J. A. Weston, Supt. A. Q. Guage.
MARYSVILLE, CAL.—City Pass. R.R. Co. (No returns.)
MECHANICSBURG, ILL.—Mechanicsburg & Buffalo Ry. Co. 3 1/2 m, 3-10 g, 16 lb r, 3 c, 4 mu. Pres. J. N. Fullenwelder, Treas. A. T. Thompson, Sec. J. T. Fullenwelder.
MEMPHIS, TENN.—Memphis City R.R. Co.
MERIDIAN, MISS.—Meridian St. Ry. Co. 1 1/2 m, 4-8 g, 16 lb r, 3 c, 12 h. Pres. J. J. Shannon, V. Pres. J. L. Handley, Sec. R. M. Houston.
MIDDLETOWN, O.—Middletown & Madison St. Ry. Co.

**MILLERSVILLE, PA.**—Lancaster & Millersville St. R.R. Co.

**MILWAUKEE, WIS.**—Cream City R.R. Co. 8 1-6 m, 4-8 1/2 g, 27-38 lb r, 74 c, 307 m, 2 h. Pres. Winfield Smith, V. Pres. Christian Pressner, Treas. Ferdinand Knehn, Sec. Wm. Damkoehler, Supt. Henry Berg.

**MILWAUKEE CITY RY. CO.** 15 m, 4-8 1/2 g, 27 lb r, 75 c, 43 h. Pres. Peter McGeoch, Sec. & Treas. Geo. O. Wheatcroft.

**MINNEAPOLIS, MINN.**—Minneapolis St. Ry. Co. 45 m, 3-6 g, 27-35 45 lb r, 146 c, 725 h and mu. Pres. Thos. Lowry, V. Pres. C. Morrissey, Treas. W. W. Herrick, Sec. & Supt. C. G. Goodrich.

**MOBILE, ALA.**—City R.R. Co. 17 1/2 m, 5-2 g, 36-70 lb r, 68 c, 240 h. Pres. Jno. Maguire, Sec. I. Strausse, Treas. Myer I. Goldsmith, Supt. A. Moog.

**MOBILE, ALA.**—Mobile Central St. Ry. Co. 1 1/2 m, —g, —lb r, 3 c, 11 h. Pres. S. W. Wheelock, V. Pres. M. Y. Cady, Sec. W. R. Moore, Treas. C. F. Hemenway.

**MOBILE, ALA.**—Mobile & Rock Island St. Ry. Co. —m, —g, —lb r, —c, —h. Pres. J. Huntton, Sec. I. M. Buford, Treas. C. Lyons, Supt. Wm. Gamble.

**MONTECAL, CAN.**—Montreal City Pass. Co. 21 m, 4-8 1/2 g, —lb r, 76 c, 465 h. Pres. Jesse Joseph, V. Pres. Wm. Smith, Sec. & Man. Ed. Lusher, Supt. I. H. Hobland.

**MOUTRIEVILLE, S. C.**—Middle St. & Sullivan's Landing Ry.

**MUSKOGON, MICH.**—Muskegon Ry. Co. 4 1/2 m, 3-6 g, 20 lb r, 8 c, 26 h, 8 mu. Pres. F. A. Nims, V. Pres. Chas. Merrim, Boston, Mass., Sec. Thomas Munroe, Treas. G. R. Sherman, Supt. C. H. Newell.

**NASHUA, N. H.**—Nashua St. Ry. Co.

**NASHVILLE, TENN.**—Nashville & Edgefield R.R. Co. Fotherland Street Railway Co. North Edgefield and Nashville St. R.R. Co., one management. 5 m, 5 g, 16 lb r, 21 c, 100 h. Pres. John S. Bransford, Sec. Percy Kennard, Supt. Jno. T. Voss.

**NEVADA, MO.**—Nevada Street Ry. Co.

**NEW ALBANY, IND.**—New Albany St. Ry. Co. 6 m, 4-11 g, 25 lb r, 15 c, 50 h. Pres. Geo. T. Vance, Sec. G. Vance, Treas. Letitia V. Vredenburg, Supt. Wm. L. Timberlake.

**NEWARK, N. J.**—The Newark & Bloomfield St. R.R. Co. 7 m, 5-2 1/2 g, 47 lb r, 22 c, 140 h. Pres. S. S. Batin, Sec. W. L. Mulford, Supt. H. F. Totten.

**NEW BEDFORD, MASS.**—New Bedford & Fairhaven St. Ry. Co. 7 1/2 m, 4-8 1/2 g, 35-40 lb r, 38 c, 138 h. Pres. Warren Ladd, Treas. Andrew G. Pierce, Clerk Edward T. Pierce.

**NEW BURYPORT, MASS.**—Newburyport & Amesbury Horse R.R. Co. 6 1-3 m, 12 c, 54 h. Pres. W. A. Johnson, Treas. N. H. Shepard, Sec. Geo. H. Stevens.

**NEW HAVEN, CONN.**—Fair Haven & Westville R.R. Co. 7 m, 4 1/2 g, 42 lb r, 23 c, 151 h. Pres. H. B. Ives, Sec. & Treas. G. Cander, Supt. Walter A. Graham.

**NEW HAVEN & Centreville Horse R.R. Co.** 2 1/2 m, 4-8 1/2 g, 42 lb r, 4 c, 30 h. Trustee Cornelius Pierpont. Seate Street Horse R.R. Co. 2 1/2 m, 4-8 g, 43 lb r, 4 c, 40 h. Pres. C. A. Warren, Sec. & Treas. C. C. Blatchen. The Whitney Ave. Horse Ry. 2 1/2 m, 4-8 1/2 g, 25 lb r, 3 c, 25 h. Pres. Geo. H. Watsons, Sec. George D. Watson, Treas. Eli Whitney, Jr.

**Dry Dock, East Broadway & Battery R.R. Co.** 11 1/2 m, 4-8 1/2 g, 60 lb r, 187 c, 1,132 h. Pres. William White, Auditor E. T. Landon, Sec. & Treas. Richard Kelly, Supt. Fred F. White. Offices, 605 Grand st.

**Fourth Ave. R.R. Co.** 10 m, 4-8 1/2 g, 60 lb r, 112 c, 1,155 h. Pres. W. H. Hays, Sec. & Treas. James Affleck, Supt. H. B. Wilson.

**Forty-Second Street & Grand Street Ferry R.R. Co.** 5 1/2 m, 8-4 g, 64 lb r, 50 c, 500 h. Pres. Chas. Curtis, Sec. & Treas. E. S. Allen, Supt. John M. Cahoun.

**Harlem Bridge, Morrisauia & Fordham Ry.** 4 1/2 m, 4-8 1/2 g, 45-60 lb r, 65 c, 233 h. Pres. Henry Spratley, V. Pres. Richard M. Hoe, Sec. & Treas. Wm. Caldwell.

**Houston, West Street & Pavonia Ferry R.R. Co.** 5 m, 4-8 1/2 g, 60 lb r, 50 c, 400 h. Pres. Richard Kelly, Sec. & Treas. Daniel F. Hasbrook.

**Jerome Park R.R.** 1 m, 4-8 1/2 g, 50-56 lb r. Pres. Leonard M. Jerome, Sec. Fred A. Lovcraft, Treas. Theodore Moss.

**New York City St. Ry. Co.** 10 m, [not in operation]. Pres. Loomis I. White, Sec. W. L. McCorkle, Treas. Wm. L. Skidmore.

**New York & Harlem R.R. Co.** 5 1/2 m, 4-8 1/2 g, 56-75 lb r, 144 c, 1,408 h. Pres. W. H. Vanderbilt, V. Pres. & Sec. Cornelius Vanderbilt, Treas. Ed. V. W. Rossiter, Supt. Alfred Skitt, Pur. Agt. Chas. Reed.

**Sixth Ave. R.R. Co.** 4 m, 4-8 1/2 g, 60 lb r, 127 c, 1,296 h.

**South Ferry Ry. Co.** 3/4 m, 4-8 1/2 g, 60 lb r, 13 c, 41 h. Pres. Henry Hart, Sec. Wm. N. Cohen, Treas. Albert J. Elias, Supt. Chas. H. Meeks.

**The Second Ave. R.R. Co.** 13 m, 4-8 1/2 g, 60 lb r, 316 cars, 1750 h. Pres. W. Thorn, V. Pres. J. Wadsworth, Sec. & Treas. J. B. Underhill.

**The Third Ave. R.R. Co.** 13 1/2 m, 4-8 1/2 g, 60 & 74 lb r, 318 c, 2,150 h. (3/4 m of cable road on 10th ave.) Pres. Lewis Lyon, 739 Madison ave., V. Pres. Henry Hart, 110 Tribune Building, Sec. Alfred Lazarus, 436 W. 61st st., Treas. John Beaver, 211 E. 112th st., Supt. John H. Robertson, 307 E. 65th st.

**Twenty-third St. R.R. Co.** 7 m, 4-8 1/2 g, 54 lb r, 102 c, 692 h. Pres. Jacob Sharp, Sec. Thos. H. McLean, Treas. Lewis May, Act-Supt. George Ferry.

**NIAGARA FALLS, N. Y.**—Niagara Falls & Suspension Bridge Ry. Co. 2 1/2 m, 4-8 1/2 g, 38 42 lb r, 8 c, 36 h. Pres. Benj. Flagler, V. Pres. Alva Chich, Sec. W. J. Mackay, Treas. A. Schoellkopf.

**NORFOLK, VA.**—Nortolk & City R.R. Co. 3 1/2 m, 5-2 g, 44 lb r, 18 c, 65 h. Pres. John B. Whitehead, Treas. H. C. Whitehead, Supt. E. W. Savage.

**NORTHAMPTON, MASS.**—Northampton St. Ry. Co. 3 1/2 m, 4-8 1/2 g, 32 lb r, 7 c, 26 h. Pres. Oscar Edwards, Sec. M. H. Spaulding, Treas. & Sup. E. C. Clark.

**NORWALK, CONN.**—Norwalk Horse R.R. Co. 2 m, 4-10 g, —lb r, 7 c, 20 h. Pres. James W. Hyatt, V. Pres. & Sec. Edw. G. Hoyt, Supt. James W. Hyatt.

**NORWICH, CONN.**—Norwich Horse R.R. Co.

**OAKLAND, CAL.**—Alameda, Oakland & Piedmont St. R.R. Co. 14 m, 4-8 1/2 g, 60 lb r, 187 c, 1,132 h. Pres. William White, Auditor E. T. Landon, Sec. & Treas. Richard Kelly, Supt. Fred F. White. Offices, 605 Grand st.

**Lehigh Ave. Pass. Ry. Co.** Pres. John Lamon, Sec. Chas. A. Porter, Treas. John L. Hill. [Track not laid.]

**Lombard & South Sts. Pass. Ry. Co.** —m, 5-2 g, 43 lb r, 51 c, 276 h. Pres. John B. Parsons, Sec. & Treas. Francis Hazelhurst Supt. Jno. M. Gaughen.

**People's Pass. Ry. Co.** 44 m, 5-2g, 47 lb r, 125 c, 1,080 h. Pres. C. J. Harrah, V. Pres. C. J. Harrah, Jr., Sec. & Treas. Jno. C. Dessalet, Supt. Wm. Hagenswiler.

