of its form under the compressive strain to which it is subjected. The allowable strain per square inch on chords is governed by the same rule as that for columns; the ends being considered square, and the length of the chord the distance between two panel-points. The top chord may have simple machine-faced butt joints, or it may be made continuous in sections, the contiguous abutting surfaces being joined by fish or splice plates riveted or bolted to them. Such plates serve simply to keep the chord in position, and are not subjected to any strain whatever. Under this last arrangement, there would be attained all the advantages that can possibly be claimed for riveted work—namely, perfect continuity of material. This principle, combined with the American system, results in a structure that harmonizes theory and practice in the highest attainable degree. With some forms of compressive sections, like the Phoenix column, or the three-beam section, it is desirable, in fact necessary, that a casting be introduced to connect the several parts that cluster at the panel-points. This casting must have all its bearings machine-faced to match the faced ends of the chords and posts. In continuous box-shaped chords, the pin-holes must be reinforced with thickening plates, not only to increase pin-bearing, but also to distribute the pressure delivered to the chord at each panel-point over as much surface as possible. Further, it is advisable that the increased sectional area required at each panel-point, in approaching the centre, be placed in the sides of the box, as it is through the sides that the pin passes. It is