CONCRETE FENCE POSTS.*

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A paper on this subject should include a description of the more important types of posts so far developed and a discussion of their merits. It has not been possible, however, in the time available to get together the information for such a paper. I shall, therefore, confine myself to the one post with which we have had experience on the Burlington Railroad.

The machine was set up in 1911 and a small number of posts, about 6,000, were made. It has now been put in operation for this season's work, but has been running only a few weeks.

In going into a new proposition of this kind there are always some delays in getting the plant organized and operating smoothly. We have had the usual amount of trouble along this line and have not yet been able to determine how cheaply we can make posts.

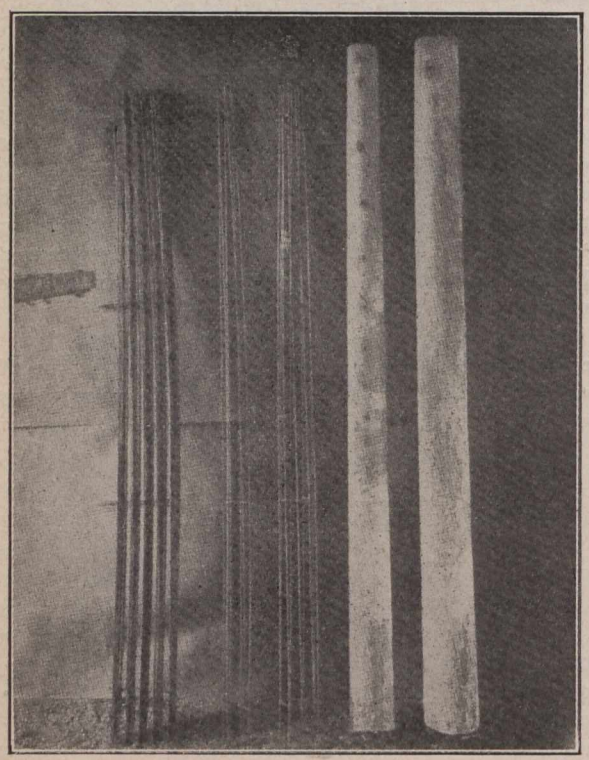

Fig. 1.

With the plant as now arranged, the machinery is all enclosed in a frame building 28 feet by 94 feet. The concrete materials are brought into the house at the rear of the post machine and storage room is provided in the house for a considerable quantity of material so that it may be warmed for use in cold weather. The drawing shows piles of stone chips and sand. The chips, or screenings, were tried experimentally because they could be obtained at practically no cost. They were not satisfactory, however, as the concrete seemed to lack strength and the posts were not smooth. A mixture of sand and screenings was tried, with somewhat better results.

A supply of small gravel containing a large proportion of sand was then obtained and this material is superior in every way to the others mentioned. It can be obtained in any desired quantity and at a moderate price, and will undoubtedly form the standard material for this work.

As the posts are taken out of the machine they are placed on a push car standing on the track shown at the upper part of the drawing. In cold weather they are stored in the house for a few days before being taken out of doors. In warm weather they are stored indoors or out, as may be most convenient. They are removed from the moulds a day or two after being made and stored against the heavy timber racks until ready for shipment or until they are strong enough to be corded up in piles. For a week after being removed from the moulds they are thoroughly wet down once a day and in summer protected from the sun by tarpaulins.

In the rear of the post machine is the measuring machine, consisting of two hoppers for gravel and cement. A small conveyor operates in the bottom of the hoppers and dumps the materials in proper proportions into a boot. Here it is picked up by a bucket elevator and taken to the mixer at the top of the machine.

The mixer is a large shallow bowl with a concave bottom. A number of paddles rotate in this bowl and mix the concrete, water being sprayed on it from a perforated pipe. In the bottom of the mixer is a hole which is closed by a form of gate valve, and through which concrete is discharged into the moulds below.

Under the mixer is a turntable arrangement which holds four moulds at a time. There is also a jolting device so arranged that as each mould is being filled it is alternately raised and dropped through a distance of perhaps an inch. This tamps the concrete effectually and insures a smooth finish.

Two forms of reinforcement are used. The one which was used last year is made from sheets of No. 24 or No. 26 black iron. The sheets are passed through a machine which cuts out half the reinforcement for a post at each pass. At the same time long slits are cut in the iron and the edges of the slits turned up. Two strips of this material are inserted in the mould to form the reinforcement for one post.

It has not been altogether satisfactory, however. If the concrete material is a bit too coarse it does not run through the slits readily and the posts are not well filled out. The reinforcement also has a tendency to get out of place during filling and is occasionally found to be near the centre of the post instead of at the outside.

Fig. 1 shows an improved style of reinforcement now coming into use. It is made entirely of wire, each wire being crimped to insure a bond with the concrete. The material is shipped knocked down, as shown at the left of the photograph, and is quickly made up into the cages shown at the centre. The wires may be of such size as needed to give the required strength and the concrete flows around it without obstruction.

Fig. 2 illustrates the post and also the method of fastening the wires to the posts. By reference to the cross sections it will be seen that there is a groove in one side of the post and that the holes through the posts are offset, being smaller on the grooved side of the post. These holes are of such a size that a ten-penny nail can be pushed through them until the head brings up against the offset. The fence wire is then placed on top of the projecting end of the nail and the latter bent up around the wire until its point is curled back into the groove, thus holding the wire tight against the post. This work is done with a small tool which is shown in successive positions in the upper part of the drawing. This is a very cheap and effective fastening. One difficulty has developed in connection with it, however.

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