PAINTING THE FLAGSTAFFS OF TALL BUILDINGS.

The flagstaffs which seem to be an indispensable part of the modern office building often extend to an extraordinary height above the street level. The tallest in the city are those which have been erected above the domes, at the top of the two towers on the Broadway façade of the Park Row building, a description of which appeared in the SCIENTIFIC AMERICAN of December 24, 1898. The top of the dome is 390 feet above the sidewalk, and the trucks of the flagstaffs, which are 57 feet in length, are therefore about 450 feet above the street level.

A few days ago the foot passengers down Broadway, and across the City Hall Park, were watching with great interest the figure of a man who was engaged in painting these lofty poles, and the question naturally arose as to how this perilous work was done. The answer will be found in the accompanying engraving, which shows one of these aerial artists at work. His climbing apparatus is one of the very simplest kind, and consists of two short lengths of rope, each of which is provided with a slip noose which encircles the flagstaff. The upper rope carries an ordinary "bo'sun's chair"—a plain piece of board which forms a seat astride of which the painter sits—and the lower rope ends in a simple foot-stirrup. In climbing the pole, the weight is first thrown on the foot-stirrup, thereby releasing the noose of the upper rope, which is then slid up the pole. The weight is now thrown on the seat, and the stirrup noose being released of weight is drawn a few inches up the pole. By thus throwing the weight alternately on either rope and slacking the other, the painter is enabled to climb to the top of the pole. The painting is done from the top downward; the order of slipping the ropes being, of course, now reversed. Underneath one end of the seat is hung the paint pot, and a dab of putty for filling up cracks and knot holes is stuck conveniently upon the same end of the seat.

Weight carried by stirrup. Weight carried on chair.

HOW FLAGSTAFFS ARE PAINTED.

A NEW METHOD OF INSTRUCTING AND EXAMINING TRAINMEN.

The executives of the most progressive railroads throughout the country are continually devising means to impress upon the employes of the roads the exact meaning of train rules as applied to the various pieces of apparatus that form an important part in the successful operation of the modern railroad.

No scheme has perhaps proved so successful on the Cincinnati Southern road as the method recently devised by Superintendent W. J. Murphy.

The magic lantern has been used with much success by lecturers for bringing before the public that which word painting cannot convey. It has been used for years in our best educational institutions for representing scientific truths, and there is no particular reason why the use of the stereopticon should not prove highly efficient in the instruction and examination of railway employes. While the plan of using models of signals as heretofore employed by the Cincinnati Southern was very satisfactory, it was open to improvement. But one great objection can be offered to their use. A signal is always used on a road to serve a particular purpose at a special place, and therefore there are many applications that can be represented only by taking the trainmen to those particular locations and allowing them to see the exact purpose of the signal. It follows that in order to know whether trainmen are perfectly conversant with the meaning of all signals along the road, they should be called upon to explain the purposes of each signal in its direct relation to all its surroundings. This cannot conveniently be done by taking the men to the exact location of every signal, but the same thing may be accomplished by making lantern slides of all kinds of apparatus, signals, tracks, etc., and presenting these with their actual local surroundings to the trainmen who are to be instructed or examined.

The examining room at Lexington, Kentucky, has been equipped, not only with models and such appliances as are placed in the hands of the trainmen for the moving of trains safely, but an electrical stereopticon has been provided, together with a large number of slides representing equipment on the road. The trainmen are required, not only to familiarize themselves with the rules in the abstract, but they must know the purpose and meaning of every signal and piece of apparatus along the line of the road in question. The men are practically carried over the road by a series of lantern slides projected on canvas, and the examiner is able to determine very satisfactorily as to the fitness of men for the positions which they hold, or to which they aspire.

The use of the magic lantern has demonstrated that it is possible for trainmen to know the meaning of the various positions of all kinds of signals, and to recite glibly what should be done under certain conditions, and yet to be absolutely deficient in the knowledge of what the signal means when it appears in combination with some other. The applications of the lantern are so varied that there is scarcely a phase of railroad work that could not be handled effectively. It is an appliance by which you can bring to the examining room all the apparatus, equipment, and, in fact, the road itself, and all the merits and defects can be discussed accurately and exhaustively.

