CAST IRON COLUMNS.

Even when the most careful calculations have been made, and the details have been scrupulously worked to, cast-iron columns are sometimes subjected to improper treatment before being fixed on buildings, which may seriously impair their strength and safety. The American Machinist refers to the attempt made to straighten columns that were not true by heating and bending them by placing them on their convex side up over a fire and loaded by pig iron, the effect of which treatment was to stretch the iron on the lower side and make it thinner, and to render the column in one case weaker under a dead load. An attempt made to straighten a column by the reverse process, of placing the concave side up and loading the overhanging ends, and then applying the fire underneath the centre of column, is said to have been attended with better results, as it "permits the column to be made stronger instead of weaker," as the heating thickens the side of the column which has been stretched. It cannot be denied that any tampering with cast iron must be riskful, as the reheating and loading tends to develop internal strains in the metal. That cast iron columns are sometimes subjected to such treatment to straighten them is to be feared. Architects and engineers probably know little of these processes; the columns thus strained are set up and loaded to a degree which may be dangerously near the breaking point. We think it well that those entrusted with the ironwork of our buildings, engineers and inspectors, should be aware of these endeavors to rectify cast-iron columns and girders, and refuse to accept all constructional iron work that has been subjected to these processes. The action of heating a column or girder at a particular point, and then subjecting it to strain, must necessarily tend to cause internal elongation of some fibres and compression on others, causing unequal power of resistance, or even fracture. The metal also on the heated and compressed side must be increased, while that on the contrary is made thinner; and this enevenness, under certain conditions of loading, would be really dangerous.

WATERPROOFING BRICK AND SANDSTONE.

A number of experiments were recently made to ascertain the length of time that brick and sandstone are rendered waterproof or protected by oil. The three oils used were linseed oil, boiled linseed and crude mineral oil. The amount of oil and water taken up by the sandstone was very much less than that absorbed by the brick, although the area of the sandstone cube was much greater. Equal amounts of the raw and boiled oil were absorbed. The mineral oil, however, was taken up in much greater quantities by both brick and sandstone. By the end of twelve months the mineral oil evaporated from the bricks, but such was not the case when the other oils were used. After an exposure of four years the bricks practically retained all their oil, inasmuch as they had not lost any of their weight, and were also practically impervious to moisture. It was noticeable that the sandstone cubes treated with linseed oil returned to their original weights, but do not appear to have lost the beneficial effect of the oils, being also practically waterproof.

LEGAL DECISIONS.

In Mills v. Dominion Construction Company, an action to recover balance of contract price for building the new T. H. and B. railway station in Hamilton, his Lordship gave judgment for amount claimed, some $1,013.