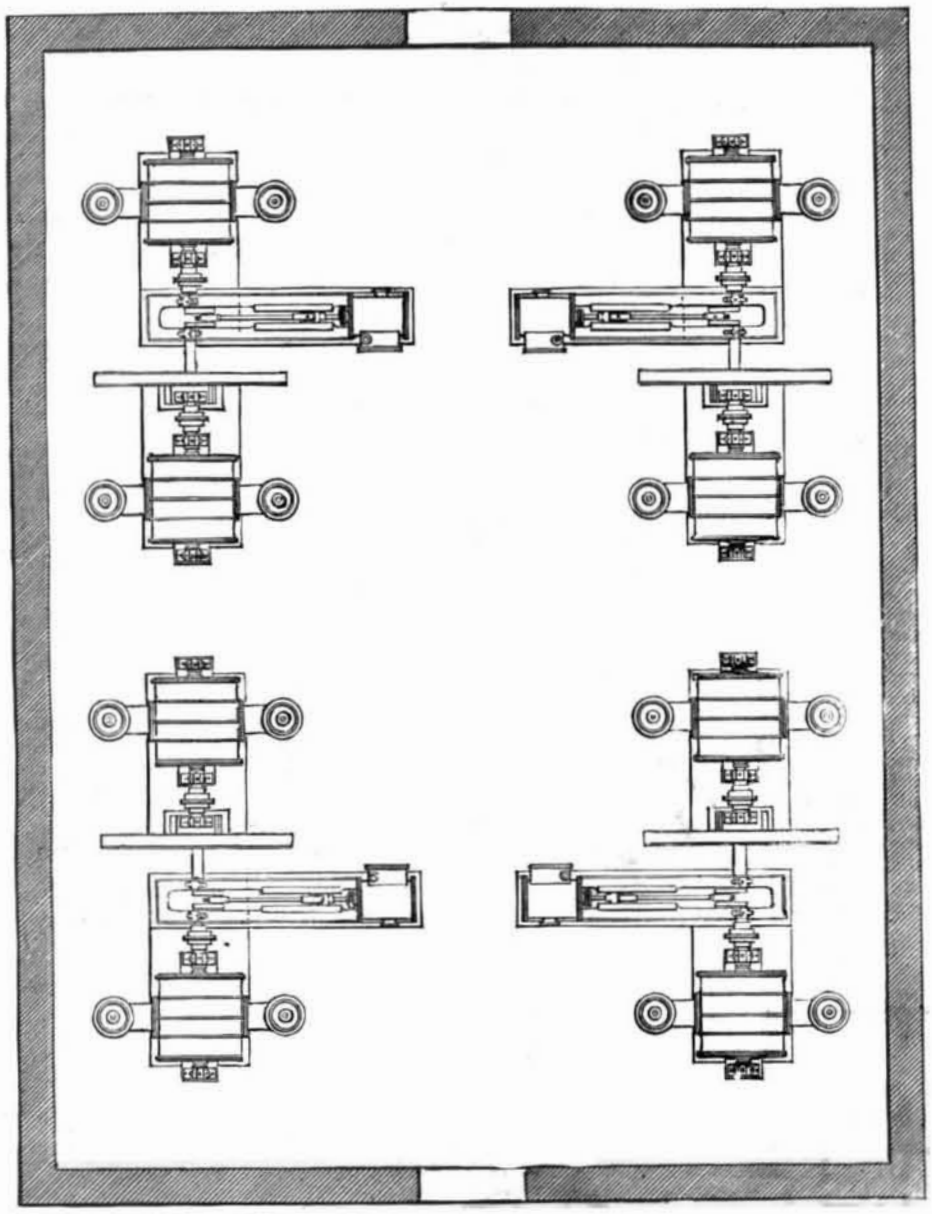

GENERAL ARRANGEMENT OF THE GAS PUMPING MACHINES.

PRICES OF IRON.

PRICES of iron have fallen so much within a few weeks as to make a considerable reduction in the cost of railroad construction and maintenance. But the sudden fall has not stimulated, but rather restricted, the demand for the present, for the simple reason that buyers fear that, before they need to use the iron, it will be cheaper still—just as they were eager to purchase when prices were rising from week to week. There is a limit below which prices are not likely to fall, however, under the present circumstances, and that is the cost of importation; and it must not be supposed that this cost of importation is likely to become nearly as low at any time this year as it was a year ago, when importations began to be made on a large scale. For, though doubtless a large and probably the chief cause of the advance in foreign iron has been the American demand, we cannot expect that the diminution or cessation of that demand will be followed by a recurrence to last year's prices.

The lowest price at which foreign steel rails have been imported, so far as we know, has been $55; and at that time the current price for ordinary steel rails in England and Belgium was not more than $22. But since that time the cost of production in these countries, as well as here, has increased materially; the iron-master has to pay a good deal more for coal, ore, and wages; and although these will doubtless fall somewhat with lower prices for iron, they will fall slowly, and only under the pressure of great necessity, to the rates prevailing a year ago. Indeed, it must be remembered that the prices then were universally recognized as altogether out of proportion to the cost of production, possible only for the most fortunately situated works, and barely paying expenses at these, the others being generally closed.

