post and the pin hole when the post would be on the point of
rupture by compression. Where the ends of the posts are
figured hinged, which is a decidedly better construction, the
extension plates pass inside the splice plates of the chord, and
are attached to the pins. As before, there must be enough
rivets to transfer the stress in the posts to the plate.

The thickness of the re-enforcing plates at the lower end of a
post is determined by the bearing required, and their length in
the manner already described. It is better to place these plates
on the inside of the posts; then, if the flanges of the channels
be partially cut away, an extra plate (at least three-eighths of an
inch thick) can be placed on the outside of each channel. The
reason for cutting away the bottoms of the post channels is
merely to pack the chord more closely, and thus reduce the
bending-moments on the pins. But, if the method of pin propor-
tioning given in Chapter XI. be adopted, the necessity for
cutting away the channels, to any extent, vanishes; for at the
middle of the span the web stresses are so small, that their
moments are neglected, and the pins at the feet of the other
posts have an excess of strength.

In high double intersection truss bridges with long panels,
the diagonals become so long, that it is convenient to halve
them, and connect the halves by pins. It is then advisable to
let these pins pass through the webs of the post channels where
the diagonals cross, for the latter then tend to stiffen the posts.
If intermediate struts also be used at the middle of the trusses,
the posts can be figured for half length, with both ends hinged.
On account of the stretch of the main diagonal, there would be
a tendency to deflect the post. If the diagonals were forty-two
feet long, the stretch of the upper half of them would be about
one-eighth of an inch; so that, to avoid this objection, it will
be necessary to elongate the pin hole that amount on the lower
side, in the direction of the main diagonal. The pin holes
should, of course, be well re-enforced in order to compen-
sate for the material cut from the channels. The stretch of
the counters being less than that of the main diagonals, and the
posts crossed by the heavy ones generally having an excess of
strength, it is not necessary to elongate the pin holes in the
direction of the length of the counters.