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THE

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THE CANADIAN CONTRACT RECORD,

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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.

CAULKING LEAD JOINTS.

The recent issue of *The Technic* gives the following on the above subject:

The lead joint, when properly made, is considered by all authorities to be the best yet devised for water, gas and oil pipes. Although in the recent laying of natural-gas mains in Detroit and elsewhere in the west the screw-joint wrought-iron pipe has been used, it is hardly probable that this will succeed the lead joint in popular favor. The writer was informed by one of the skilled laborers employed on a line where both the screw and lead joint were used that in a test of about 200 pieces of each—the only test made on the entire line—it was found that eighty joints of the screw pipe leaked, while not a leak was developed in the lead.

In the lead joint, a great deal depends upon the skill of the workman who does the caulking. Anybody can pound lead, but anybody cannot make a tight joint. In making lead joints on oil and gas lines little or no yarn is used, but in water it is customary to fill from one-quarter to one-half the bell with yarn, as it has been found that two inches of lead, well driven, is ample to withstand any ordinary pressure. The yarn put in it should be rammed in solidly with the yarning-iron. If the joint be very cold, or at all damp, it is always a good plan, and sometimes a very necessary one, to pour in a little oil. The heavier the oil the better. This prevents the lead chilling too soon, and also prevents its spattering into the face of the man pouring. The opening of the joint may be closed for pouring, either by a rope

rolled in wet clay or by some one of the patent jointers. The latter consist of a rubber band on the inner side of an inclosed hoop of steel. At the ends of the hoop are riveted two lugs, by means of which, either with a clamp or tongs, the jointer is closed around the pipe. A small piece of clay is used as a gate around the opening between the ends of the band, which allows of pouring. The rubber should be kept well smeared with clay, and, when so used, will last for the pouring of five or six miles of pipe.

The use of the jointer will be found quite economical, as it saves the services of the boy who makes the rolls, and a joint having been run with a jointer on requires less time to caulk than one where the roll is used. The tongs will be found much more serviceable than the clamp, although we have not yet been able to find a house which furnishes tongs, but always have to take clamps and have the tongs made by a blacksmith.

The pouring having been successfully accomplished, the caulking proper begins. A good caulker will always caulk the bottom of his joints first, because it is more difficult to do a good job there, and if the top is caulked last, the spigot is forced down against the lead at the bottom, so tightening the joint there. In nearly twenty miles of pipe where this rule was followed, although leaks were occasionally found on the top and upper sides, not one was found on the bottom. If a joint leaks on top, it is a very easy matter to drive the lead a little more, and usually to close it up; but a leak at the bottom is much more difficult to get at. This is one of the best tests we know of, of the ability and experience of a caulker. Another good test is to have a man acknowledge that he cannot tell by looking at a joint whether it will hold or not. If a man says he can, it can generally be relied upon that he has not seen a great deal of work tested.

The tools used in caulking are the yarning-iron, having an edge about 1-16 of an inch by about $\frac{7}{8}$; a cold chisel, to cut off the superfluous lead and to start up a tight joint, and from four to ten sets varying in thickness from 1-16 of an inch to $\frac{3}{4}$ of an inch, and about $\frac{1}{4}$ of an inch broad at the face. Some caulkers prefer those with the offset, others those with the single bend. The hammer used should weigh $1\frac{1}{4}$ to $2\frac{1}{2}$ or 3 pounds, and should not be over ten inches in length over all.

In caulking the joint, there should first be used a narrow tool next to the spigot, then one a size wider, and so on until one is reached which about fills the joint and leaves a smooth face to the lead. In this way the lead is forced into the recess in the bell, and is also thoroughly consolidated next to the spigot. If the joint was not run full, so that the lead drives back away from the reach of the tools, the joint must be run over again, and under no circumstances in a case of this kind should a cold lead plug be put in. If, however, there is some one point where the joint failed to fill at the front and is filled behind, it is then admissible to put in a plug of cold lead, a chisel having been driven into the lead in the joint to form a cavity for the union of the two pieces of lead; but a plug should never be inserted against a flat surface of lead. It must always go in like a wedge in order to be reliable.

A novel method is to be used in the fireproofing of the new Drexel Institute, in Philadelphia, which is as follows: After the heavy iron joints have been put in place, iron rods about one and a half inches wide and three-quarters of an inch thick are strung from one rafter to another at a distance of about three feet. Under these rods temporary wooden boxes are built and filled with cement. The boxes keep the cement in place until it hardens, when they are removed, leaving a suspended floor capable of withstanding the strain of many tons. The floor is not to be covered with wood, as the cement in itself makes a smooth and hard surface.