

ed by Mr. Kyan, was the injection of the same solution by direct pressure ; but, in both cases, the great expense prevented the general adoption of plans otherwise perfectly successful.

The consideration of these methods have induced an engineer of Hamilton, Mr. Wm. G. Tomkins, to apply the same ideas more directly and more simply, and we propose to give a short description of a patent obtained by him, from his Excellency the Governor General, dated May 16, 1856, which in its heading enumerates the benefits to be derived as follows : "This Patent consists in the simple manner of inserting in the body of a tree different chemical compounds, by a hydrostatic process, or, by a hydrostatic apparatus, and in the use of a pneumatic apparatus for exhausting and drawing off the sap from a newly felled tree, or by vessels of compressed air, forcing out the sap, thereby seasoning the wood and rendering it more sound and marketable."

The manner in which this is effected, is of the utmost simplicity, and can be performed in a few hours at a nominal cost. A tree, newly felled and full of sap, or one in which the sap has been retained, by its lying immersed in water, is laid on the ground and the end cut off by a cross-cut saw, at right angles to the axis of the tree. On to this end is fixed a cap of metal, held firmly by small bolts, which pass through a ring kept in its place by screws or wedges. This hollow cap forms an air-tight chamber, and into the back a pipe is screwed, to connect with a vertical pipe of a quarter inch bore, and a cistern at twenty-five or thirty feet above, for the hydrostatic apparatus, or with a receiver and an air-pump for the pneumatic apparatus. By the former process it will be found that, with a head of 25 feet, and pure water in the cistern, a tree of 16 feet in length is permeated by the water in a few seconds, and a stream of sap will run continuously from the other end. By using the pneumatic apparatus, a pressure of 14lbs. to the square inch, equal to a head of water of 28 or 30 feet, will be acting by the weight of the atmosphere, drawing, or so to speak, sucking out the sap which falls into the receiver prepared for it, rendering the tree in a few hours perfectly free from sap ; and this without any danger of warping or splitting which constantly takes place in the slower process of seasoning. The quantity of sap which is extracted by this mode equals from 20 to 40 per cent. of the weight of the tree, and hence the saving in carriage, by rail, by ship, or by canal, is of the utmost importance, besides having lumber worth ten per cent. more in the market, as its elements of decay have been withdrawn. After having abstracted the sap, the end of the tree may be immersed in a preservative liquid of any kind, such as corrosive sublimate, sulphate of copper, alum solution, or solution of sulphuric acid, to render the entire body of the tree free from dry-rot and incombustible ; or if desirable, a coloring matter may be applied to dye the whole body of the tree, of any hue which may be wanted. In like manner, also, the patentee has impregnated a tree by the hydrostatic process, in a few hours, with the same substance. A tree twelve feet long became brilliantly red throughout in the course of three hours, with two penny worth of logwood : and all other dye stuffs may be used in the same manner. He proposes in his patent, likewise, to use heated air in the pores of the tree, either by the pneumatic process drawing it through the tree, or by compressing the heated air to 10 or 12 pounds to the inch ; and then, as it were, blowing out the sap. Either mode may be adopted, and the expense is trifling. In our large Canadian saw mills, where 250 or 300 logs are passed under the saw in the day, all might be prepared the previous day with one or two pumps, and a