

revolve, causing them to bite more firmly upon the road. The steering is done by steam. The machine acts as its own sprinkler, and besides this, steam may be introduced into the drums, to moisten the surface of the road and enable them to take a better hold. As the drums are narrower than the full width of the road, the sleds are provided with grooves, through which steam may be passed to moisten the ruts where the runners go. By this means the machine makes its own road, firm and solid, and better than if separate sprinklers were used.

Everything is of the most substantial construction. The material used is soft steel so that the risk of breakage is reduced to a minimum. Although two drums are shown in the cut, that number is only required for heavy grades, and the machine now being built at the Bertram works has only one, with a horizontal engine of the compound type. But these are only differences of detail and do not affect the principle. When in use the machine is closed in to protect the men and machinery.

The logger is 30 feet long by 10 feet wide over all, the sleds being 6 feet 6 inches, and weighs 13 tons. Eight and a half tons of this rests on the sleds, the remainder on the drums. The diameter of the drums in the cut is supposed to be four feet, in the machine being built with one only, it is increased to six feet. The engine is 75 horse power and is geared to run from 8 to 10 miles an hour. It has a starting capacity of 600 horse power and its hauling load is 40,000 feet a trip. It is impossible to slip or spin the drum on the road, because the harder the pull the stronger the bite.

It will be seen at a glance how great is the advantage of such a machine. Logs cut and skidded in the fall must be banked the following winter. Failure to get them out means serious loss by discolouration, worms, locking up of capital and failure to fill contracts, besides risk from fire. A lumberman with 20,000 feet of logs left over in the woods has their value, \$150,000 or more, absolutely dead capital for a year. How important it is,

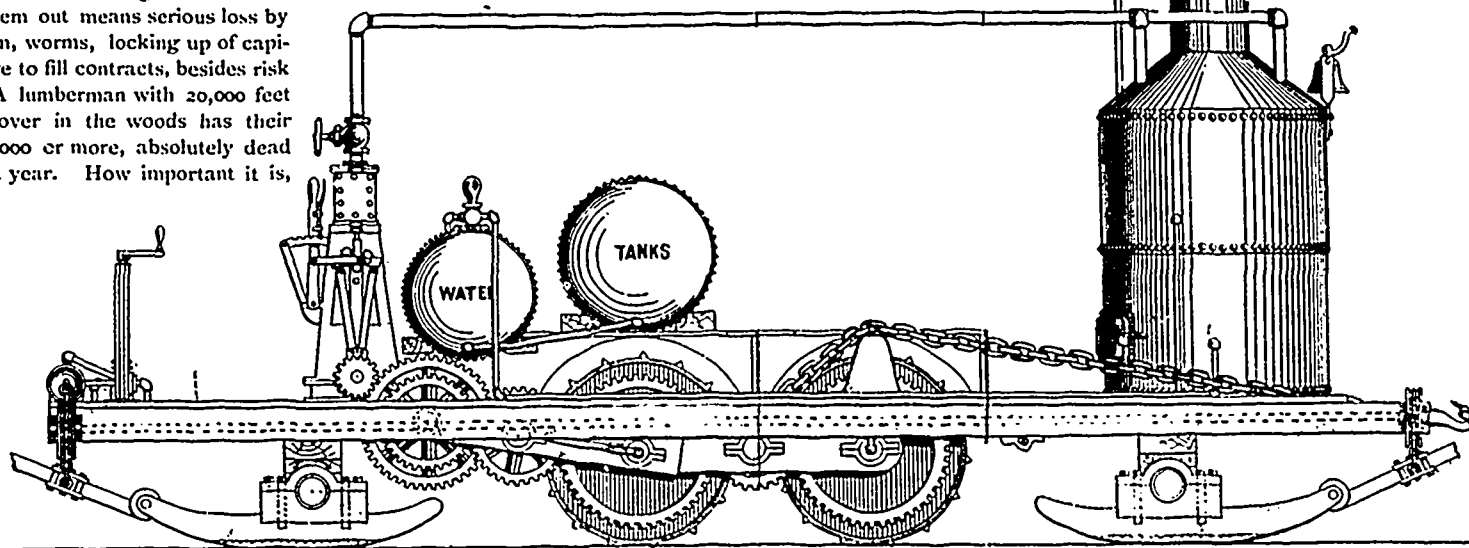
mercial success. It has since been in successful use in Michigan, and is now being introduced into Canada.

