by fire on Saturday last. Loss $3,000, partially insured.—Lamy's hotel, Amherst, N. S., was burned recently. Loss $15,000, insurance $9,000. —Fire at Weymouth, N. S., on the 1st inst. destroyed Henry Oakes' grocery store, W. F. Journeay's dry goods store, and the Meteghan River Lumber Co.'s store and several thousand feet of lumber.—On Wednesday last, fire at Thorold, Ont., destroyed John Clay's grocery store, two stores belonging to Mrs. A. Hardie, and two dwellings owned by Thos. Coulon. The losses are as follows: John Clay, loss on building, $8,000, insurance $4,000; Thos. Conlon, loss on buildings, $2,500, insurance $1,800; Mrs. Hardie, loss on buildings, $3,500, insurance $2,000.

CONTRACTS AWARDED.

NEWBURY, ONT.—The Bennett Furnishing Co. has been awarded the contract for seating the new school.

REGINA, N. W. T.—Messrs. Dunlop & Chapman, of Pembroke, Ont., have the contract for heating the new post office.

TORONTO, ONT.—The Collegiate Institute board have accepted the following tenders for work on the new Harbord St. school. Bennett & Wright, plumbing, $350; M. & J. L. Vokes, locks, $150; Canadian Electric Mfg. Co., electric bells, $190; P. C. Allen, gymnasium fittings, $880; Hess & Co., blinds, $136; E. Rogers, coal at $4.90 per ton.

BIDS.

TORONTO, ONT.—The sub-committee of the Ashbridge Bay Committee has recommended the acceptance of Col. Alexander's tender for the execution of the work.

INTERESTING FACTS ABOUT WOODS.

One cubic foot of ash weighs 52.81 pounds; bay wood 51.37; blue gum 64.3; cork 15.; cedar 35.; hickory 49.; lignum vitæ 83.312; mahogany from 35. to 66.; white oak (dry) 53.75; pine, pitch, 41.25; pine, white, 34.625; pine, yellow, 33.85; spruce 31.25; walnut, black, dry, 31.25; willow 36.56.

The comparative weights of green and seasoned timber are about as follows: pine, green, 44.75 pounds, dry, 34.62 pounds; ash, green, 58.18 pounds, dry, 52.81 pounds; beech, green, 60 pounds, dry, 53.37 pounds; cedar, green, 39 pounds, dry, 35 pounds. Thus it will be seen that the large majority of the lumber we handle is much heavier than we notice during our daily acquaintance with it.

The tensile strength of ash is 15,000 pounds, which about equals cast lead, which is 18,000 pounds; hickory, 11,000 pounds or same as tin which is 11,000 pounds; mahogany, 21,000 or same as gold, which is 20,380 pounds; white oak, 16,500 pounds, or same as Clyde cast iron, which is 16,000 pounds; pine, 19,200 pounds, or same as gun metal, which is 18,000 pounds; walnut, black, 16,000 pounds, or same as walnut, English, which is 7,800 pounds; willow, 13,000 pounds, or same as sheet zinc, which is 16,000 pounds; cedar, Lebanon, 11,400 pounds, or same as beech, which is 11,500 pounds; ebony, 27,000 pounds, which is about the same strength as copper.

White oak at 16,500 pounds, is tougher than many grades of cast iron, not only in tensile strength but in almost any other test to which it may be put.

It is known that wood as a combustible is divided into two classes—the hard as oak, ash, elm beech, maple and hickory—and the soft, as pine, cotton, birch, sycamore and chestnut. Green wood subjected to a temperature ranging from 340 to 440 degrees, will lose 30 to 45 per cent, of its weight. At a temperature of 3000 degrees, oak, ash, elm and walnut, in a comparatively seasoned state, lose from 16 to 18 per cent. Woods contain an average of 56 per cent. of combustible matter.—*Woodworker.*

USEFUL HINTS.

Good Portland cement and colors that take on that material are mixed dry and made into a paste with the least quantity of water added. One paste has to be made for each color. The different pastes are placed on the top of one another in layers or different thickness. The mass is pressed from all sides and beaten so that the colors of the different parts impress themselves on each other without uniformity. The result is that more or less deep veins penetrate the mass. This is then sawed into plates, which are pressed in a mould for twelve days, during which time it is necessary to keep them moist as long as they are not entirely hardened. The plates are polished in the same way as marble.

