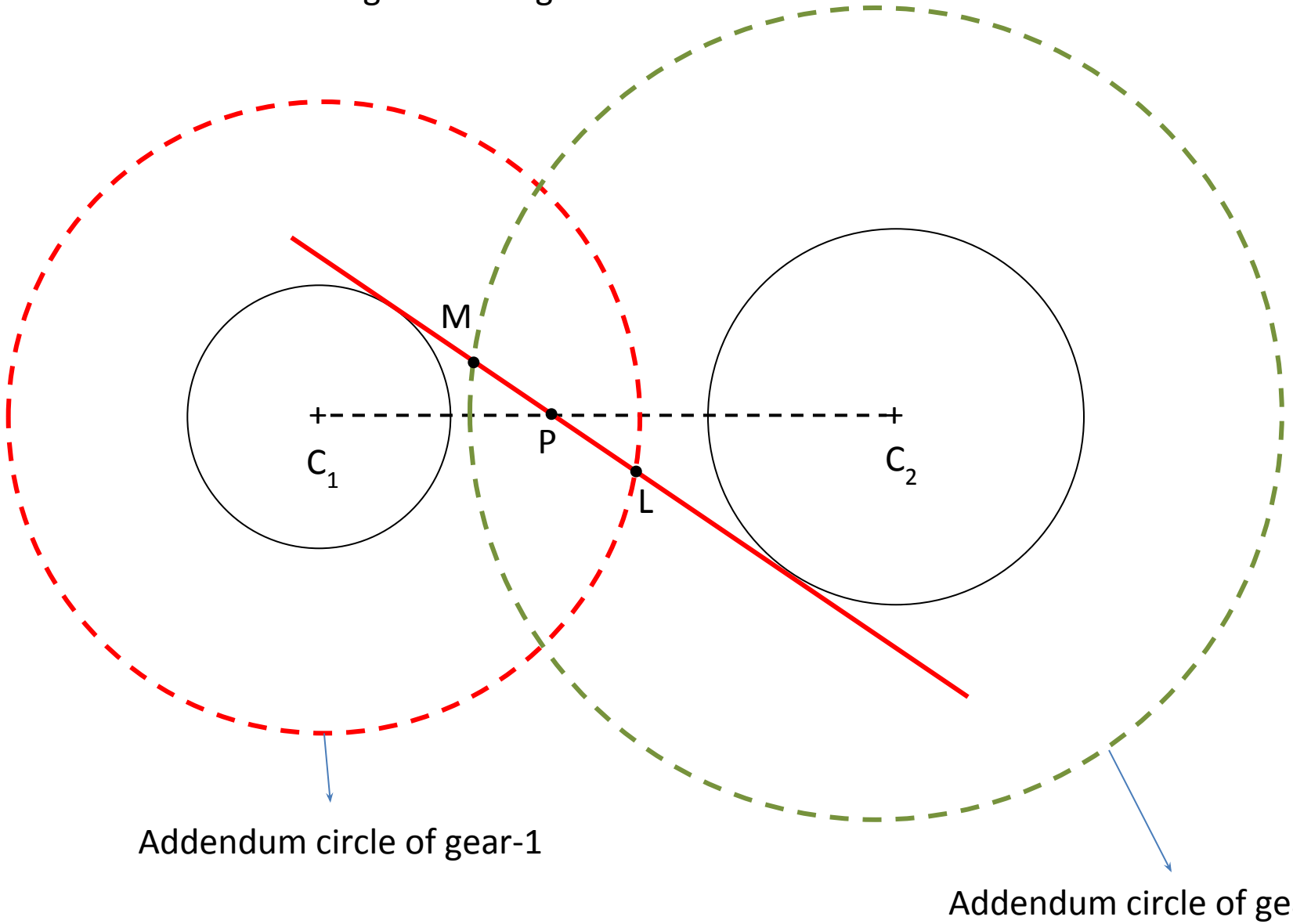
Path of contact

Path of contact

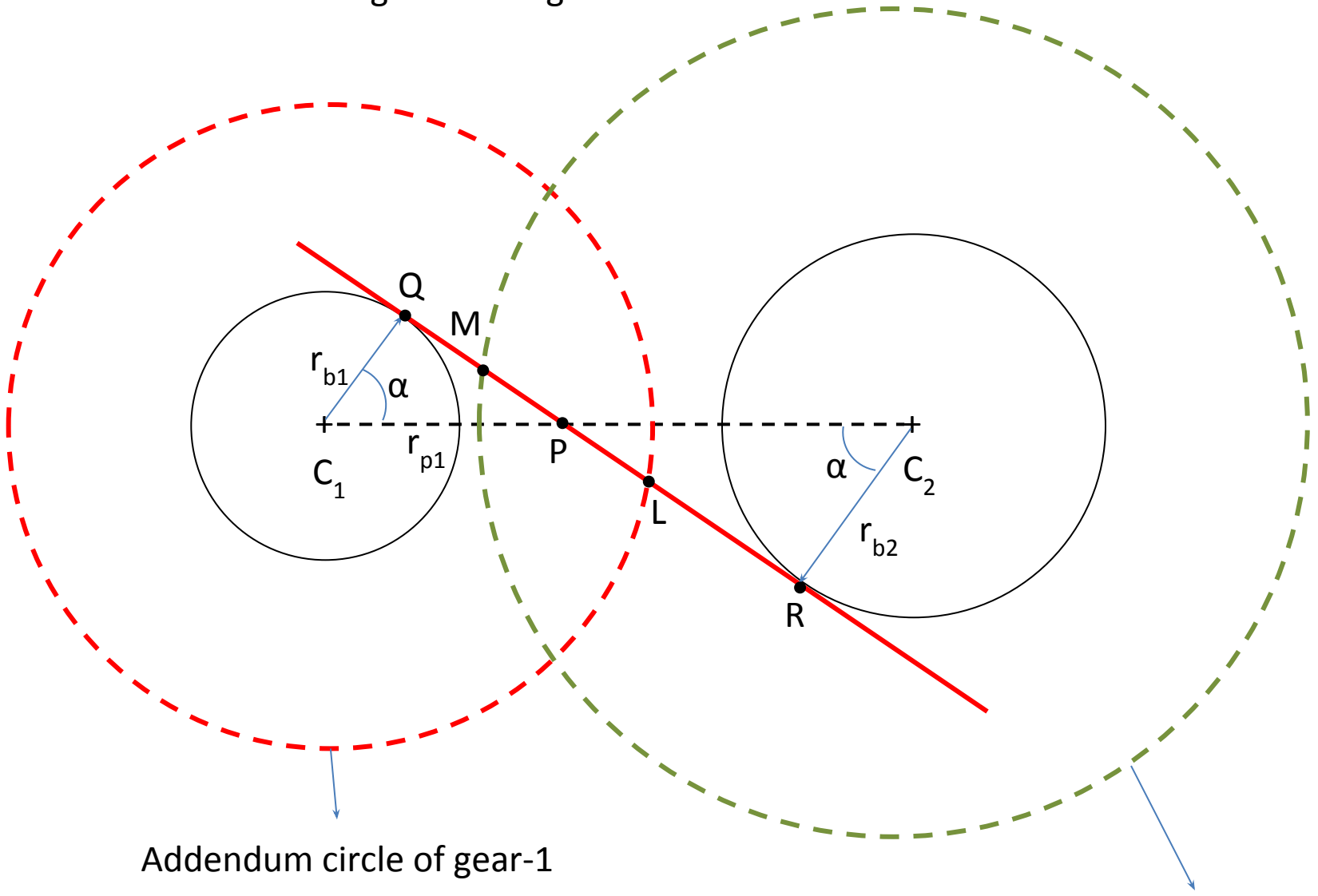
Draw addendum circle for gear-1 and gear -2



LM is known as path of contact.

Path of contact

Draw addendum circle for gear-1 and gear -2



LM is known as path of contact.

Path of contact

Path of contact LM:

LM = LP + PM

Calculate LP:

LP = LQ – PQ

$$LQ = \sqrt{C_1L^2 - C_1Q^2}$$