Our illustration No. 3 represents what is called an electric disk block signal. The color indicated in the small central disk is white. A white signal in connection with the operation of a railroad always means that the train may proceed, but in this case, the rules make it necessary for the train, when running onto a white signal, as indicated by the signal 100¾, to stop, unless the signal changes from white to red in the presence of the engineer. In other words, a stationary white signal means just as much danger to the engineer in this case as a stationary red signal.

Red is the danger position of the same signal, which means stop, except, as previously stated, when it changes from white to red upon a train entering the block limit.

Illustration No. 1 represents what is called a semaphore signal. It is used in connection with interlocking apparatus and worked from the tower shown on the photograph. The upper arm always governs the main or most important track. When this arm is in a horizontal position, trains on the main track would have to come to a stop and not proceed until the arm assumes the oblique position, as indicated by the lower arm. The lower arm governs a track of less importance than the main track and is operated in the same way, so that with the signals as here represented a train on the main track would have to stop, and a train on the siding could proceed.

The second illustration represents a scheduled train; that is, a train shown on the time table. The red signals on the pilot of the engine indicate to the railroad fraternity that the engine is backing up at night. The green lights also indicate that the engine is moving at night and that it is to be followed by another train on the same schedule having equally the same rights. The green flags indicate in the day time what the green lights do at night. If the engine or train were going forward, instead of backward, as indicated in this photograph, there would be no lights where the red lights are shown here, but those red lights would be transferred to the rear of the train, so that these symbols, or signals, indicate quickly to the railroad man just what kind of a train it is—whether it is backing up or going forward, whether it is being followed by another section or not.

A regular scheduled passenger train carries by day green or classification flags on the front of the engine, which indicates that

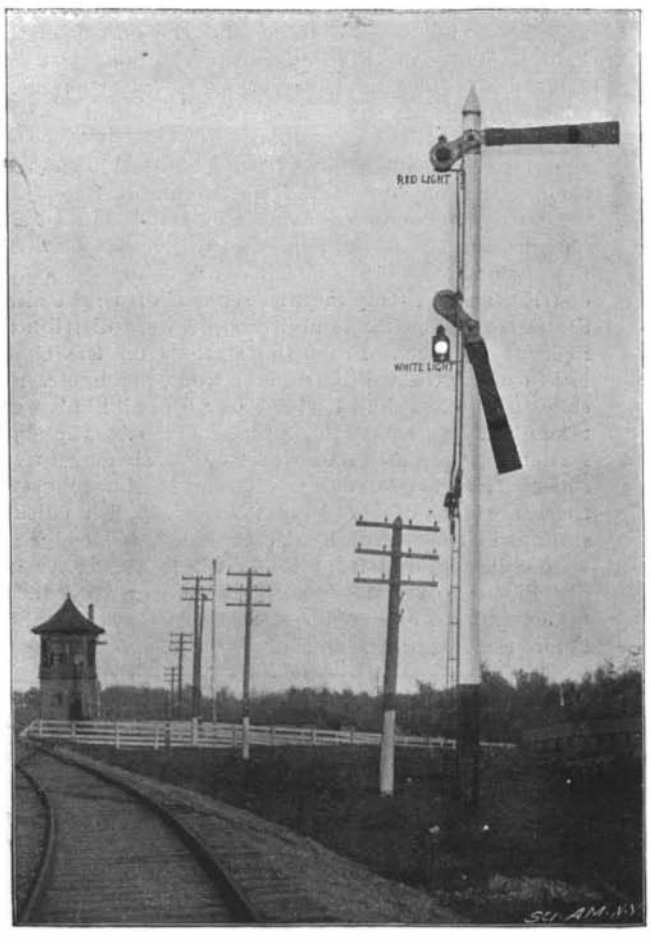

Fig. 1.—SEMAPHORE SIGNAL.
Main line closed, local open.

