ple. It consists in describing, as in Fig. 1 of the accompanying diagrams, a circle of radius \( CA \), equal to that of the pin hole, and a portion of another circle with a radius \( CB \), equal to that of the pin hole plus the product of one-half the depth of the bar \( HK \) by the ratio given in the table on p. 20; then drawing the lines \( DE \) and \( FG \) parallel to the sides of the bar, and at a distance therefrom equal to \( CB \); and with \( C \) as a centre and a radius \( CD \), equal to twice \( CB \), describing an arc to intersect \( DE \) and \( FG \) in the points \( D \) and \( F \); finally, with \( D \) and \( F \) as centres, and radii equal to \( CB \), describing the arcs \( HL \) and \( KM \), tangent to the sides of the bar at \( H \) and \( K \), and to the outer circle at \( L \) and \( M \).

For welded heads the construction is as shown in Fig. 2, where the pin hole and bar are laid out as before. The distance \( AB \) is equal to one-half of \( HK \) multiplied by the ratio given in the table on p. 20; and the distance \( SO \) is equal to \( HK \), or the diameter of the pin hole, whichever be the greater. The centres \( P \) and \( R \) of the arcs \( OBL \) and \( OTM \) respectively are found by trial; then \( DE \) and \( FG \) are drawn parallel to the sides of the bar at distances therefrom \( DH \) and \( FK \), equal to one and seven-tenths times \( PB \) or \( RT \); and with \( P \) and \( R \) as centres, and radii equal to two and seven-tenths times \( PB \) or \( RT \), or, what is the same thing, equal to \( DH \) plus \( PB \), arcs are described cutting \( DE \) in \( D \), and \( FG \) in \( F \); finally, with \( D \) and \( F \) as centres, and with radii equal to \( DH \), arcs are drawn tangent to the sides of the bar at \( H \) and \( K \), and to the arcs \( OBL \) and \( OTM \) at \( L \) and \( M \) respectively.

These constructions, with slight modifications, are taken from Trautwine's "Pocket-Book."

Next show the posts and the attached sway bracing in two projections with all their details. There should be allowed a clearance of about an eighth of an inch for the ends of the posts inside of the chord. The positions for the stay plates should