

"Verein für Eisenbahnkunde" May 10, 1904. In your issue of November 6, 1903, you illustrated Mr. Haarmann's superstructure, tested on the Berlin high-speed test track. The wheel-carrying angle bar used there was unfavorably reported on by the "Central Organ der Bauverwaltung" November 11, 1903, and by the "Organ für die Fortschritte des Eisenbahnwesens," April, 1904. I will here only speak of a few points which may be of interest to American engineers.

Mr. Haarmann reports that the Prussian Minister of Railroads has recently ordered a further test to be made with his superstructure. This is rather surprising, coming so soon after the official condemnation of all wheel-carrying joints, and leads one to believe that the Minister has grown somewhat suspicious as to the correctness of his referee's theory. The Prussian Government railroads have been testing the different kinds of "Blattstoss" (lapped rails) on a large scale, but up to date they do not seem to have been able to arrive at any satisfactory conclusion, as otherwise they would not continue to equip all their main lines with the ordinary rail and angle bar.

The main objection to the "Blattstoss" was the increased weakness of the rail ends. Mr. Haarmann tried to overcome this by supporting the ends with his joint carrier. The results obviously were no more satisfactory than those which have been attained by supporting the foot of rail ends with bridges. As a last resource Mr. Haarmann took recourse to the wheel-carrying angle bar, and discovered that his joints with bridges and carrying bars, after a severe winter, were behaving better than all the others. He refers in his lecture to the remarkably good results which have been achieved in Saxony and Bavaria by equipping ordinary rails with wheel-carrying angle bars. These results are not new; they have been well-known for many years, such a device now being used on about 2,000 miles of track.

The most interesting point in his statement is that his joint carrier relieves the strain on the bearing surface of the angle-bars; in other words, that the angle-bars intended to support the rail ends necessitate being themselves supported. It is scarcely possible to explain more clearly the mistake which has been made for so many years by supporting the angle-bar on the rail ends, instead of relieving the weak ends of at least a part of the pressure. This can only be done by supporting the carrying joint immediately on the joint ties. Experience with my rolled joint has shown that by these means even old tracks with battered ends can be kept in shape for a great number of years, at the same time securing smooth riding and considerable reduction in cost of maintenance of way. There is therefore no reason whatever why the existing system of rails should be replaced by a more expensive one.

Those who claim the increased expense for replacing outer angle-bars by the Barschall joint to be a disadvantage do not consider that the saving in cost of maintenance of way, and still more, the saving of interest for so many years on investment for new rails, gives an immense return. With the present prices of rails there is good reason to employ the means at hand in order to prolong the life of rails. By using say 1,000 tons of rolled joints, about 10,000 tons of rails can be saved until they are worn out in their entire length. A "retrenchment" of this kind has more sense than all others.

Mr. Haarmann also said that he is making tests for the purpose of improving the efficiency of the wheel-carrying principle by changing the shape of the tread of the main rails; in September last, this change was made public as consisting in a flattening of

the outer head. From the description of the "double rail joint" printed elsewhere in this issue it will be seen that in this direction Mr. Haarmann's ideas have been anticipated! MAX BARSCHALL.

Pernicious Diversity in Signal Practice.

THE LAKE SHORE & MICHIGAN SOUTHERN RAILWAY COMPANY. CLEVELAND, OHIO, Nov. 21, 1904.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I note that there is being put on the market a form of semaphore signal operated directly from a switch stand and located at the point of facing point switches. This semaphore in its form as well as in the position and light displaying indications is identical with the semaphore used at interlocking plants. It is so arranged that when the switch is set for main track the arm is lowered and the white light shown; when switch is set for siding the arm assumes a horizontal position and a red light is shown.

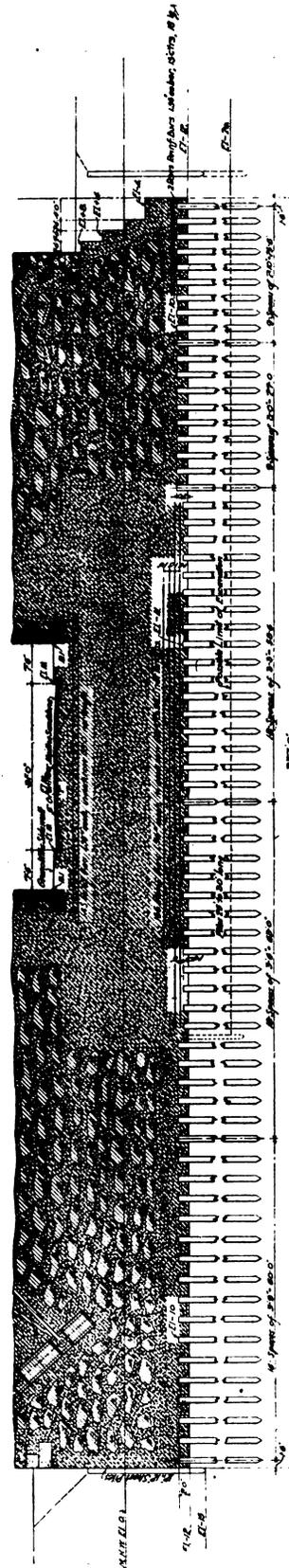
I think this device used in this way is wholly improper, in fact, pernicious, and that all who are interested in proper signaling should unite in protest against its being used in the manner in which it is intended to use it. In signaling by means of semaphores the rules in this country are well nigh universal. With arm in horizontal position, and (in addition) by night a red light indicates stop. The arm lowered, either 60, 75 or 90 deg., and, in addition, a proper light at night (on some roads green, on others white) indicates proceed.

Every semaphore signal should indicate one of three things, viz., stop, caution or proceed. Now in this device the semaphore is deliberately used to indicate, when in a horizontal position, that the switch is set one way, and when it is in an inclined position that the switch is set another way. I do not think there is anything that should be more vigorously objected to than the use of the stop indication of the semaphore signal as a means of conveying information regarding the position of a facing point switch. If such a switch-stand is to be used it should either be provided with two arms, so that a proceed signal can be given for either route, or there should be some additional indication to denote the position in which the switch is set.

AZEL AMES, JR., SIGNAL ENGINEER.

Anchorage for the Manhattan Bridge.

The Department of Bridges, City of New York, has issued contract plans and specifications for the anchorages of the Manhattan Bridge, No. 3, over the East river about half a mile above the Brooklyn, and will shortly advertise for bids on the work. It will be remembered that under the former bridge commissioner plans for this bridge were prepared which contemplated the use of nickel-steel eye-bar chains with stiffening trusses and rocking steel towers. These plans were published in the *Railroad Gazette*, Dec. 4, 1903. The present commissioner, Mr. Best, on taking office last January discarded the proposed eye-bar chain cables and had the original plans for a steel wire cable bridge with fixed steel towers revised and completed. Last July these completed plans were submitted to the Municipal Art Commission for its approval, according to law, and were the subject of further controversy. Reproductions of the architect's sketches showing the completed bridge were published in the *Railroad Gazette*, July 1, of this year. The tower piers for this bridge are completed and the work on the anchorages now remains to be done before the superstructure can be started. When completed the



Longitudinal Section Through Foundation of Anchorage.