

### LARGE SHEAR-LEGS BUILT AT TORONTO

**S**HEAR-LEGS 80 ft. high, 35 ft. wide at the base, 10 ft. wide at the top, and with carrying capacity of 100 tons distributed equally between two blocks, were recently erected at the yards of the Dominion Shipbuilding Co., Toronto.

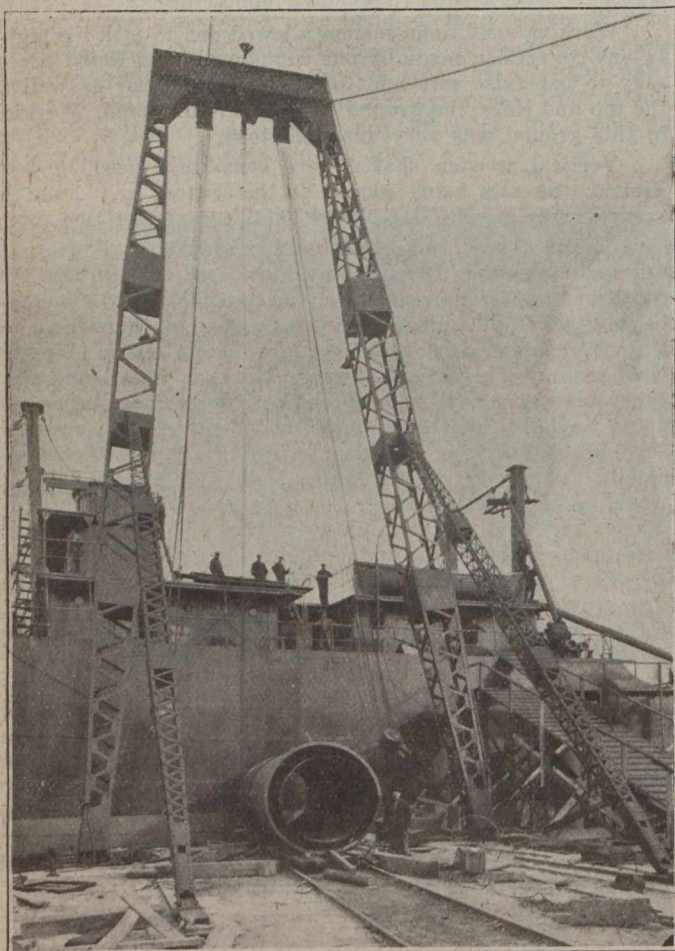
The two blocks allow both symmetrically and eccentrically loaded machinery to be carried horizontally with equal facility. The top girder also carries an auxiliary fall, of 10 tons' capacity, to take lighter weights.

The main legs are hinged at the bottom and allow the shear legs to tilt forward to a maximum, when loaded to capacity, of 50 ft. overhang from the base. When carrying 50% of the full load, the overhang may be increased to 60 ft. The 50-ft. overhang is sufficient to allow machinery to be placed in the centre of a boat or on the side away from the shear-legs.

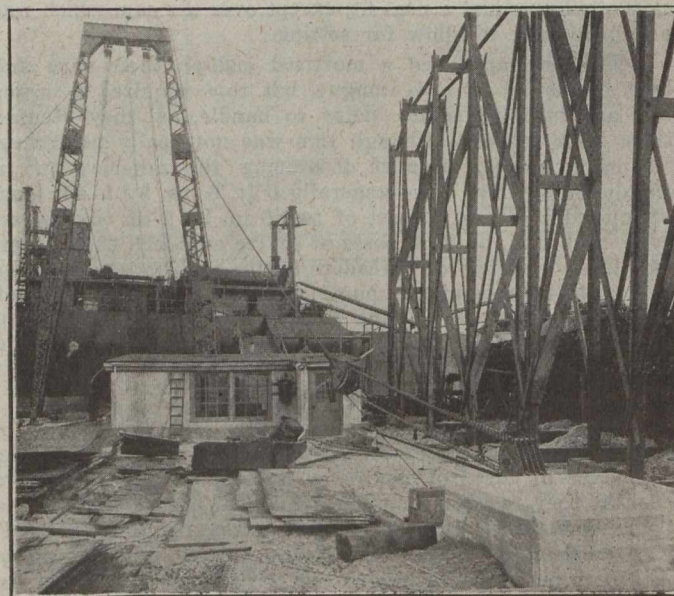
In order to obtain strength without excessive cost, latticed steel construction was decided upon for both main

multiple. There is a special single-drum electric hoist, with a 60 h.p. motor, for operating the 10-ton block with speeds up to 50 ft. per min. These hoists have automatic brakes and band brakes on the drums. Cut steel gears were used throughout, with the exception of the main gears on the drums, which are of cast-iron.

The shear-legs were fabricated by W. D. Beath & Sons, Ltd., and McGregor & McIntyre, Ltd., both of Toronto and were supplied to the Dominion Shipbuilding Co. through



SHEAR-LEGS BUILT FOR DOMINION SHIPBUILDING CO.



VIEW SHOWING HOIST HOUSE AND LUFFING TACKLE

F. H. Hopkins & Co. The design was suggested by the engineering staff of the Dominion Shipbuilding Co. and was detailed and elaborated by C. V. Osborn, Toronto manager of F. H. Hopkins & Co., and by Harry Brass, engineer for W. D. Beath & Sons, Ltd.

At the annual meeting of the Border Cities branch of the Engineering Institute of Canada, the following officers were elected: Chairman, H. B. R. Craig; secretary-treasurer, J. E. Porter; executive, J. J. Newman, H. Thorne and Ed. Brain.

J. M. Leamy, provincial electrical engineer of Manitoba, states that construction on the first lignite briquetting plant in Western Canada will commence early in the spring. The plant will be located six miles southeast of Bienfait, Sask., on a spur of the C.P.R. All the buildings will be of steel construction.

With the object of promoting a highway from Fort William to Winnipeg, a new organization, to be known as the Central Canada Colonization and Highway Association, has been formed. Out of a total mileage of 423 miles, 60% will have to be brought up to a "good roads" standard and connected to sections already constructed. The suggested road would open about 50,000,000 acres of land that are at present undeveloped.

In Alberta and Saskatchewan, about 54,000,000 acres of land require irrigation, says the superintendent of the Dominion reclamation service. A further area of 19,000,000 acres, lying between the North and South Saskatchewan and the Battle and Deer rivers, is declared by engineers to be irrigable. At the present time about 1,500,000 acres are irrigated, and the Dominion government has promised immediate surveys of another 500,000 acres which will be irrigated at an estimated cost of \$20,000,000. The Canadian Pacific railway has developed in Southern Alberta the largest individual project on the American continent, with an irrigable area of 600,000 acres, and canals and ditches having a total length of over 3,000 miles.

and back legs. The top girder is of steel plate. The main legs have a maximum dimension of 4 ft. square at the middle, tapering to 18 ins. square at the ends. All the legs are strengthened by diaphragms.

The shoes and hinges are of cast steel and are embedded in concrete. The back guys are 2-in. plough steel cables, which are each attached to a quadruple luffing tackle which is anchored to a 4-in. steel pin buried 10 feet deep in concrete.

The steel hoisting blocks are 15 ins. in diameter. Each of the four 50-ton blocks have six sheaves, carrying  $\frac{3}{4}$ -in. plough steel cable. These cables are connected to the hoisting machinery by way of underground ducts.

The hoisting speed of the 50-ton blocks is 6 ft. per min., and they are operated by a four-drum electric hoist, equipped with a 60-h.p. motor. This hoist also operates the luffing tackle. Two drums of the hoist are in series and two in