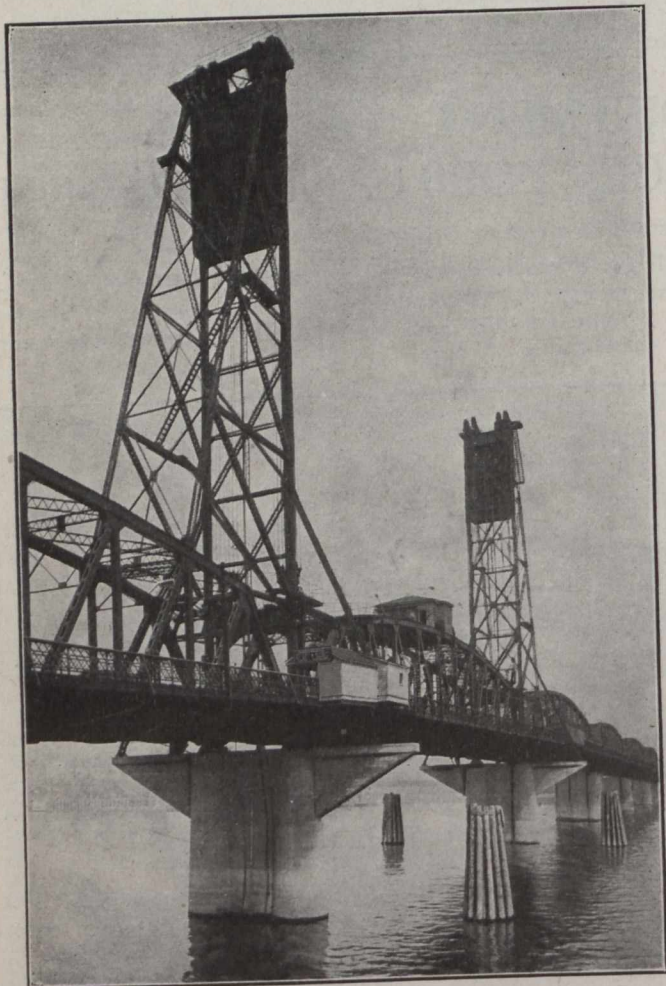


- 1st. There is no unequal expansion or contraction, due to the effect of the sun's rays, as would be the case with the draw span type pivoted in the centre.
- 2nd. The wind friction is practically negligible.
- 3rd. It offers the use of the entire channel.



View of bridge with draw in position.

The bridge was designed by Waddell & Harrington, consulting engineers, Kansas City, Mo., and was erected under the supervision of Mr. Leon Clarke, engineer in charge. The electrical equipment, including the motors and control equipment, was furnished by Westinghouse Electric and Manufacturing Company, East Pittsburg, Pa.

BRITISH INVENTION FOR UTILIZATION OF PEAT.

A new process for the utilization of peat, invented by F. H. Nixon, of London, consists of cutting the turf, after it has been air dried, into corrugated blocks, which are sprayed with petroleum so as to form firelighters. The blocks are subsequently given a coating of highly inflammable material which also strengthens them and prevents them from breaking easily. It is claimed that this process overcomes the obstacles associated hitherto with the combination of peat and petroleum which have been connected mainly with the employment of a briquetting machine that is not only difficult to work, but also expresses too much of the petroleum from the finished blocks. It is stated that the process enables the firelighters to be produced at a cost which has not been approached before. It is proposed also to employ the method for the production of fuel on a larger scale.

POWER PLANT TESTS.

A valuable contribution to the literature on power station operations is contained in the report of the committee on power tests presented December 5 at the annual meeting of the American Society of Mechanical Engineers. Aside from its importance in establishing standards, the report is a collection of all the information necessary for making a test upon any kind of power-producing machinery, and notwithstanding the vast extent of the field, the report is in most surprisingly condensed form.

The subject matter is divided into three parts, of which the first is a set of general instructions for testing operations. This includes a series of brief descriptions covering the apparatus and instruments recommended for different operations, together with instructions for their use. As an example of the completeness of the report, among the methods described for measuring steam flow is included a table showing the weights of steam discharged through a given orifice with various pressure drops. There are, however, no positive recommendations for smoke determination, although the Ringleman smoke charts and several other methods are briefly described.

Another part of this section is devoted to a statement of the standard units recommended as a basis upon which to express capacities and efficiencies of power generating apparatus. Although the committee recognizes the recently proposed "myriawatt" as a unit for steam boilers by mentioning it in a footnote, in the body of the report the measurement of the boiler capacity is expressed only in terms of the weight of water evaporated from and at 212 deg. per hour. The expression "boiler horse-power" is sanctioned for stationary boilers, but also only by mention in a footnote. Steam turbines delivering mechanical power have been distinguished from turbo-generators in the list of standards by the use of the brake horse-power at the shaft as the unit of capacity for the former and of the kilowatt-hour for the latter. Engine-driven generators are included with turbo-generators, and in both cases the exciter output is excluded from that of the machine.

An interesting recommendation in this part of the report is that covering reserve capacity for power plant apparatus, or, in other words, the excess capacity which it should have over and above the commercial or manufacturer's rating. These reserve capacities are recommended to be 33 per cent. for boilers using standard fuel and 25 per cent. for steam engines and turbines with normal boiler pressure, together with the ability to deliver rated capacity at a boiler pressure 15 per cent. below normal. For pumping engines a reserve power of 20 per cent. is advocated, and the same percentage applies to gas producers and gas and oil engines. Water-wheels, however, are required only to have a reserve of 10 per cent. at the specified head of water.

The second section of the report includes standard codes of rules for different classes of apparatus, each of which is elaborated sufficiently with instructions to enable a test to be carried out in all necessary detail. The individual codes are, of course, revisions of the older standard codes, which are in this report brought up to date and, in consequence, differ but little from the previous form.

The report concludes with a series of appendices giving more elaborate descriptions of instruments and methods that are covered by the first section on general instructions. Among these are several devoted to the analysis of heat losses of the reciprocating steam engine, and a reference is made to the British standard of engine economy, the use of which is, however, made optional in the complete standard code and omitted altogether in the short form.