other, the longitudinal components of the stresses in the latter produce a moment tending to revolve the beam about the upper edge of the web. Then, again, the bent plates must be made so heavy that they would withstand, before buckling, the ultimate pull of the lateral rods; and it is very seldom that such a detail is made strong enough to stand the ultimate pull of an inch and a half round rod. Another way is to rivet a plate across the top of the beam, and two bent plates or large angles opposite each other, just below the top flange, dropping pins through the jaws thus formed. This is the best arrangement yet employed. But in the author's opinion all these details are defective, for the reason that the lateral rods all take hold of the floor beams, which are simply suspended from the pins that are several inches above them; so that, unless the hangers be screwed up very tightly, any wind stress in the lateral rod will cause a rocking at the point of suspension, and, even if the hangers be screwed up tightly, the tendency to rock still exists. The only correct place to attach the lateral rods is to the chord pins, and their stresses should not be transmitted through the floor beams. Then come the questions, "How shall they be transferred?" and "How shall the rods be arranged so as to clear the joists?" The detail about to be described will answer these questions.

Upon the floor beam place a stick of square timber (about eight inches for ordinary highway-bridges), and let the ends fit into wrought-iron jaws, which screw up against the chord pins; then fasten the timber every few feet on alternate sides of the web, by half-inch bolts, to the flanges of the beam, and rest the joists on the timber. The laterals can either be attached by bent eyes to the chord pins (which would be preferable if their diameters do not exceed an inch and three-fourths), or by ordinary eyes to vertical pins passing through the wrought-iron jaws. In this way the timber not only acts as a lower lateral strut, but serves to give additional stiffness to the floor beam; although the section of the latter should not be diminished on that account.

Now, what objections can be raised to this method?
Some may say that it is a clumsy contrivance, but that is a matter of taste. Others may suggest that it reduces an iron