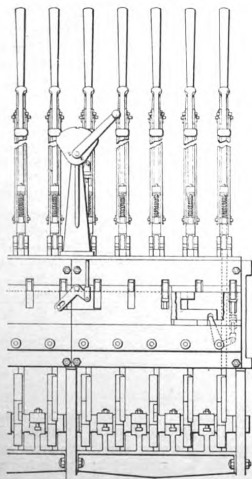


vance of over 21 per cent. in the gross receipts, or if the receipts remained constant the necessary train-mileage might be reduced 17.5 per cent. A train of standard 10-ton wagons would hold a paying load of 0.52 ton per running foot, about one-sixth of the total length being accounted for by the vacant spaces between adjacent headstocks; by increasing the capacity of the wagons a paying load of 0.84 ton per foot could readily be obtained, and thus the capacity per unit of length of train or siding increased by 62 per cent.

The conclusion that the short haul characteristic of much of the goods traffic in this country would prevent the realization of the economy secured on American railways by the introduction of rolling stock of high capacity was hardly warranted by a consideration of the influence of the decreased mileage per ton upon working expenses. The short haul enhanced the relative importance of terminal charges and increased the ordinary expenses per train-mile because it decreased the daily mileage obtainable from engines and wagons. It therefore tended to emphasize the necessity for increasing the gross receipts per train-mile, while the multiplicity of junctions and sidings gave additional importance to the compact formation of trains of high capacity rolling stock. The Great Western Railway had built some bogie wagons, each capable of loading 40 tons, the tare weight being 17 tons 7 cwt. It was possible to construct a wagon having a body of twice the standard capacity with an increase of one-third only in the tare weight. Both the Great Western and the London & North Western Railways were experimenting with steel coal wagons of 20 tons capacity; the tare weight of the Great Western wagon was 8 tons 6 cwt., while that of the North Western's was 7 tons 18 cwt. The author, in conclusion, pointed out that their successful introduction depended on a satisfactory solution of the question of terminals.

Mr. J. A. F. Aspinall (General Manager of the Lancashire & Yorkshire Railway) said an important element in the question was the private ownership of wagons, about 500,000 being in the hands of private owners. Hence any proposal for altering them touched a very large number of people. It was unfortunate that this private ownership ever took root in this country. It could not be a good thing that half a million wagons should be moved empty during at least one journey, as these were, and any change that led to the use of these empty wagons would be an economy. It was not only the haulage of them that told; marshaling, sorting, etc., represented a tremendous annual loss. As to the long wagons advocated by Mr. Twinberrow, the collieries on the one hand and the dock companies on the other controlled the situation, the railways being only intermediaries; he himself would only be too glad if they could be persuaded to alter their arrangements.

In reply Mr. Twinberrow fully admitted the difficulties in the way of introducing wagons such as he advocated,

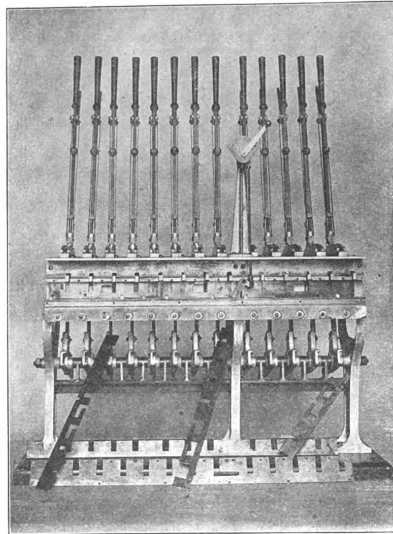


but they were not insuperable. He did not think the matter of existing plant would long be allowed to stand in the way, and he could not understand the argument that plant was not to be altered because it had been on English railways from their beginnings. As to the continuous brake, some people seemed to look on its adoption for goods trains as a luxury, but he believed that its cost would be paid for over and over again by the facilities it would introduce in working.

The French Northern Railroad seems bent on making Paris a suburb of London. The time of the fastest train from Paris to Calais has been 3 hours and 35 minutes, and that only recently. Lately a trial was made with a train which ran the 300 kilometers in 3 hours, but was 10 minutes longer in going back to Paris. It is claimed that a speed of 87 miles an hour was reached on certain stretches between stations.

The Rowell-Potter Interlocking Machine.

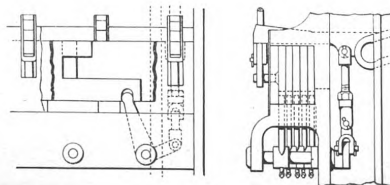
The Rowell-Potter Safety Stop Company, of Chicago, is putting on the market a new manual interlocking machine which is very compact, and in which no dogs or tappets are used, the locking being directly on the links. Referring to the engraving, it will be seen that each link has an extension at the forward end. The locking is accomplished by passing a bar under this extension when the lever is normal, and over it when it is reversed. The



The Rowell-Potter Manual Interlocking Machine.
Front View—Combination Bar and some of the Locking Bars removed.

locking bars are of steel and are contained in a slot in the front of the frame, 3 in. wide x 4 in. deep, regardless of the number of levers. Each bar is moved by a short direct connection to the link and there is not the necessity for the close adjustment needed with the dog and tappet movement; there is also less chance for wear. One of these machines has been installed at Glassboro, Ill., at the crossing of the Illinois Terminal R. R. with the Cleveland, Cincinnati, Chicago & St. Louis and the Chicago & Alton; and another interlocking is about completed at the junction of the Chicago, Burlington & Quincy and Peoria & Pekin Terminal roads at Peoria, Ill.

