July 10, 1908.

## CORRESPONDENCE.

[This department is a meeting-place for ideas. If you have any suggestions as to new methods or successful methods, let us hear from you. You may not be accustomed to write for publication, but do not hesitate. It is ideas we want. Your suggestion will help another. Ed.]

## INSPECTING.

Sir,-Last week under the heading "Inspecting" you published an editorial which will aid in keeping before construction men the necessity of having capable inspectors on all work of any importance. This necessity cannot be too often or too forcibly brought before the readers of an Engineering paper. The duty of an inspector is to see that his employers, the people whose money is being spent on the enterprise, get the quality of work done which they are paying for. And the best way for him to earn his pay is ;o show the contractor at the start that good work must be done, and also show that he is willing and able to help the contractor get the work done well. Any inspector who thinks he can "lord it over" his job and who is under the impression that the contractor is to be looked upon as an enemy will soon find out that the contractor may turn out to be nis enemy, and that the hostile feeling created by the inspector interfering too freely will not help the work either in quality or in the time limit required for its completion. Now, as you rightly say, an inspector should be a man of some experience and preferably not a youth who knows little or nothing about the carrying on of work. Such a youth by interfering with work he knows nothing about will prove a nuisance on the job, and by spoiling the tempers of the contractor and his men will spoil the quality of the work and will lose money for his employers instead of helping On the other hand, if he keeps his eyes open and them. uses common sense he may soon prove himself a valuable man both to his employers and the contractor. When the contractor is trying to scamp the job an able and experienced inspector is required. The inspector must recognize that the contractor is in the business to make money, and that most contractors are in the business to make money honestly. They have no desire to scamp the work, they want reasonably good work done, and the inspector ought to help him to have good work done rather than try to force him to do anything when he is doing his reasonable best.

Concrete work is the work which is at present in most need of good and careful inspection, considering the class of labour which is working on this important work to-day. The foremen obtainable are not always the highest class of men, and in many cases it is the work of the foreman rather than the desire of the contractor that gives bad results. Of course the foreman is supposed to look after the quality of the work as well as to look after the running of the gang. But hustling a gang of men, mostly unskilled, is no child's play, and in many cases the foreman's attention is entirely taken up and the time he can spare on the details which really determine the quality of the work is limited. Any inspector who shows the contractor that he knows his job can readily obtain permission to pick out the best men of the gang and teach them how he wants the work done. For instance, he can pick out a likely man to run the mixer, show him how he wants the stuff mixed, and stay with him until he can mix it evenly and well. He can pick out good men to do the tamping in the forms and for the other jobs that require careful attention, and by watching his own picked men closely can have work done well without clashing with the contractor's interests or delaying the work by interference. He will find that everything will soon run smoothly and easily for himself, and that he can have lots of spare time to examine gravel and stone and other materials used on the

job which require attention. On the other hand, he may go about his work in a different way, and when anything goes wrong he can go to the foreman and demand that he make it right without telling him how he is to do it. The foreman will soon get sore on the inspector, and continual scrapping will ensue. Now the inspector, to carry on his work well, ought of course to know how everything should be done, and unless he knows at least as much as the foreman he is very little use on the job. He ought to be able to see things the foreman does not see, and instruct the foreman as well as the man. In fact he ought to be the ablest man on the job, and should stay continually at his work. Especially these days he ought to be able to give all information needed about the work because it is generally useless to go to the so-called engineers on the job, many of whom hold their positions from the fact that they can look through an instrument and who really know very little if anything of the work. Many of them are most conscientious men and certainly know their work well, but unfortunately some of them do not. In fact it is very questionable whether a man should get his position as an engineer on construction work until he las had considerable experience either as an inspector or in 2<sup>n</sup> engineering position where he has come in contact with a number of inspectors. To put a man on as an engineer simply because he can look through a transit is undoubte lly folly, but yet it looks as if a great many engineers who have been made during the last great construction boom possess no other accomplishments in the engineering line. A firm in the construction business ought to pick out clever fellows for their inspectors, and by keeping them and teaching them they will soon have a number of men who can fill up their engineering staffs and do their work carefully and well. In fact engineers who have had an inspector's training ought to be better men than those who have only had a training in instrument work. Many of these last are unable to run a job right, and are unfit to be called engineers or to be placed over inspectors to whom they can give no instructions. Yours truly, Contractor.

## ADJUSTMENT OF TRANSIT.

Sir,-In your issue of the 20th ultimo your correspondent N. D. O. asks a question regarding a defect of construction or adjustment of a transit. He does not state whether he has tested the collimation adjustment or not; if not, he should first do so in the usual manner described in the text-books, taking care that the back and forward points are approximately at equal distances from the instrument, so that no change of focus may be necessary during the operation. This adjustment insures the right line being perpendicular to the horizontal axis for the position which the focussing tube occupied during the adjustment, assuming that the telescope is set vertically over the vertical To test whether or not the adjustment holds good axis. for all positions of the focussing tube he may proceed as fol-Select a distant well-defined point, direct the sight lows: line to it and clamp, then suspend a fine plumb line in front of and as close to the telescope as can be clearly seen, and adjust it in position so that on changing the focus it may appear to be covered by the intersection of the cross wires. Then reverse the instrument and again sight the distant point, and clamp. If now on again changing the focus the plumb line appears to be still covered by the cross wires he may be sure that the focusing tube runs truly and that the collimation adjustment is undisturbed by a change of focus.

The vertical adjustment of the focussing tube may be tested in a similar manner: Direct the sight line to a distant well-defined point and clamp firmly, then without changing the direction of the telescope read a levelling