Mr. Chandler has formed a company called the Ontario Steam Logger Co., Limited, to build and operate the engines, in which he has associated with him a number of prominent business men, Alderman Jas. Scott, president of the North Shore Navigation Co., and vice-president of the Georgian Bay Lumber Co., being president, Mr. Geo. H. Bertram, treasurer, Mr. R. H. Bowes, secretary, and Messrs. Bertram, Wm. McKenzie, T. H. Dunnet, A. H. Campbell, T. R. Wood, S. Pearcey, of Toronto, Samuel Chandler and Geo. T. Glover, of Chicago, directors. Two engines will be built for use in Canada this winter. The one approaching completion is going to the limits on the Wahanapietoe River, in the Nipissing district, to work for Wm. Irwin & Co., Peterboro', the other will be employed by Mr. Egan, of the Hawkesbury Lumber Co., in the Ottawa district. By next year the company will be prepared to furnish engines and crews anywhere in Canada, and will make contracts for hauling at a rate per M feet rather than sell or rent the engines. They assert that by its use the output can be doubled with reduced gangs of both horses and men.

The engine is, of course, available for any kind of haulage over snow roads, and it will doubtless be largely adopted in connection with mining and other operations in the Lake Superior, Georgian Bay and Ottawa districts.

NOVA SCOTIA NOTES.

Young Bros. & Co., head office at Parrsboro, have a steam gang mill at Newville, where they saw seven mil-



NEW STEAM LOGGING MACHINE.

then, that they should reach water. By the use of the steam logger risks arising from the use of horses are avoided.

It is found that at present prices it does not pay to haul logs with horses more than five miles. With the logger much longer hauls can be economically performed, for the longer the haul the cheaper is it per M per mile, and it hauls over roads that cost less than horse roads. Three men—engineer, fireman and pilot—on a five mile haul, will do the work of 40 double teams and their drivers. In case of emergency, by having two crews the engine can be worked at night as well as in the day, for it never tires. A large saving can be effected in the board of horses and men, besides avoiding depreciation in horses, which is estimated at 20 to 25 per cent each season. It costs nothing to keep the machine when it is not working, and when in use its only food is wood, obtained on the spot and costing nothing but the cutting. If it can do the work claimed its economy is so great that it must come into general use.

The steam logger is the result of experiments commenced some ten years ago in the lumber districts of Michigan. The necessity for something of the kind was felt, and a practical lumberman, named Glover, began experimenting. He associated with him Mr. Samuel Chandler, of Chicago, and the two worked out the idea, slowly and labouriously, and at an outlay of about \$100,000 in experimenting, till they achieved success. At the close of the season of 1893, after being thoroughly tried under varying conditions of weather, roads and temperature, the machine was pronounced by competent engineers and practical lumbermen a mechanical and com-

mercial success. It has since been in successful use in Michigan, and is now being introduced into Canada. Mr. Chandler has formed a company called the Ontario Steam Logger Co., Limited, to build and operate the engines, in which he has associated with him a number of prominent business men, Alderman Jas. Scott, president of the North Shore Navigation Co., and vice-president of the Georgian Bay Lumber Co., being president, Mr. Geo. H. Bertram, treasurer, Mr. R. H. Bowes, secretary, and Messrs. Bertram, Wm. McKenzie, T. H. Dunnet, A. H. Campbell, T. R. Wood, S. Pearcey, of Toronto, Samuel Chandler and Geo. T. Glover, of Chicago, directors. Two engines will be built for use in Canada this winter. The one approaching completion is going to the limits on the Wahanapietoe River, in the Nipissing district, to work for Wm. Irwin & Co., Peterboro', the other will be employed by Mr. Egan, of the Hawkesbury Lumber Co., in the Ottawa district. By next year the company will be prepared to furnish engines and crews anywhere in Canada, and will make contracts for hauling at a rate per M feet rather than sell or rent the engines. They assert that by its use the output can be doubled with reduced gangs of both horses and men.

Clarence Fullerton, Port Greville, has a large tract of timber at Fraserville, and has Joshua Welsh, with his steam portable saw mill, sawing for him. He expects to get out from a million to a million and a half of deals, which will be shipped from West Bay. Mr. Fullerton is a successful merchant as well as lumberman.

