

sufficient number of caps, the fixing of which would not occupy more than the attention of one man. The pumps at a cost of \$30 or \$40, would be worked by the motive power of the mill. The utility of this simple invention cannot be over-rated, when we consider that Canada produced in 1853 the enormous quantity of 218,480,000 feet of lumber, and 38,740,000 cubic feet of squared timber, which would be worth, as declared by the Government accounts, £2,355,255. This is entirely for export, and we may safely estimate that the quantity required for home consumption, for railroads, bridges, shipping, houses, &c., must considerably exceed double this quantity. Any 'hod which can be adopted to prevent the ravages of dry rot and decomposition, must prove an absolute saving to the country to a very considerable amount. These processes which we have briefly attempted to describe, seem to embody the requirements of simplicity and easiness of application; and, if they are proved by practical experience to accomplish all that their patentee promises, could be introduced, at a very slight expense, in the largest as well as the smallest lumber mills. With such a simple method, our houses and bridges might be made capable of lasting an indefinite period.

It is worthy of notice, in reference to these processes, that they serve in some degree to illustrate the small amount of pressure which nature seems to employ in the growth of trees. We here find, that with a head of twenty-five feet, water is driven, in about thirty seconds through a tree 16 feet long; so that in the natural process of the sap rising, the pressure must be scarcely perceptible, and probably, is nothing more than capillary attraction. When looking at the end of a beach or oak log, with its extremely minute pores, it would scarcely be believed that so slight a pressure could force the water through its minute channels, yet such appears to be the case, and it is owing to this wonderful provision of nature, that by the processes detailed above, these same pores may be employed as means of drying and seasoning the wood; or conveying through them, to the innermost heart of the tree, chemical substances, to render it incombustible, or completely to impregnate it with any coloring matter we may desire.

Scarcely anything strikes the observant traveller fresh from Europe, on his first arrival in Canada, more than the extent to which wood is used; especially in great public works, such as Railway viaducts, and bridges of all kinds, in piers and esplanades, and in many parts of the most substantial buildings, for which stone or iron would alone be considered suitable in Europe. The cause of this is obvious, from the great abundance, slight cost, and facility in working, of the wood; and if to these important qualities we can only add something of the permanency of stone and iron, by such economical processes as those referred to above; and further render it incombustible, as has been effectually, though not yet economically done, by Kyan's methods, the value of the results to Canada would be almost incalculable. One, if not both of these most desirable objects, Mr. Tomkins, of Hamilton, believes he has attained; and we can only hope his processes will be fairly and fully tested; and that if they prove successful he may meet with the reward he will be so fully entitled to.