



Peterboro' brickmakers are preparing for a big season's sale.

The Calgary Lumber Co., will make bricks at Cochrane this year.

Mr. A. Biot, Montreal, will build a glass works at Ottawa if a bonus is offered him.

Toronto manufacturers will in future make bricks of a uniform size. There will be no advance in price.

Mr. Wm. Davidson, builder and contractor, Mount Forest, Ont., is about to open a planing mill and sash and door factory.

The Buckingham Brick and Tile Co., Montreal, have been incorporated with \$30,000 capital stock for the manufacture of brick, drain tile, &c.

Mr. A. S. Walker, talks of starting a brick kiln at Neepawa, Man. Good clay can be procured, and building next year promises to be brisk.

One of the latest uses to which paper has been put is the building of chimneys. It is made in the form of blocks which are joined with silicious cement.

Dealers in Montreal are holding stocks of cement for higher prices. This anticipation of a rise is based on recent advances in prices in foreign markets.

Mr. Walter Beatty, Pembroke, Ont., has refused the offer of a \$3000 bonus to assist him in rebuilding his sash and door factory recently destroyed by fire.

For cement to make joints for granite monuments use clean sand, twenty parts; litharge, two parts, quicklime, one part; and linseed oil sufficient to form a thin paste.

Messrs. Jas. H. Donnel and H. C. Stavley have recently purchased the planing mill business formerly conducted by Messrs. Kineard & McWilliams, Peterboro', Ont.

The Bell Telephone Company in Montreal is establishing telephone communication between different departments in large warehouses, thus doing away with speaking tubes.

For veneering for panels, thin stripes of white pine may be stained with bleached and tinted cocobro, both wood and cocobro being heated. When cold, the surface is to be varnished with shellac. The tones present a translucent appearance.

The pavement in front of the Fifth Avenue residence of the late W. H. Vanderbilt, New York, has one large stone forty feet long and twenty-five feet wide, the largest piece of flagging ever quarried, and alone cost \$9,000. The Vanderbilt pavement cost, altogether \$40,000.

It is said that carbonate of lime found in the vicinity of Shallow Lake, Grey Co., Ont., will produce a good quantity of whitening, and that this, together with the clay of the district, will make excellent Portland cement. A company is being formed for the manufacture of these articles.

In a paper on the strength of different kinds of wood for building purposes, Professor Johnson calls attention to the fact, as now demonstrated, that much cheaper kinds of timber may prove more valuable for structures than more expensive varieties, which have been supposed to be stronger, and, therefore, more desirable. Thus pine supports or pillars have been found stronger than oak ones, when tested in large samples.

E. Van Noorden & Company, of Boston, manufacturers of metallic sky-lights, have contracted with the city of Charleston, S. C., to line the walls of four hospital wards constructed of wood, with glass, one-quarter of an inch thick, set in angle iron frames, held in place by galvanized steel-iron caps; the ceiling will be of finely corrugated iron, arched to a radius of twenty-four feet. The wards are each 30x115 feet, one story high, with double pitch roof. The idea in using glass is to prevent the absorption of disease germs and to secure cleanliness. Although glass has been suggested for this purpose, this is the first instance of its use of which we have heard. The people of Charleston are watching the work with interest.

A USE FOR BRICK WASTE.

ACCORDING to the statement of Mr. Miles, a well-known engineer, it is a fact peculiar to Spanish countries that ordinary brick dust, made from hard-burned, finely pulverized bricks, and mixed with common lime and sand, is universally and successfully employed as a substitute for hydraulic cement. Mr. Miles says that during an engineering experience of some six years in Cuba his opportunities were ample for testing its merits, and he found it in all respects superior to the best Rosendale hydraulic cement for culverts, drains, tanks and cisterns, and even for roofs. In an experiment to test the strength of this product, it was found that a block of it, 4-inch in thickness, without sand, and after an immersion in water for four months, bore, without crushing or splitting, a pressure of fifteen pounds per square inch. It is thought that, by the addition of pulverizing mills to brick yards, to utilize the waste and broken bricks, a profitable manufacture might be carried on.

CASTING PLATE GLASS.

