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THE

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A Weekly Journal of Advance Information and Public Works.

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THE CANADIAN CONTRACT RECORD, A Weekly Journal of Advance Information and Public Works.

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The purpose of this journal is to supply Contractors, Manufacturers and Dealers throughout Canada, with advance information regarding contracts open to tender, and to furnish Architects, Municipal and other Corporations with a direct medium of communication with Contractors.

Information from any part of the Dominion regarding contracts open to tender will be gratefully received.

ADVERTISING RATES ON APPLICATION.

At its Convention held in Toronto, Nov. 20 and 21, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and pledged its members to use this journal as their medium of communication with contractors with respect to advertisements for Tenders.

The publisher of the "Canadian Contract Record" desires to ensure the regular and prompt delivery of this Journal to every subscriber, and requests that any cause of complaint in this particular be reported at once to the office of publication. Subscribers who may change their address should also give prompt notice of same, and in doing so, should give both old and new address.

USEFUL HINTS.

A new method of preparing the composition for moldings is announced, in which the wood pulp is mixed with bronze powders, aniline or metallic colors, so as to give a uniform color of any desired shade to the pulp.

The swelling of cement, according to recent investigations by the German railways, reported in the *Centralblatt der Bauverwaltung*, is principally due to the magnesia they contain. An examination of the cement used in a bridge which failed recently showed that it contained 24.12 per cent. of magnesia. Many cements, however, which will expand in setting contain very small amounts of this element, and it seems probable that such expansion is not due to one, but to several causes.

The best ordinary process of arresting decay in sandstone, says the *American Architect*, consists in saturating the stone as deeply as possible with a solution of silicate of soda, followed by a solution of chloride of calcium. The double decomposition leaves the pores of the stone filled with silicate of lime, the chloride of sodium washing out. The application of the process requires care, and some experience. The solutions should be applied very weak, and several times, at intervals, alternating the soda and lime solutions. If the silicate of soda solution is too strong it will form a gummy coating, which will prevent the penetration of the subsequent solutions, and will effloresce later, spoiling the appearance of the stone.

Three and a half barrels of lime will do one hundred square yards of plastering, using two coats. Two barrels of lime will do the same amount of plastering with one coat. One and a half bushels of hair will do a hundred square yards of

plastering. One and a quarter barrels of good sand will do a hundred square yards of plastering. One barrel of lime will lay one thousand bricks. Two barrels of lime will lay one cord of rubble stone. One half barrel of lime will lay one perch of rubble stone. One thousand shingles laid four inches to the weather will cover a hundred square feet of surface, and five pounds of shingle nails will fasten them on. One-fifth more siding and flooring is needed than the number of square feet of surface to be covered.

A recent investigator declares that it is a natural rule that wood, under all but the most extraordinary conditions, will warp into a curve opposite to the curve of the rings of growth, and he gives a reason for this peculiarity. His theory is that all the rings of growth in sap wood carry sap from which accumulations of fiber are made, showing also that there is some growth constantly going on with not only the outer ring, but the inner sap rings, as opposed to the presumption of annual growth, and that the growth of each ring has the effect of stretching all the rings outside of it, and that it is evident that the outer surface of any ring so strained must be stretched to a greater degree than the inner surface of the ring; that it is probable that such a strained condition of the fibers is never neutralized, and that as soon as a slab of wood is cut from a log and the continuity of the rings broken, the elastic stress in the outer fibers of the rings comes into action with less resistance, drawing the outer surface of the slab together and causing a warp contrary to the curve of the rings. That all the rings of sap wood carry sap there is thought to be but little doubt. A scientific experiment is mentioned that would seem to settle the question. The scientist sawed horizontally into a tree and inserted into the cut a metal stencil of his own name, the letters being filled with a soluble colored powder. The sap dissolved this as it ran down, carrying the coloring matter with it. The tree was cut down after several seasons and sawed across in several places, the initials being found wherever cut, showing that the sap followed all the rings as far in as the opening had been made, and that there was no lateral connection between the capillary tubes.

TO FIND A LEAK IN AN UNDERGROUND PIPE.

A German paper thus describes a method of detecting leaks in underground gas-pipes: Test holes are sunk in the ground along the lines of the gas mains, and $\frac{1}{2}$ in. wrought-iron pipes about 3 feet long are inserted. In the upper ends of these pipes small glass tubes are placed, each tube containing a slip of paper moistened with chloride of palladium. The test papers turn black under the influence of illuminating gas, the rapidity and distinctness of the reaction depending upon the strength of the palladium solution and upon the volume of escaping gas. Under the most unfavorable conditions, however, an exposure of the test paper for a period of 15 minutes is considered long enough to show whether or no gas is present. The test holes should be placed about 6 feet apart, and should not reach below the line of gas pipe. The main object is to penetrate the more or less compact surface of the street, so that the gas in the ground has a direct and convenient means of escape. In many of the streets of Frankfort-on-the-Main, especially those having asphalt pavement, 1-in. pipes lead through the asphalt and the underlying layer of beton, their lower ends extending to within a short distance of the gas mains. These escape pipes are filled with pieces of sponge, and are closed with cork stoppers. The pieces of sponge are renewed from time to time. The pipes have been found to overcome to a considerable extent, the annoyance of digging up the streets for long stretches with the view of locating leaks in the main.