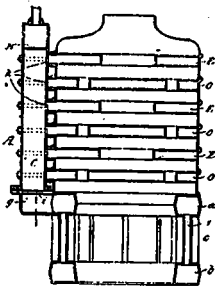


plstons I, I', substantially as and for the purpose hereinbefore set forth. 3rd. The combinations of the cylinders K, K' and the pistons I, I', with the rods P, P', as connected with the lever Q and the chain T, substantially as and for the purpose hereinbefore set forth.

Hot Water Radiator.

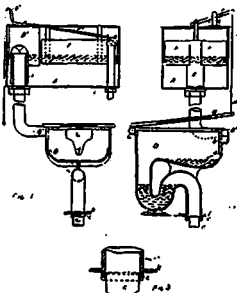
No. 28,923. Eugene S. Manny, Montreal, Que., dated 16th April, 1888.



Claim.—A hot water radiator, composed of a certain number of vertical hollow double independent sections A, mounted on a double hollow corresponding horizontal base B, by means of bolts C, and provided with a system of air tubes O, P and valve Q, the whole as above described and for the purpose set forth.

Water Closet Apparatus.

No. 29,526. David S. Keith and Alexander Keith, Toronto, Ont., dated 23rd July, 1888.



Claim.—1st. As an improvement in a water closet apparatus, the siphon A containing a siphon E which is operated by the depression of a miss D, or of a mass F F' in the water, as herein described, and for the purpose specified. and the improvement in a water closet apparatus which consists of bringing the seat M to lug L, formed in the wire of the closets, and connecting the seat M to operate the action of the siphon system, as herein described and for the purpose specified. 3rd. In a water closet the fan B having an opening above the level of the water in the basin, and pointing towards the centre of the bottom of the basin, substantially as described herein and for the purpose specified. 4th. In a water closet apparatus, the connection of the closet to the soil pipe C, formed by the flange with the channelled recess C containing tar or other viscous matter, substantially as described and for the purpose specified.

Composition for Roofing and Carpet Felt, Straw Lining, etc.

No. 29,528. Thomas P. Bishop, Jr., St. Bazile, Que., dated 28th July, 1888.

Claim.—In the manufacture of carpet felt, roofing felt, and straw lining, the admixture with the ingredients of which these are now composed, of spent tan bark within the proportions of from fifteen to twenty per cent. as and for the purpose set forth.

PROPOSED NEW SEWER PIPE MANUFACTORY IN CANADA.

THE editor of the CANADIAN ARCHITECT AND BUILDER is in receipt of the following letter from a gentleman in the United States, whose name we withhold for the present, having no authority to make it public:

"I am thinking of establishing a manufactory for sewer tile, etc., in Canada, if I can find a city suitable for the purpose, and I think I know where I can get it.

I write to you for information regarding the market for sewer tile, and to find out if the demand is all good; or what there is any manufactory in Canada at present, and to what extent. I, of course, refer to a vitrified, salt glazed tile, and I understand the largest size at present manufactured in the country is six inch.

Any information you can send me on the subject will be thankfully received."

Upon receipt of the above letter, we instituted enquiries, with a view to obtaining the information sought for. We were informed by the principal dealers in sewer pipe in this city that a wide field lies open to the manufacturer of a first-class article in that line in Canada. There are at present two manufactories in Canada—one in Ontario, the other in Quebec. These, we were informed, supply but a very small percentage of the sewer pipe used in this country. The largest proportion is imported either from Scotland or the United States. We enquired

whether it was owing to the limited capacity of the Canadian manufacturers to produce the goods that such a large proportion had to be imported. The answer was that it was due rather to the inferiority of the pipe at present manufactured in Canada as compared with the imported article. The city of Toronto, it was said, would not allow the use of the native article, and that one dealer alone imported into Toronto last year 300 car loads of drain and sewer pipe. We give these statements to the public as they were given to us, with no desire to injure in any way any industry at present in operation in Canada, but rather to point out to the proprietors of such the apparent necessity of improving the quality of their output, if they desire to supplant the manufacturers of other countries at present used so largely in our public works. We also consider it a duty to encourage the establishment in Canada of manufactories whenever there appears to be a profitable opening for the same.

ENGINEERING MATERIALS.

