

**BIDS.**

HALIFAX, N.S.—The council invited tenders for the erection of a power house for an electric light plant, the following being submitted: S. A. Marshall—building, \$11,498.60; chimney, \$3,400; coal trestle, \$4,230; total for whole work, \$19,128.60. E. Maxwell & Son—building, \$12,665; chimney, \$2,098; coal trestle, \$3,224. J. McInnis & Son—woodwork, \$19,800; foundation, 1,230. M. E. Keefe for whole work, \$19,000. The awarding of the contract has been left in abeyance until a decision is reached regarding the installation of plant.

**BUSINESS NOTES.**

Purcer & Son, plumbers, Windsor, Ont., have dissolved partnership, J. D. Purcer continuing.

Curre Bros. & Bent, contractors and manufacturers of sash and doors, Bridgetown, N.S., are reported to have suspended payment.

Leith & Turnbull, manufacturers of elevators, Hamilton, Ont., have dissolved, M. Turnbull retiring and C. H. Thompson being admitted.

**THE STRENGTH OF CRANE SCAFFOLDING.**

At the second ordinary meeting of the Royal Society of Edinburgh, Lord Kelvin presiding, Mr. R. G. Alford, M. Inst. C.E., delivered a paper entitled "Crane Scaffoldings; their Mathematical Calculation and Probable Theoretical Deficiencies." He based his calculations on two scaffoldings at the Royal Infirmary, Edinburgh, and the Waverley Station, Edinburgh, the latter of which was blown down on March 18th last. He described the construction of the two, and deduced certain rules which mathematical conditions seemed to imply as a necessity for safety. He dwelt on the supreme importance of effective combination of the towers. He made three suggestions to contractors. When there were towers they should adopt the strict equilateral triangle form, and so be prepared for any direction of the wind. They should never omit deep bracing girders between the towers half-way up, and when they did not stand on the ground their feet should be connected in a similar manner. The

towers ought also to be filled up with stones or bricks at each leg, to add stability to the feet.

**DRILLING IN FROZEN GROUND.**

A novel kind of mining drill, for use in Arctic regions, is the production of an invention in Arizona. It is hollow throughout, and is constructed to permit the passage of hot water or steam to the point of the drill, to thaw the frozen ground. In the sectional view of this drill, given in the Scientific American of August 12th, we notice that the admission of steam is controlled by a valve, the stem of which runs down to the point and up to the handle-bar, where it is provided with a cross pin engaging slots in a spring-pressed sleeve, which can be either turned or moved longitudinally, owing to the key-hole form of the slots. In admitting steam to the drill point, the sleeve is forced down against its spring, so as to insert the valve and permit the steam to thaw the frozen ground and wash out the precious metals. The valve is under the complete control of the operator, for when he grasps the sleeve to force the drill into the ground the valve will open, but will immediately close when he withdraws the pressure. The working of this drill renders necessary a small steam boiler close at hand.

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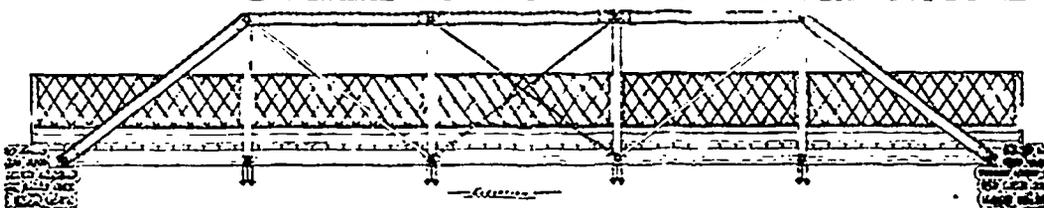
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