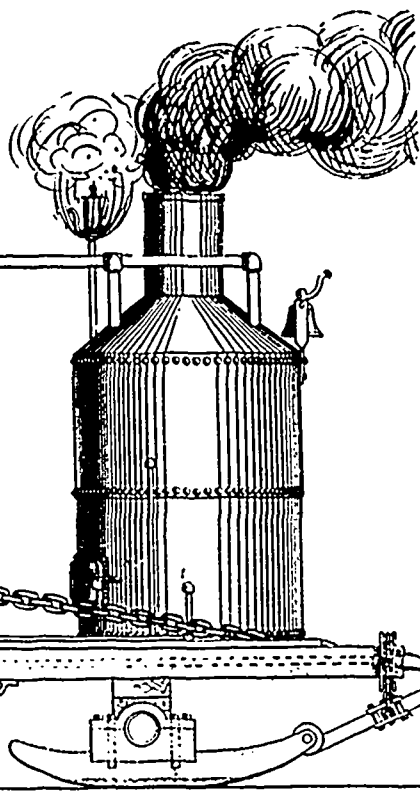
A. C. & C. W. Elderkin, Advocate Harbor, have a steam portable mill in which they cut a million feet of deals per year. Their operations this winter will be normal. They also ship-build when there is money to be made in the business. The Messrs. Elderkin are shrewd, clear-headed business men, and what they undertake they perform.

Huntley & Epps, Parrsboro, have a 30,000 feet capacity steam circular mill at Canaan, six miles from Parrsboro. One feature in this mill is that when the deals leave the trimming table they fall into a water sluice that delivers them to within 1½ miles of place of export. Their cut

this year was three and a quarter million feet of deals and boards and two and a half million lath. They haul the lath to the wharf in Parrsboro in winter, where they are ready for early spring shipment when the market prices suit. Their deals are shipped from West Bay. The firm have also a planing mill in Parrsboro in which their boards and scantling are dressed ready for market. They also buy boards from mills up and down the bay, which they dress and market. D. F. Huntley and Henry Epps compose the firm.

H. Elderkin & Co., Port Greville, have a steam portable mill sawing for them, which will cut a million feet. They also have a water power circular mill which they use principally in sawing timber for the vessels they build, of which they keep from one to three on the stocks all the time. The firm also do a large mercantile business. Mr. Hubert and Mr. Brenton Elderkin compose the firm.

Moses Hatfield, Fox River, has a steam portable mill in the woods on his land, which will saw 1,000,000 feet deals, a part of which is birch. He also has a water power circular mill which he runs in the spring, sawing about a million. His deals go to West Bay for shipment. Mr. Hatfield is a successful lumberman and at the same



time superintends his farm, one of the most thrifty looking in Cumberland county.

F. R. & L. F. Eaton, Eatonville, have a large steam gang mill at Eatonville, on the shore of the Bay of Fundy. The mill is a model in the way of convenience and labor-saving devices. The firm log six to eight million feet yearly. Their cut this winter will be the usual amount. Deals are shipped to West Bay, boards and lath to Eastern States and South America. Mr. Ed. Henderson is the capable superintendent, and thoroughly understands the practical part of manufacturing lumber. The mill was built from his plans, which accounts for the completeness of its parts. Mr. L. F. Eaton directs his attention to every detail in a business way from the log to the vessel, and can tell at a glance the comparative cost of each part of the business from year to year. Mr. F. R. Eaton is located at Parrsboro, where he is building a barque for the Greenland trade, for New York parties. Mr. Eaton has built several vessels for the Arctic trade and thoroughly understands how to make them strong.

Edward Brownell, Moose River, is lumbering on lands owned by Hon. A. R. Dickey, member of the Federal Cabinet. He has a steam portable saw mill and the deals are run from the mill to the shipping point on Bay of Fundy in a water sluice, which in some places is built up 125 feet from the ground. At one place for a quarter of a mile, it is 75 feet above the ground. The quantity got out yearly is about one million feet. The deals are shipped from West Bay.

Fisher Bros., Southampton, will saw one million feet of deals, which are carried to Parrsboro by the Cumberland