I NOW desire, says Sir Frederick Emmwell, the eminent English engineer, addressing the British Association, to point out how, as the work of the engineer grows, his needs increase. New material, or better material of the old kind, has to be found to enable him to carry out these works of greater magnitude. At the beginning of this century stone, brick and timber were practically the only materials employed for that which I may call smelting engineering work—i. e., buildings, aqueducts and so on. The white, malleable cast iron and wrought iron were for many years the only available materials for the framing and principal parts of moving machines and engines, with the occasional use of lead for the pipes, and of copper for pipes and for boilers. As regards the cast iron, little was known of the science involved (for that ought to be involved), in its manufacture. It was judged of by results. It was judged of largely by the eye. It was "white," it was "mottled," it was "gray." It was known to be "fit for refining," fit for "strong castings," or fit for castings in which great fluidity in the molten metal was judged to be of more importance than strength in the finished casting. With respect to wrought iron, it was judged of by its results also. It was judged of by the place of its manufacture; but when the works of the district were unknown, the iron, on being tested, was classed as "good fibrous," although some of the very best was "steel-like," or "bad," "hot-short," or "cold-short." A particular district would produce one kind of iron, another district another kind of iron. The ore, the flux and the fuel were all known to have influence, but to what extent was little realized; and if there came in a new ore or a new flux it might well be that for months the turn-out of the works into which these novelties had been introduced would be prejudiced. Steel again—that luxury of the day of my youth—was judged by the eye. The wrought bars, made into "blister" steel by "cementation," were broken, examined and grouped accordingly. Steel was known, no doubt, to be a compound of iron and carbon, but the importance of exactness in the percentage was but little understood, nor was it understood how the presence of comparatively small quantities of foreign matter might necessitate the variation of the proportions of carbon. The consequence was that anomalous results every now and then arose to confound the person who had used the steel, and, falsifying the proverb "true as steel," steel became an object of distrust. Is it too much to say that Bessemer's great invention of the steel by the "converter," and that Siemens's invention of the open hearth process, reacted on pure science, and set scientific men to investigate the laws which regulate the union of metals and metalloids, and that the labors of these scientific men have improved the manufacture, so that steel is now thoroughly and entirely trusted? By its aid engineering works are accomplished which, without that aid, would have been simply impossible. The Fourth Bridge, the big gun, the compound armor of the Ironclad with its steel face, the projectile to pierce that steel face, all equally depend upon the "truth" of steel as much as does the barely visible hair-spring of the chronometer, which enables the longitude of the ship in which it is carried to be ascertained. Now, what makes the difference between trustworthy and untrustworthy steel for each particular purpose? Something which, until our better sense comes to our aid, we are inclined to look upon as ridiculously insignificant—a "next-to-nothing." Setting extraneous ingredients aside, and considering only the union of iron and carbon, the question whether there shall be added or deducted one-tenth of one per cent. (pardon my clumsy way of using the decimal system) of carbon is a matter of great importance in the resulting quality of the steel. This is a striking practical instance of how apparently insignificant things may be of the highest importance.

In an article descriptive of the Montreal Terra Cotta Lumber Company's business, which appeared in the June number of this Journal, an error occurred which we very much regret, and now desire to correct. The President of the Company is Mr. J. Barsalou, and the manager, Mr. W. T. Gayoun, not W. C. Evans, as erroneously stated in the article referred to. The company's works are at Maisonneuve, not their business office at 86 St. Peter street, Montreal. Our readers are asked to note the company's correct address, as given above, and correspond with them for full particulars of their terra cotta fire-proof building material.

William Clarke, 39 Adelaide street east, Toronto, is the inventor and patentee of a new kind of sliding door hanger, which is superior in some important particulars to those heretofore used. Unless very carefully handled the ordinary sliding door will "stick," and prove itself to be a nuisance. This is owing to the fact that the door is hung entirely from the top. With Mr. Clarke's invention the door cannot hitch, being perfectly balanced and sliding on both top and bottom tracks. Another equally important advantage lies in the fact that it is put in separate form, instead of as a part of the building, and should any demagagement of the building throw it out of perfect adjustment, the difficulty can be overcome without disturbing either the wall, carpet or furniture. Mr. Clarke has commenced the manufacture of his device, and invites correspondence and investigation from persons interested in building.



Architects, Engineers, Builders, Owners and others are invited to send particulars of all kinds of construction work in continuation, for publication in this department. Please state location, character and cost, and names of person or persons controlling the work.

OSHAWA, ONT.—W. J. Hart will erect a foundry here at once.

KINGSTON, ONT.—Tenders will be asked shortly for the erection of the proposed dry dock.

OWEN SOUND, ONT.—The Methodist congregation propose to erect a handsome new church.

HALIFAX, N. S.—This city proposes to expend \$10,000 in sewer extension and improvement.

LEAMINGTON, ONT.—Capitalists have in view the erection of a \$50,000 hotel on the lake shore next summer.

PENDBROKE, ONT.—Pembroke will on the 26th December vote on a by-law to borrow \$50,000 for waterworks.

ST. JOHN, N. B.—The Intercolonial railway will be extended along the harbor front if right of way is given.

TESWATER, ONT.—A by-law to raise \$5,000 for a system of waterworks has been adopted by 45 of a majority.

