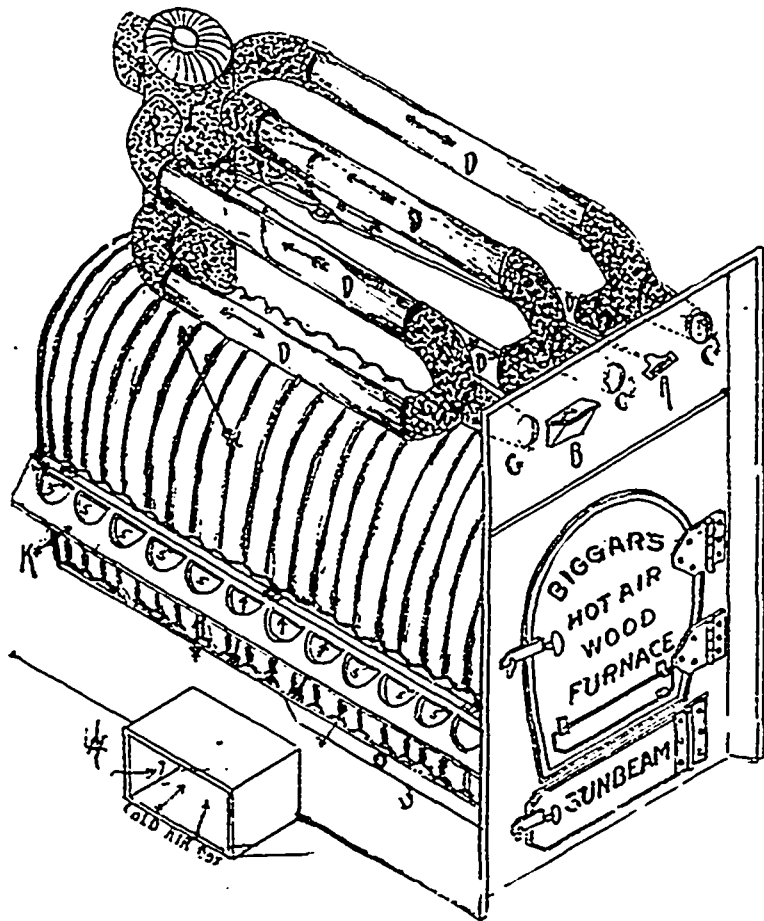


A NEW WOOD FURNACE.

There are many parts of Canada where, owing to the dearness of coal and the abundance of cheap wood, furnaces especially built for wood will be in good demand for a long time to come, and any efforts to improve the construction of this class of heater will be welcomed. The accompanying outline sketch shows a new wood furnace, patented by the inventor, R. W. Biggar, of Hamilton.

This furnace has a peculiarly constructed cast iron dome, with elbows in one piece, for the rear and front, made of cast-iron, and connected with steel tubes, which form six radiators. These radiator-pipes are so arranged that they can be easily and quickly cleaned by means of a metallic brush, and the series is provided with a damper, which gives a direct or indirect draught. Attached to the outside of the lower part of the furnace is a shield, where the cold air is drawn to the sides from cold air ducts outside the



casing. No cement is used in making the joints, but a V-shaped joint is used—the first joint of the kind applied to a furnace—to prevent smoke or dust escaping. The circular damper is placed in the large upright tube at the rear over the dome, and is worked by a rod and handle extending to the front at the point A. When the damper is opened, which is usually done when lighting the fire, there is a direct draught from the furnace fire. When the damper is closed the products of combustion are checked at that point and pass along the bottom radiators towards the front, whence they return along the top radiators to the back and pass out through the exit pipe above the damper. The ends of the tubes in front are provided with movable stoppers, C, to permit the insertion of the metallic brush for clearing. The metal shield K is bolted to the sides of the furnace at the joints, its outer edge inclining downwards and the cold air is drawn in here through the openings S and becomes heated as it rises. One of the objections to the old style of wood furnace is that the cement used in the joints falls out by the expansion and contraction of the metal, and cracks develop through which the dust escapes through the house. The V-shaped flange obviates this difficulty very successfully. The furnace is provided with an ash-pan at O, and a water-pan for moistening the air, if required, is placed in front at B. The frame is so constructed that the brick work is not liable to break.

