

lugs are cast by which each section is securely bolted to its adjoining section, the bolts securing each pair of sections being susceptible of being tightened up for the purpose of making the joint between the sections absolutely water and gas tight. This is a decided improvement over the previous method of having the bolts securing the sections together extend continuously from top to bottom of the heater, through the lugs. The packing and joint fillings are practically indestructible. The ingress and egress openings, and all the water passages, are so formed, proportioned and located as to reduce resistance to the motion of the water to a minimum. The flue openings permit of either very rapid or very slow combustion, and of any condition between these extremes; and there is a very simply arranged and easily operated damper on the top section which greatly facilitates the control of the draught. The surfaces of the sections are presented in the most favorable manner for the absorption of the passing heat, the free passage of gases, and facility for cleaning. The location, form and size of flue doors, also the legend cast upon them, "Keep the flue surfaces clean," furnish ample opportunity for the examination and cleaning of the flues, and call attention to the necessity of so doing. The degree of attention given to the legend will be manifested in the coal bill. The door permitting access to the shaker bar, and to remove scoria from the fire pot, is made to drop and is so arranged that a metal chain may be attached and led to the room above, by which the draught may be increased or diminished at pleasure of operator without visiting the heater. The incline given to the furnace mouth, and the rounding of the top ends of the fire brick and cast iron projections between them, prevent the lodgment of fuel upon them. The perforated lining to the fire door prevents radiation through the door, and it also admits heated air to the top of the furnace in proper proportions for the combustion of the gases. The ample capacity of the fire pot renders frequent firing unnecessary, applications of fuel at intervals of about twelve hours being sufficient even in the coldest weather. By removing the ash pit front the grates and grate rests may be removed from the heater with great facility, and without disturbing the upper structure.

If there is no leakage in the pipes or radiators, there can be no waste or diminution of water in the system after it has been once supplied. The water can never exceed a boiling temperature even in the heater, and the heat given off from it in its passage through the pipes and radiators lowers that temperature continuously, until, completing the entire circuit of the system, it is returned to the heater at its minimum temperature. A simply arranged tank, of a few gallons capacity only, placed at the highest point in the system, is sufficient to meet any possible exigency that may arise by any leakage. Actual tests show that the water leaving this heater at a temperature of about 200 degrees, after circulating through a system embracing about three thousand feet of pipes and radiators, is returned to the heater at a temperature of about 175 degrees, the loss in heat in making the circuit being only about 25 degrees.

THE attention of mill and factory owners is called to the fact that the cost of a metallic roof is not much, and that it is a good protection against fires.

*Light Heat and Power*, Philadelphia, the only journal in America devoted to the gas industries, will hereafter be published weekly instead of twice a month, as heretofore. This excellent journal is accepted as authority on the matters to which it gives special attention.

THE *American People* is a weekly pictorial journal published in Pittsburgh, Pa., specially in the interests of American manufacturers. The cartoons all bear upon the now all-absorbing tariff question, and show the benefits to be derived from "Protection" as against the adverse influences of "Free Trade." It is doing good work.

SHIPMENTS of coal for July from the Nanaimo district were the largest yet attained in the history of coal mining in B.C. Total shipments amounted to 40,158 tons, loaded into twenty-six vessels. This does not include supplies to the local steamers and home consumption. The value of the exports of coal for the month is placed at \$140,553.

THE *London Evening Times* is another new bark just launched upon the sea of Canadian journalistic enterprise, by Messrs. Paul & Harris, London, Ont., and which finds hearty welcome to our editorial table. It is a valuable acquisition to our exchange list, as it appreciates the importance of publishing whatever may be transpiring in London and vicinity in manufacturing and industrial circles.

THE *Enterprise*, New Glasgow, N.S., is a new and welcome visitor to our exchange table. It is published weekly by Messrs. Dennis Bros., and started out with a guaranteed circulation of

2,000 copies. New Glasgow is the centre of what is already a great manufacturing and mining region, and although these industries are in their infancy, the unbounded faith of those interested in them, including the *Enterprise*, will push them to a development that will bring employment to all classes, and the largest prosperity. The name of the paper is characteristic of the people and the province, and we wish it every imaginable success.

