

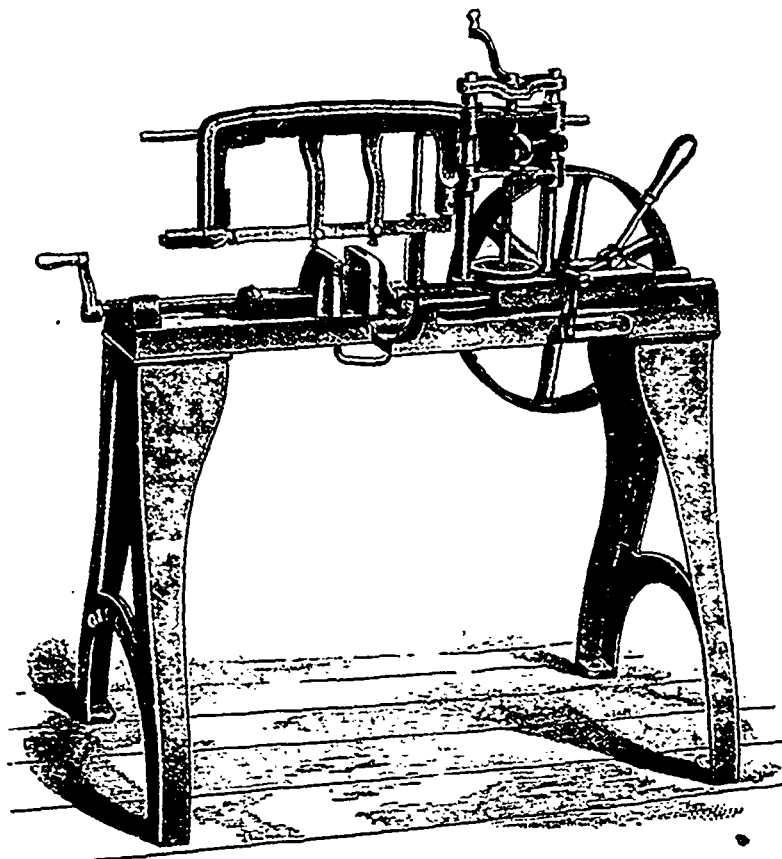
supply of water, and the pipes should have as small a number of bends and valves as possible, as the element of friction is greatly increased thereby.

To obviate any possibility of a break down during the cold weather, all pumps ought to be suitably drained; bad and otherwise dangerous breaks have occurred to pumps which have been allowed to stand with the cylinder full of water in places exposed to freezing temperatures.

PUMPING hot water is not to be advised unless the supply is on a level with or slightly above the pump; owing to the great expansibility of gases when at elevated temperatures, the vapors arise and fill the spaces behind the piston, and consequently no liquids can enter.

THE "Q & C" SHOP SAW WITH AUTOMATIC FEED.

The accompanying cut shows a new machine-shop tool that will be found of great value, and a time saver for cutting all kinds of metal, iron, steel, brass and castings, including tool steel. Capacity, five inches and less.



The "Q & C" Shop Saw is a great improvement over the gravity feed, or Hack Saw; has positive feed, entirely automatic, and speed can be instantly changed to accommodate all classes of work. The common Hack Saws depend entirely upon gravity to feed the saw through the work, and, as the weight of saw frame cannot be increased, the cutting speed diminishes as the size of work increases, whereas with the "Q & C" Shop Saw, having automatic screw feed, the same cutting speed is maintained throughout. The old style machines drag the blades backward on the return stroke with nearly, if not quite, as much pressure as when cutting, destroying the keenness of the edge as well as the blade itself in a short while. The "Q & C" Shop Saw clears the metal on return stroke, effecting an actual saving of 50 per cent. of wear; a single blade lasting from three days to two weeks. The special saw blades furnished are claimed to be superior to all others.

The "Q & C" Shop Saw was specially designed to overcome the known weakness of the old style machines, which are very slow and very expensive to keep supplied with saw blades; one of these special blades will outwear several dozen of the old style.

The machines are supplied with movable vise, allowing use of entire blade, also double adjustable guards to hold the blade firmly, ensuring true work.

