

as the frosty weather came in November, he stopped the work, not for a few days or weeks, until the weather might improve, but till spring; and this was repeated the next fall, for the bridge did not go as things go now, and while it was commenced in August, 1857, it was not completed till the summer of 1859. Now, the fact that usages and methods have changed does not discount the wisdom which in the past recognized these inflexible natural laws as affecting masonry, whether stone or brick, as these laws can only be ignored at the expense of the work. There is another evil inseparable from this system of rush, when applied to bridge masonry, or heavy engine or pump foundations, where grout is used, and where under the operation of this system emphasized by a specific requirement that the work must (under a penalty) be completed in a time which will admit of no delay on any account; and so as soon as a course is laid and grouted the steam derrick is planting the next course, and as soon as this is finished the grouting begins again. And the same process is repeated with the result (possibly) of finishing the work in the specified time, and with the further result of 15 or 20 per cent. of cavities caused by the evaporation of water from the grout; and then the owner and engineer, or architect, as the case may be, condemn the mason, because the work is not water-tight. This bad result of rush is most apparent in dimensioned work, where there is no backing or hearing. In such case as the joints are close the grout must be thin, or it will not go into the joints, and so the joints are filled with this thin grout and covered at once with the next course, and while in ordinary bridge masonry the grout from a second course may to some extent

reach the cavities in the lower course, in dimensioned work this is impossible, and the result of evaporation of water will probably be 50 per cent. in these joints; and though, of course, the percentage of unfilled joints will vary, yet to a greater or less extent the cavities

are inevitably under this system of working, and it seems a pity that where every other precaution has been used to secure the best character of work there should be failure on account of this pernicious system of Building.—J. P. Knox, in the Journal of Building.

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