

now worked by a separate flume from the fountain head, but which will hereafter be connected with the new and larger works, and worked by the tail water from the new structure, being as it is at a level some 80ft. lower than said structure. The output of both mills, it is expected, will be not less than 300 tons per diem. All the aforesaid works are under the general superintendence of Mr. Dubuc, one of the directors of the company, of which Gaspard Lemoine, of Quebec, Nemèse Garneau, and others are members, and the works in the aggregate will not cost less than one million dollars.

The city has a very efficient system of waterworks. The principal water main through Racine street is six inches in diameter, being an inch or two larger than those of several other places where the population is not greater than that of Chicoutimi—some 4,000 to 5,000. Again, the intake through the new dam has been made of not less than 24 inches diam., or of 16 times the capacity of the present main running through the city, so as to allow for any future extension or increase of population up to 50,000 souls.

The town is, moreover telephoned and thoroughly electro lighted with 3,000 16-c.p. lamps, with provision for electric tramways, all of which last works, and the aqueduct are managed by Engineer Casgrain, a brother of Senator Casgrain, of Montreal, also an engineer, and a brother of Mr. Casgrain, assistant engineer of the Quebec Waterworks Department.

Chicoutimi under its present progressive city council, headed by Mayor Savard, a gentleman of the medical profession, has lately had its roadways graveled, its thoroughfares flanked with double sidewalks, while its public buildings are of quite a monumental kind and architecturally stylish, to wit: its magnificent cathedral, its bishop's palace, its seminary, convent, hospital, its new city hall, the upper portion of which is to be used as a theatre and concert hall, etc. And last, but not least, the city is liberally provided with hotels, that of Nero—possibly a descendant of the Roman emperor—being of the Canadian type of true comfort; while its more pretentious sister the "Chateau Saguenay" puts on that style which is dear to our wealthy tourists of Canada, the United States and Europe.

Nor can I close this sketch without mention of Chicoutimi's well provided and efficient fire brigade, nor without mentioning that when the works in progress are completed, which they will be by the forthcoming spring, and the grounds and approaches leveled and trimmed off: the pulp works at about a mile and a half from the steamboat landing at Racine street, and the hotels, will be well worth seeing in all their picturesque surrounding frame work of forest bedecked rocks and cataracts, lovelier, if anything, than those we already know of at Grand Mere, and Shawinigan, and thence to Kinogami, where the company has erected an extensive barrage to store freshet waters, and let them out by sluices when continued drought may require it to supplement the then diminished flow of the Chicoutimi river.

DUTIES AND AUTHORITY OF AN ENGINEER FROM A LEGAL STANDPOINT.*

The public profession of an art is a representation to all the world that the person holding himself out as possessed of certain qualifications does, as a matter of fact, possess them, and that he can and will properly perform and complete any work that he may undertake with requisite skill and ability. There is consequently on the part of an engineer, employed to do certain work, a warranty that he is reasonably competent for the task he undertakes, and furthermore, he is responsible for those whom he may employ under him. It is also to be remembered that it is a general principal of law and equity that an agent is not allowed to make any profit out of his agency beyond his proper remuneration, and any sum of money so obtained must be accounted for to his principal. Where, therefore, an engineer entered into a sub-contract with a contractor without the knowledge of the employer, it was held that the em-

ployer could have such contract rescinded and that he could refuse to proceed with it in any shape. On the other hand, an engineer cannot without the knowledge of the builder or contractor, enter into a secret contract or engagement with his employer. For instance, if besides the contract between the employer and the contractor, there is an agreement between the employer and the engineer, of which the contractor knows nothing, that the outlay shall not exceed a certain sum, and the contractor is by his contract subject to the orders of the engineer as to what work he shall do, this agreement between the employer and engineer is not binding upon the contractor, and this restriction of the engineer's authority cannot in any respect prejudice the contractor's rights.

No particular form of agreement appointing an engineer is necessary. The retainer, so to speak, may with two exceptions, be verbal or implied, from the acts of the parties or the circumstances of the case. This general rule has two exceptions. If the agreement is one which is not to be performed within the space of one year, that is to say, if in its nature it is such an agreement that the parties must have contemplated a continuation of the employment after one year, then such a contract to be binding must be in writing. This is governed by an old statute, known as the Statute of Frauds. The other exception is in the case of a corporation. A corporation, whether municipal or otherwise, can only express its intention, or make a contract, by deed or writing under its common seal. There are some every-day acts of necessity for which it would be absurd and unreasonable to require the corporate seal, for instance, cheques or promissory notes, but any transaction of any importance, not in the ordinary daily round of business, in order to be enforceable against a corporation, must be executed under its seal, and a number of cases have been decided in England and in our own courts, holding that contracts by corporations with engineers and architects not under seal are not binding on the corporation, and this notwithstanding the fact that the architect or engineer may have performed considerable work on the supposition that the contract was valid. Do not, therefore, be content with a mere resolution or by-law of the company or corporation for whom you undertake to do work. There seems to prevail among engineers the impression that a resolution of a municipal corporation is all they require before proceeding with their work. This is a mistake. See that you get your contract on each occasion under the corporation seal.

There is no fixed rule in this country regarding the payment of engineers. In England there is some sort of tariff recognized by the Society of Engineers. The usual remuneration is by way of commission on the total cost of the work, and this remuneration should be defined by a written agreement. The local municipalities in Ontario are very chary about spending municipal moneys and are not disposed to pay professional men anything like a proper remuneration. Engineers in England are paid for similar work much higher fees than are obtained here. This results from the fact that engineers undervalue their own services, and they have themselves to blame for the inadequate fees that they receive. Preliminary plans are either made subject to a special contract for that purpose, or in the case of public competitions, to the terms of the advertisement. In the latter event the employer cannot make use of the plans if the competition is not proceeded with. In a Scotch case the architect prepared detailed plans. The buildings were not proceeded with but the proprietor used the plans to his advantage in dealing with the purchasers of the ground. The proprietor denied liability on the ground that the plans had been furnished on the understanding of there being a competition. The court, however, considered that it lay upon the proprietor to prove that the employment was gratuitous, and as he failed to do so, ordered payment to the architect of a fair sum. If an engineer agree to prepare such probationary plans as an employer should approve of, and fail to obtain such approval, he will have no cause of action, but if no time is fixed within which the plans are to be finished, the presumption will be that a reasonable time was intended. In the case of pro-

*Notes of a paper read before the Engineers' Club of Toronto.