The Construction of Concrete Highway Bridges.—Charles Talbot, County Engineer for County of Middlesex, London, Ont.

Concrete Pavements.—James Pearson, President, The Constructing and Paving Company, Toronto, Ont.

Thursday, March 31st, 8 o'Clock p.m.

Annual Meeting of Members.—Election of Officers and Reception of Report of Executive.

Thursday, March 31st, 10.30 O'Clock a.m.

Concrete in Europe.—Richard L. Humphrey, President, National Association of Cement Users, and Director, United States Structural Materials Testing Laboratories, Pittsburg, Pa.

Some Experiments with Cement Tile.—W. H. Day, Professor of Physics, Ontario Agricultural College, Guelph, Ont.

The Uses of Concrete on the Farm.—Philip L. Wormeley, Testing Engineer, Office of Public Roads, United States Department of Agriculture, Washington, D.C.

The Hardening of Portland Cement. — A. G. Larson, Chemist, The Grey & Bruce Portland Cement Company, Owen Sound, Ont.

Thursday, March 31st, 10.30 o'Clock a.m.

The Annual Dinner of the Association.—The Tecumseh Hotel.

Friday, April 1st, 2.30 o'Clock p.m.

Government Testing Laboratories.—Richard L. Humphrey, President, National Association of Cement Users, and Director United States Structural Materials Testing Laboratories, Pittsburg, Pa.

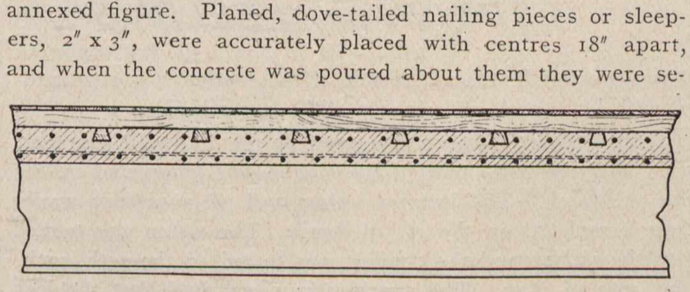
The Commercial Aspect of Reinforced Concrete in Canada.—Gustave Kahn, General Sales Manager, Trussed Concrete Steel Company of Canada, Toronto, Ont.

What the Concrete Block Means to Canada.—J. Augustine Smith, Secretary and Sales Manager, Ideal Concrete Machinery Company, South Bend, Indiana, U.S.A.

Concrete from the Contractor's Standpoint.—D. C. Raymond, Vice-President, Bishop Construction Company, Montreal and Toronto.

LOCKING A WOOD TOP TO A CONCRETE FLOOR.

The new yarn mill of the Jules Desurmont Worsted Company, at Woonsocket, R.I., presents an interesting type of machine carrying floor of concrete with wood top, designed by F. W. Dean, mill engineer and architect of Boston, who planned the whole building. The necessity of providing a wood top of such soft that it would afford a secure attachment for machinery, dictated the special scheme shown in the annexed figure. Planed, dove-tailed nailing pieces or sleepers, 2" x 3", were accurately placed with centres 18" apart, and when the concrete was poured about them they were se-



Wood Top Reinforced Concrete Floor Designed by
F W Dean Mill Engineer and Architect
Boston Mass

curely locked into the mass of the floor-slab. It will be seen by reference to the figure that the sleepers were laid parallel to the upper course of reinforcing bars in the concrete, and that there were three bars to each space between sleepers. The bases of the latter were a little below the level of the upper course of bars. Machines can be easily and securely attached to this floor by means of lag screws. The construction also contributes to the personal comfort of the operatives, and for a textile mill has certain manifest advantages over a granolithic surface.

REINFORCED CONCRETE ON IRRIGATION SYSTEM*

By B. A. Etcheverry.

This siphon has been very recently constructed on the same irrigation system as the Reinforced Concrete Siphon of Sosa and Ribabona in Spain.

The Albelda Siphon is located in the Province of Tuena, Spain, on the irrigation system of Aragon and Catalogne, seventeen miles downstream from the Sosa Siphon. Although this siphon of Albelda is a work of less magnitude than the Sosa Siphon, it is technically much more important and interesting because of the greater pressure, larger diameter, and the absence of a steel tube to insure water tightness.

Th Sosa Siphon is 3,340 feet long, consisting of twin pipes of reinforced concrete 12.47 feet in diameter, and subject to a maximum pressure head of 85 feet. The Albelda Siphon is 2,363 feet long and consists of a single pipe of reinforced concrete 13.12 feet in diameter and subject to a maximum pressure head of 97 feet.

The most important difference between the two is in the design of the reinforcement. The twin pipes of the Sosa Siphon consisted of 158 sections, 21.32 feet long, joined by expansion joints. The reinforced concrete shell was made of a steel tube about ⅛-in. thick, covered with an outside concrete layer 5.9 inches thick, reinforced with T bars, and an inside coat of reinforced mortar .87 inches thick. In the Albelda Siphon there are no expansion joints and no steel tube to insure impermeability.

The construction of this siphon was in charge of Mr. Mariano Luina, who was also engineer in charge of construction of the Sosa Siphon. Mr. Luina, with whom the writer has corresponded, has very kindly furnished the information embodied in this article.

General Description.

The conduit is 2,380 feet long between the inlet and outlet chambers and subject to a maximum pressure head of 97 feet. To empty the siphon, a channel carries the water, from the blow-off at the lowest point in the siphon, for a distance of 1,000 feet downstream; 410 feet of this channel being covered.

The conduit proper is a single reinforced concrete pipe 7.87 inches thick, supported up to its horizontal diameter on a concrete cradle. As it was expected that there would be more or less leakage through the pipe, the cradle was given a peculiar shape, designed to collect the seepage water, to prevent the softening and washing away of the foundation.

Description of Cradle.

This cradle is made of porous concrete and comprises a system of drains intended to collect and carry away all water percolating through the pipe and through the porous concrete of the cradle.

On the right side of the cradle is the main collecting

Plate 1—Reinforcement in place.

gallery; in the upper part of this gallery drain holes 3 feet 3 inches deep, 16 inches long and 6 inches wide, spaced 4 feet apart, connect the gallery with a longitudinal, semi-

*From the Journal of Technology, California.