

plain spandrel walls above the piers. In abutments a noticeable batter of the face, as employed in the Kemp Bridge, Wabash, Ind. (Fig. 31), is essential to obviate the appearance of tending to tip forward.

The use of copings for piers involves the accentuation of the structural functions of these portions of the bridge, and adds to the clearness of the whole design. Besides providing a necessary covering for the body of the pier, in the case of stone masonry construction, it, in any case, emphasizes the point of support of the superstructure and obviously distributes its weight over the support. An excellent example of the proper use of such a feature is seen in Fig. 22, already described. The Heidelberg Bridge (Fig. 30) illustrates the defect of its omission.

Skilful contrasts in colour are at times employed to accentuate the main structural lines. For example, in the case of the Connecticut Avenue Bridge, Washington (Fig. 22), the arch rings, coins of piers and abutments, copings, and cornices are of light gray artificial stone blocks, while the spandrel walls and faces of piers and abutments are of a light buff shade. It is therefore comparatively easy to instantaneously trace the structural outlines of the whole bridge and form an estimate of their correctness.

Special treatment of a structure may advantageously be employed at times to emphasize its magnitude. Thus, the emphasis of the ring stones or voussoirs of an arch enhances its size. This impression is a result of the observer's realization that a great number of large stones are required to make the circuit of the ring. On the other hand, the use of moulded rings, while permissible for small arches comparable in size with those employed in building construction, effectually dwarfs the span when used for large arches. The use of spandrel panelling of a type familiar in domestic architecture, or the provision of niches for heroic statuary, also have a reducing effect and should be avoided for large spans.

Emphasis of strength, either directly or by withholding any decorative feature which gives the impression of reducing the capacity of the structure for traffic, are important aesthetic details. The placing of large retreats or other heavy features over the crown of an arch is objectionable, since it creates a feeling that the arch is being burdened with a considerable load which might have been placed where it would tax the structure less severely—for example, over the springings. The Franklin Bridge (Fig. 26) contains this objectionable feature. Lamp clusters should not be placed over the crown, for the same reasons. They should be placed over the piers, as shown in Fig. 29.

The relief of the monotony of large blank spaces or the breaking of the extensive repetition of a detail are among the legitimate