

PITTSBURG, SUNDAY, NOVEMBER 16, 1890.

THE SIGNAL STAFF.

A Resort to Pioneer Railroad Methods at the Ohio Connecting Bridge.

SAFEST SYSTEM OF ALL.

Enormous Traffic Over This Monster Structure of Iron and Steel.

FACTS ABOUT SIGNAL HISTORY.

Early Day Semaphores and Various Improvements Upon Them.

AUTOMATIC SWITCHES AND THE LIKE

WRITTEN FOR THE DISPATCH.

STICK of wood, not more than an inch thick and one foot long, has for two or three weeks past protected the millions of dollars' worth of freight that has crossed over the new Ohio Connecting Railroad bridge at Woods' Run. One day last week—the 7th of November—52 freight trains crossed this new bridge, or 28 each way. This means a good many cars. In the first 24 hours after the great structure was opened for traffic nearly 1,000 cars passed over it.

The stick of wood is called a "signal-staff." For the time being it took the place of the telegraph. It was a resort to the primitive railroad customs of Great Britain.

A REMARKABLE RAILROAD.

So pressing was the demand for a bridge like this to supply the missing freight link around Pittsburgh that business upon it commenced at once without waiting for telegraph wires to be erected. The iron superstructure of the bridge is 4,000 feet long, which includes the approaches on either side of the river. In addition to these approaches there is 300 feet of trestling to connect the viaduct with the Panhandle freight yards at Nimick station on the south side of the Ohio, and on the Allegheny side there are several hundred feet more of trestling and graded road-bed necessary to carry the railroad down to the city. The bridge is made of the Fl. Wayne Railroad tracks.

IN OTHER WORDS, so high is the bridge approach above Preble avenue and the tracks of the Pittsburgh, Ft. Wayne and Chicago Railroad that it crosses the Allegheny some distance above Woods' Run station, but cannot connect with the tracks of the latter road until it descends a steep grade as far as the Nimick station. The road-bed has been built from solid rock along the hillside above Preble avenue.

THE STAFF OF SAFETY.

So that there is a single-track railroad two miles long, and carrying in proportion, it is said, a heavier freight traffic than any other single-track line in the United States, is running successfully without telegraph. There has been no accident as a result, and not a single pound of freight has been lost. The signal-staff is striped with red and white paint. It is inserted simply with these words: "Ohio Connecting Bridge."

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CONES AND LANTERNS.

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of electric currents, and the passage of a train induced a current which rang a bell at the receiving station. Another invention, by Mr. Coupan, signals the station keeper if the lights at the switches are not burning, or in proper position. M. Lartigue has invented a signal for notifying the switchman if the switch does not respond to the automatic levers. By various other inventions it is proposed to set a danger signal automatically when a rail breaks.

But of all certain, though slow methods, the "signal staff," now about to be discarded at the Ohio Connecting Bridge, is perhaps the safest. L. E. STOFFEL.

POSTAL TECHNICALITIES.

The Letter was Damp and Weighed More at Night Than in the Morning.

Not long ago I mailed several letters, with sufficient postage on, says a business man in the St. Louis Globe-Democrat. To my annoyance it was notified the next morning that the whole batch was held for postage. I went around to the postoffice and was informed that each envelope and its contents weighed just enough to turn the scale and that I must in consequence pay the extra postage. At my request one of the letters was weighed on the official scales and instead of being over it turned out to be a fraction under weight.

But my triumph was short-lived, for I was informed that the weight when mailed was what had to be charged on, and the letter weighed more the preceding night than then. The explanation as to the loss in weight was that the letter had been copied and mailed damp, subsequently giving off quite an appreciable weight by evaporation. Now I insist on letters being copied as early

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Semaphore was the name applied to the system of telegraphy in use before the application of the electric current. Semaphores were first established by the French in 1794 as the plan of conveying intelligence from the capital to the armies on the frontiers. In the following year General Murray introduced them in England, and by their means the Board of Admiralty were placed within a few minutes of Portsmouth.

THESE SEMAPHORES WERE TOWERS BUILT AT INTERVALS OF FROM FIVE TO TEN MILES ON COMMANDING SITES. ON THE TOP OF EACH TOWER WAS THE TELEGRAPHIC APPARATUS, WHICH AT FIRST COMPRISED SIX SHUTTERS ARRANGED IN TWO FRAMES, BY THE OPENING AND SHUTTING OF WHICH, IN VARIOUS COMBINATIONS, 63 DISTINCT SIGNALS WOULD BE FORMED. IN 1816 SIR HANS POPELAIN SUBSTITUTED A MAST WITH TWO ARMS, SIMILAR TO MANY OF THE PRESENT RAILWAY SIGNAL MASTS ABOUT PITTSBURGH.

THESE ARMS WERE WORKED FROM WITHIN THE TOWER BY WINES IN THE LOOKOUT ROOM, WHERE A POWERFUL TELESCOPE IN EITHER DIRECTION CONSTANTLY COMMANDS THE MESSAGE OF THE NEXT STATION. IF A LOG SET AT ANY POINT ON THE ROUTE, THE MESSAGE IS DELAYED; OTHERWISE, WHEN A SHARP LOOKOUT WAS KEPT, THE MESSAGE WAS VERY RAPIDLY TRANSMITTED. THE HOUR OF 10 O'CLOCK BY GREENWICH TIME WAS ALWAYS COMMUNICATED TO PORTSMOUTH. WHEN THE BALL SET AT GREENWICH THE SEMAPHORE WAS READY FOR THE MESSAGE, AND IT COMMONLY PASSED FROM LONDON TO PORTSMOUTH, AND THE ACKNOWLEDGMENT BACK TO LONDON WITHIN THREE-QUARTERS OF A MINUTE.

IN CASE OF WINDY WEATHER, WHEN THE FLAG WOULD NOT EXTEND ON SHIPBOARD, SEMAPHORES ARE EMPLOYED ON BOARD SOME SHIPS AS MEANS OF SIGNALING FROM ONE VESSEL TO ANOTHER. IN SUCH A CASE THE POST CONTAINING THE MESSAGE IS STRIPPED WITH RED AND WHITE PAPER.

CONES AND LANTERNS.

Before the electric telegraph many gen-

erations of a shield from right to left sufficed as sailing directions to the several lines. In modern times signaling between ships has become indispensable; but there is probably no department of practical science in which progress has been slower, and every so-called system of signals has been distinctly without any system whatever. But in railroad signals progress has been

more accelerated. Incomparably the most powerful medium for the purpose is the electric current. But before that was discovered the basis of the present system existed. It was used though for various purposes.

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