**Philadelphia City Pass. Ry. Co.** 7 m, 5-2 1/2 g, 47 lb r, —c, —h. Pres. Wm. W. Colket, Sec. & Treas. T. W. Pennypacker.

**Philadelphia Tracton Co.** 109 m, 5-2 1/2 g, 45-78 lb r, 595 c, 3,160 h. Pres. W. H. Kemble, V. Pres. P. A. B. Widener & W. L. Elkins, Sec. & Treas. D. W. Dick- inson.

**Philadelphia & Gray's Ferry Pass. R.R. Co.** 10 1-3 m, 40 c, 200 h. Pres. Matthew Brooks, Treas. J. C. Dawes, Sec. J. Crawford Dawes, Supt. Patrick Lov- ett.

**Ridge Avenue Pass. Ry. Co.** 14 m, 5-2 g, 47 lb r, 55 c, 352 h. Pres. E. B. Edwards, V. Pres. John Lam- bert, Sec. & Treas. Wm. S. Blight, Supt. William Ingles.

**Second & Third Sts. Pass. Ry. Co.** 37 m, 116 c, 669h. Pres. Alexander M. Fox, Treas. William F. Miller, Sec. Charles D. Matlack, Supt. David W. Stevens.

**Seventeenth & Nineteenth Sts. Pass. Ry. Co.** 7 1/2 m. Pres. Matthew S. Quay, Sec. & Treas. John B. Ped- die. [Leased to Philada. Tracton Co.]

**Thirtieth & Fifteenth Sts. Pass. Ry. Co.** 14 m, 5-2 g, 43 lb r, 73 c, 452 h. Pres. Thos. W. Ackley, Sec. & Treas. Thos. S. Harris, Supt. Wm. B. Cooper.

**Union Pass. Ry. Co.** 70 m, 348 c, 1,724 h. Pres. Wm. H. Kemble, Sec. & Treas. John B. Peddie, Supt. Jacob C. Petty.

**West Philadelphia Pass. Ry. Co.** 18 1/2 m, 122 c, 646 h. Pres. Peter A. B. Widener, Sec. & Treas. D. W. Dickson. (Leased by the Phila. Tracton Co.)

**PHILLIPSBURGH, N. J.**—Phillipsburgh Horse Car Ry. Co. 2 1/2 m, 4-8 g, 35 lb r, 4 c, 13 h. Pres. Daniel Rukle, Sec. & Treas. James W. Long.

**PITTSBURGH, PA.**—Central Pass R.R. Co. 3 m, 16 c, 95 h. Pres. J. F. Cluley, Sec. P. L. Stephenson, Treas. E. R. Jones, Supt. R. G. Heron.

**Beaver Falls & New Brighton Ry. Co.**

**Citizens' Pass. Ry. Co.** 16 1/2 m, 5-2 1/2 g, 47 lb r, 40 c, 337 h. Pres. Jno. G. Holmes, Sec. C. M. Gormly, Supt. Murry Verner.

**Federal St. & Pleasant Valley Pass. Ry. Co.** 26 m, 5-2 1/2 g, 46-50 lb r, 20 c, 154 h. Pres. Wm. H. Creery, Treas. James Boyie, Supt. Wm. J. Crozier, Allegheny City.

**South Nashville St. R.R. Co.** 4 1/2 m, 5 g, 16-20 lb r, 10 c, 68 h. Pres. W. M. Duncan, Sec., Treas. & Supt. C. L. Fuller.

**Berkley Villa R.R.**

**People's Park Pass. Ry. Co.** 2 m, 5-2 1/2 g, —lb r, 10 c, 75 h. Pres. Wm. McCreery, Treas. James Boyie, Supt. Wm. J. Crozier, Allegheny City.

**NEVADA, MO.**—Nevada Street Ry. Co.

**Broadway & Piedmont St. R.R. Co.**

**People's Park Pass. Ry. Co.** 2 m, 5-2 1/2 g, —lb r, 10 c, 75 h. Pres. Wm. McCreery, Treas. James Boyie, Supt. Wm. J. Crozier, Allegheny City.

**NEW ALBANY, IND.**—New Albany St. Ry. Co. 6 m, 4-11 g, 25 lb r, 15 c, 50 h. Pres. Geo. T. Vance, Sec. G. Vance, Treas. Letitia V. Vredenburg, Supt. Wm. L. Timberlake.

**FOURTEENTH ST. R.R. CO.** 6 m, 5 g, 20-30 lb r, 6 c, —h. Pres. & Supt. Walter Blair, Sec. P. J. Van Loben.

**Pittsburgh, Allegheny & Manchester Pass. Ry. Co.** 5 m, 5-2 1/2 g, 46 lb r, 40 c, 275 h. Pres. Chas. Atwell, Sec. & Treas. Chas. Seibert, Supt. James C. Cotton.

**NEWARK, N. J.**—The Newark & Bloomfield St. R.R. Co. 7 m, 5-2 1/2 g, 47 lb r, 22 c, 140 h. Pres. S. S. Batin, Sec. W. L. Mulford, Supt. H. F. Totten.

**OAKLAND, CAL.**—Alameda, Oakland & Piedmont St. R.R. Co. 14 m, 4-8 1/2 g, 60 lb r, 187 c, 1,132 h. Pres. William White, Auditor E. T. Landon, Sec. & Treas. Richard Kelly, Supt. Fred F. White. Offices, 605 Grand st.

**Pittsburgh, Oakland & East Liberty, Pass. Ry. Co.** 11 m, 5-4 1/2 g, 47 lb r, 32 c, 110 h, 61 mu. Pres. J. T. Jordan, Sec. John G. Traggardth, Treas. D. W. C. Bidwell, Supt. H. M. Cherry.

**NEW BEDFORD, MASS.**—New Bedford & Fairhaven St. Ry. Co. 7 1/2 m, 4-8 1/2 g, 35-40 lb r, 38 c, 138 h. Pres. Warren Ladd, Treas. Andrew G. Pierce, Clerk Edward T. Pierce.

**OSGDEN CITY, UTAH.**—Ogden City Ry. Co. 3 m, 4-8 1/2 g, 20 lb r, 4 c, 21 h. Pres. L. W. Shurtieff, Ogden City, V. P. & Supt. O. P. Arnold, Salt Lake City, Sec. & Treas. H. S. Young, Ogden City.

**Pittsburgh & Birmingham Pass. R.R. Co.** 3 1/2 m, 5-2 1/2 g, 48 lb r, 20 c, 170 h. Pres. W. W. Patrick, Sec. D. F. Agnew, Treas. John G. Holmes.

**NEW BURYPORT, MASS.**—Newburyport & Amesbury Horse R.R. Co. 6 1-3 m, 12 c, 54 h. Pres. W. A. Johnson, Treas. N. H. Shepard, Sec. Geo. H. Stevens.

**OLEAN, N. Y.**—Olean St. Ry. Co. 1-10 m, 3-6 g, 25 lb r, 3 c, 8 h. Pres. M. B. Fobes, Sec. & Treas. M. W. Barse.

**Pittsburgh & West End Pass. Ry. Co.** 3 1/2 m, 5-2 g, 35 lb r, 13 c, 75 h. Pres. John C. Reilly, Sec. & Treas. Thomas S. Bigelow, Supt. William J. Burns.

**NEW HAVEN, CONN.**—Fair Haven & Westville R.R. Co. 7 m, 4 1/2 g, 42 lb r, 23 c, 151 h. Pres. H. B. Ives, Sec. & Treas. G. Cander, Supt. Walter A. Graham.

**OMAHA, NEB.**—Omaha Horse Ry. Co. 15 m, 4-8 1/2 g, 35 lb r, 40 c, 303 h. Pres. Frank Murphy, V. Pres. Guy C. Barton, Treas. W. W. Marsh, Supt. W. A. Smith.

**Pittsburgh & Wilkinsburg St. Ry. Co.**

**NEW HAVEN & Centreville Horse R.R. Co.** 2 1/2 m, 4-8 1/2 g, 42 lb r, 4 c, 30 h. Trustee Cornelius Pierpont. Seate Street Horse R.R. Co. 2 1/2 m, 4-8 g, 43 lb r, 4 c, 40 h. Pres. C. A. Warren, Sec. & Treas. C. C. Blatchen. The Whitney Ave. Horse Ry. 2 1/2 m, 4-8 1/2 g, 25 lb r, 3 c, 25 h. Pres. Geo. H. Watsons, Sec. George D. Watson, Treas. Eli Whitney, Jr.

**ONEIDA VILLAGE, N. Y.**—Oneida St. Ry. —m, —g, —lb r, —c, —h. Pres. Jerome Heacock.

**Second Avenue Pass. Ry. Co.**

**NEW ORLEANS, LA.**—Canal & Claiborne St. R.R. Co. 13 m, 5-2 1/2 g, 37 lb r, 40 c, 200 h. Pres. E. J. Hart, Sec. & Supt. John H. Dr. Grange.

**OSHKOSH, WIS.**—Oshkosh St. R.R. Co. 3 1/2 m, 4-8 1/2 g, 27 lb r, 9 c, 24 h. Pres. Tom Wall, V. Pres. F. Zentner, Sec. & Treas. J. Y. Hull, Sup. F. L. Thompson.

**South Side Pass. R.R. Co.** 2 1/2 m, 5-2 1/2 g, 45 lb r, 12 c, 80 h. Pres. D. Z. Brickell, Sec. & Treas. W. T. Wallace, Supt. W. M. Rosborough.

**NEW ORLEANS & Carrollton R.R. Co.** 8 m, 4-8 1/2 g, 30-45 lb r, 65 c, 200 h, 19 engines. Pres. Wm. Benthuysen, Sec. Walter F. Crough, Supt. C. V. Halle.

**OTTAWA, ILL.**—Central City Horse Ry. Co. 4 1/2 m, 4-8 1/2 g, 40 lb r, 60 c, 135 h. Pres. H. R. Woodward, Sec. M. Pfeiffer, Treas. H. N. Wheeler, Supt. John Strong.

**Transverse Pass. Ry. Co.** 6 1/2 m, 5-2 g, 52 lb r, 39 c, 243 h. Pres. C. L. Magee, V. Pres. F. P. Klopier, Sec. & Treas. Wm. R. Ford, Supt. Miller Elliot.

**NEW ORLEANS CITY & Lake R.R. Co.** 64 m, 5-2 1/2 g, 46-40 lb r, 180 c, 39 coaches, dummy engine, 1050 mu. Pres. J. A. Walker, Sec. W. E. Levenich, Supt. F. Wintz.

**OTTAWA, ONT.**—Ottawa City Passenger Ry. Co. 3 m, 4-8 1/2 g, 34 lb r, 1 c, 40 h. Pres. Thomas C. Keefe, V. Pres. R. Blackburn, Sec. James D. Traser.

**Pittston, PA.**—Pittston St. R.R. Co. 1 1/2 m, 3 c, 5 h. Pres. Thomas Griffith, Treas. M. W. Morris, Sec. William Allen.