The object of boring out a plumb bob and then filling it with mercury is to get as much material substance as possible into the space that we are allowed to work with, for then we have all the downward force that we are able to get to bring the plumb line into a vertical position with the least amount of surface exposed to the disturbing air currents that always exist where long lines are made use of. A fine needle point is of no use at the tip of the plumb bob unless it stands exactly in the centre of rotation wherever the plumb bob takes a notion to rotate about the plumb line for an axis. It is not always a good idea to lay every disturbing element to solar attraction, even where a plumb line is inclined to deviate a trifle from the true vertical position. We have a case in mind where a line was left hanging over night and the plumb bob was found to be over half an inch from the position it occupied the night before. This was supposed to be due to solar attraction at first, as the sun, when setting, attracts the plumb bob to one side, and then to the other when it rises, and an attempt was made to figure out this deviating force from the weight of the plumb bob and the length of the line, when it was discovered that one of the guy threads of a spider's web had been made fast to the plumb line during the night and had drawn the plumb bob to one side much farther than all the attraction of the universe.—*Boston Journal of Commerce.*

The fact that wooden joists are, generally speaking, better for buildings than iron or steel joists, was referred to in a recent lecture on fire prevention by Professor Goodwin. The two latter materials, he explained, lose their strength at a not very high temperature, whereas wood would sustain a heavy strain for a much longer period when exposed to great heat. Besides, when wood has once been charred it does not burn so readily again. Iron and steel soon expand under the influence of heat. Brick and stone are objectionable; the former becomes fused under great heat, and the latter is liable to crack or fly when suddenly cooled after heating. The drawback to tiles is that when fire plays upon the joists of floors fitted with them, the joists expand and allow the fire to play upon the joists through the tiles. Portland cement is objectionable, as it flakes off when heated, but if wire netting or bars are imbedded in concrete, this defect is remedied. A joist padded with silicate of cotton and encased in salamander plaster (a mixture of silicate, cotton and plaster of Paris), the professor holds, is a splendid fire-proofing material. Such a material is not only a non-conductor, but it is elastic and would yield with the joist. In an experiment undertaken by Professor Goodwin, it was found that a joist of this kind withstood very fierce heat for eight to nine hours without sustaining any serious damage. Still, in fireproof construction as generally applied, iron or steel joists are thoroughly protected by fire-proof material, principally porous terra cotta or clay; if cheapness is desired, wooden beams can of course be used, protected by plaster blocks, the floor surface being finished off with asphalt or cement.—*Ex.*

COST OF OPERATING ELECTRIC CRANES.

The following facts and figures relative to economy of working electric cranes on a wharf in London are of interest. Formerly there were on the wharf a 10-ton steam crane, a 2-ton steam crane, and two thirty-cwt. hand cranes. The cost of coal for driving the two steam cranes only was $1250 per year, steam having to be kept up night and day. All four of these cranes were fitted with electric gear, and a dynamo with all necessary wiring, switches, and safety fitting was put in, the total cost being $1500. A gas engine used for chaff-cutting, drives the dynamo, and the cost of the gas for the whole of the work—cranes, chaff-cutter, and corn crusher, besides an ordinary friction hoist—is given as $280 for the year, while the amount of the work done has been considerably in excess of any previous year. The engine is a 12-horse power gas engine. The cost of repairs and renewals for the year has been a little more than $25.

ANCHORING BOLTS IN STONE.

M. J. Butler, Napanee, Ont., writes to *Engineering News* as follows:—For some years past I have invariably used Portland cement for above purposes. In using 1¼-in. bolt I have the hole drilled with a 2 in. drill and the bolt ragged. I have used this style of anchor bolt for the heaviest class of work—engine beds, turbines, pulp grinders and heavy bearings. Some years ago, owing to lack of experience in pouring sulphur at the proper temperature, I made a failure and then tried the cement with success. I have no hesitation in saying that in every respect good Portland cement is the best material I know of for anchoring bolts in masonry.