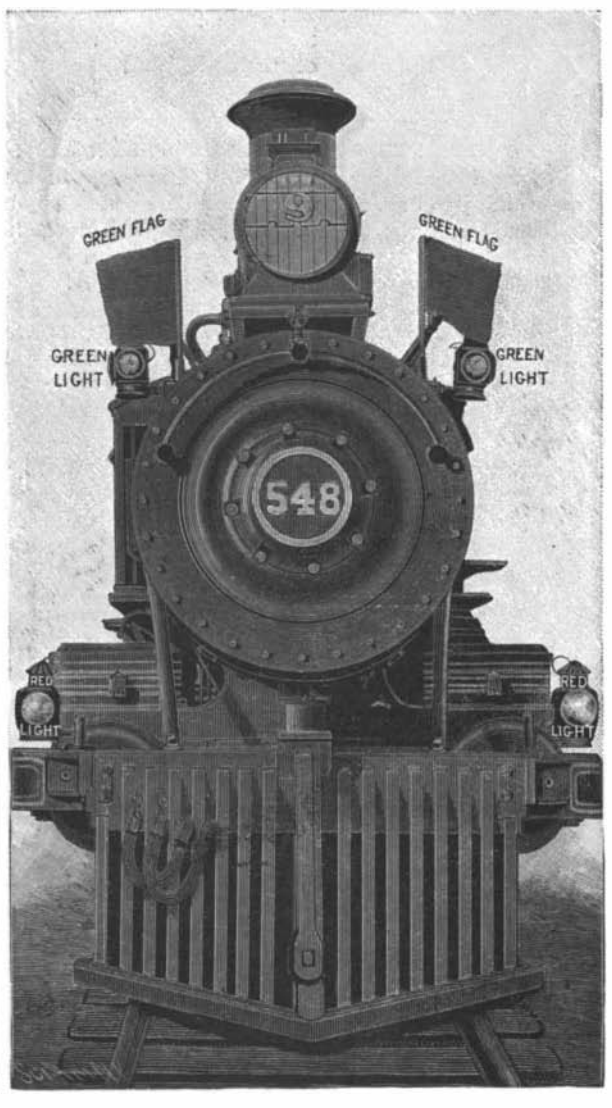

Fig. 2.—TRAIN SIGNALS ON ENGINE.
Schedule train backing up at night.

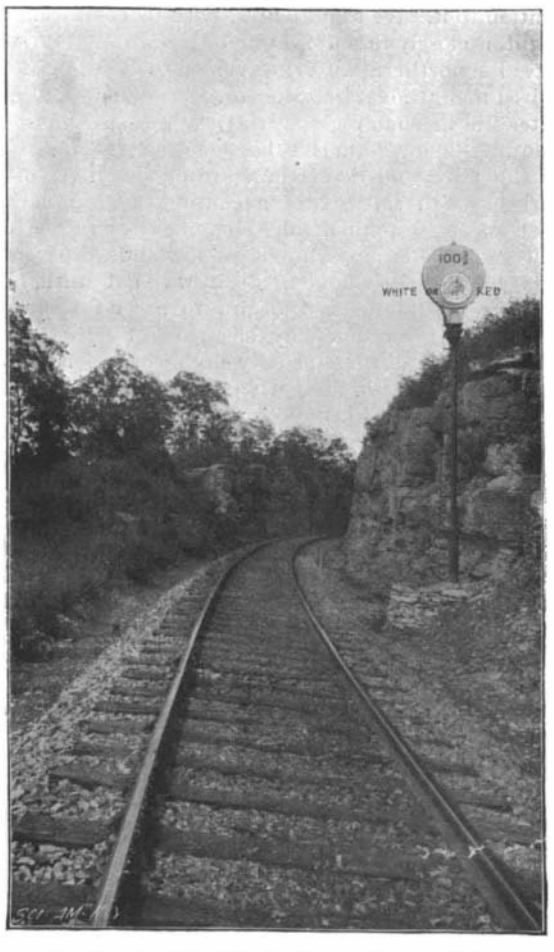

Fig. 3.—ELECTRIC DISK BLOCK SIGNAL.
Train may proceed.