while if the distance between the faces be more than one and a half times the depth of the channels, either the thickness must be increased by one sixteenth of an inch and the width sufficiently for two more rivets on a side, or the thickness must be increased one eighth of an inch and the width sufficiently for one more rivet on a side.

But if single rivetted lacing be used the dimensions of the stay plates are to be taken from the next table, the same allowance as before being made for the increased distances between channels:

Depth of channels.	Thickness of Stay Plates.	Width of Stay Plates.	No. of Rivets on a side.
4 inch.	¼ inch.	4 inch.	2
5 "	¼ "	4 "	2
6 "	¼ "	6½ "	3
7 "	¼ "	6½ "	3
8 "	5⁄16 "	6½ "	3
9 "	5⁄16 "	8½ "	4
10 "	⅜ "	8½ "	4
12 "	⅜ "	8½ "	4

Inclinations of Latticing and Lacing Bars.—Lattice bars shall make with each other, as nearly as circumstances will permit, angles of ninety degrees, and lacing bars angles of sixty degrees.

Diameters of Rivets for different Channels.—For attaching plates and lattice bars to channels the least diameters of the rivets to be used are to be taken from the following table; and the greatest diameters must not exceed those given in the table, in any case, by more than one eighth of an inch:

Depth of Channels.	4in.	5"	6"	7"	8"	9"	10"	12"
Diam. of Rivets.	½in.	½"	⅝"	⅝"	⅝"	¾"	¾"	¾"

Sizes of Lattice Bars.—The minimum sizes of the lattice bars for the different depths of channels, when the distance between the inner faces of the latter does not exceed their depths, are to be taken from the following table: but if this distance exceed the depth and be less than one and a quarter times the same, either the thickness of the bars must be increased by one sixteenth of an inch or their width by one half of an inch; if the distance between the faces be greater than one and a quarter times the same, both of these changes in thickness and width must be made; while if the distance between faces exceed one and a half times the depth, the thickness must be increased by one eighth of an inch and the width by one half of an inch. This table can be made to apply to single rivet lacing by increasing the width of the bars by three eighths of an inch, and making the same allowance for increased distance between the faces of channels.

Splice plates.—The length of a splice plate is to be determined by the number of rivets necessary to transfer the stress from one main member to the other: the sum of the working resistances to shearing of all the rivets on either side of the joint must not be less than the stress in the main member upon that side, onr must the latter stress be greater than the sum of the working resistance at the bearing surfaces of the rivets on that side of the joint.

When practicable, a splice plate must be placed on each side of every member where a splice occurs.

The transmission of compressive stresses shall be considered as entirely through the medium of the rivets and connection plates, and these must be proportioned accordingly.

Reinforcing plates.—Simple reinforcing plates or plates rivetted to webs at pin holes in order to compensate for strength lost there, or to provide additional bearing for the pins, must have as many rivets to attach them to the webs as will give shearing and bearing resistance for same, at least equal to the greatest allowable stresses upon the reinforcing plates.

Cover plates.—Cover plates for top chords or batter braces are to have the same section as the chord or batter brace plate, the joints of which they cover, and enough rivet on each side of the joint to take up the greatest allowable stress that could ever come upon the cover plates.

Extension or connecting plates.—All extension or connecting plates on the ends of struts, for the purpose of attachment by pins or rivets, must be designed of such a strength that they will bear without buckling the ultimate resistance to compression of the struts, and to provide sufficient bearing for pins and rivets. There must be a sufficient number of the latter to transfer all the stress in the post to the extension or connecting plates.

Shoe plates and roller plates.—No shoe plate or roller plate is to have a less thickness than three quarters of an inch.

Beam hanger plates.—Beam hanger plates are never to be made less than three quarters of an inch thick, and their areas are to be such that the hanger nuts will always have a full bearing thereon.

The necessary thickness for a beam hanger plate is to be found by considering it as a beam uniformly loaded by the whole weight that comes on the hangers, the length of said beam being the distance between the centre of holes, through which pass the ends of one hanger and its width being the extreme dimension of the plate measured parallel to the floor beam: the working stress for bending on the plate is to be taken equal to that used in proportioning the floor beam.

Rivetting.—In rivetted work all joints are to be squarely and truly dressed, and the rivet holes must be accurately spaced.

No rivets with crooked heads or heads not formed accurately on the shank, or rivets which are loose either in the rivet holes or under the shoulders will be allowed in a bridge.

Depth of channels.	Thickness of Lattice Bars.	Width of Lattice Bars.
4 inch.	¼ inch,	1¼ inch.
5 "	¼ "	1⅜ "
6 "	¼ "	1½ "
7 "	¼ "	1⅝ "
8 "	5⁄16 "	1¾ "
9 "	5⁄16 "	1⅞ "
10 "	5⁄16 "	2 "
12 "	⅜ "	2⅜ "