them under rapidly moving loads, with a proportionate gain in stiffness. In the best designs, cross-beams are located at panel-points, and they must be proportioned to carry the wheel-loads previously indicated. When sidewalks are to be carried outside of the trusses, the floor-beams of the roadway are prolonged on either side to support them, although occasionally circumstances may arise when the sidewalks must be supported by independent cantilevers bolted or riveted to the outside faces of the truss-posts. All things being considered, the compound riveted girder is probably the best form for floor-beams, because they can be made deep. A good depth for such girders in the middle is one tenth the width of roadway, but for long panels and heavy loads a still greater depth will often be found more desirable. A short distance either side of the centre, the bottom-flange may be tapered up gradually to the point of support. This form, even when not dictated by motives of economy, is very much more sightly than if the flanges are kept horizontal and parallel from end to end. The thickness of the web in such girders is usually from $\frac{1}{4}$ to $\frac{5}{16}$ of an inch, and the flanges should be so arranged as to be formed from but two angle-irons, the section of which must, of course, be determined by the extreme strain at centre of beam. This is a matter easily attained, since the sizes of angles vary so much that any desired area may be found in the lists of the principal manufacturers. The objections previously advanced against riveted work have least force in such girders as are above described, there being but a