WIARTON, ONT.—A by-law appropriating \$85,000 for the construction of waterworks was carried here on Oct. 10th.

AURORA, ONT.—The by-law to raise \$3,000 for the extension of the Aurora waterworks was carried by a majority of 65.

STRATFORD, ONT.—The necessity for the erection of a hospital for this city is being pointed out, and doubtless action in that direction will soon be taken.

OTTAWA, ONT.—The Y. M. C. A. of Ottawa, are about to erect a \$22,000 building.—The Chairman of the Waterworks Committee will receive tenders until the 31st inst. for the construction and erection of a set of pumping machinery. Specifications and drawings may be seen at the waterworks office, here.

QUEBEC.—An effort is being made to obtain a suitable site for a grand union passenger depot on the Cove field for all the railways entering the city.—A corps of engineers is making observations to ascertain the width and elevation of the St. Lawrence and record soundings of the river bed with a view to erecting a bridge across the river at this point.—A syndicate is said to have acquired ground near Dufferin terrace on which to erect a large hotel.

WINDSOR, ONT.—Health Officer Coventry, of Windsor, says Walkerville is bound to grow, and that sewage from that place will in time make the water lower down dangerously impure for use at Windsor. He favors a site above Walkerville for new waterworks buildings. A competent engineer will be employed to estimate the cost.—Foreign contributions to be applied to the building of the new hospital, Hoag Dieu, at Windsor, to the amount of \$20,000 have been received by Dean Wagner. A site has been secured, and work will soon be commenced on the main wing, which will cost \$30,000. The total cost of the building will be about \$75,000.

TORONTO, ONT.—A by-law will be submitted asking \$90,000 for new water mains.—Mr. A. E. Paull, architect, is preparing plans for a new fire hall to be built on Ossington Ave.—Plans have been prepared for a Wyafers' Home, to cost \$10,000.—The following permits for the erection of new buildings have been granted by the Toronto City Commissioner since our last issue: Mr. Byer, a blocks of six each a storey e. c. dwellings, 4 to 30 Davenport Road, cost, \$6,000; Mr. Clark, 3 attached r. c. dwellings, Eglar street, cost, \$4,000; Mr. T. Dowdell, attention to dwellings, corner Ontario and Wellesley sts., cost, \$1,150; Beady & Bell, a attached r. c. dwellings, Walton st., near Termyan, cost, \$2,500; Mr. H. H. Strathly, alterations to warehouse, 37 Front st., cost, \$3,000; J. T. Shipper, pair s. d. a storey and attic brick dwellings, Carlton st., cost, \$5,000; Mr. W. O'Neil, alterations to building, Adelaide st., cost, \$5,000; R. & T. Watson, 4 storey brick warehouse, Esplanada st., east of Church st., cost, \$6,500; Mr. W. S. Thompson, pair s. d. a storey and attic brick dwellings, cor. Wilcox and St. George st., cost, \$15,000; A. J. Mark, 2 pr s. d. a storey and attic brick dwellings, corner of Mainland and Church sts., cost, \$25,000; Mrs. C. Verrill, 4 attached 3 storey and attic brick dwellings, Bathurst st., near College st., cost \$16,000; Mr. Ben Heck, brick additional storey, cor. Duesch and Sherbourne st., cost, \$1,000; Mr. John C. Cochrane, a storey and attic brick dwelling, St. George st., south of Bloor, cost, \$11,000; J. G. Goddard, a storey brick addition, cor. Front and Sherbourne sts., cost, \$4,500; George Hastings, a storey brick addition and alterations to 200 Simcoe st., cost, \$2,000; Mr. A. Mitchell, pair attached a storey brick dwellings add alterations to store, Grange Ave., cost, \$3,000; St. Joseph's Convent, brick stable and coach house, cost \$3,000; W. G. Boon, pair s. d. a storey and attic brick dwellings, Murray st., cost, \$3,000; G. C. Sheppard, one pair s. d. a storey and attic e. c. dwellings, Cumberland st., near Avenue Road, cost, \$1,600; O'Keefe & Co., alterations to store house, Dalhousie st., cost, \$2,000; B. Rossman, alterations to brewery, Duesch st., cost, \$5,000.—Those who have in hand the raising of funds for the erection of the new Victoria University building in this city hope to be in a position to let contracts for the work next spring.

PERSONALS.

M. B. Thomas, Superintendent of the Dundas gas works, has recently returned from a tour of inspection to various cities of the United States.

Hon. Mr. Smart, Minister of Public Works for Manitoba is reported to be dangerously ill of typhoid fever at Brockville, Ont.

Mr. Sandford Fleming, the well-known engineer, has returned to Ottawa after spending the summer at Halifax, N. S.