**NEW ORLEANS R.R. Co.** —m, —g, —lb r, 32 c, 140 h. & mu. Pres. & Supt. H. Larque, Sec. & Treas. P. Congot. Office, Cor. White & Larher Sts.

**OTTUMWA, IA.**—Ottumwa St. R.R. Co. 2 m, 3-6 g, 27 lb r, 4 c, 2 h, 14 mu. Pres. J. M. Hedrick, Sec. & Treas. H. L. Hedrick, Supt. C. M. Hedrick.

**PORT HURON, MICH.**—Port Huron St. Ry. Co.

**NEW ORLEANS ST. R.R. Co.** —m, —g, —lb r, 32 c, 140 h. & mu. Pres. & Supt. H. Larque, Sec. & Treas. P. Congot. Office, Cor. White & Larher Sts.

**OTTUMWA, IA.**—Ottumwa St. R.R. Co. 2 m, 3-6 g, 27 lb r, 4 c, 2 h, 14 mu. Pres. J. M. Hedrick, Sec. & Treas. H. L. Hedrick, Supt. C. M. Hedrick.

**PORTLAND, ME.**—Ocean St. R.R. Co.

**NEW ORLEANS CITY & Lake R.R. Co.** 64 m, 5-2 1/2 g, 46-40 lb r, 180 c, 39 coaches, dummy engine, 1050 mu. Pres. J. A. Walker, Sec. W. E. Levenich, Supt. F. Wintz.

**OTTAWA, N. Y.**—Oswego St. Ry. Co. 2 m, 4-8 1/2 g, 45 lb r, 3 c, —h. Pres. Jas. F. Johnson, V. Pres. R. J. Olliphant, Sec. Haynes L. Hart, Treas. Robt. G. Post, Gen. Man. James O'Connor. [Not in operation yet.]

**Portland R.R. Co.** 7 1/2 m, 4-8 1/2 g, 30-33-45 lb r, 34 c, 154 h. Pres. H. J. Libby, Treas. & Gen. Man. E. A. Newman, Supt. Geo. W. Soule.

**NEW ORLEANS & Carrollton R.R. Co.** 8 m, 4-8 1/2 g, 30-45 lb r, 65 c, 200 h, 19 engines. Pres. Wm. Benthuysen, Sec. Walter F. Crough, Supt. C. V. Halle.

**OTTUMWA, IA.**—Ottumwa St. R.R. Co. 2 m, 3-6 g, 27 lb r, 4 c, 2 h, 14 mu. Pres. J. M. Hedrick, Sec. & Treas. H. L. Hedrick, Supt. C. M. Hedrick.

**PORTSMOUTH, O.**—Portsmouth St. R. R. Co. 2 m, 3-6 g, 18 lb r, 4 c, 10 h. Pres. James Skelton, Treas., Sec. & Supt. Enas Reed.

**NEW ORLEANS CITY & Lake R.R. Co.** 64 m, 5-2 1/2 g, 46-40 lb r, 180 c, 39 coaches, dummy engine, 1050 mu. Pres. J. A. Walker, Sec. W. E. Levenich, Supt. F. Wintz.

**OTTUMWA, IA.**—Ottumwa St. R.R. Co. 2 m, 3-6 g, 27 lb r, 4 c, 2 h, 14 mu. Pres. J. M. Hedrick, Sec. & Treas. H. L. Hedrick, Supt. C. M. Hedrick.

**POTSDEVILLE, PA.**—People's Ry. Co. 9 1/2 m, 16 c, 56 h.

**NEW ORLEANS & Carrollton R.R. Co.** 8 m, 4-8 1/2 g, 30-45 lb r, 65 c, 200 h, 19 engines. Pres. Wm. Benthuysen, Sec. Walter F. Crough, Supt. C. V. Halle.

**OTTUMWA, IA.**—Ottumwa St. R.R. Co. 2 m, 3-6 g, 27 lb r, 4 c, 2 h, 14 mu. Pres. J. M. Hedrick, Sec. & Treas. H. L. Hedrick, Supt. C. M. Hedrick.

**POUGHKEEPSIE, N. Y.**—City R.R. of Pough- keepsie. 3 m, 4-8 1/2 g, 35 lb r, 11 c, 38 h. Pres. Aaron Imms, V. Pres. G. B. Adrance, Sec. A. B. Smith, Treas. Hudson Taylor, Supt. C. M. Davis.

**NEW ORLEANS CITY & Lake R.R. Co.** 64 m, 5-2 1/2 g, 46-40 lb r, 180 c, 39 coaches, dummy engine, 1050 mu. Pres. J. A. Walker, Sec. W. E. Levenich, Supt. F. Wintz.

**OTTUMWA, IA.**—Ottumwa St. R.R. Co. 2 m, 3-6 g, 27 lb r, 4 c, 2 h, 14 mu. Pres. J. M. Hedrick, Sec. & Treas. H. L. Hedrick, Supt. C. M. Hedrick.

**PROVIDENCE, R. I.**—Union R.R. Co. 50 m, 4-8 1/2 g, 24-54 lb r, 240 c, 1,200 h. Pres. Jesse Metcalf, V. Pres. & Gen. Man. D. F. Longstreet, Sec. and Treas. C. A. Babcock, Aud. B. A. Jackson.

**NEW ORLEANS CITY & Lake R.R. Co.** 64 m, 5-2 1/2 g, 46-40 lb r, 180 c, 39 coaches, dummy engine, 1050 mu. Pres. J. A. Walker, Sec. W. E. Levenich, Supt. F. Wintz.



RED OAK, IA.—Red Oak St. R.R. Co. 1 1/2 m, 4-2 1/2 g, flat r, 2 c, 2 h, 2 mu. Pres. J. W. Jenkins, V. Pres. Geo. West, Sec. F. M. Byriket, Treas. & Supt. F. O. Jenkins.

RICHMOND, IND.—Richmond City Ry. Co. 3 m, 3 g, 25 lb r, 9 c, 30 h. Pres. J. Y. Miller, V. Pres. Joseph Katliff, Treas. H. I. Miller, Supt. F. M. Francisco.

RICHMOND, ILL.—Richmond St. R.R. Co.

RICHMOND, VA.—Richmond City Ry. Co. 7 m, 4-8 1/2 g, 60 43 lb r, 40 c, 180 h. Pres. J. H. Schoolcraft, Sec. & Treas. F. D. Mellen, Man. C. M. Baeton, Supt. Charles Sleders.

ROCHESTER, N. Y.—Rochester City & Brighton R.R. Co. 22 m, 4-8 1/2 g, 45 lb r, 120 c, 500 h. Pres. Patrick Barry, Sec. C. C. Woodworth, Treas. C. B. Woodworth, Supt. Thomas J. Brower.

Citizens' St. Ry. Co. Pres. Wm. H. Jones, Sec. & Treas. J. E. Pierpont, Supt. S. A. Green.

ROCKFORD, ILL.—Rockford St. Ry. Co. 6 2-5 m, 4-8 1/2 g, 30 lb r, 13 c, 52 h, 16 m. Pres. Anthony Haines, Sec. H. H. Robinson, Treas. N. E. Lyman.

ROCK ISLAND, ILL.—Rock Island & Milan St. Ry. Co. 7 m 4-8 1/2 g, 20-30-42 lb r, 10 c, 7 h. Pres. & Supt. Bally Davenport, Sec. E. H. Gayer, Treas. John Peety.

RONDOT, N. Y.—Klmgston City R.R. Co. 2 4-5 m, 4-8 1/2 g, 40 lb r, 10 c, 40 h. Pres. James G. Lindsley, V. Pres. S. D. Coykendoll, Sec. & Treas. John C. Romeyer, Supt. Wm. H. DeGarmo.

SACRAMENTO, CAL.—Sacramento City St. R.R. Co.

SAGINAW, MICH.—Saginaw St. R.R. Co. 2 1/2 m, 4-8 1/2 g, 42 lb r, 10 c, 50 h. Pres. David H. Jerome, V. Pres. Geo. F. Williams, Sec. & Treas. Geo. L. Burrows, Supt. Fred G. Benjamin.

SALEM, MASS.—Salem & Danvers St. Ry. Co. 6 m, 4-8 1/2 g, 35-47 lb r, 15 c, 45 h. Pres. Benj. W. Russell, Sec. G. A. Vickery, Treas. Geo. W. Williams, Supt. W. B. Furgurson, Asst. Supt. David N. Cook.

Naumkeag St. Ry. Co. — 4-8 1/2 g, 30-35 45 lb r, 50 c, 140 h. Pres. Chas. Odell, Clerk Joseph F. Hickey, Treas. Henry Wheatland, Supt. Willard B. Ferguson.

SALT LAKE CITY, UTAH.—Salt Lake City R.R. Co. 13 m, 4-8 1/2 g, 20 lb r, 20 c, 115 mu. Pres. John Taylor, Sec. David McKenzie, Treas. James Jack, Supt. Orson P. Arnold.

SAN ANTONIO, TEX.—San Antonio St. Ry. Co. 15 m, 4 g, 30 lb r, 38 c, 125 mu. Pres. A. Belknap, San Antonio, V. Pres. F. W. Pickard, N. Y. City, Treas. I. Withers, San Antonio, Sec. E. R. Norton, Supt. John Robb.

Prospect Hill St. Ry. Co.

SANDUSKY, O.—Sandusky St. Ry. Co. 2 m, — g, — lb r, — c, — h. Pres. Chas. B. Ods, Sec. & Treas. A. C. Morse, Supt. Clark Rude.

SAN FRANCISCO, CAL.—California St. R.R. Co. Central R.R. Co. 6 m, 4-8 g, 45 lb r, 31 c, 290 h. Pres. Chas. Main, V. Pres. Jos. Roseberg, Treas. A. J. Gunnison, Sec. C. G. LeBreton, Supt. J. F. Clark.

Clay St. Hill R.R. Co. 1 m, 3-6 g, 30 lb r, 11 c, 12 dummy ears. Pres. Joseph Britton, V. Pres. James Moffit, Treas. Henry I. Davis, Sec. Chas. F. Campbell, Supt. Joseph Britton.

Clay St. Park & Ocean R.R. Co.

Market St. Cable Ry. Co. 10 9-10 m, 4-8 1/2 lb r, 137 c, 2 motors. 73 h. Pres. Leland Stanford, V. Pres. Chas. F. Crocker, Treas. N. T. Smith, Sec. J. L. Willcutt.

North Beach & Mission R.R. Co. 8 m, 5 g, 46 c, 400 h. Pres. Jos. Rosenberg, Sec. H. W. Hathorne, Treas. Carl Ahfel, Supt. M. Skelly.

Omnibus R.R. & Cable Co. 8 1/2 m, 5 g, 35-45 lb r, 50 c, 364 h. Pres. Gustav Sutro, V. Pres. D. Callaghan, Sec. G. Ruegg, Supt. M. M. Martin.

Portrero & Bay View R.R. Co. 1 1/2 m, 5 g, 35 lb r, 20 c, 64 h. Pres. Leland Stanford, V. Pres. Chas. Crocker, Treas. N. T. Smith, Sec. J. L. Willcutt.

Sutter St. R.R. Co. 5 1/2 m, 4-11 g, 35-45 lb r, 30 c, 125 h. Pres. R. F. Morrow, Sec. A. K. Stevens, Treas. M. Schmitt, Supt. James McCord.

