

As the greater part of the expense incurred in making the tests and working up the data obtained was borne by the Engineering Experiment Station of the University, a few words regarding its organization and purpose may not be out of place. The Engineering Experiment Station was established some six years ago, and was modelled along somewhat the same lines as our own Agricultural Experiment Stations. Its object was the promotion of research work, the results of which would furnish information and data which would be beneficial to the industries of the State and aid in the development of its natural resources. In general the work is carried on through the co-operation of the various departments of the Engineering College with the Experiment Station, most of the instructors devoting part of their time to research work along the lines approved by the Experiment Station, and the special apparatus being supplied by the Experiment Station. In this way the experiments are carried on at a minimum expense to the Experiment Station, and the Engineering College obtains considerable equipment for its various laboratories. A great deal of work has already been done on the perfect combustion of Illinois coal, testing of reinforced concrete columns and beams, life-tests on the many forms of incandescent lamps under different operating conditions, and the train resistance of steam trains and electric cars. The results of these experiments are published from time to time in the form of bulletins, which may be obtained upon application to the director.

APPARATUS.

The car used in making the tests to determine train resistance was a standard interurban car and formed part of the laboratory equipment of the Railway Engineering Department. It was built by the Jewett Car Company, and the principal dimensions are as follows:

Length over all.	45 feet
Width over all.	8 feet 4 inches
Distance between truck centres.	22 feet 4 inches
Height from under side of sill to top of roof.	9 feet 6 inches

The car is divided into two compartments, the smaller of which contains the recording instruments as well as part of the motor control apparatus. In the larger compartment are a motor generator set for supplying low voltage current for bond testing, a water rheostat for regulating the voltage on the motors, and several other pieces of apparatus for work of a special nature.