THE CEMENT MARKET.

The arrivals of cement at Montreal last week were 1,850 barrels English and no Belgian or German, as against 1,000 English and 15,201 Belgian for the previous week, making a total for the season of 236,764 Belgian and German and 30,405 English. Importers state that a very fair trade has been done, there being a good demand for small lots from local buyers. Stocks are at present small, but now that all the large contracts have been completed, and as there is still five vessels to arrive before the close of navigation, with fair quantities, the indications are that supplies will be ample to fill all requirements during the winter months. Advices from English makers state that the prospects are that there will be a big demand next season, and in consequence, present prices will more than likely be maintained. The receipts of firebricks last week were 61,961, as against 135,544 for the previous week, making a total up to date of 1,170,605. The demand is good, and prices are unchanged at $16 to $21 per 1,000, as to brand.

FREEZING TESTS FOR BRICKS.

One of the most important features in structural materials of all kinds is their permanence under atmospheric influences. Of all these, perhaps the one that exercises the greatest mechanical effect is frost, which tends to disintegrate bricks and stone by the expansion in the act of freezing of the water enclosed in the pores, with a consequent separation of particles or flakes when thawing ensues. Probably very few of our readers have ever thought of testing the permanency of their goods under such conditions; the winter time provides a seasonable opportunity and there is no reason why every manufacturer should not, if there is frost enough, be able to ascertain to what extent his goods will stand frost. The British Brickbuilder says this can be determined by a very simple test—namely, by direct freezing. Let tropical samples of the goods be chosen during frosty weather, and saturated with water, and then alternately frozen or thawed a dozen times or more. Now, if the samples to be tested are weighed dry, and the loss of exfoliation determined also on the dry samples, the thing is accomplished. It would be possible to create a standard of permanency by counting a given percentage of loss as unity (this would have to be chosen arbitrarily) and then referring other percentages of loss to it. Thus might be created a scale of permanency, and when about to enter into a contract this might be referred to just in the same way as the resistance to crushing strain is now quoted.—National Builder.

PUMPS FOR CONTRACTORS' USE.*

(Concluded).

CHAIN PUMPS.—Another very useful contractors' pump is the chain, which, owing to the entire absence of valves, will work well no matter how gritty or full of foreign substances the water may be. It consists, briefly, of an endless chain, to which is attached at intervals a series of circular iron discs, slightly concaved, to prevent splashing. The upper part of the chain passes over a sprocket wheel which engages with the links, and is actuated by hand, steam, or other power. The lower part of the chain dips into the water, and as the discs rise with the chain they pass through a pipe carrying the water with them. In the most improved patterns the piping is made of wrought iron, which is lighter and less liable to fracture than cast. The working parts are covered in to prevent splashing. The base-plate which supports the driving gear should be adjustable, so that the pump can be raised or lowered as desired. Owing to their few working parts, these pumps are little liable to get out of order from rough usage or frost, and when damaged can usually be repaired by a blacksmith.

HAND-PUMPS.—When the quantity of water to be dealt with is small, hand-pumps will be found useful. For contractors' work, where they are liable to be subjected to rough usage, barrels of wrought iron can be recommended. The valves—preferably of gun-metal—should be of simple type and ample area, and readily adjustable for wear. Suction and delivery pipes should also be of wrought iron, as this material is lighter and less liable to fracture. A telescopic suction is a useful arrangement when varying depths have to be dealt with. Though theoretically a pump in perfect order should lift up to 34 ft., this is never possible in practice. Given a well packed bucket with tight valves, a depth of suction of

* J. L. Crathorne, in the Contract Journal.