Telegraph Hill St. Ry. Co. 1,707 ft, 4-11 g, 36 lb r, 3 c, — h. Pres. Gustav Sutro, V. Pres. E. O. Demicks, Sec. & reas. C. J. Werner.

The City R.R. Co. 5 1/2 m, 5 g, 48 lb r, 73 c, 285 h. Pres. R. B. Woodward, V. Pres. Geo. E. Raun, Sec. M. E. Willis, Treas. J. H. Goodman, Supt. William Woodward.

SAN JOSE, CAL.—San Jose & Santa Clara R.R. Co.

First St. & San Pedro St. Depot R.R. Co. Market St. & Willow Glen R.R. Co. North Side R.R. Co. People's R.R. Co.

SANTA BARBARA, CAL.—Santa Barbara St. R.R. Co. 1 m, 3-6 g, 3 c, 8 mu. Pres. A. W. McPhall.

SAUGATUCK, CONN.—Westport & Saugatuck Horse R.R.

SAVANNAH, GA.—City & Suburban Ry. Co. 18 1/2 m, 5 g, 16-30 lb r, 49 c, 110 h, 3 engines. Pres. J. H. Johnson, Asst. J. W. Alley, Treas. E. Schmidt.

Coast Line R.R. Co. 7 m, 5 g, 30 lb r, 17 c, 37 h. Pres. Geo. Parsons, New York, Sec., Treas. & Gen. Man. R. E. Cobb, Savannah.

SAYRE, PA.—Sayre St. Ry. Co. Pres. Howard Elmer (organization not completed).

SCRANTON, PA.—People's St. Ry. Co. 9 1/2 m, 4-8 1/2 g, 25-52 lb r, 19 c, 70 h. Pres. Wm. Matthews, Sec. & Treas. J. C. Platt.

SEARCY, ARK.—Searcy & West Point R.R. Co. 8 m, 4-8 1/2 g, 20 lb r, 7 c, 6 mu. Pres. A. W. Yarnell, Sec. W. H. Lightle, Treas. Jasper Hicks.

SEATTLE, W. T.—Seattle St. Ry. Co. 3 1/2 m, 4-8 1/2 g, 35 lb r, 5 c, 20 h. Pres. F. H. Osgood, Sec. Geo. Kinnear.

SEDALIA, MO.—Sedalia St. Ry. Co. 2 1/2 m, 4-10 g, 54 lb r, 6 c, 31 h. Pres. Joseph D. Sicher, V. Pres,

Louis Deutsch, Treas. F. H. Guenther, Sec. & Supt. Chas. S. Conrad.

SELMA, ALA.—Selma St. R.R. 2 1/2 m, 18 lb r, 5 c, 8 h. Pres. E. Gillman, Sec. & Treas. J. H. Hollis, Supt. W. Bohila.

SENECA FALLS, N. Y.—Seneca Falls St. Ry. Co.

SHERMAN, TEX.—Sherman City R.R. Co.

SHREVEPORT, LA.—Shreveport City R.R. Co. 1 1/2 m, 4-4 g, 46 lb r, 6 c 14 h. Pres. Peter Youere.

SILVER CLIFF, COL.—Silver Cliff St. R.R. Co.

SLOUX CITY, IA.—Sloux City St. Ry. Co. 5 m, — g, — r, 6 c, 8 h, 4 mu. Pres. Fred T. Evans, V. Pres. D. A. Magee, Sec. & Treas. F. T. Evans.

SOUTH CHICAGO, ILL.—Chicago Horse & Duany R.R. 5 m, 4-8 1/2 g, — lb r, — c, — h. Pres. D. L. Huff, Treas. A. C. Calkins, Sec. E. R. Bliss. [Not in operation.]

SOUTH PUEBLO, COL.—Pueblo St. R.R. Co.

SPRINGFIELD, ILL.—Citizens' St. R.R. Co. 9 1/2 m, 3 6 g, 20-36 lb r, 23 c, 100 h. Pres. J. H. Schrick, Treas. Frank Reisch, Sec. Chas. F. Harman. Springfield City Ry. Co.

SPRINGFIELD, MASS.—Springfield St. Ry. Co. 4-8 1/2 g, 33-40 lb r, 28 c, 115 h. Pres. John Olmstead, Auditor L. E. Ladd, Clerk Gideon Wells, Treas. A. E. Smith, Supt. F. E. King.

SPRINGFIELD, MO.—The People's Ry. Co. of Springfield, Mo. 3 1/2 m, 4-10 g, 35 lb r, 5 c, 30 h. Pres. J. C. Cravens, Sec. Benj. N. Massey, Treas. Chas. Sheppard, Supt. H. F. Denton.

Springfield R.R. Co. 2 m, 30-40 lb r, 4-8 1/2 g, 7 c, 19 h, 19 mu. Pres. C. W. Rogers, St. Louis, Sec. & Treas. B. F. Hobart, Supt. J. A. Stoughton, No. Springfield.

SPRINGFIELD, O.—Citizens' St. R.R. Co. 10 m, 4 g, 29 c, 135 h. Pres. D. W. Stroud, V. Pres. A. S. Bishnell, Treas. Rose Mitchell, Sec. F. S. Penfield, Supt. W. H. Hanford.

STATEN ISLAND, N. Y.—Staten Island Shore Ry. Co.

ST. CATHARINE'S, ONT.—St. Catharine's, Merillon & Thorold St. Ry. Co. 5 1/2 m, 4-8 1/2 g, 30 lb r, 7 c, 30 h. Pres. E. A. Smythe, Sec. S. R. Smythe, Supt. E. A. Smythe.

ST. JOSEPH, MO.—Citizens' St. R.R. Co. 3 m, 4-8 1/2 g, 28 lb r, 14 c, 52 mu. Pres. Richard E. Turner, Sec. & Treas. Arthur Kirkpatrick, Supt. John F. Merlam.

Frederick Ave. Ry. Co. 1 1/2 m, 3 g, 16 lb r, 6 c, 16 h. Pres. Thomas E. Tootle, V. Pres. Winslow Judson, Sec. W. D. B. Motter, Treas. Thomas W. Evans, Supt. S. Rowen.

St. Joseph & Lake St. R.R. Co. Union Ry. Co.

ST. LOUIS, MO.—Baden & St. Louis R.R. Co. 3 1/2 m, 4-10 g, — lb r, 7 c, 21 h. Pres. George S. Case, V. Pres. William Z. Coleman, Supt. J. H. Archer.

Benton & Bellefontaine Ry. Co. 7 1/2 m, 4-10 g, 45 lb r, 29 c, 200 h. Pres. J. G. Chapman, Sec. Robert McCulloch.

Cass Avenue & Fair Grounds Ry. Co. 8 m, 4-10 g, 38 lb r, 37 c, 290 h. Pres. W. R. Allen, V. Pres. Geo. W. Allen, Sec. & Supt. G. G. Gibson, Cashier O. H. Williams.

Citizen's Ry. Co. Jefferson Ave. Ry. Co. Lindell Ry. Co. 1 1/2 m, — g, — r, 65 c, 475 h. Pres. John H. Maquon, V. Pres. John H. Lightner, Sec. & Treas. Geo. W. Baumhoff, Supt. Jos. C. Llewellyn.

Missouri R.R. Co. Mound City R.R. Co. Northern Central.

Springfield Ry. Co. 2 m, 4-8 1/2 g, 25-40 lb r, 7 c, 40 h. Pres. C. W. Rogers, St. Louis, Sec. & Treas. B. F. Hobart, Springfield, Supt. J. A. Stoughton, No. Springfield, Asst. Supt. Frank B. Smith, No. Springfield.

Southern Ry. Co. 7 4-5 m, 4-10 g, 35-52 lb r, 49 c, 250 h. Pres. E. R. Coleman, Sec. J. S. Minary, Man. W. L. Johnson.

St. Louis R.R. Co. and the People's R.R. One management. 11 m, 4-10 g, 38-44 lb r, 58 c, 375 h. Pres. Chas. Green, Sec. & Treas. John Mahoney, Supt. Patrick Shea.

Tower Grove & Lafayette R.R. Union Depot R.R. Co. Union R.R. Co.

STONEHAM, MASS.—Stoneham St. R.R. Co. 2 1/2 m, 4-8 1/2 g, 33 lb r, 10 c, 28 h. Pres. A. V. Lynde, Melrose, Treas. & Clerk Lyman Dyke, Supt. John Hill.

ST. PAUL, MINN.—Wabash St. Ry. Co. St. Paul City Ry. Co. 25 m, 4-8 1/2 g, 80 c, 150 h, 294 mu. Pres. Thos. Lowry, V. Pres. C. G. Goodrich, Sec. J. H. Randall, Treas. Clinton Morrison, Supt. A. L. Scott.

STERLING, ILL.—Sterling St. Ry. Co.

STILLWATER, N. Y.—Stillwater & Mechanics ville St. Ry. Co. 4 1/2 m, 4-8 1/2 g, 25-30 lb r, 3 c, 6 h. Pres. S. Rowley, V. Pres. W. L. Denison, Sec. H. O. Bailey, Mechanicsville, Treas. E. N. Smith.

STROUDSBURGH, PA.—Stroudsburgh Passenger R.R. Co. 1 4-5 m, 4 8 1/2 g, 28-30 lb r, 3 c, 9 h. Pres. & Treas. J. Lantz, Sec. Jacob Houser.

SYRACUSE, N. Y.—Syracuse & Onondaga R.R. Co. 2 3-5 m, 4-8 g, 28-47 lb r, 9 c, 18 h. Pres. Peter Burns, Sec. & Treas. Lyman C. Smith, Supt. Henry Thompson.

Central City Ry. Co. 2 1/2 m, 4-8 1/2 g, 40 lb r, 12 c, 37 h. Pres. George N. Kennedy, V. Pres. Daniel Pratt, Sec. & Treas. James Barnes, Supt. George Crampton.

Fifth Ward R.R. Co. 2 1/2 m, 4-8 1/2 g, 35-56 lb r, 8 c, 30 h. Pres. P. B. Brayton, Sec. & Treas. O. C. Potter, Supt. Hugh Purnell.

Genesee & Water St. R.R. Co. and Fourth Ward R.R. Co. 4 m, 4-8 1/2 g, 18-30 lb r, 10 c, 35 h. Pres. Robt. G. Wynkoop, Sec. & Treas. Geo. J. Gardiner, Supt. J. H. Hart.

New Brighton & Onondaga Valley R.R. Co. 1 1/2 m, 4 8 g, 16-35 lb r, 2 c, 4 h. 1 dummy. Pres. Mathias Britton, Sec. T. W. Meacham, Treas. J. H. Anderson, Supt. J. H. Anderson.

Syracuse & Geddes Ry. Co. 2 m, 4-8 1/2 g, 25-45 lb r, 10 c, 32 h. Pres. R. Nelson Gere, Sec. & Treas. Rasselias A. Bonta, Supt. Wm. J. Hart.

TAUNTON, MASS.—Taunton St. Ry. Co. 4 1/2 m, 4-8 g, 14 c, 44 h.