THE operation of casting a plate is as follows: The glass in the pots having attained the proper degree of liquidity, and having received a thorough melting and refining, the fire is slackened to render the mass somewhat viscous by cooling. The doors in front of the pots are lifted or taken away; the workmen, each with a long pair of iron pincers, take hold of the pot in the furnace, bring it upon an iron truck or carriage, and at a dog-trot carry it under the crane. The impurities of glass gall upon the surface of the glass are now scraped off and the pot carefully wiped on the outside with a wet cloth to prevent dirt from falling upon the casting table. The pot is now seized by a pair of strong iron tongs or nippers and raised over the table by means of the crane. The casting table is a large cast-iron slab well polished, mounted upon a carriage running over a railway. Upon this table two iron rules of the thickness of the required plate are now laid on each side. The pot suspended above is now tilted over and the glass poured upon the table. A heavy iron roller is now passed over the glass, the ends of which rest upon the thickness rules. During the rolling, if any impurities are detected in the glass while yet plastic, they are removed with suitable instruments. The plate is then annealed, after which it is ground, smoothed and polished, each being an operation requiring time and care.

QUALITY OF BRICKS.

THREE main points with reference to bricks have to be taken into account: 1. The power of resistance under pressure; 2, the appearance of the fracture, which should present an even texture, and a fine and brilliant grain, without cavities in the interior, and neither ribbony nor stony; 3, the exterior, which should be smooth and regular, the angles and edges sharp and straight. When the size of the bricks is equal throughout the mass it is a proof that the brick earth has been well prepared and the bricks generally well made. A brick, when struck, should give forth a clear, ringing sound. Good bricks are generally of a dark reddish-brown color, and sometimes they show variegated spots on the surface; it is not well, however, to depend too much on the test for, it is often only an indication of the amount of heat to which the brick has been subjected, while the clay of which the brick is made may be impure and ill prepared. Bad bricks are readily recognized by their reddish-yellow color, but still more by the dull sound which they emit when struck; their grain being soft they crumble easily, and absorb water with avidity. A good brick should not absorb more than about one-fiftieth of its own weight of water; it should appear, and in reality be, dry. A brick that does not take up any water at all is too much burnt; the mortar adheres to it imperfectly, but it is a good conductor of heat. Such bricks may be used in damp soil and for pavements. When a brick left in water either soaks or swells it is of bad quality and contains cosmic lime. A brick which, being made red-hot, and then having water poured on it, does not crack, is of extraordinary and rare quality, and those which have borne the effect of moisture and dryness during two or three winters without scaling or cracking are excellent. In order to try if bricks will bear the effect of frost, let one be boiled for half an hour in a solution of sulphate of soda, saturated cold, and then suspended by a string over the vessel in which it has been boiled. In 24 hours the surface of the brick will be covered with small crystals; the brick is then to be immersed again in the solution until the crystals dis-

appear, and again suspended, repeating this operation for five days, the crystals reforming after each immersion. If after this treatment a number of particles of the brick are found at the bottom of the vessel containing the solution, the bricks are incapable of supporting the effects of frost.—*Carpentry and Building.*

THE MARBLE QUARRIES OF CARRARA.

THE famous marble quarries of Carrara have been worked for centuries, and as yet show no signs of exhaustion. The marbles of this favored locality are among the very few which possess that exquisite fineness of texture, purity of color, and freedom from veins and spots which are demanded for the uses of the sculptor's art; and the major portion of the famous works of ancient and modern art have been chiseled from Carrara stone.

The quarries of Carrara are very extensive, and give employment to 5,000 men; in addition to which there are in the town no less than 100 studios of sculpture and 65 saw mills.

The method of extracting the stone is peculiar. In some of the quarries the men are hoisted to the height of some 600 feet above the level of the quarry, and up aloft on the mountain side excavate and loosen colossal blocks of the precious rock. Each gang (as described by eye-witnesses), or the foreman of the gang, goes down with, and on the block as it is swung by derrick ropes out into the air and swiftly brought to moorings. The free, easy primitive style of the Carrara flying trappe work makes it appear doubly dangerous. The fact that hundreds of accidents happen every year does not appear to have any influence with the workmen.

