Street Railways.

A street railway, as almost universally constructed, consists of rolled iron rails, laid upon longitudinal timbers or stringers, resting upon timber cross ties. The top of the rails should be set flush with the surface of the street and they should, preferably, be of such patterns, and laid to such guage as will least incommode the ordinary traffic conducted with the vehicles of the neighborhood, for it will rarely occur that the interests of the railway, and those of the truck, cart, and express wagon will be other than identical. Upon crowded streets in particular, and generally in the business portion of cities and large towns, every devise calculated to keep the current of affairs moving and prevent blockades, is a benefit alike to all.

Is is desirable that the car wheels should bear upon the rail, directly over the centre line of the stringers, or as nearly so as possible, in order to obviate any tendency of the rail to cant on one side, when the wood begins to come soft and weak from decay. This condition, however, would exclude the rail with a single rib, raised on one side only, and having a broad, flat surface occupying the rest of its width, which is really the form offering the least interference with the traffic conducted on ordinary carriages; for the broader the surface upon which such carriages can track, the less will be the difficulty, and the less the wrench upon the wheels as well as upon the rails, in taking and leaving it.

In some cities the pattern of the rail as well a guage of track is prescribed by municipal authorities, with special references to obtaining such a railway as will not only reduce to a minimum the annoyance occassioned by the rails. to promiscious traffic but will enable then even to contribute to its promotion and convenience.

A grooved rail as a general rule is not the most desireable, either for a railway company or the ordinary vehicles upon the street. It collects the dust and mud, and, in cold weather gets filled with ice and snow, thus greatly augmenting the tractive force of the car; while the wheels of waggons and hacks, and especially of all lighter and frailer of carriages having once entered into the grooves, experience a severe strain, and are not unfrequently twisted off in leaving them, while the rails themselves are more or less disturbed, and in time loosened at their fastenings.

On a well built street railroad, the force required to move a car upon the level rail at a speed of five miles per hour is not far from 1-230 to 1-250, of the total weight of the car and load varying within these limits with the state of the rail, with respect to moisture and dryness.

The following rule is the one in common use for obtaining this resistance;

Multiply the weight in gross tons by 6. The product regarded as pounds will be the fracton.

Multiply the weight by the velocity in miles per hour, and divide by 3. The quotient will be the allowance to be made for concussion in pounds. Square the velocity in miles per hour, and multiply the square by the frontage in feet, and divide the product by 400, for the resistance of the atmosphere in pounds.

The sum of these three results is the total resistance in pounds.

Upon street railway lines in consequence of the presence at all times, of more or less dust and stiff mud upon the rails, the tractive force is comparatively large. In the average condition of the road it may be best. To set down as fully one-one hundred and twentieth of the loaded car, so that a car weighing 4,000 pounds, carrying twenty-eight passengers, each weighing one-hundred and fifty pounds —total 8,200 pounds—would require the exertion of a force of sixty-eight and one-third pounds to move it on a leval rail at low speed. Upon descending grades of one in sixty-eight and one third, the brakes would not therefore have to be applied.

In practice, the grades must conform to those of the street, and for short lengths may be even steeper than would be suitable for ordinary vehicles upon a good street surface. The question of grades therefore, for street railways, except in special cases, resolves itself into the adoption of those already existing.

Upon streets suitably provided with paved carriage ways, and sidewalks, and with sewers, there is no occasion to make special or additional provision for the drainage of the street railways, but for lines located upon country or suburban roads, the same precaution must be taken to procure a thorough surface, and sub-drainage that have already been described as necessary for ordinary roads.

The making of good roads is a matter in which both the town and country are interested. The country is interested in the question because they have so much teaming to do in bringing the products of their farms to market and the merchants and townspeople in general are concerned in the making of good roads, because, other things being equal, farmers will draw their produce to the town that has the best roads leading to it. In this connection it will be interesting to mention that one of the most interesting features of the Interstate Fair at Elmira, New York, and at the Syracuse State Fair in the same state, will be the road improvement exhibits. At each fair a stretch of road will be laid out showing dirt, tile-drained, gravel, Macadam and Telford roads in sections. over this road narrow-tire and broad-tire wagons will be kept going, an indicator recording the amount of tractive power required on the various roadways and the effect of each style of tire on the road surface. Implements, machines and materials used in road construction and sectional exhibits showing the method and construction will also be on view. There will also be a bureau of information to answer all questions and distribute literature on road making. The exhibits will be arranged by J. A. C. Wright, state secretary of the National League for good roads, and Mr. Davison of the New York State Agricultural Society. The sole object of the Road League is to further the cause of good roads. All the officers serve without salary. Their motto is, "There is no more common interest than the common roads."

The question of making good roads has been for some time engaging the attention of the Ontario government, and all the municipalities in Ontaaio ought to take a live interest in the question as there is profit, pleasure and comfort in having good highways.—*Ex.*

Inspection of Buildings.

There is one matter of very great importance to all towns and cities, which, as a general thing, is overlooked, and that is the supervision of buildings. Where so many fires occur from defective flues, and so much damage results from improper and unsafe buildings, it is proper that all buildings in a town, or at any rate within certain limits, should be passed upon by somebody competent to decide on the general safety of a structure. Every city, or town of any size should have an officer whose duty it should be to inspect all plans and all buildings in course of erection and see that they are put up on correct principles, and copies should be kept and filed of all plans for buildings erected within his jurisdiction, for further reference.

The Farmer's Disadvantsge.

Roads belong to that unappreciated class of blessings of which the value and importance are not fully felt. Bad roads make it difficult for the farmer to market his grain, except during a fractional part of the year, the consequence of which is the crowding down of prices by the plethora of supply. The farmer having no choice of times for disposing of his produce must force it upon the market while prices are lowest.—*St. Joseph Herald.*

Penurious, Slovenly and Expensive.

There could be no wiser, no more economical use of public money than spending it in the making of good, permanent public roads. There is no man who would fail to be benefited by good, solid roads far more than the construction of such roads would cost him. The old road system of Georgia is penurious, slovenly, expensive and discreditable. It is a disgrace to the civilization of the age. —*Sparta (Ga.) Ishmaelite.*