Summary

If $\frac{a}{c},\frac{b}{d}$ are two consecutive terms of any given “farey sequence” then we can find two ‘ford circles’

With centres $\frac{a}{c},\frac{1}{2c^2}$ and $\frac{b}{d},\frac{1}{2d^2}$. Which are tangent.

We have proved that if $\frac{a}{c},\frac{b}{d}$ are two consecutive terms of a farey sequence then $\frac{a+b}{c+d}$ also becomes a term in farey sequence making $\frac{a}{c},\frac{b}{d},\frac{a+b}{c+d}$ three consecutive terms.

Then we can easily say two ford circles with centres $\left(\frac{a}{c},\frac{1}{2c^2}\right),\left(\frac{a+b}{c+d},\frac{1}{2(c+d)^2}\right)$ are also tangent

Ford circles