

## THE RAILWAYS OF THE FUTURE.

An interesting paper on "the gauge for the railways of the future" was read before the British Association of Liverpool, by Mr. R. F. Fairlie, and appears in *Hercupath's Railway Journal*. Its object is to show in what manner and to what extent the cost and maintenance of railways, are affected by the gauge on which they are built, and how better financial results may be realized on railway property. Mr. Fairlie states, what is admitted, that the ratio of non-paying to paying weight in passenger trains, as now run on the 4 ft. 8½ in. gauge, is as 29 to 1, and in freight trains, exclusive of minerals, as much as 7 to 1. This is partly due to the prevailing system of management, but chiefly to the gauge. The dead weight of trains, conveying either passengers or goods, is in direct proportion to the gauge on which they are run; or in other words, the proportion of non-paying to paying weight is increased exactly as the rails are farther apart. In proof of this, the case of the Festiniog Railway is cited, with its gauge of 1 ft. 11½ in. The wagons used upon it, for carrying timber, weigh only 12 cwt., and they frequently carry a load of over 3½ tons, at a speed of 12 miles an hour. So that, these wagons carry as much as six times their weight, while the best wagons on the ordinary gauge do not carry as much as twice their own weight.

Mr. Fairlie then cites the case of the London and North Western Railway, one of the best managed in England, and boldly asserts, that if its gauge were 3 feet, instead of 4 ft. 8½ in. its goods traffic could be hauled for half the present cost, with half the present motive power, and in such a way as to reduce the present tonnage over the road by one half.

There are carried annually on this railway, ten millions tons of goods. To carry these ten millions tons of paying load, a non-paying rolling weight of seventy millions of tons has to be employed, according to the proportion before given; but this seventy millions he reduces to forty millions, which with the goods added gives fifty millions of tons, to be hauled by locomotives at an average speed of 25 miles an hour.

The wagons for a line of three feet gauge weigh each one ton, and carry a maximum load of three tons. Supposing that the same number of wagons and trains were run on the narrow gauge as on broad, it follows that the average one ton of merchandise now carried would easily be taken in a wagon weighing one ton instead of four tons, and that the gross load passing over the line for one year would be only twenty millions of tons, instead of fifty millions; while the same amount of paying weight would be carried in either case. That is, the small wagons, which are capable of carrying three times the weight of goods now actually carried in a four-ton wagon, would only have to carry one-third of that quantity, and would produce the same paying load as the heavier wagons; thus instead of fifty millions of tons travelling over the line, there would only be twenty millions, and as the haulage cost is precisely the same whether the tons hauled consist of paying or non-paying load, it follows that this expense would be reduced to two-fifths of what it now is. We must also consider the enormous saving to the permanent way, which would have to bear the friction and weight of only twenty

millions of tons in the place of fifty millions. If there should be sufficient traffic to load the narrow gauge wagons in such a way as to require the same number and weight of trains that are now worked the result would be that, without increasing by one penny the cost of haulage and of the permanent way expenses, the three feet gauge would carry a paying load of twenty-five millions of tons as against the ten millions now carried. Here then we have established the fact that, as far as capacity goes, the narrow gauge is superior to the broad one. The former can produce twenty-five millions net out of a gross tonnage of fifty millions; whilst the latter to produce the same result, if continued to be worked as it now is, would require that one hundred and twenty-five millions tons should be hauled, and that at an increased cost in the same proportion of one hundred and twenty-five millions to fifty millions.

The Fairlie double bogie engine can not only be made to haul trains fully as heavy and at the same speeds as those now taken on the broad gauge; but it will do this on what is termed a light railway, with rails that shall not be required to exceed 50 lbs. to the yard, and that shall be fairly worn out, instead of being crushed and ground out as the 84 lbs. rails are under the present system.

Mr. Fairlie cites a number of cases to illustrate the advantages which he claims for light railways of a narrow gauge, and concludes his paper as follows:—

In moderately temperate climates, gauges of 2 feet 6 inches will be found ample for any traffic in any part of the world, and will sustain a speed of thirty miles an hour; while 3 feet is sufficient for either very hot or very cold climates, and will sustain a speed of 40 miles an hour. Railways can be made cheaply, and, at the same time, to be thoroughly efficient; and those who aver to the contrary are, in fact, enemies to progress and civilization. There is no country too poor to have railways sufficient for its requirements.