*Wide Awake* for September shows up on our table as bright and cheerful as ever, and brimming over with a profusion of delightful reading that produces a feeling of restfulness while pursuing it, and of regret when it is finished. Why don't the publishers send it to us every week instead of only once a month? We are sure there is not an intelligent person in all Canada who is fortunate enough to receive it who does not feel happier and better for having read it. Intended as it is specially for the delectation of the young, it brings pleasure to older people also. *Wide Awake* is \$2.40 a year. D. Lothrop Company, publishers, Boston, Mass.

THE *Cleveland Iron Trade Review*, of August 16, was a Centennial edition, commemorative of the great Centennial Exposition of the Ohio Valley and Central States, recently held in Cincinnati. Among the more interesting features of it are concise and condensed descriptions of a number of the more enterprising manufacturing centers of Ohio, from which fair ideas may be obtained of the greatness of that great manufacturing state. Careful work, fine paper, and good printing and press-work are characteristics of the edition to which we allude, and there are just fifty-two equally good and interesting *Trade Reviews* published each year.

THE *Pump Catechism*, a practical help to runners, owners and makers of pumps of any kind; covering the theory and practise of designing, constructing, erecting, connecting and adjusting pumps, by Robert Grimshaw, M.E. Fourth improved edition. New York: Practical Publishing Company, 21 Park Row. Price, \$1, post paid to any address. If there is any practical question concerning any application or any adjustment of any kind of a pump, which is not answered in this book, the publishers would like to have it for answer in the next edition. The author will answer any such question free by mail, if addressed in care of the publishers enclosing stamp. This offer is good only to those who have ordered the book.

THE *Dominion Illustrated*, which is published every week in Montreal, by Messrs. G. E. Desbarats & Son, is a journal of which every Canadian should be proud. They should be proud of it because it is a distinctively Canadian publication, which seeks in all ways within its scope to magnify and exalt Canada, and to make the excellence of the country and the people living in it well-known and appreciated abroad, and at home also. Unlike some other journals published in Canada, it does not pander to any disloyal element, nor seek to depreciate Canada by ridicule and false insinuations. The illustrations, whether of persons, things or places, are all of the highest order of merit and very artistic and beautiful. Messrs. Alex S. Macrae & Son, 127 Wellington Street, West, are in charge of the Toronto office of the concern.

THE Rathbun Company of Deseronto, Ont., are now manufacturing and have for sale all kinds of fireproof building material. Their porous earthenware, or terra cotta, is recommended by architects and insurance companies as unexcelled for protection against fire. It weighs one-third that of brick; mortar adheres to it without the use of lath; it may be nailed, sawed and worked with carpenters' tools; it takes the place of wood or brick for outer or inner walls and floors at about the same cost; insures immunity from fire, dampness and vermin; gives warmth in winter and coolness in summer; lowers insurance and decreases the cost of the building. Persons rebuilding old structures or erecting new ones are solicited to consult their architects or write the company direct in reference to this new material.

THE manufacture of various articles from compressed paper is by no means a novelty, the art of producing papier-mache goods having been known for centuries to oriental nations. The employment of this light and durable substance for everyday purposes, is of more recent date, and has only been made possible by modern science and invention, backed by the results of mechanical skill. This business is fast acquiring large proportions both in Canada and the United States, where paper pulp, or wood pulp is converted into a large variety of domestic utensils. In the manufacture of these goods the material is placed under a press capable of developing a pressure of 250 tons, provided with dies that are kept at a proper temperature. The goods thus formed are subjected to a water-proofing process, and baked at a high temperature, enamelled and baked again, rendering them smooth, of handsome appearance and perfectly non-porous. They are ornamented to taste and after another coat of varnish, they are again baked and are then ready for use.