TERRE HAUTE, IND.—Terre Haute St. Ry. Co.

4 1/2 m, 1-8 1/2 g, 28 lb r, 16 c, 48 h. Pres. T. C. Buntin, V. Pres. Joseph Collett, Sec. John R. Hagen, Supt. John T. Shriver.

TEXARKANA, ARK.—Texarkana St. Ry. Co. TOLEDO, OHIO.—Toledo Consolidated St. Ry. Co. 17 m, 4-8 g, 42 lb r, 37 c, 180 h. Pres. John B. Bailey, Sec. A. E. Lang.

Adams Street Ry. Co. Metropolitan St. Ry. Co. 8 1/2 m, 3 g, 29 c, 88 h. Pres. Jno. J. Shilphord of Cleveland, Treas. H. E. Wells of Cleveland, Gen. Man. T. F. Shilphord, Supt. Jno. A. Watson.

Monroe Street R.R. The Central Passenger R.R. Co. of Toledo, O. 8 m, 3 g, 27 lb r, 17 c, 70 h. Pres. F. E. Seagra, V. Pres. & Treas. James Pazner, Sec. Chas. F. Parks, Supt. A. R. Seagrave.

Toledo Street R.R. Co.

TOPEKA, KAN.—Topeka City Ry. Co. 9 m, 4 g, 25-48 lb r, 25 c, 90 h. Pres. Joab Mulvane, V. Pres. D. W. Stormont, Sec. & Treas. E. Wilds, Supt. Jesse Shaw.

TORONTO, CAN.—Toronto St. Ry. Co. 18 m, 4-10 1/2 g, 30 lb r, 136 c, 670 h. Pres. Frank Smith, Sec. James Green, Supt. John J. Franklin.

TRENTON, N. J.—Trenton Horse R.R. Co. 1 1/2 m, 5-2 g, 43-47 lb r, 10 c, 31 h. Pres. Gen. Lewis Perrine, Sec. & Treas. Lewis Perrine, Jr., Supt. Thomas Silloritts.

City Ry. Co. 3 m, 5-2 g, 45 lb r, 15 c, 69 h. Pres. Adam Extolr, V. Pres. W. H. Skinn, Sec. H. B. Howell, Treas. & Mang. Director Chas. J. Bramford.

TROY, N.Y.—Cortland & Homer Horse R.R. Co. 4 m, 4-8 1/2 g, 25-30 lb r, 2 c, — h. Pres. C. H. Garrison, Troy, V. Pres. E. A. Fish, Cortland, N. Y., Treas. Jas. M. Milen, Cortland, Sec. S. E. Welch, Cortland.

Troy & Alba Street Ry. Co. 3 1/2 m, 4 g, 25 45 lb r, 9 c, 41 h. Pres. Thos. A. Knickerbocker, Sec. & Treas. Theo. E. Haselhurst, Supt. W. R. Bean.

Troy & Lansingburgh R.R. Co. 20 1/2 m, 4-8 1/2 g, 47 lb r, 91 c, 466 h. Pres. William Kemp, V. Pres. Charles Clemmishaw, Sec. & Treas. Joseph J. Hagen, Supt. Leader C. Brown.

URBANA, ILL.—Urbana R.R. Urbana & Champaign St. Ry. Co. 2 m, 4-8 1/2 g, 33 lb r, 4 c, 20 h. Pres. Wm. Park, Sec. & Treas. Frank G. Jaques, Supt. W. Park.

UTICA, N.Y.—Utica, Clinton & Binghamton St. R.R. 7 1/2 m, 4-8 1/2 g, 43-56 lb r, 17 c, 82 h. Pres. Isaac Maynard, Sec. & Treas. Robt. S. Williams, Supt. Roger Rock.

The Utica & Mohawk R.R. Co. 2 1/2 m, 4-8 1/2 g, 25-40 lb r, 9 c, 5 h. Pres. Chas. W. Hutchinson, V. Pres. Nathan S. Haynes, Sec. Geo. M. Weaver, Treas. Joshua W. Church.

VAITSBURGH, N. J.—Newark, So. Orange, Ferry St. & Hamburg Place R.R. Co.

VALEJO, CAL.—Valejo St. Ry. Co.

VICKSBURG, MISS.—Vicksburg St. Ry. Co.

VINCENNES, IND.—Vincennes St. Ry. Co.

WACO, TEX.—Waco St. Ry. Co. 5 m, 4 8 g, 14 18 lb r, 9 c, 44 h. Pres. E. Rotan, Sec. & Treas. W. R. Kellum, Supt. J. W. Sedbury.

WALTHAM, MASS.—Waltham & Newton St. Ry. Co. 3 1/2 m, 4-3 1/2 g, 30 lb r, 6 c, 14 h. Pres. R. E. Robbins, Sec. & Treas. Henry Bond.

WASHINGTON, D.C.—Capital, No. O. St. & So. Washington R.R. Anacosta & Potomac River Ry. Co. 3 m, 4-8 g, 37 lb r, 9 c, 24 h. Pres. H. A. Griswold, Sec. Edward Temple, Treas. T. E. Smithson.

Columbia R.R. Co. of the District of Columbia. 2 1/2 m, — g, — lb r, 19 c, 56 h. Pres. H. A. Willard, Sec. & Treas. Wm. H. Clayette, Supt. Thos. E. Benson.

Metropolitan R.R. Co. 2 1/2 m, 4 8 g, 38 lb r, 90 c, 400 h. Pres. George W. Pearson, V. Pres. A. A. Wilson, Sec. & Treas. William M. Morse, Supt. L. W. Emmart.

Washington & Georgetown R.R. Co. 10 m, 4 8 1/2 r, 42 lb r, 161 c, 750 h. Pres. H. Hurt, Sec. & Treas. C. M. Koonen, Gen. Supt. C. S. Salfes.

WATERFORD, N. Y.—Waterford & Cohoes R.R. Co. 2 m, 4-8 1/2 g, 45 lb r. Pres. Thos. Breslin, Sec. & Treas. C. B. Ormsby. (Leased by the Troy & Lansingburgh R.R. Co.)

WEST HURON, CONN.—New Haven & West Haven R.R. Co.

WESTPORT, CONN.—Westport & Saugatuck Horse R.R.

WICHITA, KAN.—Wichita City Ry. Co. 6 m, 8 c, Pres. J. W. Ground, Sec. & Mangr. E. R. Powell.

WHEELING, W. VA.—Citizens Ry. Co.

Wheeling & Elm Grove R.R. 7 m, 4-8 1/2 g, 30 lb r, 12 c, 4 Baldwin Motors. Pres. J. D. DuBois, Sec. E. J. Rutter.

WILKESBARRE, PA.—Wilkesbarre & Kingston Pass. R.R. Wilkesbarre & Ashley Passenger R.R. Co. Coalville Passenger R.R. 2 1/2 m, 4-8 1/2 g, 20-34 lb r, 4 c, 10 h. Pres. Chas. A. Miner, Sec. & Treas. George Loveland, Supt. Albert G. Orr.

WILLIAMSPORT, PA.—Willamsport St. R.R. Co.

WILMINGTON, DEL.—Front & Union St. Passenger Ry. Co. Wilmington City Ry. Co. 4 1/2 m, 5-2 1/2 g, 45 lb r, 20 c, 82 h. Pres. W. Canby, Sec. & Treas. John F. Miller, Supt. Wm. H. Burnett.

WINDSOR, CAN.—Sandwich & Windsor Passenger R.R. Co.

WINNIPEG, MANITOBA, CAN.—The Winnipeg St. Ry. Co. 5 m, 4-8 1/2 g, 35 lb r, 13 c, 75 b. Pres. Duncan MacArthur, Sec. & Mangr. Albert W. Austin, Supt. Geo. A. Young.

WINONA, MINN.—Winona City Ry. Co. 4 m, 3-6 g, 27 lb r, 10 c, 39 h. Pres. John A. Mathews, V. Pres. B. H. Langley, Sec. & Treas. C. H. Porter.

WOBRURN, MASS.—No. Woburn Horse R.R. 2 1/2 m, 4 8 g, 4 c, 4 h. Pres. & Treas. John Carter, Sec. J. G. Masuire, Supt. Dexter Carter.

WORCESTER, MASS.—Worcester St. Ry. Co. 5 1/2 m, 4-8 1/2 g, 45 lb r, 19 c, 100 h. Pres. Geo. H. Seeley, N. Y. City, V. Pres. Nathan Seeley, N. Y. City, Treas. & Supt. Harry S. Searls, Worcester.

YOUNGSTOWN, O.—Youngstown St. R.R. Co.

ZANESVILLE, O.—Bellair, Chillicothe & Canton. Zanesville & McIntire St. Ry. Co. 3 m, 3-6 g, 38 lb r, 12 c, 54 m. Pres. J. Bergen, Sec. W. C. Townsend, Treas. T. B. Townsend.

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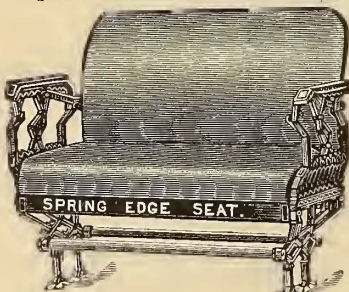
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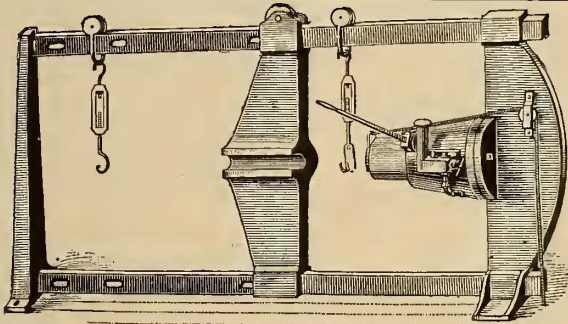
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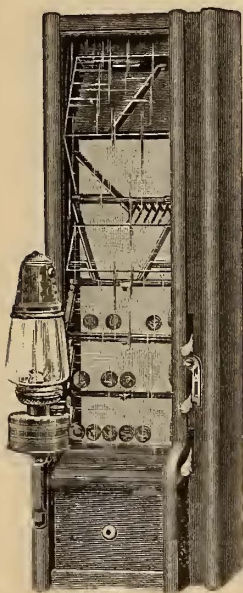
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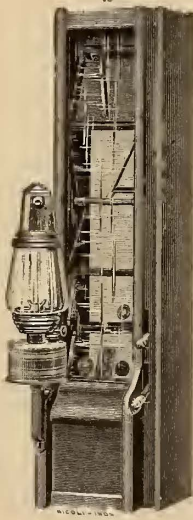
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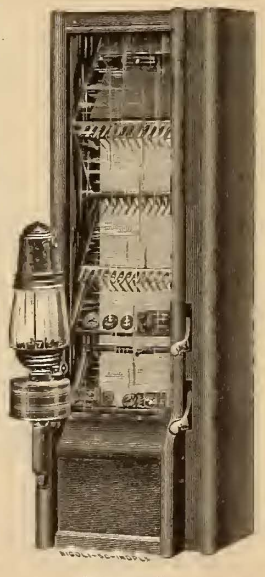
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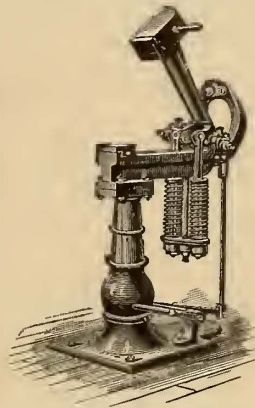
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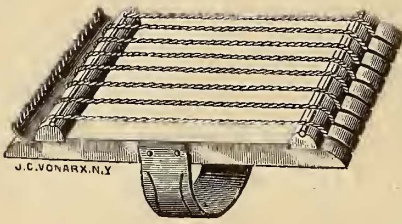


