

Fig. 9.—Placing Blocks with Derricks.

The Canadian Example.—The chimney constructed at Quebec for the locomotive shop plant of the National Transcontinental Railway is 200 feet in height above the ground level. The inside diameter at the summit is 9 ft., and at the base 14 ft. The foundations were carried down to solid rock, which was encountered 19 ft. below the surface. The smoke flue, which opens into the chimney below the ground level, is 11 ft. 5 ins. high by 5 ft. 6 ins. wide inside, and is constructed of reinforced concrete.

The vertical reinforcing rods in the foundations were carried into the footing almost to the base, and continued to the top of the foundation, overlapping and bonding those of the superstructure for a length of from four to five feet.

In constructing the foundation the footing was first poured for a depth of one foot, then the vertical rods were set and held in place by means of wood framing, as shown in Fig. 5. After these rods were placed the balance of the footing, about 3 ft., was poured, and allowed to set. The framing was then removed from the rods, and the forms for the balance of the foundation constructed (Fig. 6). The concrete in the footings was poured by means of a derrick and a bottom-dumping bucket; but for the upper portion it was found more convenient to use barrows, owing to the limited space between the forms, and the quantity of steel which had to be held in place during the work. Before reaching the top of the foundation the reinforcing rods for the superstructure were placed and the concrete poured around them. The concrete was then allowed to set and the forms removed before commencing to lay the blocks. An illustration of the foundation ready to receive the blocks is shown in Fig. 7; and the back-filling of the earth around it with a Hayward orange peel bucket in Fig. 8.



Fig. 10.—Tamping Concrete in the Forms.

In the meantime the making of the blocks was proceeding in an adjoining shed, so that by the time the foundation was completed there were sufficient blocks on hand to keep the erection going continuously.

The blocks were made in four collapsible forms, these being so constructed that they served equally for all blocks from 4 ins. to 9 ins. in thickness, and any length desired. The labor employed consisted of two masons and three helpers, the concrete being mixed in a small gasoline-driven mixer. The concrete, which consisted of a 1:2:4 mixture, was placed in the forms in a semi-dry state, the reinforcing rods inserted, and the whole well tamped (see Fig. 10). Immediately upon the completion of a block it was removed from the form and placed to one side, to be sprinkled daily for a period of about two weeks or until ready for laying. It is perhaps needless to state that the forms were well cleaned and soaped after each operation. The whole operation of making the blocks, 3,290 in all, occupied 82 working days, or an average of approximately 40 blocks per day.

On September 16, 1914, the first blocks were laid

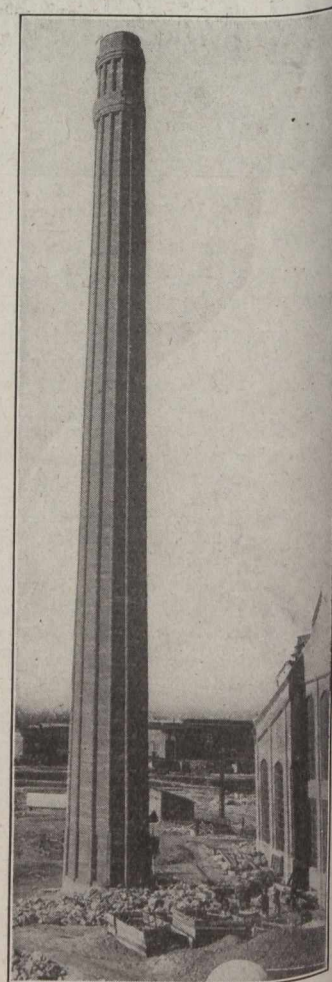


Fig. 11.—Completed Chimney.