It is not likely that the foreign works will be willing or able to supply this country at anything like the prices they accepted a year ago.

As for the domestic production, a considerable element in its cost was fixed for several months when prices were at the highest. The blast furnaces that receive supplies from Lake Superior, and some others, we believe, make their contracts for ore in the winter for the whole year, and at the same time, this year, have contracted for its transportation by lake. This year the prices for both ore and transportation were such as were justified by the winter prices of iron—that is, very high. Thus, with the greatest possible reduction in the profits of the iron works and the wages of their employes, a return to last year's prices or anything like them cannot be expected. Indeed, it is questionable if the American works will not have trouble in meeting the cost of importation, even with very moderate profits. They will, doubtless, do it, however, and it is probable that hereafter imports will be very greatly diminished, and that the American works will substantially supply the home demand; though, for the rest of this year, the chief profit in the business may go to those who supply the ore, and not to those who manufacture the iron.—*Railroad Gazette.*

A CASE OF PERMANENT POLARITY IN STEEL OPPOSED TO THAT OF THE MAGNETIZING COIL BY WHICH IT IS PRODUCED.

By A. RIGHI.

THE author finds that on taking bars of the same steel and of the same diameter but of decreasing lengths, he arrives at a certain length which no longer yields any magnetization, whilst with smaller lengths he obtains a permanent polarity opposed to that of the coil.—*Comptes Rendus.*

PROGRESS OF RAILROAD LAW IN NEW YORK.

THE just published seventy-sixth volume of the New York Court of Appeal Reports contains several instructive decisions illustrating the progress of railroad law in New York. One of them, Thorpe *vs.* The New York Central & Hudson River Railroad Company, relates to the vexed question of the liability of a company in respect to drawing room cars which it does not own. It is well understood that for the most part, throughout the country, the drawing room cars, palace cars, and the like, are not owned by the company owning and operating the road and selling the passage tickets. That company merely draws them, attached to its trains, for the Wagner or Pullman Car Company. Whether this arrangement exists because, when the special cars were first introduced, the railroad companies did not care to risk the investment of purchasing them, but preferred to draw them for the inventors, so that the companies are simply continuing to do as they began, or whether there are substantial reasons for continuing the division of ownership as a permanency, has never been made clear in the courts. The passenger has, in several instances, sued the carrying company for some mishap, maltreatment, loss of baggage, etc., sustained by fault of the drawing room car company's servants. The carrying company has interposed the defense that they were not owners of the drawing room car nor responsible for its management. But we do not recall that in any of these cases, counsel for the company so defending have made any clear, lucid, satisfactory explanation of practical re asons upon which this division of ownership and responsibility is founded. Perhaps, therefore, it is not surprising that the courts have not favored the view of a divided liability. The current of judicial thought has been that passengers cannot be required to discriminate between the railroad company and the palace car proprietors; their arrangements are a matter entirely between themselves.

Thorpe's case forms no exception to this general view. He entered a New York Central Railroad train at Syracuse, without asking for a drawing room car ticket, his purpose being to ride in one of the ordinary passenger cars to Auburn. There were two plain cars attached to the train. He passed through them both, seeking a seat, but could not find one. Most of them were filled with passengers, a few, as usual, with hand bags and overcoats; there were none vacant, and several persons were obliged to stand up or sit upon the wood box for want of seats. One point made in the case was that Thorpe ought to have formally asked the conductor to clear away the hand baggage from one of the seats and assign it to him; but the court said that this is not a passenger's duty; it is the duty of the company's servants to keep the seats available for passengers. Thorpe passed forward into the drawing room car. There was no doorman stationed to forbid him; the objection, taken in some of the cases, that a passenger may not force his way into a car which is guarded under rules of the company, did not arise. He entered the car without opposition, found a vacant seat, and took it. In due time the drawing room car collector called upon him for the extra charge. He declined to pay it; said that he had taken the seat only because the other cars were full; and declared that he was willing to go back to the ordinary car whenever he could have a seat there. The porter of the drawing room car then attempted to eject the passenger from that car by force, and for this assault Thorpe sued the railroad company. The defense made was simply that he had sued the wrong defendant; that the porter was the servant of Wagner, the owner of the drawing room car, not of the railroad company; and that the latter company was in no respect responsible for his acts, even if wrongful. The Court of Appeals decide that the persons in charge of a drawing room car are to be regarded and treated, in respect of their dealings with passengers, as the servants of the railroad company, and that the latter company is responsible for their acts toward passengers to the same extent as if it selected them and paid their wages. In the ordinary management of railroad trains, these cars are mingled with the other cars of the company, are open to passengers generally, are apparently a part of the train, and the manner of conducting the business amounts to an invitation by the railroad company to the public to use them. Passengers cannot know what private or special arrangements, if any, exist between the company and third persons, under which these special cars are run; and a passenger who takes one of these cars has a right to assume that he does so under a contract with the railroad company, and that the servants in charge of that car are its servants. The opinion of the court mentions possible cases of a passenger in one of these cars who should be burned by the negligent upsetting or breaking of a lamp by the porter, and says that he could not be turned over for his remedy to a suit against the proprietors of the drawing room car. The railroad company is responsible to passengers for the entire management of the train and the due performance of duty by all persons employed in it, and must in turn seek reimbursement from the drawing room car proprietors if they are ultimately liable. While corroboration for this decision is drawn from some statutes of the State, the chief grounds are of general application.

