$$\alpha = \cot^{-1}\theta$$

$$\theta = \cot\alpha$$

$$\theta = (\cos v \tan\varphi)$$

$$\varphi = \sin^{-1}\left(\frac{\sin\left(\frac{\lambda}{2}\right)}{\sin v}\right)$$

$$\sin\varphi = \left(\frac{\sin\left(\frac{\lambda}{2}\right)}{\sin v}\right)$$

$$\sin\varphi \sin v = \sin\left(\frac{\lambda}{2}\right)$$

Gimbel lock whenever $\sin\varphi = 0$ or $\sin v = 0$; i.e. whenever $\sin\left(\frac{\lambda}{2}\right) = 0 \Leftrightarrow \lambda = 0$ which is therefore a condition that $\sin\varphi = 0$ and finally that

$$\theta = \cot\alpha = 0 = \frac{\cos\alpha}{\sin\alpha} \Leftrightarrow \alpha = \frac{\pi}{2}, \frac{3\pi}{2}, \ \cos\alpha = 0, \ \sin\alpha = \pm 1$$