

the machine or engine, which I have had constructed, to take out the stumps or roots of trees, I transmit, to-day, a description of that machine, and every information in my power respecting it.

The machine in question, which I propose to name "*Extirpateur*," has not been invented by myself, and the contriver of it is unknown to me. The general description of the machine, published in the "*Journal de Québec*," in the course of last summer, and transcribed into the "*Journal d'Agriculture*," appeared so striking to me, and of so much importance, that I resolved to have one made, and now that it is constructed, and worked under my own superintendence, I have no doubt that, with some modifications, it will be a most valuable machine for the clearing of land in Canada.

My project being formed, it was necessary to put it in execution, and as my object was the public good, I applied to the Municipal Council of our Division of Rimouski, who liberally put at my disposal the sum of £10, which I deemed quite sufficient, and it would indeed be so now for constructing one. All the little difficulties, inconveniences of delay, unforeseen expenses and mis-calculations, assailed me so much as to create incredulity even among the most friendly disposed to the experiment; but if I may be permitted to compare little things to great ones, as Napoleon reckoned on his good fortune, (*étoile*,) so I believed in my *extirpateur*.

The *extirpateur* is at last constructed. It is composed of a car or chariot, which is the vehicle, and of the adjunction or re-union of three mechanical forces: the tackle, the axle-tree, and the indented wheel. The chariot is composed of a frame of red tamarack or spruce-wood, six feet long and three feet and six inches wide; the sides are one foot high and six inches thick; the fore-traverse or cross-piece has the same height and is four inches thick; the hind craft-piece is formed of a piece of wood, twelve inches square, and serves to fit the machine for its operation; angles are joined by mortices and strengthened by iron collars fixed by means of screwed bolts. That frame is supported by two axle-trees on four full wheels—the hind axles being fixed by two three-fourths of an inch bolts, and the low front one turning on an iron pivot of one and a quarter inch. Those axle-trees are four inches square. The fore-wheels are one foot in diameter, and the hind ones a foot and a half. Shafts are fixed to the chariot, and it may be drawn by a single horse, even when loaded with all its implements or accessories.

The mechanism is composed of two iron axes terminated by *tarillors* turning in cast-iron mouldings.

On the fore-axle, which is of iron, and two inches square, is fixed at one end, an indented cast-iron wheel, twenty-eight inches diameter. The remainder of that axle-tree is surrounded by a roll of black birch-wood, six inches diameter. The hind axle-tree is of iron, one inch and a quarter square, and carries an indented wheel, five inches diameter. Out of that axis, the extremities of the *tarillors* are flattened so as to admit two handles eighteen inches long; and to the machine constructed in this manner an iron tackle is added, of which the immoveable pulley is fixed to the rear traverse of the chariot, and of which the moveable end of the chain comes and rolls itself on the axle-tree, the hook of the moveable pulley being itself fastened to the chain which is rolled around the stump to be worked upon. This chain is about ninety feet long. A chain end about ten feet long, serves to fix the machine by its hind cross-piece to a stump made use of as a support. The chain is of iron, five lines across, but it is not quite new.

The machine and its accessories cost £15 10s. to wit: £7 5s. paid to Mr. Lee, engineer, for the pullies and the remainder of the mechanism; £3 15s. for the chain; £1 for the wood work; £3 10s. for the iron and the blacksmith's work. I believe that, with the cast-iron piece as a standard, the mechanism may be procured for £4. The cost of the chain will depend on the length required, say £3 10s; the wood work, executed after a model or pattern, might cost 15s.; the piece of iron, and iron, working also by a model, would be about £2; the whole expense, therefore, would be £10 5s. at the utmost. Three men can work easily the *extirpateur*—two men on the levers and one man to carry the chains—when the instrument is to be moved, the three men can do it easily. In the middle of stumps of common tenacity, it can run from two to three arpents in a day. A farmer of this parish, who had hired it, cleared, with the help of one man only, in a day's time, a piece of cedar land, for the clearing of which he had offered in vain the sum of £4. By means of the *extirpateur*, that piece of land cost him six shillings expense—3s. to pay his man, and 3s. for the hire of the machine. The kind of land just spoken of is that to which the *extirpateur* is best adapted. The machine not having been ready to do public work but very lately, and having, some time after the first trial, encountered an accident, it could not be let but for one day. I have, myself, operated with it successfully upon pine stumps, old indeed, but very tenacious.

I believe that, on an average, three men are able to do with the *extirpateur* in every kind of ground as