AUTOMATIC CENTRE PUNCH.

The Brown & Sharpe Mfg. Co., of Providence, R.I., have brought out a new Automatic Centre Punch of entirely new design. It has features that make it much more convenient and accurate for laying out work to be machined or drilled than the ordinary centre punch and hammer. It combines lightness and simplicity with durability, and the various parts are proportioned to withstand the most severe usage to which a tool of this character should be subjected. All parts are of steel and those parts most subject to wear are carefully hardened. The tool is self-contained, the striking mechanism being enclosed in the knurled handle, which is of such a size and form as to be conveniently held in the hand. It is about 5¼-in. long and ⅝-in. diameter. When following a line or establishing a point by the intersection of lines, one hand can be free to guide the point or hold the magnifying glass, and, after the point is located, it is not apt to slip and lose the setting, as just a downward pressure of the handle releases the striking block and makes the impression. Another advantage appreciated by mechanics is that the punch marks are all of uniform depth, and, therefore, more easily and accurately followed than when of varying depths.

TOWN LIGHTING BY ACETYLENE.

Although the discoverer of the commercial production of acetylene gas from calcium carbide is a native of Canada, and this country figures largely in the manufacture of carbide, progress in the lighting of towns by acetylene gas has been more marked in other countries, notably in Europe, than here. Acetylene lighting has made more headway in Western Canada than in the eastern Provinces. Birtle, Carberry, Virden and Moosomin are lighted by acetylene and Souris, Deloraine and Gladstone are either equipped or are being equipped with acetylene plants. The tanks, or gas-holders, have in each case, we understand, a capacity of 3,000 cubic feet, and supply from one or two hundred up to several hundred lights. In each of these towns the system appears to give satisfaction, and the number of consumers is being steadily increased. Among Ontario towns that have adopted acetylene are North Bay, Bradford, Rodney, Aurora, Oshawa, Bolton and Milverton.

The largest, as well as one of the most successful, acetylene plants in Canada is that at North Bay, a town of between 4,000 and 5,000 inhabitants, at the junction of the Canadian Pacific Railway main line with the branch of the Grand Trunk connecting with Toronto. This plant is operated by the North Bay Gas Co., of which A. F. Leggatt is president and manager, A. G. Browning vice-president, and John Ferguson, Wm. Martin and S. and D. Purvis, the other directors. Construction on the plant was started in the autumn of 1902, but it was not put into operation till April, 1903, when it began with 180 lights. There was then in operation an electric lighting system, owned by another company, which had been in existence about twelve years, generating its electricity by steam. At the time the acetylene plant started, the electric system had about 1,500 lights, and is reported to have about 1,800 now. In the same time the acetylene plant has increased its services from 180 to 1,200, and is extending at the present time at the rate of 100 services a month. The gross income of the acetylene plant is now $4,000 a year, and it is claimed that the net profits of the plant are greater than that of the electric plant, which has a gross income of about $9,000. In the case of the acetylene plant the manager and one assistant do the entire work, and the supply of gas and of connections can be considerably enlarged without any increase of the staff. In fact, the same staff operates the plant now that was required when there were only one-fifth as many lights. The company expects to pay a dividend of 7 per cent. this year.

The gas tank holds 4,000 feet of gas, and at each fresh charge carbide is put in to make 1,000 feet. An interior view of the generating station is here shown, and this equipment is sufficient for 8,000 lights. The company paid $60 a ton for carbide till last year, when the price was increased to $65. To this freight has to be added, making it about $70 a ton. The company charges its customers $1.75 per 100 feet (equivalent to 1,000 feet coal gas), with a discount of 12½ per cent., making the net price $1.53, with no charge for meter, against a charge of 15 cents per 1,000 watts, with 25 cents per month for meter charged by the

A. F. Leggatt, President and Manager, North Bay Gas Co.

electric company. This makes the net price slightly in favor of acetylene for the same candle power of light. In practice, the advantage is still more in favor of acetylene for the lighting of stores, it is claimed, because there being no electric current on during the day, the consumer cannot use the electric light on dark days or in cellars. A half foot burner gives a 24-candle power light, which, with a simple installation, yields a good, strong illumination, the character of the light being a nearer approach to daylight. This appears to be a consideration with many merchants, especially dry goods dealers, and consequently most of the shop lighting in North Bay is now done by the acetylene plant. The C.P.R. station is also lighted with it.

Interior of Generating Station, North Bay Gas Co.'s Acetylene Plant.

As against coal gas, acetylene lighting in Canada for towns and villages would appear to have some substantial advantages.

The first of these is that acetylene gas mains and service pipes need not be laid below the frost line. The troubles of last winter will be remembered by coal gas people as well as waterworks people; but in North Bay.