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- Ridge Avenue Passenger Railway Co., Philadelphia, Pa.
- Citizens' Passenger Railway Co., Philadelphia, Pa.
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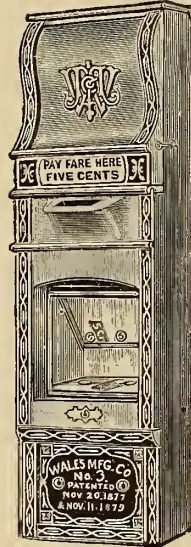
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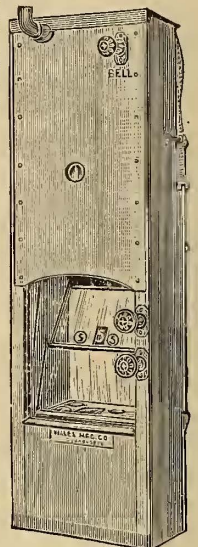
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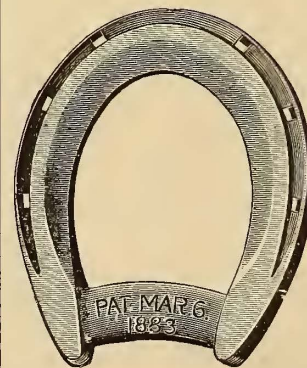
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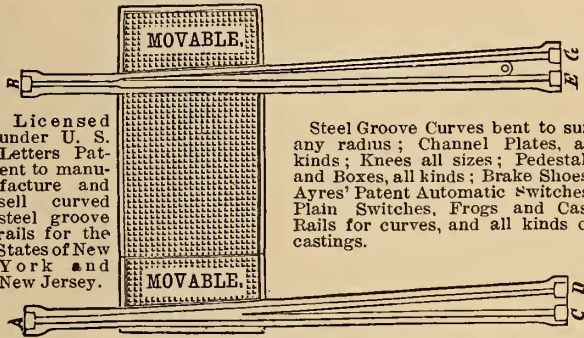
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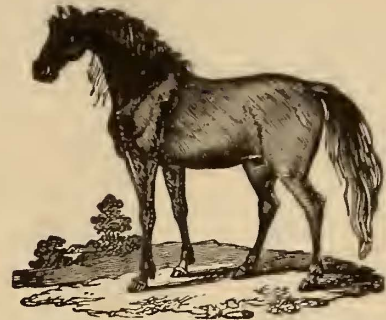
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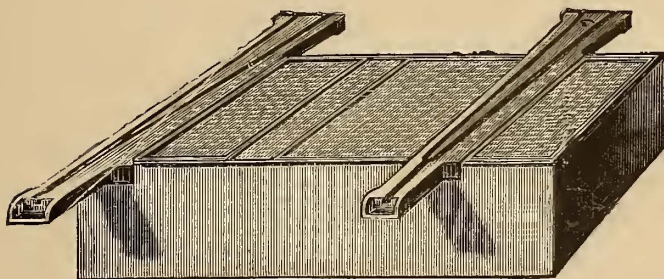
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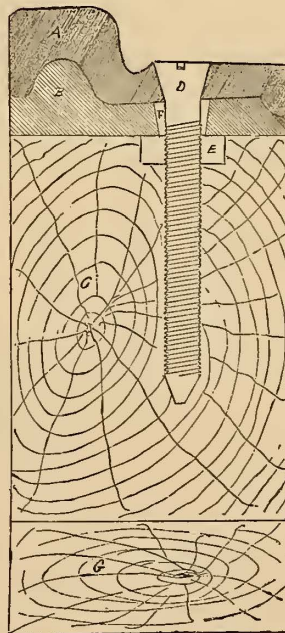
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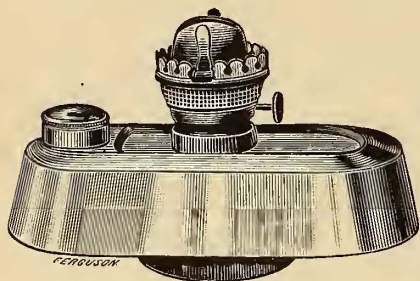
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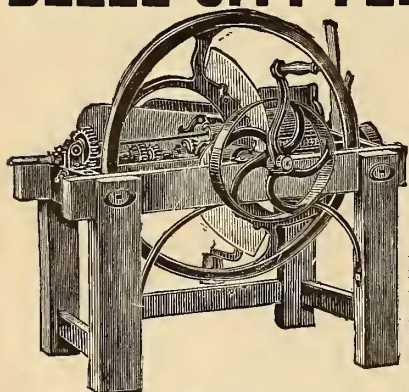


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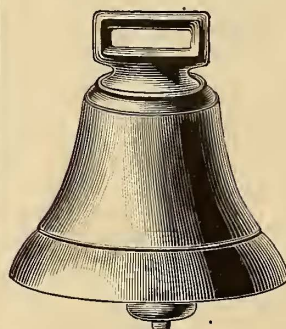
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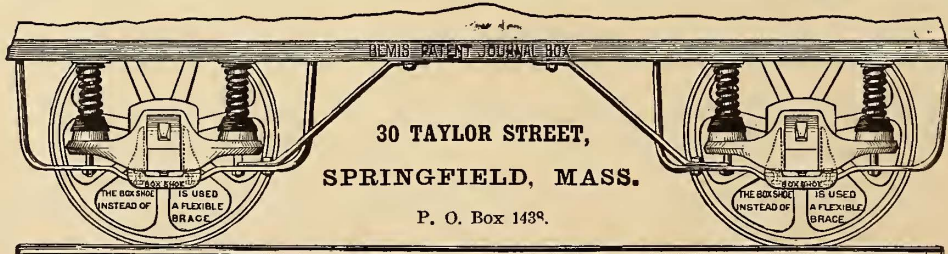
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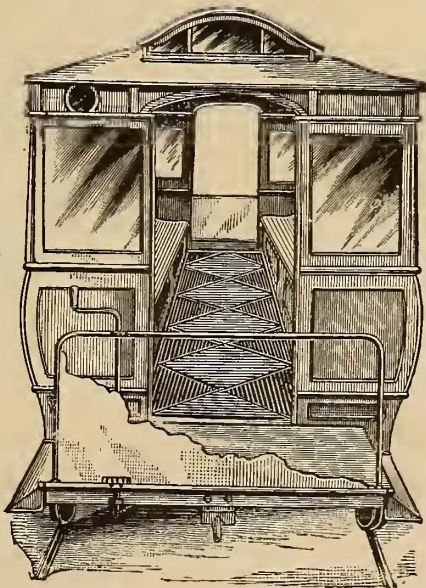
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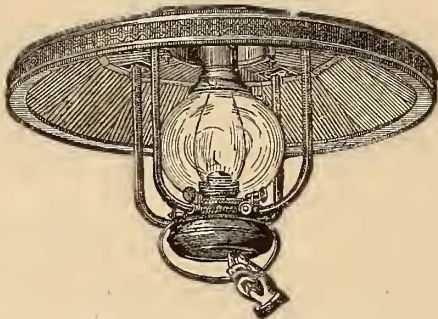
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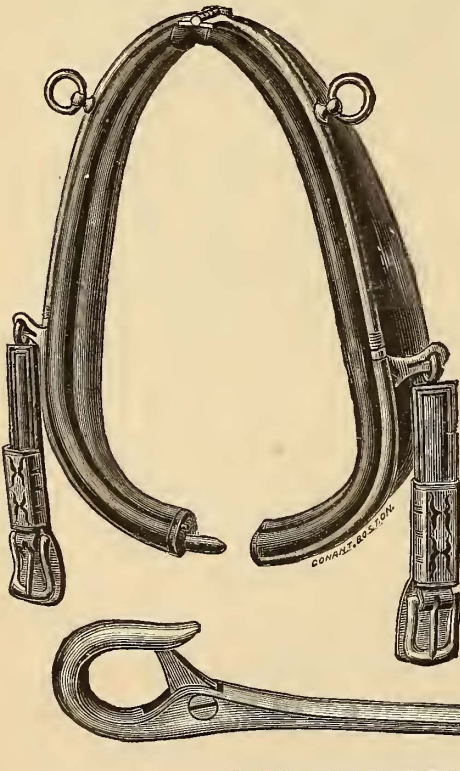
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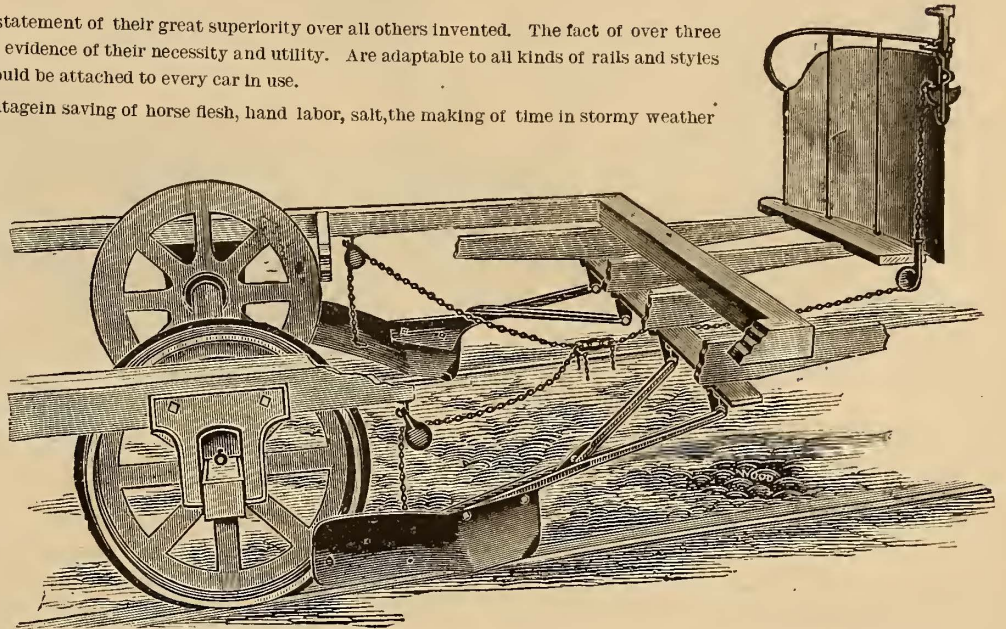


