

that in a case similar to the foregoing about six and a half tinfuls will be required. This is due to the fact that the material does not become completely packed when just thrown into the tin. A little practice will allow a very accurate estimate of the required quantity to be made.) Having measured the shingle or other aggregate, a measured quantity of cement is then emptied on the top of the heap so that it runs evenly all over it. In the example six tinfuls of the aggregate were taken, and therefore, if the mixture is to be 1-6, one tinful of cement will be required.

*Mixing.*—A mixing-board 8 ft. by 8 ft. square is suitable for anything up to eight tinfuls at a time. It should be made of tongued-and-grooved Oregon-pine boards, this timber being most suitable for all concrete moulds, &c., as it is less liable to warp than others. Where there is no need to shift the mixing-board a smooth concrete floor makes a very good substitute. Mix thoroughly before and after adding the water. The best mixing is obtained by having a man on each side of the heap. Shovel from the bottom, and throw the material away from the heap with a turn of the shovel, at the same time imparting a spreading movement. Turn the material in this manner at least three times before adding water. A drag with flattened tines is a very useful tool for mixing, and if its use is alternated with that of the shovel the work will be made easier. Repeat the turning operations, at the same time splashing water carefully over the new heap being formed, or using a watering-can. The water must not be added so quickly as to cause streamlets to run away from the heap, as a large amount of cement may be lost if this happens. The quantity of water necessary depends upon the wetness of the aggregate before mixing. Excess of water must be avoided, and when the concrete is so wet as to require a slight shake to dislodge it from the shovel the wetness will be right for most purposes.

So that the concrete can be used immediately, the mould must be got in readiness before mixing.

## 2. CONCRETE POSTS.

### ORDINARY FENCING-POSTS.

Making the necessary moulds is, of course, the first step in connection with concrete posts. Drawings of a mould suitable for making tapering posts, 6 ft. long, 5 in. by 5 in. at the bottom and 5 in. by 3 in. at the top, are given in Fig. 4. This type of boxing can be used equally well for the post with parallel sides similar to that made in the mould shown in Fig. 5, or a two- or six-post mould may be preferred. If it is considered preferable to make the posts singly—as when larger posts, say, 8 in. by 8 in. in cross-section, are being prepared—then the Figs. 6 and 7 type is extremely useful. Instead of the dowels, strips may be fastened on the base-board to keep the sides from bulging; or two iron pins passing through holes in a cross-piece which rests on the top of the mould, fitting into holes in the base-board, make a very convenient arrangement for this purpose (Fig. 6). Since the dowel-holes tend to become filled with cement, this method of holding the mould in position is probably the better one.