

steels he reported, except for a high-manganese steel of the Hadfield type. His chrome-vanadium and nickel-chrome steel gave greater wear with greater hardness than simple carbon steel of about 0.70 per cent. carbon and 0.60 per cent. manganese.

The tests which I have made confirm the conclusions of both Robin and Nusbaumer, and also those of actual service experience, that manganese, nickel, chromium, and vanadium have a marked effect on the wearing qualities of steels. Manganese apparently has a greater effect than either nickel or chromium. Vanadium, however, evidently has a much greater effect than either of these three elements, as it only requires a very small percentage to produce a marked increase in resistance to wear. This is apparent in steels E-1 and F-1; and C-1 and D-1, each of which pair is practically alike, except for vanadium. These tests are only a small proportion of those planned, and it is the intention to cover not only a considerable range in composition and heat treatment, but also to study the effect of rollers of different composition and hardness, on the rate of wear of the various steels.

STRUCTURAL MATERIALS AND CLAY PRODUCTS

The following is a statistical table of structural materials and clay products as contained in the Economic Minerals and Associated Industries, by J. McLeish, Chief of the Division of Mineral Resources and Statistics, Canada:—

Product.	Quantity.	Value.
Cement, Portland	Bls. 7,132,732	\$ 9,106,556
Clay products: (\$10,575,709)		
Brick, common	No. 769,191,532	7,010,375
“ pressed	“ 125,180,422	1,609,854
“ paving	“ 4,579,500	85,989
“ moulded and ornamental	“ 371,356	8,595
Fireclay and fireclay products.		125,585
Fireproofing and architectural terra-cotta		448,853
Pottery		43,955
Sewerpipe		884,641
Tile, drain		357,862
Kaolin	Tons. 20	160
Lime	Bus. 8,475,839	1,844,849
Sand-lime brick	No. 96,448,402	1,020,386
Sand and gravel (partial record) ..		1,512,099
Slate	Sq. 1,894	8,939
Stone: (\$4,726,171).		
Granite		1,373,119
Limestone		2,762,936
Marble		260,764
Sandstone		329,352
Total		\$28,794,869
Grand total		\$135,048,296

Work was begun Nov. 5th on the one thousand foot pier in the Hudson River at Forth-sixth Street, that marked the beginning of harbor improvement which it is claimed by its initiators will place New York on a par in accommodations for shipping with the great harbors of the world. Other piers of equal length are planned, and eventually the entire Hudson River waterfront, city officials predicted to-day, would be re-built for the accommodation of the great ocean liners of the future.

COAST TO COAST.

Hamilton, Ont.—About one mile of Hydro street-lighting has recently been turned on in Hamilton on Barton Street.

Vancouver, B.C.—Preliminary work on the overhead bridge to be erected by the C.P.R. to produce Granville Street to the waterfront is well advanced.

Regina, Sask.—The report of Superintendent Venzke, of the civic Parks Department shows that 8½ miles of new boulevards were graded last year in Regina.

Moose Jaw, Sask.—Another street car service has been formally opened in Moose Jaw, e.g., the car line built to Boulevard Heights, about two miles from the centre of the city.

Ottawa, Ont.—It is stated that the surplus over operating expenses on the I.C.R. will exceed this year by a considerable amount the million dollar mark. Last year's surplus did not attain the million mark; but since rates have been raised, and traffic has increased.

Owen Sound, Ont.—Owing to an extraordinary expenditure upon bridges during the past year, the County Treasurer, Mr. S. J. Parker, has stated to the Council that, in his opinion, the treasury will show a deficit of about \$10,000 at the end of the year.

Regina, Sask.—In the recent report made by Superintendent McKay, of the Waterworks Department, it is shown that 101,281 feet of water pipe have been laid under contract during the last ten months, and 2,941 lineal feet of pipe by day labor, making a total length of pipe laid in the city of 104,222 feet, or approximately 20 miles.

Ottawa, Ont.—The last connecting rail has been laid between Quebec Bridge and Yellowhead Pass, no particular ceremony being connected with the event. Though the laying of steel is by no means the final act in completing a line, authoritative information has been given to the effect that when traffic at Winnipeg is offered, the railway will be able to handle it.

Regina, Sask.—The Waterworks Department has shown very economical management during the past year, \$17,000 less than the estimated amount of \$59,670 having been expended. The estimated capital expenditure of \$546,178.70 was also in excess of the actual expenditure of \$496,082.06. The operation of the waterworks system showed a profit of \$57,327.33, which gives a net surplus of \$4,570.69 after debenture charges are deducted.

St. Catharines, Ont.—During the year thus far, building permits of approximately three-quarters of a million dollars have been granted in St. Catharines. A like amount has been expended on local improvements. The expenditure on new constructive work during 1913 will thus be in excess of \$1,500,000 within this city; and on the new Welland Ship Canal construction in close proximity to the city, contracts amounting to \$34,000,000 have already been let.

Le Pas, Man.—The first trial of the receiving instruments at the wireless station signals has been made, and Operator E. Richards reports signals obtained from Sayville, N.Y.; Arlington, near Washington, D.C.; Cape Cod, Mass.; Glace Bay, N.S.; and also from the stations on the Pacific Coast of the United States; so that this station can hear what is transpiring at both sides of our continent. The signals from all stations on the lake shores can be distinctly heard, and also from most of the boats on the lake.

Fort William, Ont.—The excavating of a tunnel under the main building of the Canadian Car and Foundry Company in connection with the construction of Stanley Avenue sewer has been commenced. The tunnel must be driven approximately 160 feet under the building, and a shaft will have