A D. The $r \prec d$ triangle A B E gives A E = A B cot. E; hence $d = h$ cot. $\frac{1}{2} a$. Again $r \prec d$ triangle C A D gives A C = A D cot C; hence $D + h = d$ cot. $\frac{1}{2} a = h$ cot^2 $\frac{1}{2} a$.

134. EXAMPLE.—From the top of a mountain 3 miles in height, the visible horizon appeared depressed 2° 13′ 27″; Find the diameter of the earth and the distance of the boundary of the visible horizon.

Log. h = 0.477121
Cot. $\frac{1}{2} a$ = 11.711941 } sum = 2.189062; d =

= 154.54; $D + h$ = 7961.3.901003.

h = 3

$\therefore$ D = 7958 miles the diameter of the earth.

135. To construct a horizontal sundial.—In any straight line A B take a point O, and from O erect a $\perp$ O T; take O as center withe the chord of 60° as radius and describe a circle F T S D. F S will represent the 6 o'clock line, and O T the meredian or 12 o'clock. From T on the quadrant arc, lay off T H = the latitude and join O H; from T draw the $\perp$ T P which will be the sine of the latitude. Make T G = T P, and from G as center with