be upset, so as to give sufficient width and strength at the bottom of the stirrup to allow a 1\(\frac{1}{2}\)" stem to be screwed in, to pass through and support the connecting block. This stem may extend above the bottom of the stirrup, about \(\frac{3}{4}\)", a hole being made in the under side of the beam to receive that projection. The thread of the projecting part of the screw, which enters the beam, should be turned or chipped off. This plan may be used in bridges either with or without side walks.

Again, the upright may terminate in a flange at the top of the beam, and bolts screwed or cast in the top of the block, or running through the block with head or nut below, one on each side of the beam, and connecting with the flange of the upright, as shown at B, Fig. 32.

In the case of double uprights, the beam being cut to go between the inner branches, the fixture plates should lap about 20" upon the beam, and extend so as to clasp both branches of the upright.

CX. To introduce the solid wrought beam in bridges with sidewalks originally constructed for wooden beams, the following plan is suggested.

Let the beam be cut, say 1" shorter than the space between opposite uprights. Then, take for each end

![Diagram of bridge construction](image)

of the beam, two plates \(\frac{3}{4}\)" thick and 7\(\frac{1}{2}\)" wide, or, wide enough to fill the space between the flanges of