

ing a pig-iron of passable quality, judging from its fracture.

#### What It Means to Canada.

"The result of the introduction of electric smelting into Canada may be summarized as follows:

- (1) The utilization of our extensive water powers, which cannot at present be profitably employed for any other purpose.
- (2) The utilization of the large number of iron ore deposits which, on account of their high sulphur content, cannot be treated by a blast furnace, and have so far been valueless. A consideration of extreme importance, for already the question has arisen, how long the present supply of blast furnace iron ore is likely to last, and ores are now accepted by furnace men with a metallic content such as would not have been looked at a few years ago, and when these ores are exhausted and none but sulphurous ores or titaniferous ores are available, the stacks of the numerous blast furnaces, which have rendered such magnificent service to our present civilization, will be silent and smokeless, having been supplanted by the electric furnace which can successfully treat an ore which the blast furnace cannot handle.
- (3) The utilization of our extensive peat bogs for the production of peat coke, to be used as reducing material for the operation of electric furnaces, and the utilization of mill refuse and sawdust, for which there has been so far no practical use.
- (4) Rendering it unnecessary for Canada to import fuel for metallurgical processes.
- (5) Enabling Canada to produce her own pig-iron from her abundant resources for home consumption, and consequently retaining in her own country the money which otherwise would have to be sent abroad to purchase pig iron in the crude and manufactured state.
- (6) The development of steel plants and rolling mills using only electric energy.

#### The Best Crucible Steel.

"It is only a year since the Report of the Commission appointed to investigate the different electrothermic processes for the smelting of iron ores and the making of steel, in operation in Europe, was sent out to the public, but

already a steel plant adopting Heroult's system has been erected in Syracuse, N. Y., and will be in operation in about two weeks; another using the Kjellin system has been erected in Sheffield, England, and I have been notified that two of the Kjellin system, and one Heroult have been erected in Germany. These furnaces are designed to make the best crucible steel, and their introduction means the abandonment of the old crucible process. I see no difficulty in the way of constructing electric furnaces of a capacity equal to that of our open hearth furnaces, and the production of structural steel by the electric process is likely to become an accomplished fact in the near future.

#### Realization Beyond Expectation.

"I need not picture to you the future which opens a vista of commercial success for Canada by the inauguration of the new metallurgy of iron and steel, on account of the magnificent asset of her abundant supply of water-power. I remember having delivered in Faraday Hall, Victoria University, Cobourg, shortly after the invention of the telephone, a lecture in which I tried to picture the results of the discoveries which had been made in the practical application of that wonderful agency we term electricity, and while what I said, seemed greatly to interest the audience, the outcome of the lecture was the pronouncement that certainly the lecturer possessed a brilliant imagination. But when I look back at what I said, how feebly and inadequately did I describe what might take place, and the twenty years that have elapsed, have shown a progress such as I could not have imagined, so much greater has been the final outcome than the feeble prophecy ventured by me to the audience on the occasion named. But in the matter of electric smelting we do not draw upon the imagination, but present to you hard facts and well established figures.

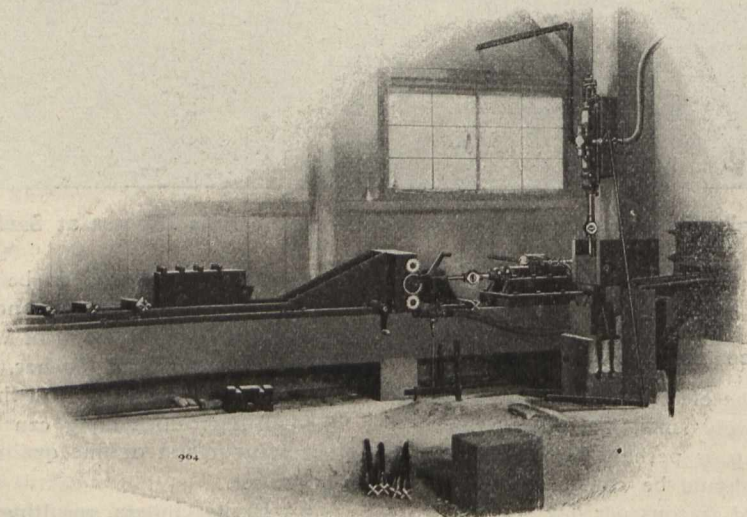
#### Appeal to Capital.

"To reap the benefits of the experiments made at Sault Ste. Marie means intelligent enterprise in the expenditure of capital. The Government has furnished you with facts on which to base a sound judgment as to the feasibility of commercially engaging in the manufacture of pig-iron by the electric process; with that its duty to the nation is done, it remains with you business men to apply, perfect and profit."

#### AJAX DRILL SHARPENER.

In contract work, mining and quarrying, where rock drills are employed, means for sharpening steel bits that

ever, where a number of rock drills are used, the automatic Ajax drill steel sharpener will be found invaluable. The Ajax is an apparatus for forging drill steel bits by power instead of by hand. Its operation is such that the bits are



Ajax Drill Sharpener.

have become dulled must be introduced. In cases where but few drills are required the usual forge, blacksmith and helper, supplied with dollies and swages, are about the only equipment necessary. In larger undertakings, how-

formed in the same manner as when hand forged, but the cost of the work is considerably reduced, and the output of the blacksmith shop materially increased. The capacity of the Ajax is about 1,200 drills in twenty-four hours, and