

Department of Public Works.

Mr. Boulton takes advantage of the difference between the temperature of the boiling point of creosote and water to evaporate the moisture of the wood by raising the oil to about 225 degrees, after it is introduced in the cylinder. The sap and moisture are withdrawn in the form of vapour through the dome of the cylinder by means of a vacuum condensed, and actually measured in a receiver. The oil takes naturally, the place of the evaporated sap and to make the impregnation sure the force pumps are applied.

Experiments made to ascertain the comparative quantities of moisture extracted and of creosote injected by the Hayford process and the Boulton process have been made. Six sleepers of the same species of timber and of precisely similar dimensions were treated by each process, the whole having been thoroughly saturated with water. The cubic contents of the six sleepers treated by Boulton's process was 18.57 cubic feet, the average loss of water was 6.45 lbs per cubic foot or 120 lbs. in all, and their gain of creosote 14.8 lbs. per cubic foot or 275 lbs. in all.

The six sleepers treated by the Hayford process showed an absorption of 116 lbs. of creosote in all or 6.29 per cubic feet, while the separate absorption was very irregular, namely 9.04 lbs., 4.52 lbs., 2.9 lbs., 6.13 lbs., 9.36 lbs. and 5.49 lbs. per cubic foot respectively. The conclusion arrived at is, therefore, that the Hayford process is not satisfactory, and that while the creosoting by that process does very materially improve the durability of the timber, it does not make it absolutely impregnable against decay, or against the sea-worm. The timber required for the Bayfield wharf was treated at the works of Messrs Eppinger and Russell in Brooklyn, N. Y. The process in vogue is apparently the same as that adopted at the Lehigh Valley Creosoting Works, and the results obtained very similar to those at Perth Amboy. I may add, however, that, Mr. Shewen, who inspected the works of Messrs. Eppinger and Russell, reports that he was not able to conduct inspection satisfactorily as part of the plant is not open to inspection, and he further states that after the opportunity that had been given him of inquiring into the mode of creosoting at Perth Amboy and in Long Island, he has reached the conclusion that the complex nature of the operation of creosoting is so eminently delicate and difficult, that good treatment can only be assured by the use of works outside the field of commercial competition altogether, where no temptation can arise to produce indifferent performance either from deliberation or neglect.

The most satisfactory results would be obtained, if the government erected creosoting works for the purpose of treating with the best oil and by the most approved process, all the timber required for the provinces on the seaboard lying within the region of the teredo and limnoria.

By the establishment of government creosoting works, not only will a considerable saving be effected in the first cost of creosoted timber, but a standard of efficiency will be reached much above that found in private works conducted primarily upon principles of commercial competition, and I may add, that it would permit the use of native timber, as from experiments made last summer it has been proven that both Canadian pine and hemlock can be successfully treated.

VIII.—APPLICATIONS TO CONSTRUCT WORKS.

Applications have been made by various corporations and private individuals for permission to construct works in or over navigable or un-navigable waters and the following is a statement of those which have been dealt with by me during the year:—
Victoria Harbour.—W. M. Clayton, erect and maintain boat-house and landing.
Telegraph Bay; Victoria Harbour, B. C.—Rithet & Co., construction of wharf.
Victoria, B. C.—Jacob Sehl, construction of wharf.

do L. B. & G. B. Joseph, construction of wharf.

do V. Jacobson do do

do Phœnix Brewing Co. do do

Rivière des Prairies.—Dominion Leather Board Co., construction of dam.

Cowichan River.—Construction of retaining booms at mouth of river.

River Assiniboine.—Curtis & Webster, to dam and bridge river at Portage la Prairie.