

the roads, "but more to supervision and regulation under the Commissioner law."

The "wholesale grocers' case" is still pending in the State Supreme Court. The Board complains that the injunction against the use of the reduced rates, which were ordered by the commissioners in this case was issued by a district judge without waiting to see whether the roads refused to comply.

The Trade of Buffalo.

Buffalo papers of Dec. 31 contain a triumph in the way of prompt statistics. The total receipts of 179,800,500 bushels of grain and flour reduced to grain are 18,917,910 bushels more than the receipts of last year and some 60,000,000 more bushels than in 1880.

Statistics of the receipts of grain, and flour reduced to grain, have been kept at Buffalo from 1838, when the total was slightly less than 1,250,000 bushels, to the present time. The grand total is 2,851,239,494 bushels.

The following table shows the average rates, and highest and lowest rates in cents per bushel, for wheat from Chicago to Buffalo during the last 10 seasons:

Table with columns: Year, Highest, Lowest, Average. Rows for years 1892-1883.

The rates per bushel from Buffalo to New York on the Erie Canal for the ten years have been as below:

Table with columns: Year, Highest, Lowest, Average. Rows for years 1892-1883.

The through rates, New York by canal to Buffalo and by propeller to Chicago or Milwaukee, have been in cents per 100 lbs. as below:

Table with columns: Year, 1st, 2d, 3d, 4th, 5th, 6th. Rows for opening and closing dates from 1892 to 1887.

The following statement shows the receipts of grain in bushels at New York, by routes, during the navigation season of 1892, compared with six previous years:

Table with columns: Receipts by routes, May 1 to Nov. 30, 1892. Sub-headers: Canal, Rail, River and Coast, Totals. Rows for Wheat, Corn, Oats, Rye, Barley, Malt, Peas.

From this it will be seen that there has been a decline in both the absolute as well as relative service by the canal.

An Iron Combination.

Rumors are afloat of a great combination of iron makers in the neighborhood of Youngstown, O. It is to include the mills and furnaces of the Brown-Bonnet Iron Co., the Andrews Iron Co., the Briar Hill, Iron & Coal Co., the Mahoning Valley Iron Co., the Ohio Iron & Steel Co., the Andrews & Hitchcock Co., and the mills of the Youngstown Iron & Steel Co., located at Youngstown, Warren and Girard.

An Englishman's Observations on American Signaling.

Last October Mr. John P. O'Donnell, an English signal engineer, now also Consulting Engineer for the National Switch & Signal Co., read a paper before the American Society of Civil Engineers which will be published shortly in the Transactions. Mr. O'Donnell gave his opinions of some features of our signal practice and then described at length the signaling of Waterloo Station, London & Southwestern, which we have lately illustrated pretty fully.

With reference to the remark in Colonel Haines' paper (President's address before the Am. Ry. Association) that "the circumstances under which distant signals should be required will differ from the rules for operating a block system as well as the essential requisites for the proper appliances," it would seem to the writer to require qualification, as, under every condition of the block system, a distant signal is needed.

The following in Colonel Haines' paper appears also to require explanation, that "railroad managers, civil engineers and inventors are trying to remedy what is called the deficiency in the block system, and it is because the Train Rule Committee is conscious of these facts that it has hesitated to indorse the block system as now used." In England, on such lines as the London, Brighton & South Coast, the London, Chatham & Dover, the South-eastern and other important railways, the union of the lock and block system is carried out, and, with that safeguard, under the at-salute block system, it is almost impossible to have rear collisions.

A point which seems to be not yet settled satisfactorily in this country is the question of arranging the signal arms to indicate high speed routes and the various lines traveling either side by side or diverging, as at a junction. The writer had occasion yesterday, through the courtesies of the New York Central officials, to examine the pneumatic plant at Woodlawn Junction, on the Harlem Division of the New York Central & Hudson River. He found that the system appears to be to arrange the top arm always for the important road, irrespective of whether it was right or left. In England our rules are the very reverse, and would appear to me to be supported by simplicity and to be easy of understanding.

The writer also noticed in the same scheme that shunting signals were provided, shunting back on the southbound track in the northbound direction, and he gathers that such provision is usually made in signaling schemes in this country for shunting onto a wrong road. It would appear to be a dangerous precedent to give an engineman absolute authority by signal to shunt in the direction of meeting an approaching train. Our custom in Great Britain is to perform such movements, when needed, by special authority, as we consider that when an engineman has received a definite outside signal to proceed, if he so proceeds, should any accident result through his obeying the signal, he is exempt from responsibility. In your system the risk of running back on the wrong road, the engineman supposing he is on the right and meeting a train from the next section, would appear to be great. We have had many such accidents in England, and the writer notes especially one which occurred in his own experience, at Kingston, on the London & South-Western, where an engineman thought that the crossing points had been removed for him to proceed to the right hand, the points themselves had not been moved at all. He proceeded to the next section on the wrong road, met a train coming in the opposite direction, with the result that eight people were killed. No wrong road movements are allowed by signal at any place, to the writer's knowledge, except at Waterloo and one or two other large terminal stations; but at all intermediate through stations corresponding to Woodlawn Junction, no such provision would ever be sanctioned.

