stresses carried by the channel bars of the two adjacent panels. The simplest way to find the stress on any channel is to multiply its area by the intensity of working-stress, which was found from either Table X. or XI. This stress is then to be divided equally, or otherwise, between the outer and inner plates which splice the abutting channels; and the number of rivets necessary to resist bending and bearing are to be ascertained in the manner explained for re-enforcing plates.

To determine the length of a cover plate, find in the same manner the number of rivets upon each side of the joint, which will take up the stress carried by the chord plate, and lay out the cover plate with the rivet spacing to scale. The stress carried by the chord plate is equal to its sectional area multiplied by the intensity previously found for the channels.

At the hip joint it is obvious, that, where the chord and batter brace are hinged upon the pin, the resultant of the thrust in the batter brace and the pulls in the diagonals and verticals must equal the thrust upon the chord, and that the bearing must be figured for this thrust; but, where they are not hinged, the section of the splice plates must answer two requirements: first, their area (neglecting, on account of its being bent, the effect of the cover plate) must be sufficient to transfer to the chord a stress equal to that in the first panel; and, second, that the pin bearing be sufficient for the resultant of the tensions in the diagonals and verticals meeting at the hip. The length of the cover plate at the hip cannot be calculated; for it carries no stress, simply adding to the rigidity of the joint, and keeping the rain therefrom.

If the posts be figured for one fixed end, the inner splice plate of the chord can be extended downward to act as a connecting plate for the post; and in this case there must be enough rivets used in respect to bearing and bending to transfer all the compression in the post to the chord by the connecting-plate, under the supposition that the ends of the post channels do not touch the flanges of the chord channels. If they do touch, so much the better; but it would not be safe to count upon their doing so. The thickness of the connecting-plate should be such that it would not bend between the end of the