occurs a sharp bend in the river. The Grand Trunk Railway crosses at this point, and the bed is further contracted by the piers and abutments of the bridge. The river originally, until straightened by the Railway Company on building this bridge, followed a wide valley in a devious course, and this had the effect of allowing it to find relief during freshets. Now, however, during heavy freshets, the water rises to such a level as to flood a considerable portion of the suburb of London West. This is further accentuated by the ice in spring forming a jamb at the bridge, which it has frequently been found necessary to relieve by blasting.

The annual ice jamb and the flooding of London West, which has, by many people, been attributed, unjustly, to the Water-works dam, nevertheless caused the Engineer to provide the large relief gates shown, so as to relieve the new structure, if possible, from any suspicion of being the cause of the flooding.

By means of flash boards the water can be raised to a height of four feet above the crest of the dam, and this is done when the condition of the river is such that this increased head will not back the water so as to damage property above the dam.

These flashboards were a feature of the old dam, and, as applied to the new structure, their design is very similar to that which proved efficient in the old. They are erected from a scow, which is floated from side to side along the crest of the dam. Two men are sufficient for the actual work of erection, which is as follows: The standard is hooked into an eye in the steel plate protecting the crest and then lifted towards a vertical position until the brace bar, which is also attached by hook and eye, will engage with it. The lowest board is then locked into position by a couple of two and a half inch nails, and this procedure is continued right across the dam if the water is low, and the other boards attached as it rises. It is possible to attach the standards and flashboards with nine inches of water going over the crest. The stop logs can be used to bring the water to a suitable level for erecting. The standards for the flashboards are spaced six feet centre to centre.

The cause of the failure of the old dam is ascribed by Mr. Moore to the ice from the jamb coming down the river in large pieces (some being as great as nine feet square) when the water was not sufficiently high to carry it clear of the dam, but allowed it to strike with the force given it by the current. These gradually smashed or loosened the planking of the crib or apron, and the filling then washed out, after which the piles were, one by one, either broken or washed away. The section which failed is indicated on drawings.

This danger from the ice in spring necessitated the dam being of the heavy section shown by the drawings. It will also be noticed that it was thought necessary to protect the crest with steel boiler