The estimated cost of completing the Trent Valley Canal, is $8,684,650.

The city of Vancouver, B C., has 13½ miles of graded streets, 5¼ miles planked, and 1 mile gravelled, and 18¾ miles of broad, plank side-walks.

The building of the new iron railway bridge at Fredericton, N. B., has just been commenced. It is proposed to complete the work before the opening of the river.

The Minister of Public Works declined to comply with the request of a deputation from Goderich asking that the specifications for improvements to the harbor at that port be changed.

A flourishing Engineering Society exists in connection with the Toronto School of Practical Science, at the meetings of which able and practical papers on engineering topics are read.

The work of constructing a ship railway across the isthmus of Chiegnecto will be resumed next summer. Mr. H. G. C. Ketchum, of Fredericton, N. B., is the promoter of the undertaking.

Slowly but steadily the work of building the great St. Peter's Cathedral, in Montreal, progresses, although the building is still far from completion. The statement of receipts and expenditure in connection with its construction from March 1st, 1885, to October, 1887, shows receipts $69,956.81, and expenditure on building, $72,488.93.

Contractors for city work in London, Ont., are condemning the new regulation of the Works Department which requires them to lay twenty feet of pipe before covering it up. They contend that the carrying out of this regulation will be found to be practically impossible in springy ground, will nearly double the cost of construction to the city, and endanger the lives of the workmen to a far greater extent than at present.

The arbitrators appointed to decide the proper division of profits between the members of the Company who built "Section B" of the C. P. railway, have apportioned the amounts as follows: Alex. Manning, $49,875; G. McLaren, $44,235; J. J. McDonald, $48,168; J. Chester, $9,500; A. Shields, $38,052. The sum of $12,500 was allowed McDonald for commission he paid into court to the credit of the suit of Shields v. McDonald. The arbitrators' fees amounted to $3,000.

The French Minister of Works is said to be in favor of Admiral Clode's plan for bridging the English channel, and is trying to induce the British Government to assist in carrying out the gigantic scheme. It is proposed to rest the bridge on concrete piers. The height of it is to be 40 metres, thus enabling the largest vessels to pass under it, and is to be built of iron. It is to start from Cranaux-Œufs, south of Cape Grisnez, and run in a straight line across the channel to Folkestone, this distance not being the smallest, but offering the least depth of water.

In most if not all American cities, work which necessitates the digging up of the roadways, ceases as soon as severe frosty weather sets in. Such is not the case in Toronto. The work of constructing sewers and private drains, and of laying gas and water pipes, has been going on uninterruptedly during the present winter, in spite of the severity of the weather. Certainly the progress made is not so rapid as in summer but a means of livelihood is afforded to the laboring classes, some of whom would otherwise be a burden on public charity during at least a portion of the winter.

The amount spent by the government last year on public buildings in the various provinces is as follows:

	Amount available.	Expended in 1886-7.
Nova Scotia	109,974	76,714
Prince Edward Island	54,036	48,150
New Brunswick	95,190	77,980
Quebec	275,896	236,206
Ontario	822,173	718,508
Manitoba	165,100	109,511
Northwest Territories	217,815	163,527
British Columbia	131,253	40,518
Public buildings gen	17,304	13,199
Total	$1,888,456	$1,485,361

An event of more than ordinary importance was the formal opening for traffic on the 18th of January of the new international railway bridge at Sault Ste. Marie. The structure, which was built under the direction of Messrs. G. H. Massey and R. G. Reid, civil engineers, of Montreal, has ten spans, each 242 feet in length and weighing about 250 tons. There are two spans of 105 feet across the main channel. The draw is next to the largest bridge in the country. The style of the bridge is a "pin truss." It is sixteen feet above the water. The trusses extend upward forty feet. The main bridge is 2,420 feet in length, is joined by 2,000 feet of trestle work across the island and then two spans of 105 feet each across the north channel. The entire length of the structure, swing, main bridge, trestle, and all from abutment to abutment on the main land on either side, is 5,400 feet. The cost of the structure was about $200,000.

A premium of $40,000 dollars is offered by the republic of Buenos Ayres, South America, for the best design of a capital building to be erected in that country. The date for submitting drawings is set for April next.

The New York legislature at its last session, with a view to improving the standard of public school buildings as regards their adaptability for the purpose they are intended to serve, decided to offer prizes ranging from $50 to $150 for plans and specifications for school houses to cost from $600 to $10,000. Fifty-eight designs were submitted. Those accepted are said to be artistic in design, and the arrangements regarding light, heat and sanitation, show a great improvement on structures at present in use. The accepted plans have been photographed for distribution wherever there is need of such plans for school-houses to be constructed.

