“A description of the Turnbridges on the Herefordshire and Gloucestershire Canal.” By Stephen Ballard, A. Inst. C. E.

Turn-
bridges.

In taking to pieces the old turnbridges on the Herefordshire and Gloucestershire Canal, the author observed that the spikes used to fix the planks down to the carriers had caused the decay of the timber ; that the balance weights of stone confined in a box under the planks kept the timber very moist ; that the timbers near the ground where there was not a free circulation of air, and the wood wherever it was pierced with iron, were decayed.

In the bridges now described, no spikes are used to fix down the planks, but the planks are held in their places by two flat rods extending the whole length of the planking. The author then describes in detail, by reference to the drawing accompanying the communication, the peculiar method of construction which he has adopted. The planks are $\frac{3}{8}$ ^{ths} of an inch apart, so that dirt and wet may not lodge in the joints. The bridge is balanced by two stones hung at the ends of the swing poles of about 6 cwt. each. The four principal carriers are supported by three cast-iron bearers fixed to a grooved circle, which rests on cast-iron balls running in another grooved circle. By this construction no planks are pierced with spikes ; the box of stones is got rid of, and a free access of air is obtained ; and the peculiar causes of destruction to which turnbridges are exposed, are it is conceived in a great measure obviated.

“Description of an instrument for setting out the width of cuttings and embankments of Railways, Canals, or Roads, as particularly applicable to falling or side-lying ground.” By Henry Carr, Grad. Inst. C. E.

Setting out
Embank-
ments.

The object of this instrument is to facilitate the operation of determining the distance of the outer lockspit from the centre line of a cutting or embankment, by avoiding all calculation, and reducing the usual threefold operation into one. The principle of its construction is the formation of a half cross section, which may be easily altered to suit all cases with regard to base, side slope, and inclination of surface. The construction of the instrument is described in great detail by reference to the drawing accompanying the communication. The author states that he set out a portion of the South Eastern Railway with this instrument, and found it answer exceedingly well. The experience of the first instrument has suggested some improvement in its construction, which is represented in another drawing.