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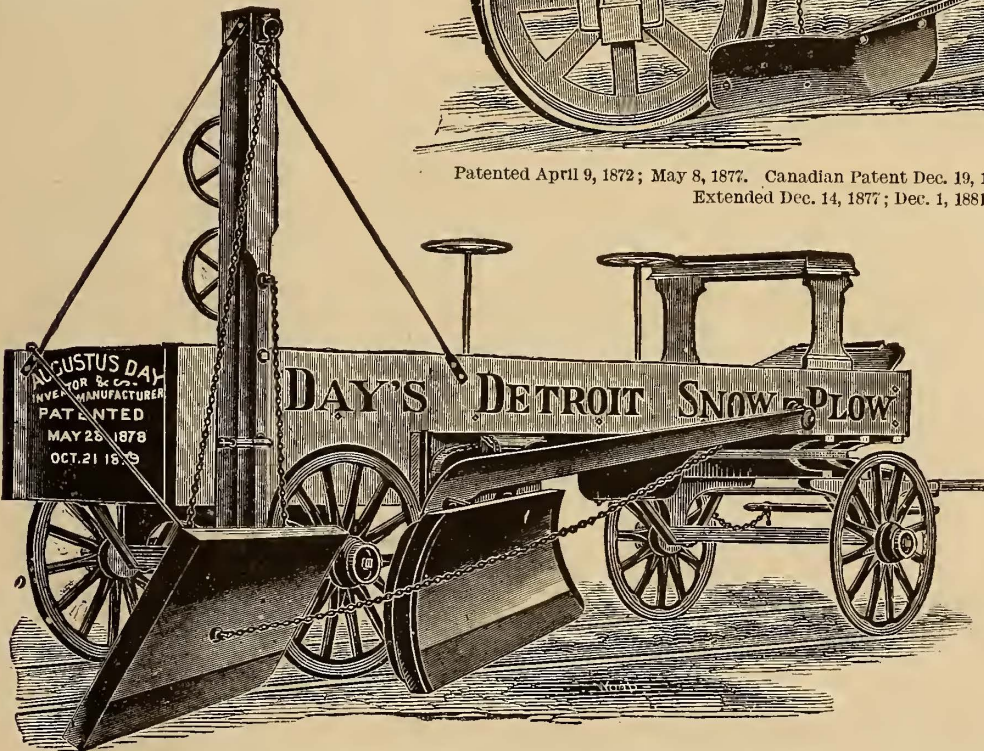
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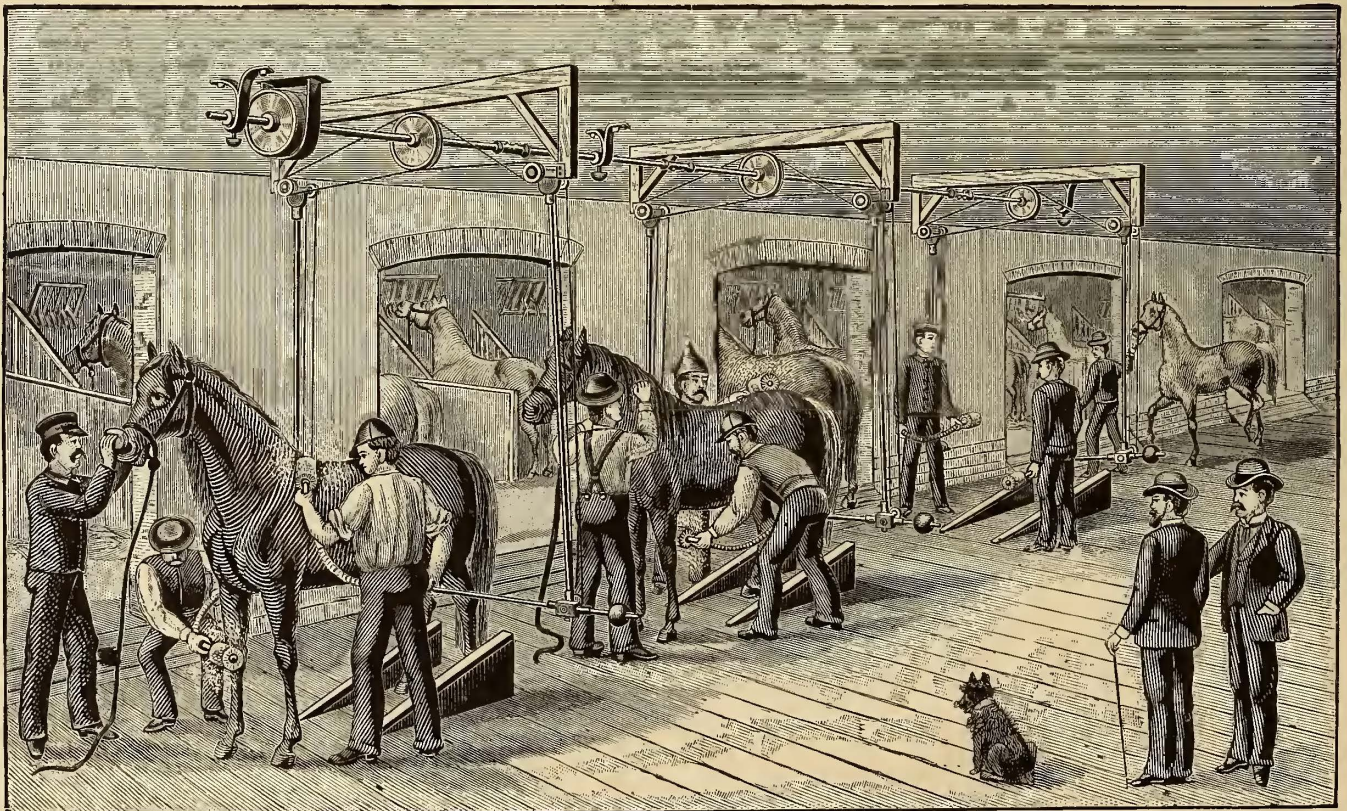
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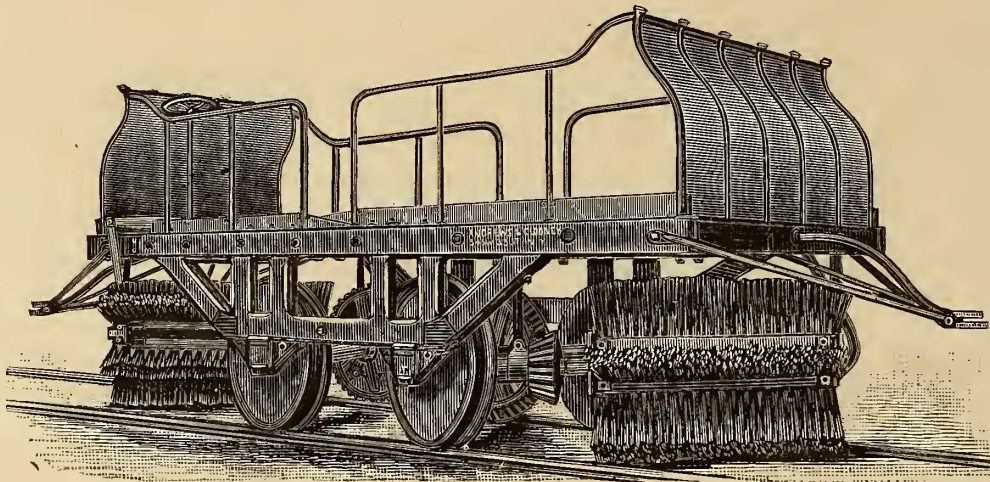
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We make two sizes: Full Size for 8 and 10 Horses; 3-4 Size for 6 and 8 Horses.

Over One Hundred are in use in New York, Brooklyn and Philadelphia,

And we are now building (August, 1885) sweepers for Chicago, St. Louis, Boston, Salem, Mass., and six additional ones for roads in New York City. References can be made to any or all of the roads in New York City or Brooklyn; Philadelphia City Pass. Ry. Co. (Chestnut & Walnut St.), Second and Third St. Pass. Ry. Co., Union Pass. Ry. Co.; Phila. Traction Co., all of Philadelphia; Citizens' Ry. Co., Pittsburgh; Pittsburgh & Birmingham R. R. Co.; Pittsburgh, Allegheny & Manchester R. R. Co., Pittsburgh; Rochester & Brighton R. R. Co., Rochester, N. Y.

**Sweepers made with Brooms propelled by Steam if required.**

NOTE.—No Patent on Broom Heads or manner of arranging the same.

Works: 535 to 551 West Thirty-third Street,  
and 538 to 552 West Thirty-fourth Street.

Office: 545 West Thirty-third Street,  
NEW YORK CITY.

F. H. ANDREWS.

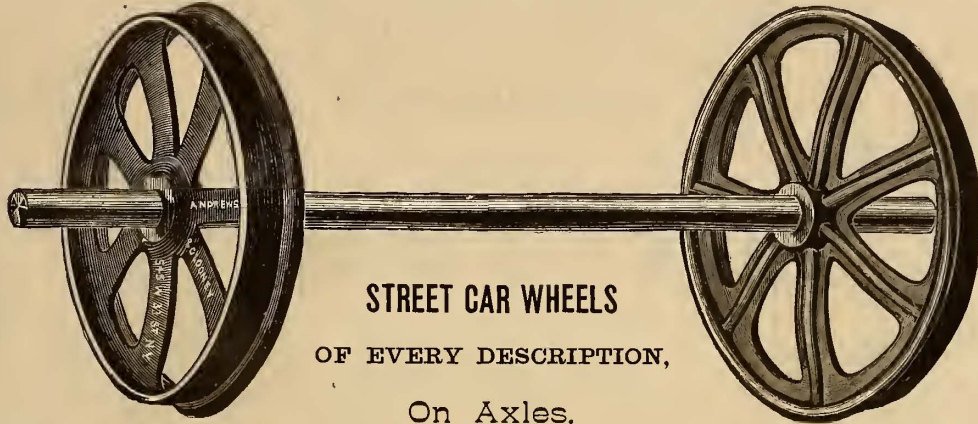
F. T. LERNED, GEN'L AGT.

B. A. CLOONEY.

# ANDREWS & CLOONEY,

OFFICE :

**545**  
W. 33d St.,  
NEW YORK.



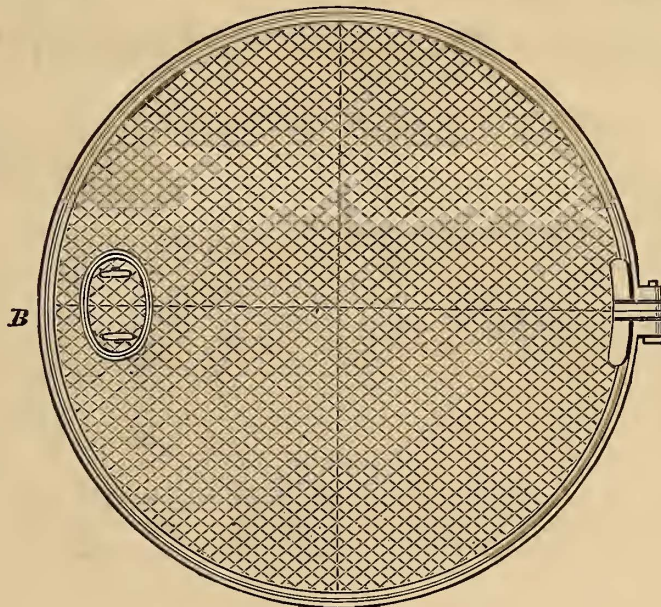
STREET CAR WHEELS  
OF EVERY DESCRIPTION,  
On Axles.

