TWO PANEL TRUSSES.

CLVIII. The form presented in Fig. 3, with rafter braces $ad$ and $de$, and a tie or chord $ae$, together with an iron tension member $db$ (in 1 or 2 pieces), is probably the best adapted to bridges from 20 to 25 feet in length. The braces should meet with a vertical joint at $d$ (Fig. 3), and toe into the chord tie with two headings, and one or two small bolts, as in Fig. 60.

Assuming the brace to be capable of sustaining a thrust of 500 lbs. to the inch of section, and the heading 1,000 lbs. to the inch, the aggregate depth of heading, $af$, and $de$, should be one-half the depth $cb$, of the brace; and, the point $f$, should fall below the point $d$, by $\frac{1}{10} ad$, so as to give a length of cleavage $fh, = 10af$ or $10 dh$. The shoulder $de$, then, should be,

(1),...$de = \frac{1}{2} cb - \frac{1}{10} ad, = \frac{1}{2} cb - \frac{1}{10} ab + \frac{1}{10} db$.

We here speak of $ad b$ as a straight horizontal line, not shown. This is regarding $af$ as equal to the vertical depth of cut at $af$; which will be sufficiently near the truth for our present purpose, provided the brace be not very steep.

But (2),...$de = db \cdot \sin \, dbe, = db \cdot \sin \, cab$.