

trusses spanning the whole width of the building, leaving an unobstructed floor space. The floor inside of the building will be paved with creosoted blocks on a concrete base. The concrete slabs on the outside platform are to be covered with an asphalt wearing surface. The cost of the completed dock and buildings will be approximately \$1.50 per sq. ft.

**British Columbian Ports.**—The British Columbian ports, particularly Vancouver, are wholly private-ownership ports, and the water-front development is almost exclusively in the hands of the railroads. It is a striking contrast to the great Canadian port of Montreal, which is one of the most progressive public-ownership ports in the world. Vancouver is passing through the boom experience of most new localities in the West, and is willing to make almost any concession to private interests for what promises most for the immediate present. Not until after the present period of expansion has passed, and public thought, now absorbed in speculation activities, has time to take stock of the situation, is it likely that the problems of port control will be given very serious consideration.

The British Columbian ports being still almost exclusively under railroad control and ownership, as far as port facilities are concerned, the rates are privately controlled, and the charges are absorbed largely by the railroads.

**Vancouver, B.C.**—As already stated, no comprehensive scheme of development of this port has been adopted. Special studies have been and are being made of different parts of the harbor, and there are rumors of gigantic development plans by private interests. The Great Northern Railway has a fine new pier under construction and other private improvements are in progress; but there is as yet no general plan, no distinctive scheme of port administration, and no provision of public funds.

The conformation of the harbor and the handicap of tidal fluctuation and currents have suggested an improvement which, though costly, would seem to possess great merit. That is to place a lock and dam across the throat of the harbor at the second Narrows, thus holding the upper part of the Inlet at high tide and making it a fixed-level fresh-water harbor. This would restrict the tidal area to one-third its present extent and would reduce tidal currents in the lower harbor so much as greatly to improve conditions there. It would seem on the face of it that this would be an improvement of great importance to the future of the port.

**New Westminster.**—The fresh-water port of New Westminster is taking active steps in harbor development. It has recently expended \$15,000 on the study of a plan and its presentation and is about to put into effect the one prepared for it by A. O. Powell, M. Am. Soc. C.E. It comprises wide, marginal streets, routes for railways, the extension of the city quay, and a long waterway in a slough parallel to the river, from which the river is to be excluded at the upper end. A succession of parallel slips, oblique to the axis of the waterway, will develop a berthing space of  $7\frac{1}{2}$  miles.

**Victoria.**—Even that sometime staid and delightful provincial town of Victoria, more distinctly British than any other port of the Pacific, has become infected with the Panama bacillus and is cogitating what it may do to be prepared for the changes which it has been told are about to ensue. No definite plans have as yet been evolved, but among the tentative suggestions are an outer harbor to be protected by a breakwater in front of the present entrance to the inner harbor; and also a development in Oak Bay on the opposite side of town fronting to the eastward.

**Prince Rupert.**—Studies for the port of Prince Rupert are now in progress under the direction of Mr. Bogue, but are not yet far enough along for incorporation in this paper. A suggestion that has been made of possible future development in this port, however, may be properly mentioned.

Prince Rupert City is on an elliptically shaped island about 6 miles long north to south by 4 miles east and west. The "lakes" which separate the island from the mainland in the rear have an area north of the railroad crossing of about 40 sq. miles. It is not unlikely that the north and south passages will be dammed off and provided with locks, thus converting the lakes into a tideless, fresh-water harbor just at the level of high-tide. While this development is still some distance off, it has such great advantages, in view of the extreme tidal fluctuation in Prince Rupert harbor, that it will probably be realized eventually.

## BRIQUETTING BITUMINOUS COAL

In the modern methods of mining bituminous coal large quantities of slack are produced; and while in some sections of the country there is a market for the slack, for use in industrial plants provided with mechanical stokers, in other sections there is little or no market for it, states "Conservation." For this reason a number of the operators in Nova Scotia are considering the installation of briquetting plants for the purpose of converting this slack into a higher grade and more suitable fuel.

On account of the friable nature of the coal mined at the MacKay Mine much slack is made during mining operations. As there is little or no market for this slack coal the management installed a briquetting plant with a capacity of 10 tons of briquettes per hour.

This is the first plant to be installed in Canada for the purpose of briquetting bituminous coal. Unfortunately, it was damaged by fire during the month of July.

The same company are also installing two similar units at the Colonial Mine, which are expected to be in operation this year.

The briquetting plants are of Belgian manufacture and are of the roll press type.

The following is a short description of the MacKay briquetting plant:

The coal from the mine is screened over a  $\frac{3}{4}$  inch screen; the lump coal (over  $\frac{3}{4}$  inches) is sent to the market, and the fine coal is carried by a disc elevator to a 75 ton bin. The coal is discharged from the bin by chute into a 10 ton concrete pocket situated at the briquetting plant. The coal is then elevated by a bucket elevator to a 3 ton cone hopper. The coal is fed from the hopper to the disintegrator at any desired rate of speed by means of a revolving table and plough-shaped cutter situated at the bottom of the hopper.

The pitch after being crushed is fed into the disintegrator by means of a similar adjustable feed. From the disintegrator the coal and pitch is elevated to the mixer where superheated steam is added. The heated coal is then conveyed to the roll press by means of a spiral conveyer. The briquettes are usually soft as they come from the rolls but upon becoming slightly cool they become hard and withstand handling very well.

The pitch used as a binder for the briquettes varies from 6 to 8 per cent. of the weight of the coal. This pitch is one of the by-products obtained from the tar recovered at the Dominion Iron and Steel Company's oven plants.

The briquettes are ovoid in shape and have been used with considerable success upon the Intercolonial Railway and for domestic purposes.

The Inverness Railway and Coal Company are also installing a briquetting plant at Inverness, C.B., for the purpose of briquetting the slack made during mining operations.

Briquettes when properly made with a suitable binder possess the several advantages over raw fuel.