

## MOVING A SAND BIN.

By E. P. Muntz.

THE accompanying four illustrations show the various stages in the moving of a large stone and sand bin at Lock No. 2 on the Welland Ship Canal. The bin is 50 feet long by 30 feet wide, 30 feet high, and is capable of holding 250 cubic yards of sand and a similar amount of stone. It supplied the aggregates for concreting operations at Lock No. 2 during the latter half of last summer. A relocation of the concrete plant has since been decided on to mix the remaining 200,000 cubic yards required. This necessitated the removal of the bin from its position alongside the construction railway, opposite the south end of the lock, to a point about 1,000 feet further north and at a 30-foot lower elevation.

The construction railway parallels the canal centre line at Lock No. 2. On the west slope of the lock pit a track lies between the construction railway and the top of the slope. This track was used by the contractors to haul the dry material from the bin to the mixer; the mixer being situated towards the north end of the lock on the top of the slope and about 800 feet from the bin.

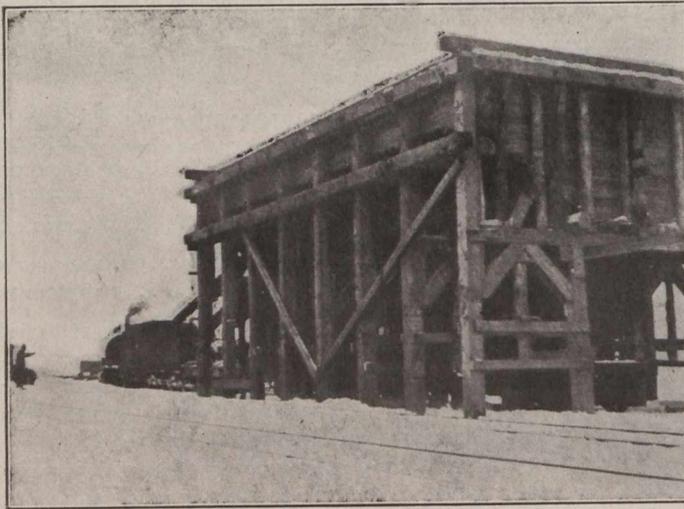


Fig. 1.—Hauling on the Level. The Double-track Railway is in the Foreground.

The moving was accomplished by jacking the bin up about two feet to permit a 60-ton steel gondola car to be run under it, on the loading track mentioned above. The weight of the bin was estimated at about 60 tons. Beams were laid across the top of the car to carry the bin and cables were used to tie the bin down to prevent swaying. The steepness of the incline (shown in Fig. 4) onto the trestle, which is the final location of the bin, necessitated the placing of a racking cable and inclined struts in the car to prevent the bin sliding.

The car carrying the bin was moved quite readily by the 45-ton Kingston locomotive, shown in Fig. 1. The track was far from being in good condition and in one place, where it lay directly on the top of the slope of the lock pit, a flat car loaded with "plums," set on the construction railway, was used as an anchor to prevent the bin overturning. Elsewhere, any tendency to upset was taken up at once by the legs bearing on the ground, the clearance being but a few inches.

The bin was lowered down the incline onto the trestle by means of two sets of blocks and tackle; the two

together capable of lifting 80 tons. The free ends were secured to two locomotives, one south and one north, on the construction railway. Two heavy "dead men" held the blocks at the top of the incline. The bin was lowered by signalling the engines to come together. The rigging



Fig. 2.—Starting Down the Incline. The Track Shown is a Siding from the Construction Railway.

of the lowering tackle and the moving and lowering of the bin took about a day and a half.

The whole operation was performed without a hitch. The bin was run out from the bottom of the incline to the end of the trestle and jacked up again and the car then hauled back.

The top of the bin is now at about the same elevation as the top of the slope on which runs the construction railway. The trestle is to be built to the same level between the bin and the slope, so that cars can be brought out from the construction railway and dumped directly into the bin.

Two 2-yard Ransome mixers are to be installed under the bin. They will be fed direct from the bin and



Fig. 3.—Hauling Bin Over Uneven Ground.

will feed direct into buckets on the concrete trains. The concrete trains will run through the trestle at a point directly below the position of the boom of the McMyler crane shown in Fig. 4. The trestle itself and the sub-