



Shellac and borax boiled in water produces a good stain for floors.

The Peierloro Bridge Works have been removed to larger premises.

The Beaverton Brick and Tile Co. have dissolved partnership. Mr. Taylor will in future conduct the business.

A company formed in this city recently will establish large works near the mouth of the Niagara River for the manufacture of heating furnaces, etc.

A test of the new pumping machinery for the Water Works Department of Hamilton, showed the pumping capacity of the engines to be in excess of the requirements.

The beautiful enamelled bricks frequently used for outside or interior decoration are made by applying to the surface a colored flux, which during the burning causes the silix to melt and cause a vitreous covering.

Mr. R. Davis, ship builder, has closed a contract with a firm producing works of Montreal to freight 2,000 tons of soapstone from Portland Bay, Rideau Lake, to Montreal during the coming summer.

Operations have been going on briskly at the Forks of the Credit, notwithstanding the severity of the weather. Messrs. Scott & Pattullo, Armstrong & Sharp and Brindell & Co. are each giving employment to twelve men.

The bulk of the stone used in the construction of the new International Bridge at South St. Marie was quarried at Oren Sound. Mr. G. M. Patterson, the inspector of masonry, says the quality of this stone is unsurpassed on this continent.

A colossal stick of lumber from Puget Sound has been contributed to the Mechanics' Exhibition at San Francisco. Its length is 131 feet, and it is 20 x 20 inches through. It is believed to be the longest piece of lumber ever traced out of any saw mill.

At a meeting of the St. Thomas Plate Glass Association held a few days ago, the following directors were appointed:—J. J. Nicklborough, A. M. Hutchinson, Dr. McLarty, Alex. Lindsay and Dr. Eaton. Dr. McLarty was elected President and J. P. Martyn, Secretary-Treasurer.

The Hungerford Marble Quarry Co., Madoc, Ont., are receiving very encouragement as the result of their recent explorations. It has been demonstrated as the opening of the vein continues, that the marble is there in paying quantities and of a very good quality. Mr. Whitney, the manager, expects to have the product of these quarries in the market during the coming summer. The industry promises to return handsome profits and employ a large number of men.

A new invention designed to take the place of stained glass is white paper manufactured from cotton or linen and modified by chemical action. The paper is dipped into a preparation of alcohol and camphor, which makes it like parchment. From this point it can be moulded and cut into remarkably tough sheets, entirely translucent, and can be dyed with almost the whole outside colors, the result being a translucent sheet showing, it is said, far more vivid hues than the best glass exhibits.

Rocks composed of chlorite are found in various parts of the world, and are used for ornamental constructions, especially for making smaller objects which can be turned with a lathe. These

are the stones which are called by the French *pierres olivines*. A chlorite from Boston, in Lower Canada, has been used. It is found in beds of the Lower Silurian age, lying immediately upon the Laurentian rocks; it is associated with dolomite or serpentine, and, like the latter rock, it contains some chrome iron.

TEST FOR GLUE.—The following simple and easy test for glue is given: A weighed piece of glue (say one-third of an ounce) is suspended in water for 24 hours, the temperature of which is not above 50° Fah. The coloring material sinks, and the glue swells from the absorption of the water. The glue is then taken out and weighed; the greater the increase in weight the better the glue. If it then be dried perfectly and weighed again, the weight of the coloring matter can be calculated from the difference between this and the original weight.

We learn from the London *Free Press* that arrangements are in progress with a firm in that city for the construction of a machine, patented by Mr. Israel Kinney, of Windsor, for the manufacture of patent fire-proof lathing. The machine weighs between eight and ten tons, and will take six or seven months to build. It is intended to construct the machine and operate it in London. Mr. Kinney also states that the machine will turn out creosote, grating screens and bridge-work. He has a patent for the invention both in the United States and Canada.

IRON BRICKS.—Louis Jochim, of Ottweiler, near Saarbruecken, Germany, is introducing paving blocks, which he calls iron bricks. They are made by mixing equal parts of finely ground red argillaceous slate and finely ground clay, and adding 5 per cent. of iron ore. This mixture is moistened with a solution of 25 per cent. sulphate of iron, to which fine iron ore is added until it shows a consistency of 38° Baume. It is then formed in a press, dried, dipped once more in a nearly concentrated solution of sulphate of iron and finely ground iron ore, and is baked in an oven for 48 hours in an oxidizing flame, and 24 hours in a reducing flame. The German Government testing-laboratory for building materials has reported favorably on this brick.

HOW TO PREPARE CALCIMENT.—Soak one pound of white glue over night; then dissolve it in boiling water and add twenty pounds of Paris white, diluting with water until the mixture is of the consistency of rich milk. To this any tint can be given that is desired. *Lilac*.—Add to the calcimine two parts of Prussian blue and one of vermilion, stirring thoroughly, and taking care to avoid too high a color. *Gray*.—Raw umber, with a tiring amount of lampblack. *Red*.—Three parts of vermilion and one of red lead, added in very small quantities until a delicate shade is produced. *Lavender*.—Mix a light blue and tint it slightly with vermilion. *Straw*.—Chrome yellow, with a touch of Spanish brown. *Buff*.—Two parts spruce, or Indian yellow, and one part burnt sienna.

