when the pin and eye surfaces are in full contact. In that view of the case for flat bars, with heads uniform in thickness with the body, pins should have a diameter equal to the full depth of the bar; or, in case it is unadvisable to have such large pins, the required bearing area can be made up by thickening the eyes.

When square bars are used, the eyes should be formed by long loop-welds, which gives, of course, ample material around the pin, being equal to the side of the square. Round bars should be forged with an equivalent flat head, as it is impossible to properly loop-weld a “round,” and have a satisfactory flat bearing on the pin. The eyes of all links should be carefully bored to match the pin, with minimum clearance compatible with erection of the work. Since in all link bridges each individual bar is calculated to perform a given proportion of duty, uniformity of length, particularly in bars of the same panel, is of the first importance. Otherwise, an inequality of strain will result after the work is erected, the tighter bars taking all the load at first, only bringing the slack ones into play after they have stretched a sufficient amount so to do. These errors of length creep in from two causes—