

water heating apparatus for the Church of Aulse, Gaspé.

GRANBY, QUE.—The Empire Tobacco Co. have given Messrs. Neil & Kent the contract for an addition to their buildings which will be 40 x 70 ft., two stories high, cased with metallic brick and gravel roof.

SEAFORTH, ONT.—F. Gullridge has supplied the sand pressed brick for the new Commercial hotel, he having bought the right to manufacture that brick in the county of Huron. The bricks are made of sand, cement and chemicals.

OTTAWA, ONT.—The Upper Ottawa Improvement Co. has awarded a contract to the Bertram Engine Works, of Toronto, for the construction of two side-wheel steamers 130 feet long by 26 feet beam, to be used for towing lumber.

WINNIPEG, MAN.—The contract for draining St. Andrew's marsh has been awarded by the Provincial Government to C. Whitehead & Co., of Brandon, at the price of \$91,760. The other tenderers were S. Gaudaur, of St. Boniface, and J. Kennedy, of Fargo. The contract calls for 850,000 cubic yards of ditching, by which 104,000 acres of land will be reclaimed.

TRENTON, ONT.—The Wm. Hamilton Mfg. Co., and the Canadian General Electric Company have been awarded the contract by this town for the water power and general machinery, electric light plant, etc., for a three-phase plant to be erected here. The contracts involve an expenditure of \$50,000, and it is proposed to run electric wires to Belleville, twelve miles distant, for power transmission.

TORONTO, ONT.—The contract for steam heating the Queen's hotel, Barrie, has been awarded to John Ritchie, of this city.—The contract for asphaltting Leader Lane, from Wellington street to Colborne street, has been awarded to the Warren-Scharf Co., at \$792.—The tender of Gardner & Co. for a cement sidewalk on south side of Front street, opposite Union Station, at \$550, has been recommended for acceptance.

MONTREAL, QUE.—The following tenders were received for improving the drainage at the city hall: Robert Mitchell & Co., \$685; Leclerc & Lamarche, \$800; Blouin, Girard & Collard, \$939; S. Crevier, \$650; J. Bisson, \$450. The latter tender has been accepted.—P. A. R. Labelle, architect, has awarded contracts for a seven storey carriage building for B. Lebourg on Osborne street as follows: excavation, F. Rochon; masonry, Labelle & Payette; iron work, Imperial Bridge Co., other trades not let.

PUNCHES.

A large number of tests of punches of different forms were recently made by Mr. George S. Allen. The object of the experiments was to determine: (1) Which of the various shaped punches now in common use for punching iron and steel did its work with the least maximum pressure and the relation of unit stress to distortion as the punch passed through the plate; (2) the effect of clearance upon the power required by the punch; and (3) the effect of the form of punch and the amount of clearance upon the tensile strength of the punched plate. The results of the test may be summarized as follows: 1. A punch to work easily and not injure the metal should not be cupped out. 2. A double punch—that is, one which first punches a small hole and then reams it out by means of a shearing counter-punch—leaves the plate stronger, but requires at least twice the power necessary to run

a flat punch. 3. The ordinary flat punch leaves the plate about ninety per cent. as strong as a drilled and reamed plate. 4. A mill spiral punch is preferable to one which has the spiral cut in a lathe.

The Prismatic Glass Co., of Toronto is applying for charter.


Albert Arter, painter, Ottawa, Ont., has been succeeded by Arter & Co.

Holmes Bros., tinsmiths, Winchester, Ont., are reported to have assigned.

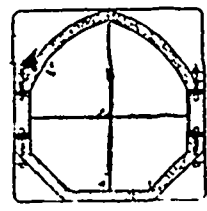
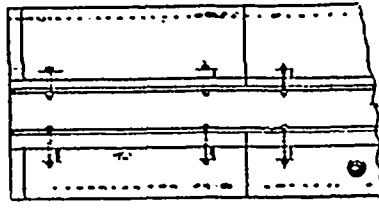
STEEL IN BUILDING.

The characteristics of this material, says C. Ritchie, in an English contemporary, I may class under four heads, viz: 1. Uniformity and trustworthiness. 2. Workability. 3. Strength. 4. Rigidity. That so-called steel of many different qualities could be made much stronger than iron has never been denied, but for many years there stood in the way of its extended use the belief—at one time too

(Continued on page 4)

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