head and in the centre line of the bar. No error in length of bar or diameter of pin hole exceeding $\frac{1}{64}$ of an inch will be allowed.

The section of metal opposite the centre of the pin hole across the eye shall be proportioned according to the following table, the diameter of the bar being the unit:

PIN.	BAR.	EYE SECTION.	
		Upset Heads or Weldless Bar.	Heads Rolled on Bars.
0.67	1.0	1.50	1.33
0.75	1.0	1.50	1.33
1.00	1.0	1.50	1.50
1.25	1.0	1.00	1.50
1.33	1.0	1.70	1.60
1.50	1.0	1.85	1.67
1.75	1.0	2.00	1.67
2.00	1.0	2.20	1.75

For hammered eyes, the shape to be used shall be determined by the Engineer after the contract is awarded. No shape, which on testing shows five per cent. of breakages in the eye or neck, will be accepted.

Pins must be turned true to size and straight, no error of more than $\frac{1}{50}$ of an inch in diameter being allowed.

Pins connecting chords, posts and tie bars shall be fitted for pilot nuts, and shall not be more than $\frac{1}{40}$ of an inch less than the pin holes of the eye bars.

Pins connecting laterals with other members shall be turned down to a diameter of not more than $\frac{1}{30}$ of an inch less than the pin holes.

Pin holes in wing nuts, channel nuts or other arrangements for lateral connections shall be drilled or else punched and reamed to a size not exceeding $\frac{1}{16}$ of an inch larger than the pin.

Rods, round or square, used for ties or counters, shall be fabricated with the same precision and care as prescribed for eye bars. They may have loop-welded eyes with reamed intrados, the proportions of the loop to be approved by the Engineer. Screw ends shall be upset so as to give 10 per cent. more sectional area at the bottom of the screw thread than in the body of the bar. Sleeve nuts, clevises, or other members used for adjustment must have the pin holes, if any, drilled, and must be of sufficient strength to break the bar to which they are attached.

Rods, used for lateral or vertical bracing, may have pin holes $\frac{1}{16}$ of an inch larger than the pin, but otherwise are to be made with the same care as counter rods.

All eye bars and counter rods are to be tested to 18,000 lbs. per square inch, and bars showing structural defects, permanent set, or too great extension under strains, shall be rejected.

39. Those shall be made of such iron or steel as is prescribed for members exposed to compression strain, except when otherwise specified. The splices shall be composed of edge-rolled plates in all cases. Abutting joints shall be milled off to exact lengths and square to the line of the chord. All pin holes shall be bored to an exact size, true to the line of strain, and correct as to position. No errors exceeding $\frac{1}{32}$ of an inch in length of part or in diameter or position of pin hole will be allowed. The pin holes may be bored $\frac{1}{32}$ of an inch larger than the pin, this is the utmost limit. Rivet holes in the splices shall be punched $\frac{1}{4}$ of an inch less than required, and then reamed to fit. After the splice plates are riveted on in the shop, each line of chords or columns shall be assembled—the joints matched, their abutting joints brought to a tight fit by turnbuckles, and all rivet holes in the ends of chords and splices in which the rivets are to be field-driven shall be reamed to an exact match and fit. Match marks shall then be made on each piece.

Parts composing posts or tie struts must be in one length, without splices between end bearings, unless specially permitted by the Engineer.

When necessary, pin holes in posts, chords or tie struts shall be reinforced by additional material, which must contain rivets enough to transmit the strain to the original member. The open sides of posts, chords, struts and tie struts shall be connected by lattice or trellis bars, the angles of which shall not exceed 63° 25′ for single bars, or 45° for double bars with riveted intersection.

The unsupported length of any lattice bar shall not exceed 45 times its thickness. All members of which the parts are connected by lattice or bracing bars shall have connection plates at each end, the row of rivets in which shall be equal to the width of the member in length and not more than four rivet diameters in pitch.

In all compression members the connecting rivets within two diameters of the ends shall be pitched not to exceed four times the diameter of the rivet.

The several pieces forming any built member shall fit closely together, and the member shall be free from bends, twists and open joints.

40. All joints shall be square and truly dressed. Rivet holes shall be accurately spaced, and the rivets must be of the best quality of iron for the purpose, and when driven must completely fill the holes.

All rivets with cracked heads, or heads not formed centrally on the shank, or rivets which are loose, either in the hole or under the shoulder, shall be cut out and replaced with good rivets.

Rivet holes shall not be spaced less than $2\frac{1}{2}$ diameters between centres, nor more than 15 times the thickness of thinnest outside plate,—9 inches being the maximum pitch allowed in plate riveting.

No rivet hole shall be less than $1\frac{3}{4}$ diameters from the end of a plate, or $1\frac{1}{2}$ diameters from the side of a plate, nor ever less than $1\frac{1}{4}$ inches from centre of hole to edge of plate, except in cases where the plate or side of angle is less than $2\frac{1}{2}$ inches.

The diameter of hole shall not exceed the diameter of the rivet more than $\frac{1}{16}$ of an inch.