cross bearer is boxed 4 or 5 inches deep, to receive the
verticals \( d \).

The diagonals \( f_f \), \( 3{\frac{1}{2}} \times 7 \) inches, are locked or ten-
oned together at the upper end, and fitted into a half inch
boxing on the inside of the upper stringer \( b \). In the cen-
ter is a mortice \( 3 \times 7 \) inches for the piece \( e \) to pass through.
The lower end is reduced to 3 inches wide between the
pieces \( d \), and 4 inches at the end, having a head, or
reversed shoulder fitting a triangular boxing inside of \( d \),
shown by dotted lines.

The diagonals \( e_e \), are secured each by 2 bolts of \( 1{\frac{1}{2}} \)
inches diameter, and a few spikes at the upper end; and
at the lower end, they are halved and locked together,
with a piece of 2 inch plank, \( 2{\frac{1}{2}} \) feet long. locked, bolted,
and spiked onto each, and extending across the other to
the end. These short pieces, being reduced to \( 1{\frac{1}{2}} \) inches
thick, except for 6 inches at the upper end, which forms
the locking, they just fill the 6 inch space between the
stringer pieces. Two bolts of \( 1{\frac{3}{4}} \) inch iron, through
stringer and diagonals, with a few spike, complete the
arrangement at this point.

To secure the vertical position of the truss, a brace and
tie runs up from a point in each cross beam, about \( 2{\frac{1}{2}} \) feet
from the centre of the truss, to or near the top stringer,
being secured at each end so as to act by either tension
or thrust, with a force of some 2000 lbs. each. Perhaps
the best arrangement for this purpose is, to use a 3 inch
square, or \( 3 \times 4 \) scantling for the brace, with a \( \frac{8}{9} \) iron rod
running beside it for the tension. These are not shewn
in Fig. 34.

If the lower stringers can not be obtained of the whole
length, they may be spliced by a two-lock splice between
cross beams, with a piece of 2 inch plank about 6 feet
long, which will extend 16 inches beyond the lap each
way, well spiked on to the inside. Six inch pressed
spike, (\( \frac{3}{4} \) inch iron,) the points drawn about an inch for