UNION, ONT.—S. V. Wilson will build a new woolen mill.

ARTHUR, ONT.—A $5,000 convent is to be erected here next summer.

BRANTFORD, ONT.—The Courtland Carriage Co. will shortly begin to build a factory.

ELMIRA, ONT.—The Roman Catholics of this place will build a new church the coming summer.

PHILLIPSVILLE, ONT.—The Evangelical Association will build a brick church the coming spring.

CHELTENHAM, ONT.—The old Presbyterian church is to be torn down and a new one erected.

WINNIPEG, MAN.—It has been decided to make extensive alterations to the Mackenzie Hotel.

SEABORT, ONT.—The Methodists of this place contemplate erecting a new church the coming summer.

LONDON, ONT.—City Council will probably erect a new building to serve as headquarters of the fire brigade.

RAPID CITY, MAN.—Plans have been prepared for a new Masonic hall building, 24x50, two stories high.

WOODVILLE, ONT.—The Methodists have material on the ground for the building of their new church in the spring.

ORILLIA, ONT.—There will be a lot of building done here next summer, all the buildings put up last year being occupied.

PETERBORO', ONT.—The contract for the erection of the new Nicholls' Hospital has been awarded to Mr. Arthur Rutherford.

AURORA, ONT.—J. Fleury's Sons are getting material on the ground for building large additions to their works in the spring.

THOROLD, ONT.—The Council is considering the matter of erecting a new town hall. For particulars address the town clerk.

BELLEVILLE, ONT.—Architect E. J. Lennox, of Toronto, is preparing plans for improvements to John Street Presbyterian Church.

GUELPH, ONT.—Some capitalists are talking of erecting a $20,000 opera house on the site of the recently destroyed Commercial Hotel.

KIRKTON, ONT.—Messrs. Ross & Taylor, of Exeter, are preparing plans for the new Methodist Church to cost $5,000, to be erected here next summer.

KINGSTON, ONT.—Increased school accommodation is urgently required, and new buildings will probably be undertaken shortly. —The congregation of Chalmer's Church will either modernize their present building or erect a new church.

SARNIA, ONT.—New plans are being prepared under which it is proposed to construct the St. Clair tunnel full size. After the plans are approved of by the directors of the G. T. Company, it is understood contracts will be let for the whole work.

STRATFORD, ONT.—$6000 has already been subscribed towards the erection of a new Baptist Church, the estimated cost of which will be $9000.—The Salvation Army propose building a barracks in the spring.—Mr. Jonathan Scarth will erect two two-story brick buildings in the spring.

ST. THOMAS, ONT.—Extensive repairs will be necessary to the city hall, which was last month badly damaged by fire.—The sum of $10,000 has been subscribed by a joint stock company for the erection of an opera house. Stockholders purpose advertising for a manager to assume the stock and contribute the additional sum necessary to erect a suitable building.—The contract for the erection of a new wing to Alma College has been let to J. M. Green at the sum of $14,618. Contract for steam heating is still open.

MONTREAL, QUE.—The congregation of Melville Presbyterian Church contemplate enlarging their church to double its present size in the spring.—Y. M. C. A. have purchased site for a fine new building near Windsor hotel. Particulars may be had from the Secretary.—The Provincial Government intends to build a new wing to the Montreal courthouse at a cost of $175,000.—The Governors of the Royal Victoria hospital, Montreal, have instructed Mr. Saxon Snell, the well-known hospital architect of London, to prepare plans for the new hospital. He is expected to visit Montreal shortly in connection with the work.—The Liberal Conservative Association of this city will erect a building to cost $50,000.

TORONTO, ONT.—Plans for the new Upper Canada College building have been completed by Architect Durand, of London, and tenders for the work will be called for. Building will be E-shaped, and will have a frontage of 250 feet, sides 200 feet.—Public School Board is considering the question of erecting a new school in St. Matthew's ward, and of enlarging the Jesse Ketchum school. —The Royal Canadian Academy of Arts has purchased a site on which to erect a public picture gallery.—Water Works Committee of City Council will spend $15,500 in completing workshop on Phoebe Street and additions to present offices of the department. —Architect E. J. Lennox reports: Spadina Ave. Methodist Church cost $65,000; add. to Bertram's hardware store, Yonge St., cost $4,500; two houses for W. R. Stewart, Wilcox St., cost $7,000; house and stable, Church St., for Dr. Graham, cost $5,500; three houses Carlton St., T. Gearing, cost $10,000; building at Berlin for the Economy Insurance Co., cost $10,000; residence Bloor St. West for L. Lukes, cost $9,000; residence Selby St., for A. G. Rundle, cost $7,000; factory on Pearl St. for J. Morrison, cost $10,000; Sunday School Board St. Church, cost $17,000; add. to R. & T. Watson's factory, Front St. East, cost $6,000; three houses on St. Andrew's Square for J. Davis, cost $14,000; church alterations at Belleville, cost $5,000.