TECHNICAL.

Engine and Tender Connections.

The Secretary of the American Railway Master Mechanics' Association has issued the following circular: Messrs. Barnett, Stevens, Smart, Morris, Hill and Lyne, forming No. 9 Committee on Attachments Between Engine and Tender, ask for prompt reply to the following questions, viz:

- 1. With engines coupled to tenders by single stout link and large pins so strong as not to break loose under heaviest pull, have the tank frames any marked tendency to either mount or run under the cab foot-plates? In other words, is there any more risk from the tender frame than there is from the tank leaving frame and sliding into cab?
2. If tender frame has such tendency, can it be prevented? If so, are the probable expense, weight, and work required to prevent it, in your opinion, justified?
3. If not using such a device, are you familiar with any fastening, equipment or invention that is designed to prevent tender frame mounting? If so, will you illustrate or describe it?
4. If in a position to give an opinion as to its practical usefulness, kindly do so.
5. Do you use or recommend safety couplings on each side of the ordinary simple main coupling? If so, should the side safety couplings be single weldless links or short sections of welded chain?
6. Do you use or recommend anything to prevent wear of the chafing surfaces between engine and tender, or

make the chafing surfaces of any particular shape, size or metal?

7. What, if any, means do you use to take up the heavy wear that comes on main coupling link, pins and chafing surfaces?

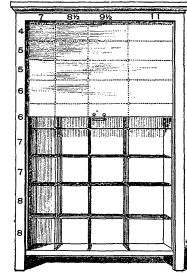
8. If you have used any elaborate connection between engine and tender, did you experience any difficulty in backing up a heavy train (tender first) around a sharp curve, due to flange friction, caused by tender not readily setting to curve?

FOOT-STEPS AND HAND-RAILS.

9. Are long steps safer or more advantageous than short steps having good high flanges to prevent the side movement of foot after foot has once touched the step?

The Acme Wire Shelving.

The illustration shows a cabinet fitted with the wire partition shelving made by the Pope Rack Co., of St. Louis. This device has been on the market for about two years, and has proved very popular. It will be seen that the partitions and shelving are made up of a network of wire fastened to the sides, top and bottom of the cabinet by screw eyes. Turn-buckles are inserted by which the wire can be tightened up as necessary. No. 13 galvanized steel wire is ordinarily used. There are several distinct advantages in this device. It is cheaper, lighter, and is claimed to be more durable than wooden shelving. It can be knocked down and packed in small space for shipping, and this, with its lightness, makes transportation cheaper than that of the wooden cabinets. One very decided advantage is that the shelves do not afford lodgment for dust or vermin. This system is applied to filing cases of every sort, the proportions and dimensions of the pigeonholes being capable of any requisite variation. In the case shown the figures on the side show the depths in inches of the compartments, and the figures on the tops their widths. The Pope Co. has a great variety of standard forms of racks and cabinets, open and closed, and will make any special form required. This system has been used with much satisfaction by a good many railroad officers.



The Hancock Inspirator Co., of Boston, Mass., commenced the manufacture of the Hancock inspirator in 1876, at a time when a general prejudice existed against it. During the past sixteen years 200,000 inspirators have been sold, but until recently no special effort has been made to sell inspirators for locomotive service. Mr. W. R. Park, the Superintendent of the company, has for the past two or three years been perfecting a locomotive inspirator, and makes the following special claims for this instrument:

The Hancock Inspirator.

1. Reliability under the most trying conditions, such as hot pipes, and hot water in the suction pipe; as it will work with suction water at 120 deg. Fahr. at 100 lbs. steam pressure and below.

2. No adjustment is required for variations in steam pressure from 30 lbs. to 200 lbs., and it will throw a constantly increasing quantity of water up to the latter pressure.

3. A range of 50 per cent. between maximum and minimum delivery. The capacity is reduced by reducing the steam pressure in the lifter chamber only, by means of a valve placed directly under the lever. This arrangement does not disturb the suction by creating a vacuum in the pipes, as is the case when it is done by throttling the water, and it does not impair the effectiveness of the forer.

Simplicity.—All valves are of the ordinary cone type, easily accessible for regrinding, and cannot in this operation be thrown out of adjustment or out of time, as the intermediate overflow valve is automatic. The inspirator is now in use on about sixty roads in different parts of the United States, and will be exhibited in operation for competitive test, at the Columbian Exposition.

The new inspirator will be sent for test and approval at no expense to the road if after a reasonable time it fails to do all that is claimed. It will fit the connections of all the principal injectors in common use without change of pipes.

Dutch Kills Creek Bridge.

A public hearing was held Tuesday in New York before the Harbor Lines Commission, to discuss the application of the Long Island Railroad for permission to change the present two-track drawbridge over Dutch Kills Creek, near Newtown Creek, to a three-track one, at the same time widening the channel between the draws from 32 to 50 ft. There were no weighty objections to the railroad's plan. The minutes of the proceedings will be sent to the Secretary of War, and a favorable decision is expected within a fortnight. If the application is granted, reconstruction will be begun at once, to be ended in June or the beginning of July. The draws will probably be worked by means of an electric motor.