The ends of pins have to be reduced in diameter, so that the nuts and pin pilots may be screwed thereon. Care must therefore be taken in proportioning small pins to see that sufficient area be left under the root of the thread to resist the tension on that section caused by the greatest transverse components of the stresses in the lateral rods. The principal objection to the use of large pins is not always the undue weight of the pins themselves, but the increased size of the chord and tie-bar heads, and the room that they take up.

On the other hand, it is not always desirable to use the smallest possible pin, as the width of the bearing is an inverse function of the diameter of the pin: so if, owing to the necessity of a large number of rivets, the re-enforcing plates be long, it might be economical to increase the diameter so as to reduce the width. Thickening the heads of eye bars has an injurious effect on the pins, although a beneficial one upon the heads, for the lever arms of the stresses are thereby increased.

Bridges with weak pins will not necessarily fail by the rupture of the pins. The reason for this is thus stated by Professor Burr: "The distortion of the pin beyond the elastic limit will relieve the outside eye bars of a large portion (in some cases, perhaps all) of the stress in them. This result will produce a redistribution of stress in the eye bars, by which some will be understrained, and the others correspondingly overstrained. Thus, although the pin may not wholly fail, the safety of the joint will be sacrificed by the overstrained metal in the eye bars."