

pointing 45° upwardly; (4) reduce speed if a yellow light is displayed or the blade is pointing 45° downward.

Having got his train under control, he then has ample time to further consider the movements which correspond with the kind of signal and with the location on the road.

Relation of Headlights to Signals

As a matter of information in connection with the use of interlocking and block signals in the United States, the following statement will prove most interesting.

During the last two years, a wave of legislation has passed over the United States having for its aim the compulsory use of electric headlights on locomotives and, although the railway managements presented the strongest arguments against such a requirement, many of the States passed the bill and made it a law.

There is no doubt but that the use of the electric headlight largely diminishes the distinctive character of night indications of block and interlocked signals. On lines of single track the condition will be serious enough but where there are two or more main running tracks the electric light blinds the runner of an approaching train on an adjoining track so that for an appreciable time after having met the train the eye cannot tell one colored light from another. It is a question still undetermined whether the continued repetition of this blinding effect will not seriously impair the vision and thus reduce the period of the runners' safe employment on lines where the highest speed trains are guided wholly by block and interlocked signals. While there is no chance for a repeal of this law for one or two years in those states where it has been adopted it is hoped that other states will not follow their example and that experience will lead in due time to the elimination of this unfortunate and even dangerous legal requirement.

Summary

Summarizing the situation as regards interlocking in America: (1) application of power interlocking is rapidly increasing; (2) electro-pneumatic and purely electric systems are superseding all other forms of power interlocking; (3) the track circuit, with electric locking, is superseding mechanical detector bars; (4) all forms of electric locking are being generally used in connection with heavily worked terminals and in heavy traffic territories; (5) diagrams for facilitating the full utilization of tracks along passenger platforms are not used in the United States.

THE NATIONAL GOOD ROADS CONGRESS.

The Third National Good Roads Congress was held at Niagara Falls, N.Y., July 28th, 29th and 30th, 1910. Mayor Anthony C. Douglass, of Niagara Falls, made the address of welcome, to which President A. C. Jackson of the association responded, and then he introduced Congressman William Sulzer of New York, vice-president, as the presiding officer. Congressman Sulzer made an address of some length, both instructive and eloquent.

Hon. Wm. Sulzer in his address urged better roads. For years he has been an earnest advocate of good road building. Good roads mean progress and prosperity, a benefit to the people who live in the cities, an advantage to the people who live in the country, and it will help every section of our vast domain. Good roads, like good streets, make every habitation along them most desirable; they enhance the value of farm lands, facilitate transportation and add untold wealth to the producers and consumers of the country; they are the milestones marking the advance of civilization; they econo-

mize time, give labor a lift, and make millions in money; they save wear and tear and worry and waste; beautify the country—bring it in touch with the city; they aid the social and the religious and the educational and the industrial progress of the people; they make better homes and happier hearth-sides; they are the avenues of trade, the highways of commerce, the mail routes of information, and the agencies of speedy information; they mean the economical transportation of marketable products—the maximum burden at the minimum cost; they are the ligaments that bind the country together in thrift and industry and intelligence and patriotism; they promote social intercourse, prevent intellectual stagnation, and increase the happiness and the prosperity of our producing masses; they contribute to the glory of the country, give employment to our idle workmen, distribute the necessaries of life—the products of the fields and the forests and the factories—encourage energy and husbandry, inculcate love for our scenic wonders, and make mankind better and greater and grander.

Lessen Cost of Living.

One of the crying needs in this country, especially in the south and the west, is better roads. The establishment of good roads would in a great measure solve the question of the high price of the necessaries of life and the increasing cost of living—which is beginning to make life a struggle for existence. By reducing the cost of transportation it would enable the farmer to market his produce at a lower price and at a larger profit at the same time. It would bring communities closer and in touch with the centers of population, thereby facilitating the commerce of ideas as well as of material products.

When we consider that the agricultural production alone of the United States for the past eleven years totals \$70,000,000,000, a sum that staggers the imagination, and that it cost more to take this product from the farm to the railway station than from such station to the American and European markets; and when the saving in cost of moving this product of agriculture over good highways instead of bad would have built a million miles of good roads, the incalculable waste of bad roads in this country is shown to be of such enormous proportions as to demand immediate reformation and the exercise of the wisest statesmanship, but great as is the loss to transportation, mercantile, industrial, and farming interests, incomparably greater is the material loss to the women and children and the social life, a matter as important as civilization itself. The truth of the declaration of Charles Sumner fifty years ago, that "the two greatest forces for the advancement of civilization are the schoolmaster and good roads," is emphasized by the experience of the intervening years and points to the wisdom of a union of the educational, commercial, transportation, and industrial interests of our country in aggressive action for the immediate building of permanent good roads.

BETTER ROADS AND HOW TO GET THEM.

B. F. Yoakum, Chairman of The St. Louis and St. Francisco Railway.

Your organization stands for a duty sadly neglected by the Government. Good roads mean more for the people at large than any other public works, and add more to the comfort and upbuilding of the country. They are of national importance.

Government statistics tell us that it costs our farmers 15 cents more to haul one ton one mile in this country than it costs in European countries. The products of the farms of the United States last year amounted to approximately 250