The locking is simplified in these machines by the use of a combination locking bar, extending the full length of the machine, which serves as a route selector. When this bar is in position to free all the levers of one route, it locks the levers of all opposing routes, depending upon the arrangement of the slots in the combination locking bar. The levers of the route freed by the selector may then be pulled in the order of their individual locking combination. The individual locking bars for the set of levers controlling each route are separate from and independent of the individual locking bars of all other levers, so these individual bars are made no longer than the



Details Enlarged.

The Rowell-Potter Manual Interlocking Machine.

space occupied by the levers of a single route. In this way there is but one locking bar extending the full length of the machine, and the use of short bars makes it possible to place all the various locking sets in the same slot. In the machines so far put in, the frame is but 28 in. wide and no additional space, either vertical or horizontal, is required for the locking. This is the arrangement for simple locking, but it is evident that special locking can be done and that this machine has considerable flexibility in this regard.

The link is suspended from the frame and when in the normal position the lever cannot be unlatched without lowering slightly the forward end of the link. If there is a locking bar under the link extension, the lever cannot be unlatched and an attempt to move the lever when locked, puts no strain on the locking. In reversing a lever, the next lever of the combination is not unlocked until the first lever is thrown and latched. Latching the lever completes the movement of the locking bar.

It will be seen that the link extension of each lever is connected to one arm of a small crank shaft mounted on the frame. The other arm of this shaft engages a slot in the bottom of the locking bar, so that any movement of the link causes a corresponding movement of the bar.

Plans are now being made in which the construction will be further simplified by doing away with these connections between the link and locking bars; then the locking bars will be shifted directly by the link extension working in suitable slots. The frames are cast, but all the working parts of the machine are drop forgings.

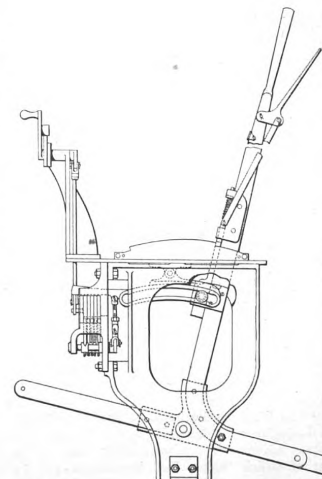
The British Westinghouse Electric and Manufacturing Company.

The first annual general meeting of the shareholders of the British Westinghouse Electric & Manufacturing Company was held Nov. 23 in London. The Chairman of the Executive Committee, Mr. Parsons, presided. He said that they had hoped that Mr. Westinghouse would be present, but he was greatly occupied in America going over the plans and specifications for the equipment of the Manchester factory.

The sales of the company during the financial year amount to about \$2,750,000, which is more than double the sales in the preceding year. Important contracts are pending. The company is handicapped in that it is trading with machinery procured from the American company, and when the Manchester works are done it will undoubtedly be able to do a larger and more profitable business. The manufacturing company will employ at Manchester from 3,000 to 5,000 men, and the company is gradually getting together the staff to manage this concern. The American company guarantees the interest on the preference shares for the British company for two years. Building at Manchester has been delayed and the works will not be completed in the time anticipated, but there is good reason to believe that the American concern will continue the guarantee until these works are in operation.

Reports have been circulated that the company has abandoned the construction of the Manchester works. This is not true; on the contrary, operations are proceeding and young engineers have been sent to Pittsburgh for training. The shops which are building are intended to turn out electrical machinery and steam engines and gas engines of large size. There will be not only a steam plant but a gas plant for running gas engines, and the company will be in a position to ascertain in its own work the relative advantages of large gas engines and steam engines.

Mr. Parsons spoke particularly of the matter of electrifying the London Underground (Metropolitan and Metropolitan District Lines). This company presents a



proposal to supply the entire outfit of electrical machinery and rolling stock as well. Bonds in payment will be issued to the contracting parties on the certificate of the engineers of the railroads, and these bonds may be negotiated by the Westinghouse Company as they think fit. This method of financing the contract requires parliamentary action, as does the proposal to lease sites for the generating stations.

The Chairman, in answer to questions, explained more particularly about the delay in building. In the first place the company had been most anxious to place the order for the steel work in England instead of in America. They asked bids from British and American contractors and found that there was a difference of four or five months in favor of the Americans. They thought, on the whole, however, that it was best that the contract should be placed in England, and it was placed with Messrs. Dorman, Long & Co., of Middlesbrough. The steel contractors have delivered a good deal of the material, which