

find a joint leaking under test, and so situated as to make proper caulking almost impossible. Unless the pipes are very heavy and the castings perfect, there is danger that the hubs will be split in making the joint. It is a well-known fact that a joint caulked with a heavy hammer, no matter how lightly used, is very likely to split the hub.

What is wanted is some method by which iron-pipes may be securely joined so as to resist both air and water pressure, and at the same time resist all action of steam or hot water. It should be easily made and, if possible, as cheap as lead, taking into consideration the time and labor required for making the lead joint. It ought to be capable of being applied to confined situations. In this respect it must be superior to lead.

The man who will accomplish this task will produce one of the most valuable and money-making inventions of this century of great inventions.—*Mechanical News.*

**FIRE BRICKS FOR BUILDING PURPOSES.**

A RAPIDLY growing industry in Pennsylvania is the manufacture of front bricks for building purposes from various grades of fire clays. The demand for fire bricks for building purposes is constantly on the increase and the pressed brick trade is feeling the effects of the competition. An authority on the subject representing a fire brick firm at McKeesport, Pa., in speaking to a correspondent in that city, said: "I see your city is utilizing to a great extent our material. The fire brick is steadily growing in favor and will in a few years be in close competition with the pressed and machine-made bricks for house contractors. It is true that the fire brick is more expensive than the others, but with improved machinery and improved methods of gas burning the cost of manufacture is on the decrease, and it will not be long before the bricks will be cheap enough to be used by everybody."

**PUBLICATIONS.**

We are in receipt of a copy of a new catalogue of 165 pages, issued by Messrs. Booth & Sons, copper smiths, brass founders, and dealers in plumbers supplies, Toronto. The catalogue is handsomely printed, illustrated and bound, and should serve as a handy reference book for architects, plumbers, etc.

During the past 12 months 215 building permits were issued by Mr. Balfour, the Inspector of Buildings for the City of Hamilton, the aggregate value of the buildings being \$500,000.

The experienced artisan who uses boxwood may frequently be annoyed by its unequal shrinkage. Mr. H. Wells, manufacturer of printers' cases and wood type, 8 Spruce Street, New York, has experimented considerably with boxwood, and brought to our office two strips cut from the same log, which showed a difference in shrinkage somewhat surprising, and he states that these are by no means exceptional cases. Each strip was planned to 3-16 of an inch square, and the original length of both was exactly 16 inches. Although both strips were cut from the same log, as stated before, one of them is of a lighter color than the other. The shrinkage in length of the light colored strip is scarcely perceptible, while that of the dark colored one is fully 1/4 of an inch. This indicates that great care should be taken in the selection of material for boxwood rules, and for other purposes where a difference in shrinkage is not permissible; and that the color of the wood may, to some extent, be taken as a guide in making the selection.—*American Machinist.*

The new process of treating sewage with a salt of iron, mentioned in the *British Architect*, seems well adapted for small and isolated areas. It consists simply in treating the sewage with a salt of iron supplied regularly in a certain fixed proportion; the effect is not merely to do away with all offensive odor, but to actually destroy all the noxious elements of the sewage, reducing it to a fine black ash: and producing a perfectly clear affluent. The iron is supplied by means of a ferro-meter. This consists practically of a glass receiver, holding 30 pounds of the specially prepared chemical, enough to last a household of fifteen persons for a week. The lower end of this receiver is perforated by a series of holes, and dips into an earthenware vessel, through which runs a constant flow of water, which gradually dissolves the chemicals, after which it is allowed to pass into the drainage system of the building. By raising or lowering the receiver in this bowl, according to a fixed scale, the rate at which the contents are dissolved may be regulated to suit the size of the household, and the flow of water is capable of similar regulation, a drop per second usually sufficing for a small household, the cost per head per year not exceeding ten pence.

Mr. P. A. Lavierre has recently purchased the Smith quarries at Cote St. Louis, which have lain idle. It is the intention of the new owner to introduce machinery for sawing the stone in slabs and in square pieces which will be used in the same manner as brick to encase houses.

Mr. W. J. Hynes has been compelled by the demands of other business interests to resign the management of the Adamant Manufacturing Co., Toronto. His successor is Mr. W. B. Cherry, who has been connected with the company from its inception, who is consequently familiar with every detail of the business, and will doubtless display his ability to fill the new and important position assigned him in a satisfactory manner.

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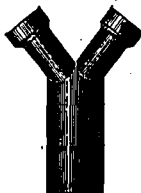
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