three-quarters of an inch in diameter, these dimensions should be increased by an eighth of an inch. Rivets may be countersunk at one or both ends.

Making parallel rows of rivets staggered avoids unnecessary weakening of the parts riveted together.

There has been much discussion as to whether punched or drilled holes are preferable; the general conclusion being, that drilled holes weaken the plates less, and when slightly countersunk, so as to avoid sharp edges, do not increase the shear upon the rivets, but that punched holes are so much more economical as regards shop-work, that, when properly made, they are preferable to drilled ones. The improvements made of late years in riveting-machines have increased the efficiency of work with punched rivet holes.

Should, for any reason, it ever be necessary, in bridge designing, to put a rivet through a plate whose thickness is greater than the diameter of the rivet, the rivet hole should be drilled.

Machine riveting is preferable to hand riveting, but there are cases when the latter has to be employed.

Field riveting is nearly always inferior to shop riveting.

When a stress is transmitted from one plate, through one or more plates, to another plate, the number of rivets must be increased. The rule given by Weyrauch is, that, "for every single shear connection, the indirect force transferrence requires for $m$ intermediate plates $m + 1$ times as many rivets as for direct transferrence." Keeping this in view, the designer will avoid using more than one flange plate in floor beams, or more than one plate for covering the channels of the top chord.