space equal to the diameter of the upright.

In Fig. 52, s-w is a part of the extension of the beam, for supporting the side-walk; s, a cast iron saddle, weighing about 4lb., for joist bearings, and e, a cross-section through the splice.

To afford a proper bearing upon the connecting-block, I propose to use a wrought iron Ring, (R, F. 54,) high enough to throw the whole bearing upon the extension plates e-e, and 3-4th" to 1" in width, except upon the side next the end of the flange beam, where it is to be clipped down to ½". This however, is not an essential point. In case of bridges already erected, the ring will have to be left open, as seen at R', and, when used, heated and closed around the upright.

Fig. 54.

Instead of the lateral bracing of wood, mentioned about two thirds down P. 69, wrought iron diagonal ties, usually called Sway-rods, have been generally used, in connection with wooden, as well as iron beams; being made of rods 5-8th" to 1" in diameter, according to character and dimensions of bridges, and bolted to the beam, 1′ or 1½′ inside of the upright, by an eye at each end of the rod.

These rods are also provided with a screw and swivel adjustment near one end of each.