The condition of these quarries and their offspring is described as being pitiable in the extreme. One who writes from personal observations, says of them: "Their food is dry bread, a raw onion and dirty water. It is the only place in Italy where wine is not drunk. Worn out by incessant toil, these people, insufficiently fed, fall into dissipation, violence and crime, dying like dogs and leaving on the white marble the sweat of their wretched lives. We see none of all this under the hand of art."

Fully \$800,000 worth of marble goes out annually from these marble quarries, the bulk of it to France. The price of it varies according to its beauty. The first quality is priced at \$60 to \$80 per square meter at the seaport. This is what we term statutory marble. The second quality is priced at \$45 to \$65, and the spotted at \$30 to \$50. They come pure white, but not statutory marble; the price is \$50 per square meter. The second quality is \$35, and the third is \$30. The valued quality is \$25. Violet-bed marble brings \$20 to \$30 per square meter. These are the ordinary tariffs, and on them the profits are absurdly high before, the marble leaves the quarry. In some instances I have known first-class statutory blocks to be rated at \$12,000 each, regardless of market rates.

"I have a little ornamental work I should like to submit," said the Carved Design to the Corinthian Temple. "Thanks," replied the Temple, "but the pressure upon our Columns is so great that we shall have to Decline your Offer."

Tom—"We've got a bay window in our house." Bessie—"So have we. And a balcony." Tom—"Pooh! That's nothing. We have two bath-rooms." Bessie—"So have we." Tom—"We've got something you folks haven't. I heard papa tell mamma about it last night." Bessie—"I'll bet we've got some of 'em too. What is it?" Tom—"A defective leg."

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THOROLD, - - ONTARIO.

OTTAWA, 31st June, 1888.

DEAR SIR,—I duly received your letter of the 21st ultimo, requesting my opinion relative to the Cement manufactured at your establishment in Thorold, in reference to which the following is respectfully submitted: For the past forty years the natural Hydraulic Cement obtained at Thorold, Province of Ontario, has been used in the knowledge, on various extensive public works, and in every instance the result has proved highly satisfactory. Where properly burned, ground fine, and used fresh from the mill, it will compare favorably with any natural or artificial cement that I know of for building or other purposes in a moist position, or for walls that have been built a few weeks before water has been let in on them. It is well adapted for concrete foundations, walls, drains, cisterns, or indeed, for any hydraulic work; when properly prepared and mixed with two parts of clean sharp sand to one of cement, the result will invariably give good satisfaction.

I am, Sir, yours very truly

JOHN BATTLE, Esq.,

Cement Manufacturer, etc., Thorold, Ont.

JOHN PAGE,

Chief Engineer of Canada, Canada.

QUEBEC, MONTREAL, OTTAWA & OCCIDENTAL RAILWAY.

CHIEF ENGINEER'S OFFICE.

JOHN BATTLE, Esq., Thorold:

MONTREAL, 31st March, 1887.

DEAR SIR,—I have tested with Reibell's Testing Machine the tensile strength of six blocks made of the barrel of Thorold Hydraulic Cement which you sent me last summer. The blocks were made of neat cement, and were 15 inches square at the smallest part. Four of them were kept 23 days in air, and only broke under the following weights: No. 1, 470 lbs.; No. 2, 470 lbs.; No. 3, 470 lbs.; No. 4, 470 lbs. The remaining two were kept one day in air and forty days in water, and broke under the following weights: No. 5, 470 lbs.; No. 6, 470 lbs. The remaining two were kept one day in air and forty days in water, and broke under the following weights: No. 5, 470 lbs.; No. 6, 470 lbs. Yours truly,

P. A. PETERSON,

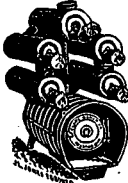
Chief Engineer.

Quebec, Montreal, Ottawa & Occidental Railway.

The Thorold Cement is sold by the following dealers:

Toronto.—Edward Terry, 27 George St.
" Robert Corbett, 60 Adelaide St. West.
" Joseph Adams, Rylands, foot of George St.

Hamilton.—W. A. Freeman, James St.
" W. J. F. Gordon, James St.
London.—A. D. Cameron, Dundas St.
" Brown & Co., 240 Bathurst St.



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