An evidence of the time saved by using this saw will be seen by the following comparison:—

OLD STYLE.		
Size of Work.		
1 inch round steel	.....	9 minutes.
2 " " "	.....	36 " "
3 " " "	.....	2 hours " "
4 " " "	.....	3 " "
THE "Q & C."		
Size of Work.		
1 inch round steel	.....	3 minutes.
2 " " "	.....	9 " "
3 " " "	.....	27 " "
4 " " "	.....	45 " "

The above test was actually made, using a *new* saw blade on each cut made on the old style machine, and a *single* blade for the four tests on the "Q & C" Shop Saw.

Darling Brothers, "Reliance Works," Montreal, are manufacturers of this machine.

CANADIAN COAL COMPANIES.

Our enterprising contemporary, the *Coal Trade Journal*, of New York, recently had what it called a Canadian number, from which the following list of the coal companies of Canada is taken:

Acadia Coal Co., Ltd.—Capital issued, \$3,846,100. Directors—J. W. Clendenin, president, No. 1 Broadway, New York; Bryce J. Allan, H. Montagu Allan, H. A. Allan, W. H. Davies, Thomas H. Hubbard, Johnston Livingston, J. Pierpoint Morgan, jr., Edwards S. Sanford, Wm. Strapp, George W. Ward, Main office, Stellarton, N.S. Henry S. Poole, general manager; J. G. Rutherford, assistant general manager. Mines are: Acadia colliery, at Westville, three miles from Stellarton; Albion colliery, at Stellarton, and Vale colliery, six miles east of New Glasgow. Total 1893 output, 273,206 tons; coke, 1893, 24,266 tons; total number of employes, 1,050.

Alberta Railway and Coal Co.—Capital stock, \$7250,000. Directors—Sir R. W. Cameron, New York, T. Davidson, E. T. Galt, Wm. Burdett-Couts, T. E. Collins, Edward Crabb, A. W. Stirling, Wm. M. Ramsay, Peter Redpath. Head office, 37 Old Jewry, London, E.C. E. T. Galt, managing director; W. D. Barclay, general superintendent. Mines at Lethbridge, Alta. Total 1893 output, 150,000 tons; 1,000 men employed. This company sells coal at 143 points in the Canadian North-west, the most distant being 830 miles from Lethbridge.

Anthracite and Bituminous Coal Co., Ltd.—Capital stock, \$250,000. Directors—B. E. Chaffey, Winnipeg, Man., president; W. Hamilton Merritt, S. H. Fleming, F. A. Fleming, G. F. Hardman. Main office, 15 Toronto street, Toronto, Ont. Mines, known as Bow River mines, are on the main line of the C. P. R., about three miles west of Cochrane Station.

Boston and Nova Scotia Coal Co., Ltd.—Capital issued, \$5,000,000. Directors—Hon. Jno. W. Candler, president, Boston; John Russel Gladding, Hon. David S. Baket, jr., John McKee, John C. Cobb, W. J. Fraser, A. C. Ross, R. P. Fraser. Main office, 66 State street, Boston, Mass. Mines are situated 14 miles from Mabou and 35 from Orangedale Station, on the Intercolonial Railway.

British Columbia Coal, Petroleum and Mineral Co., Ltd.—Authorized capital, \$4,000,000. Directors—Joseph D. Pemberton, Victoria; Lt.-Col. E. G. Prior, M.P.; Wm. Fernie. Formed to purchase from the Crow's Nest Coal & Mineral Co., Ltd., all their real and personal property for the sum of \$4,000,000.

Broad Cove Coal Co., Ltd.—Authorized capital, \$3,000,000. Directors—W. Penn Hussey, W. H. Munroe, John Y. Payzant, Wm. H. Wiswell, Hon. J. M. Raymond. Formed to mine, quarry and prepare for sale by any process, and to carry, sell, and deal in coal, ironstone, copper and copper ores, manganese and other minerals, etc., and generally to carry on the trades of mine and coal owners, etc., in Nova Scotia. Not at present in operation.

Cambrian Coal Co., Ltd.—Authorized capital, \$83,100. Directors—R. S. B. O'Brien, Edward Quennell, Thos. D. Jones. Head office, Nanaimo, B.C. The property owned by this company contains 831 acres of mineral land, situate in the Cedar district, Vancouver Island. This property is for sale.

Canada Coals & Railway Co.—Capital stock, \$750,000. Direc-