Other courts have taken the same view. In a Massachusetts case, decided in 1878, the passenger, by direction of the porter of the Wagner company, left his hand baggage in the car while he went for refreshments; the car was changed during his absence, and his baggage was lost in the transfer. In a more recent case in Ohio a traveler in a sleeping car had his head bruised by the porter's letting the upper berth fall on it, as he was arranging the car for the night, causing partial paralysis. In both cases the passengers sued the carrying company. That company defended on the ground that the action should be against the sleeping car company, and the courts overruled the defense.

Delay in forwarding perishable property gave rise to an interesting decision. Tierney, at Albany, loaded a car with cabbages for the New York market. He obtained the usual way bill or receipt, and took pains to see that the freight agent placed upon the car a placard in these words: "Perishable property; this car must be run to New York by first train: in case of accident or defect of car, reload and forward at once." Notwithstanding this mandate, the car was allowed to lie over at East Albany for two days, and during this delay the cabbages were frozen. The evidence showed, upon the whole, that if the trip had been made promptly, as agreed, the freezing would not have occurred, and that there was no extraordinary disaster or casualty preventing punctual transportation. The best account of the cause of the delay was that the freight business at the time was unusually heavy; that more cars were arriving at East Albany than could be forwarded, and that when the car in question reached East Albany, it was switched upon a side track, where it became blocked by cars subsequently arriving, so that it could not be moved until they were sent forward. The East Albany freight agent said that the reason why the car, notwithstanding its placard, was not sent earlier was, "because he could not get at it." The court held the company liable. It was its duty to transport the cabbages by their first train, unless there was such a pressure of property, likewise perishable, which had arrived before as to make sending by first train impossible. A general accumulation of ordinary freight ought not to excuse delay in forwarding perishable goods; and the opinion intimates the general rule to be, that if a carrier cannot transport all the property which he has received, it is his duty to give a preference to that which is known to be perishable, even over non-perishable property which may have been earlier received. All perishable property must be first forwarded in order of its receipt; non-perishable property naturally and properly waits until the perishable has been sent.

De Graff, a brakeman in the employment of the New York Central & Hudson River Company, was thrown from a moving train, in consequence of the breaking of the chain as he was applying the brake, and brought a suit for damages, founded on the theory that the chain was defective. No distinct evidence was given as to the cause of the fracture or nature of the defect. There is no proof that the chain was not perfect when it was put in place, and there was proof that inspectors, employed by the company, examined the chains frequently, to see that they appeared strong, and also that such chains frequently break, without, as a general rule, causing any serious harm. The decision of the court is, that such a casualty is within the risks and dangers incident to the business which are assumed by an employe. "Railroad corporations," says the Chief Justice, "should be held to a high degree of care and responsibility, but there is a point beyond which these requirements would be unreasonable and oppressive, and would, in effect, make them insurers against all accidents or injuries arising therefrom." And he explains that, as a general rule, the degree of vigilance required is measured by the dangers to be apprehended or avoided. There does not appear to be any practical necessity that the full strength of brake chains should be maintained. Upon a train of, say, thirty cars, it cannot be indispensable that the brake chains upon every car should be perfect, for only a portion of the number would be used in controlling the train. Moreover, the fracture of a chain does not ordinarily or probably involve any serious danger or injury. The company is therefore not liable to a brakeman for an injury received through the breaking of a chain, except upon proof that the company is chargeable with negligence; such as allowing the cars to be equipped with defective or insufficient chains in the first instance, or failing to maintain a proper inspection, sufficient to provide against the decay. The mere fact that the chain appears, from the breakage, to have been at the time insufficient, is not enough to charge the company. It was shown on behalf of De Graff that he was only seventeen years of age, but the court said this could make no difference. It is an element in the contract of employment that the employe bears the risks which are incident to the nature of the work. His youth and inexperience may be important when the question is whether he was chargeable with contributive negligence, or whether the company was in fault for assigning to him a service beyond his age, strength or skill. But a youth who accepts employment in work for which he is competent cannot claim on account of infancy to be relieved from its risks. He assumes the perils inseparable from the service in the same manner as a grown person would do.

A suit against one of the New York City street railroad companies gave rise to an extended discussion of the relative