A Russian professor has been experimenting on the best way to remove dry rot. He says that a thorough draught will destroy the parasite within twenty-four hours. If the action of draught be assisted by that of sunlight, a few hours will often suffice to put a stop to further damage. A concentrated solution of common salt is very efficacious, and the stronger it is used the more rapid its action. The action of a concentrated solution of cupric sulphate (blue stone, blue vitriol) is still more energetic and complete than that of common salt. Crude carbonic acid is rapid in its action and cheap, but inconvenient to use. But he considers that the best, cheapest, and most convenient material to employ is the tar obtained when birch wood is distilled for acetic acid; the under surfaces of the flooring are painted with the tar.

IMPROVED BRICKS.—For obtaining products that will offer greater resistance to humidity, etc., than ordinarily is the case, an improved process of manufacturing bricks has been brought forward in Germany. After drying and grinding the clay, a mixture is made of 9 1/2 parts of the latter, 3 parts of iron filings, 3 of table

salt, 1 1/2 of potash, and 2 of elder or willow wood ashes. The whole is heated to temperature varying from 3,352° to 3,623° Fah. At the end of from four to five hours the argillaceous mixture is run into molds, then re-baked in the ovens—always protected from the air—at a temperature of 822° to 932° Fah. The product may be variously colored by adding to the above quantity two parts of manganese for a violet brown, one part of manganese for a violet, one part of copper ashes for a green, one part of arsenic of cobalt for a blue, two parts of antimony for yellow, and one and a half parts of arsenic and one part of oxide of tin for white.

In the new system of electric bells invented in England and now being introduced, says the Boston *Journal of Commerce*, the magnet box is dispensed with and the hemispherical bell is replaced by one of the church type, inside of which is the electric magnet, the latter being a single solenoidal magnet of special construction, and by it the armature is attracted by both poles simultaneously. By this means less than half the usual quantity of wire is required, thus reducing the external resistance of the circuit one-half. Moreover the armature, besides being magnetized by induction, as acted on in the ordinary method, is directly polarized by being in actual magnetic contact by the connection of the ginal—which is in one piece with the magnet—with the core iron of the iron bell, and it is thus induced to perform the largest amount of work with the smallest electric motive force. Again, instead of the armature and clapper being in a straight line attached to a rigid spring, which necessitates a considerable attractive power to primarily give it momentum, this new system has the armature and hammer in the form of an inverted U, and being perfectly balanced from the point of suspension, the lines of force from a comparatively small magnetic field suffice to send this improved form of armature into instant regular vibration. By using a flexible break-and-make arrangement, a better result is attained.

TESTS OF WOOD FOR BUILDING.—J. B. Johnson, director of the U. S. Testing Laboratory, at Washington University, says: Manufacturers, builders, architects and too many engineers rely solely on the tables and formulae given in the trade or engineering handbooks. They know nothing of the original experiments from which the tables are derived, and too often are unable even to verify the truth of the formulae. As a matter of fact, the portions of these books referring to the strength of materials, and especially of wood, were based on experiments on small specimens and were made about one hundred years ago! Some of the arguments in favor of a new test are given below. All the old tests were made in England, and, as already remarked, on small specimens. The Western American woods have never been fairly tested for strength. Such tests as have been made on large specimens of American wood have shown the strength to be only about one-half what all the tables give them. Many cheaper kinds of timber may prove more valuable for structures than more expensive varieties, which have been supposed to be stronger. The pine supports or pilings have been found stronger than oak ones, when tested in full-sized samples. Notches cut in beams or joists, whether at the ends or in the middle, have been found to weaken the pieces a great deal more than is generally supposed. When a joist is notched into a floor beam or header, it is only about one-half or one-fourth as strong as when left full size and resting on the bottom. It always splits from the notch. If the portion below the notch be doubled off so as to be the full depth at the middle, the strength is doubled. That is to say, by removing a portion of the joist (in case of a notch), the strength is increased. This seems paradoxical, but it is true in premise and consistent with theory. It then does not fail by splitting from the end, but by breaking apart in the middle. The shearing or splitting strength of timber is of great importance in structure and is almost always overestimated. A few well-arranged tests will give more information to the designer than all the tables in the handbooks on these matters.

BUILDING MATERIALS.

Table listing various building materials such as Yellow ochre, Yellow chrome, Green chrome, Paris, Black lamp, etc., with prices and dimensions.

Table listing various building materials such as Portland Cement, White's Cement, Queenston Canadian Cement, etc., with prices and specifications.

Table listing various building materials such as Cutting up planks, Dressing stocks, Plena, American inspection, Cedar for keelbing, etc., with prices and specifications.