We understand that R. McDougall & Co., of Galt, are arranging to manufacture this furnace for the inventor.

CANADIAN SLATE

In a recent number we referred to the reopening of the slate quarries at Danville, Que. Slate was quarried at that place nearly forty years ago, and for a long time they were profitably operated and gained quite a reputation. Work was carried on by old methods, however, and all the slate produced was taken from a bed the maximum depth of which was 50 feet. At this depth a "clayfoot" was met, and this seemed to be the limit. The slate there found, though of excellent color and texture, was too fine and soft for the requirements of the roofing trade, and in course of time the quarry ceased to be operated. When the present company—of which Feodor Boas, the enterprising manufacturer of St. Hyacinthe, and R. A. E. Greenshields, solicitor, of Montreal, are the principals—took hold of the quarry, they determined to pierce the clayfoot and see what would be developed below. Mr. Boas made a tour through the slate regions of Vermont and Pennsylvania, and invested in about \$30,000 worth of the newest and best machinery. The clay-foot was penetrated, and they were rewarded with the discovery of an immense bed of what is said to be the most perfect slate ever quarried on this continent or in Europe. It combines with the finest grain a deep blue color and remarkable toughness and solidity. Its qualities are much complimented by foreign firms in the trade, and already preparations are being made to export it to the United States and Europe in competition with the best slates in those markets. The improved appliances now in use at the Danville quarries will enable the proprietors to supply the home trade for roofing, flooring and other building and industrial purposes, for the difficulty hitherto has been more a question of the sufficient supply of a uniform material than any lack of demand. The company now have 100 men at work, with two shifts of hands running night and day, and already quite a village has grown up in connection with the works. The place is lighted by electricity, and as noted elsewhere, it is proposed to build an electric railway to connect with the Grand Trunk in order to facilitate shipments and passenger traffic. It is very gratifying to know that Canada can produce a slate which for most industrial purposes ranks higher than even the best foreign varieties, and it is gratifying to learn that the enterprise of the promoters has been rewarded with such immediate success.

MINING SOCIETY OF NOVA SCOTIA.

The third annual meeting of the Mining Society of Nova Scotia was held at Halifax, on 7th March. Officers for ensuing year were elected as follows:—

President—John E. Hardman, manager Oldham Gold Co. and West Waverley Gold Co.

Vice-Presidents—R. G. Leckie, manager Londonderry Iron Co., Ltd.; David McKeen, manager Dominion Coal Co., Ltd.; Geo. W. Stuart, Truro.

Secretary-Treasurer—H. M. Wylde.

Honorary-Secretary—B. T. A. Bell, Ottawa.

Council—W. R. Thomas, Montague; R. H. Brown, Sydney Mines; Durcan Macdonald, Truro; Chas. Fergie, Westville; W. L. Blackmore, Glace Bay; C. B. W. G. Matheson, New Glasgow; C. E. Willis, Halifax; Graham Fraser, New Glasgow; Geoffrey Morrow, Halifax.

A committee was appointed to consider the feasibility and advisability of federation with the General Mining Association of Quebec and other similar associations, to report at the next regular meeting.

A resolution was passed altering the number of meetings a year from four to three.

The following papers were read: "On the Value of Furnace Materials," by R. E. Chambers, Ferrona; "Some Remarks on the Gold Production of Nova Scotia, and how it may be Increased," by B. C. Wilson, Waverley; "On the Relative Costs of Mining—Air Drills vs. Hand Drills in Narrow Veins," by J. E. Hardman, Oldham.

The following were elected members: Capt. A. L. Howard, Brownsburg, Ont.; Robert Archibald, Manager Canada Coal and R'y Company, Joggins; Dr. Martin Murphy, C.E., Halifax; W. L. Blakemore, Asst. Manager Dominion Coal Co., Limited, Glace Bay; H. A. Saunders, Lake Lode, Cariboo, and A. B. Sheraton, Halifax.

THE Ontario Government is being asked to bear a portion of the expense which will have to be incurred in repairing the county buildings at Sandwich.