tained, as a cheap, substantial and durable iron bridge for general use, for spans varying from 40 to, — perhaps 125 feet.

For bridges 16 to 18 feet wide in the clear, and panels ten or eleven feet long, a 9 inch beam, weighing 30 lbs. to the foot, is in good proportion; and when side walks are not required, the beams may be cut with square ends, just long enough to go between the uprights of opposite trusses, and provided with a fixture at each end, formed of a plate of iron about \( \frac{3}{8} \)" thick, 7" wide, and about 2' long, bent in the form of a jews-harp bow. The loop, or bow (\( u \), Fig. 31), is to encir-

![Diagram](image-url)

icle the upright, and the straight sides, to receive the vertical web of the beam between them, and to be fastened thereto, by two bolts and nuts. One of these should be 1\( \frac{1}{2} \)" in diameter, and long enough to receive the eye of a lateral diagonal tie, or sway rod (to prevent swaying or swinging), under both head and nut, and placed about 5\( \frac{1}{2} \)" from end of beam, and 2\( \frac{3}{4} \)" above lower edge of plate. The other bolt may be 1\( \frac{1}{2} \)" or 1\( \frac{1}{4} \)", and placed with its centre 1\( \frac{1}{2} \)" from end of beam, and from upper edge of plate. The thread of the screw