FIRE EXTINGUISHING EXPERIMENTS.

A SERIES of experiments of interest to fire underwriters, as well as to manufacturers of rubber goods, were lately made at the works of the Walworth Manufacturing Company in South Boston, the object primarily being to determine by actual test the behavior of the material known as rubber cement. This material is composed substantially of rubber dissolved in naphtha, and is indispensable in the manufacture of rubber goods. Both the naphtha and the cement have hitherto been dreaded by the fire insurance interest, and with good reason. It is well known that the pouring of water upon burning naphtha is worse than useless, since it not only fails to extinguish the flames, but serves to simply splash the burning oil about, thus scattering the flames; and the opinion is generally entertained that rubber cement behaves in a similar manner.

The object of the experiments above referred to, was to observe the behavior of these articles, while burning when treated to a stream of water, and particularly when subjected to the finely divided spray delivered from the so called "sprinklers," which of late have come into very general use in mills. The result of these trials demonstrated that rubber cement is by no means so hazardous as has been supposed, since it is shown that water, especially when delivered from an effective sprinkling apparatus, will quickly extinguish it. Naphtha alone, however, is shown to maintain its bad pre-eminence as a specially hazardous material.

We give below an account of these tests, with the results obtained, as recorded by the insurance editor of the Boston *Commercial Bulletin*. The tests were as follows:

First: A quantity of naphtha of 70° was placed in an iron pot and ignited. It continued to burn without being affected by the shower from the sprinkler.

Second: Boards representing flooring or wood-work, as benches, fixtures, etc., were wet with naphtha and ignited. By the time the naphtha had burned off the wood-work was afire.

Third: The above was repeated with fresh wood. The sprinkler was allowed to operate, and while it did not extinguish the flames, it prevented them from igniting the wood.

Fourth: A quantity of rubber cement, worked up with naphtha into the ordinary consistency, was ignited in an iron pot. The sprinkler promptly extinguished the flames. The wet cement was then immediately ignited from the touch of a match and again readily extinguished by the sprinkler. Cement placed on woodwork was ignited and extinguished just as it was in the pot. Re-lighted and again extinguished in the same way.

Fifth: Cement was placed on woodwork and ignited. No sprinkler was used, and the cement shortly communicated the flames to the woodwork.

Sixth: A lot of woodwork was saturated with naphtha and another lot was covered with cement. Both were ignited and the sprinkler allowed to work. The flames on the lot covered with cement were promptly extinguished, but the flames on the lot covered with naphtha continued unaffected by the water, and the naphtha exhausted itself. But neither lot of woodwork became ignited.

Seventh: A considerable quantity of cement still remaining, it was ignited in a tin dish, and the sprinkler promptly extinguished the flames. The receptacle was warped out of shape but not melted, and can be seen at Secretary Taft's office containing the cement which was ignited and extinguished.

THE experiments with the incandescent electric lights which have been made at the torpedo station at Newport have developed a novel use for these lamps, and one that is said to promise to be of great value in naval warfare. With lamps of about 100-candle power fastened on the ends of poles submerged in the sea to a depth of twenty feet the water is so illuminated that objects in it can be distinguished within a radius of 150 feet. There is little or no glare from the submerged light to betray the presence of the boat using the poles. It is believed that by this means a boat might countermine an enemy's field of submarine mines by cutting his cables or sweeping them to one side. It is probable that torpedo launches will be equipped with these lights.

INCANDESCENT LAMP GLOBES.—The common practice of surrounding incandescent lamps with open globes or globes of ground glass, leads to a loss in the one case of from forty to sixty per cent. of the light, and in the other of from twenty-five to thirty-five per cent. A simple method by which the character of the light can be softened without experiencing so great a loss of intensity has recently been proposed, and consists in covering the globe of the lamp with a film of ordinary collodion, which can, by adding successive films, be made of any desired thickness. The reduction of the light of the lamp does not, it is said, with this method exceed ten per cent., and the system possesses the further advantage that the film can at any time be removed by simple friction.—*Boston Journal of Commerce.*