WORKS :  
535 to 551  
West 33d St.,  
AND  
538 to 552  
West 34th St.,  
NEW YORK.

Manufacturers of

**Elliptic, Spiral,  
Volute, Car and  
Engine  
SPRINGS**

Of Every Description.



Street Railway Turn-table.

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

of all Descriptions where great  
Strength is Required.

Also,

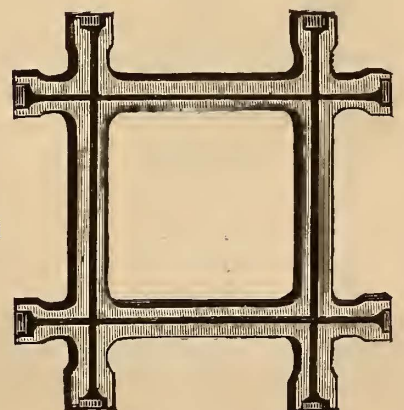
**SWEEPERS, SNOW PLOWS,  
TURN-TABLES,**

**Track Work, Automatic Switches, Etc.**

**STEEL GROOVE RAILS AND MACHINERY**



Street Car Springs.



Street Railway Crossings.

SEND FOR ILLUSTRATED CATALOGUE.

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

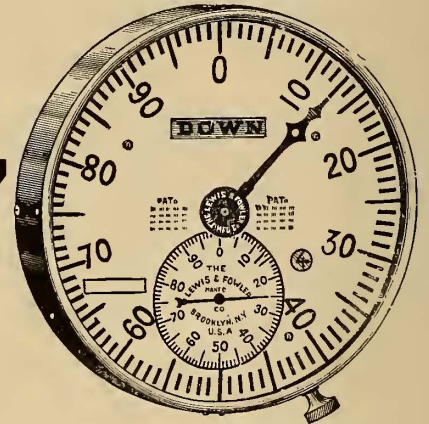
## "ALARM"

PASSENGER REGISTER.

—SOLE AGENTS AND MANUFACTURERS—



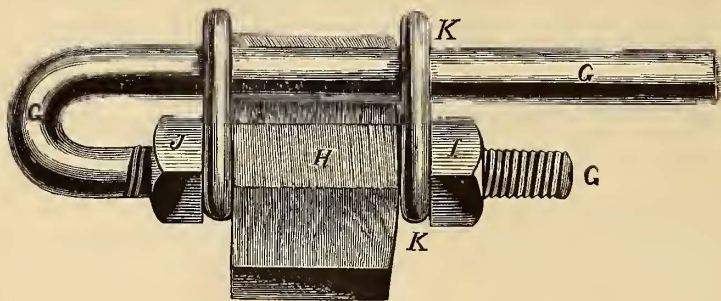
HIGHEST PRIZE.



SILVER MEDAL, CHICAGO, 1883.

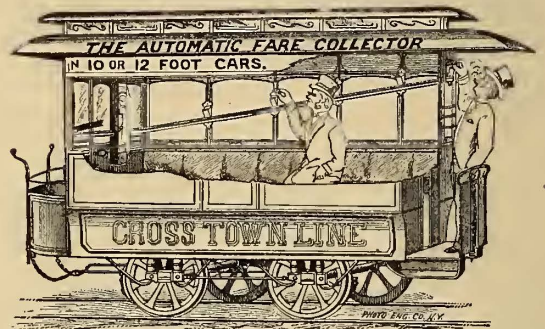
### VAN TASSEL'S Patent Brake Rod

FOR STREET CARS.

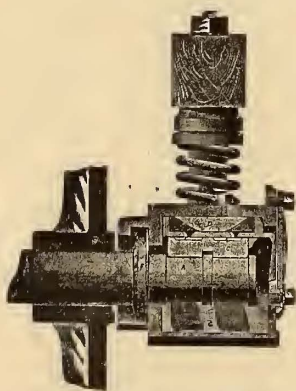


### SMALL'S Automatic Fare Collector.

FOR FARE BOX CARS.

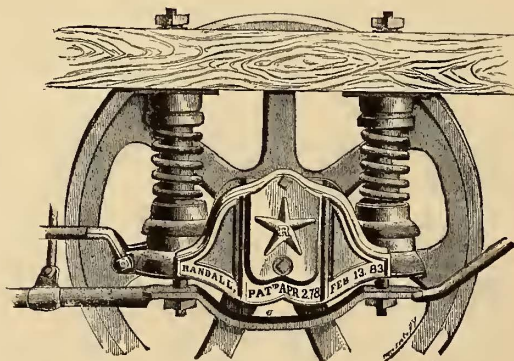


### "RANDALL'S" PATENT CAR AXLE AND BOX.



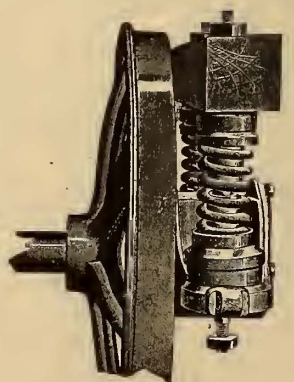
SECTIONAL VIEW.

DUST  
TIGHT.



FRONT VIEW.

ANTI-  
FRICTION



END VIEW.

Agents for ORIENTAL METAL for Street Car Journal Bearings.

# RICHARD VOSE,

13 Barclay Street, . New York,

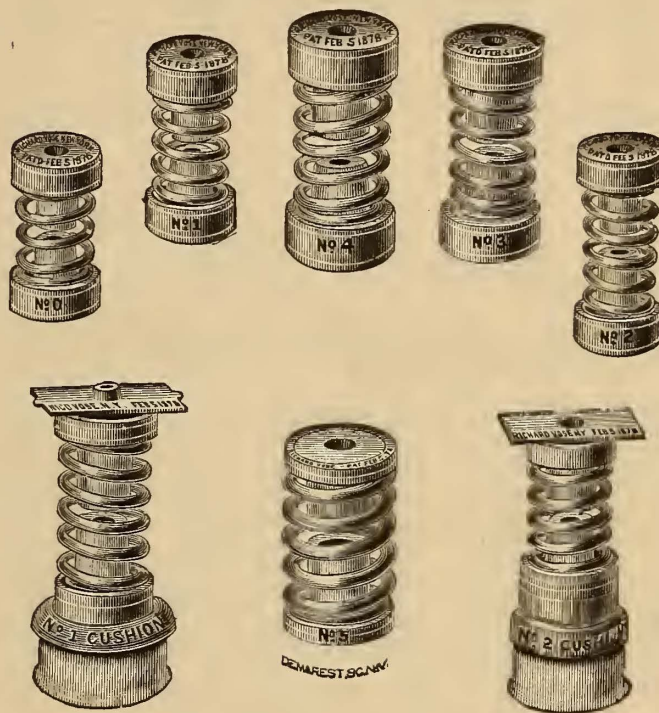
PATENTEE AND MANUFACTURER OF

## 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.

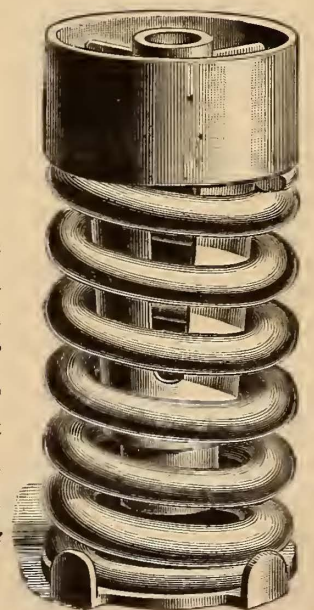
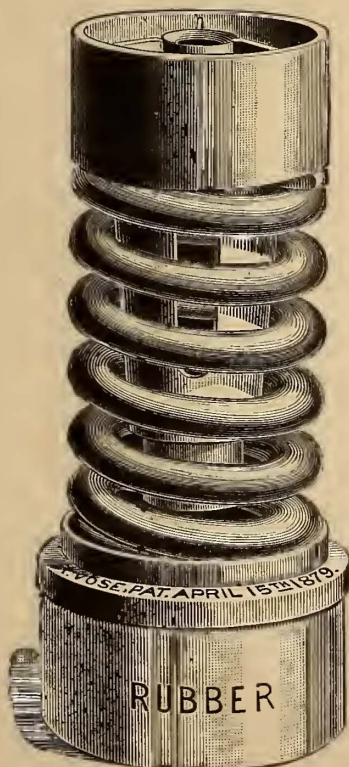
### STEEL CONE CITY CAR SPRING.

Patented April 15, 1879—August 5, 1884.

The unprecedented popularity of the

#### “VOSE GRADUATED RUBBER CONE SPRING”

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.



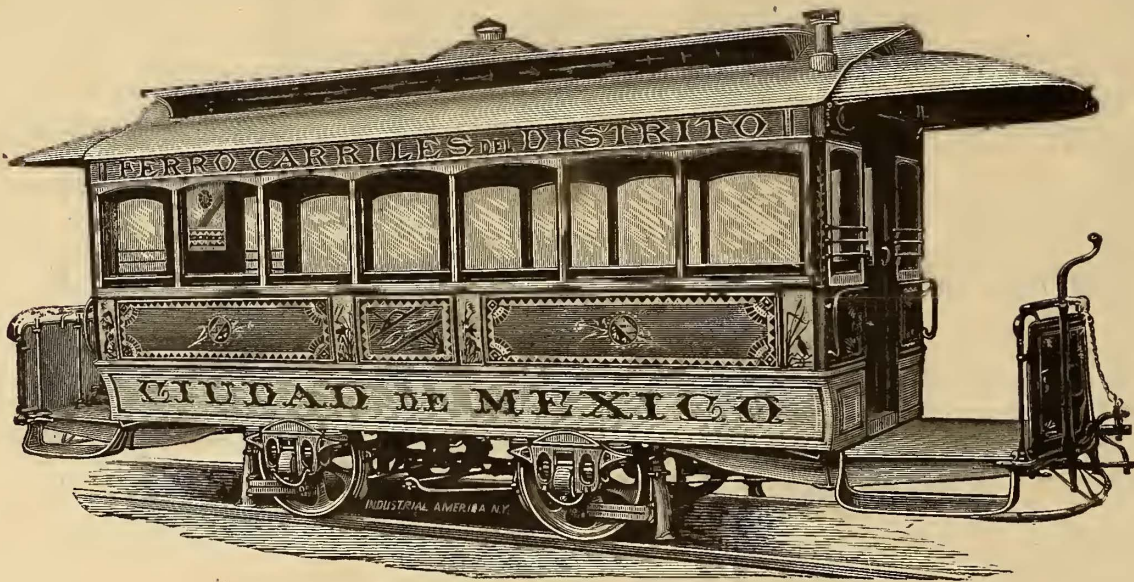
# JOHN STEPHENSON COMPANY

(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.**