**LIABILITY TO CONTRIBUTION OF INDORSERS—LIMITATION BY CONTRACT.**—In a late case of *Mitchell vs. English*, Grant's Chan. Rep. Vol. XVII, 303, a bill was filed by the assignee of an accommodation indorser against a subsequent accommodation indorser, to enforce contribution by the latter towards the amount which such prior indorser had been obliged to pay to retire such note. The Court recognized the law as well established that co-sureties for the same debts are liable to mutual contribution, although they might contract independently, and indeed without knowledge of each other; and that accommodation indorsers of a negotiable security are to be considered as co-sureties irrespective of the order of their liability on the instrument itself; still it was held that every surety does not necessarily undertake an equal liability with other sureties for the same debt, and that while he will be presumed to do so in the absence of any limitation of his liability, there is nothing to prevent him from qualifying this by contract. In this case it was held that the defendant having stipulated that he should only be liable in default of the other indorsers, the plaintiff could not make him contribute, and his bill was dismissed with costs.

**DUTY ON AD VALOREM GOODS.**—The *Commercial List* says that the U. S. Treasury Department insists upon so interpreting the Customs Act, providing for an *ad valorem* duty on imported goods, that where articles in a foreign country are chargeable with an excise tax, but liable to a drawback on exportation, the amount of such drawback shall be added in ascertaining the value of the goods for duty. This is a new doctrine in the assessment of *ad valorem* duties, and a most unwholesome one for the interests of importers.

## Insurance.

## THE FIRE AT ORANGEVILLE.

(From a Correspondent.)

Orangeville, County Wellington, October 14.—A fire broke out about 11 o'clock in the tavern stables of Mr. Witters, destroying a large number of buildings and much of their contents. The buildings being frame, the fire spread rapidly; and there being no fire engine or other appliance for staying its progress, all efforts to subdue it were fruitless, until it reached the brick buildings east and west.

The origin of the fire is attributed to incendiarism, and two parties were arrested on the charge; one of these escaped from the one-armed constable who had him in charge, and has not been recaptured; the other has been committed to jail at Guelph, by the magistrates.

The following are the losses and the insurances:—

Thos. Jackson—building; insured in Provincial for \$800—total loss.

Longway Bros.—general stock; insured in Provincial for \$2,000—total loss.

John Tilt—boots and shoes; \$300 in Toronto Mutual—partial loss.

W. R. Lloyd—confectionery; insured for \$100 in Provincial—total loss.

Thos. Jackson—buildings, and saddlers' stock; insured for \$1,200 in British America—total loss.

Miss Lawrence—building; insured for \$800 in the Provincial—total loss.

Wm. Parsons—stock; insured for \$1,000 in Gore Mutual, and \$1,000 in Toronto Mutual—total loss.

McClaverty & Eastman—stock insured for \$2,000 in British America—total loss.

John McClaverty—furniture insured for \$500 in Provincial—total loss.

Noble Moore—loss in buildings, \$800; no insurance.

Menary Bros.—loss, \$1,000; no insurance.

J. & D. Still—insured on buildings \$1,000 in Toronto Mutual—total loss.

John May—insurance on buildings in Provincial, \$1,000; loss, \$800.

William Middleton—insurance stock, 1,500; loss about \$1,400.

John Witters—contents of hotel; loss, 1,200; no insurance.

John Gardhouse—insurance on building, \$1,800 in Provincial—total loss.

The fire has left a large gap in the business part of the village.

On opposite side of Broadway, 90 feet wide, is a range of wooden shops, most of them poor buildings, and if a fire takes in the row, it is sure to be extensive. Competition has kept rates in this block at 2½; quite an adequate rate for the risk.

## INSURANCE MATTERS IN MONTREAL.

(From our own Correspondent.)

MONTREAL, Oct. 18, 1870.

Oct. 11.—At the time of mailing last advices, a fire, of which intelligence was only afterwards received, was raging at Lachine, resulting in the destruction of four wooden houses, near the Railway depot. Insured with the Royal. Loss not yet ascertained.

Same day.—An alarm of fire at Villeneuve's Hotel, corner of St. Paul and St. Claude Streets, slightly damaging the gallery in rear. Cause, hot ashes.

Oct. 12.—A fire was discovered in the garret of a first class three storied warehouse, the property of Capt. Raines, occupied by Messrs. Bonneville and Garipey, produce merchants, 65 Common Street, corner of Queen Street. The office of the steamer L. Renand, now under repair, is in the ground floor of this building, and her bedding and furniture had just been stowed away in the garret; it is supposed that the men employed in