$$LQ = \sqrt{(r_{a1})^2 - (r_{b1})^2}$$

r_{a1} = addendum circle radius of gear-1

r_{b1} = base circle radius of gear-1

PQ = C_1 P sin (α)

PQ = r_{p1} sin (α)

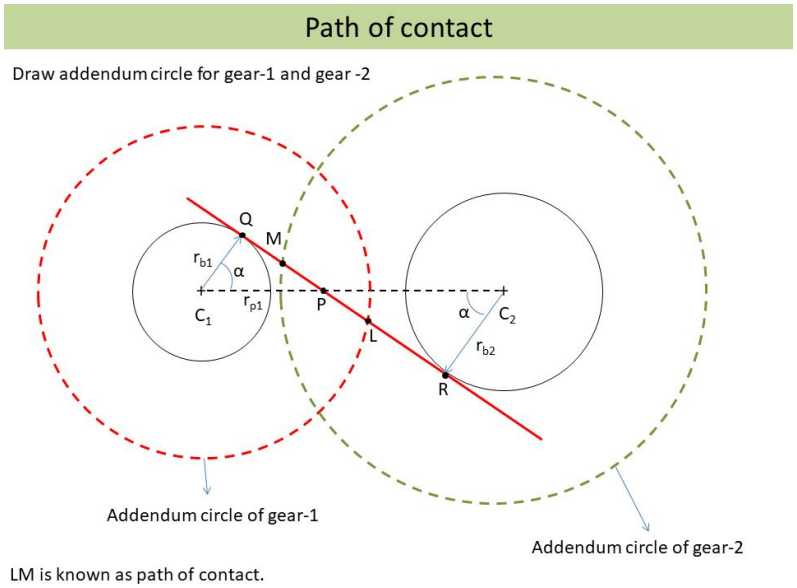
$$LP = \sqrt{(r_{a1})^2 - (r_{b1})^2} - r_{p1} \sin(\alpha)$$

Similarly

PM = MR – PR

$$MR = \sqrt{C_2M^2 - C_2R^2} = \sqrt{(r_{a2})^2 - (r_{b2})^2}$$

Path of contact



PR = C_2 P sin (α) = r_{p2} sin (α)

$$PM = \sqrt{(r_{a2})^2 - (r_{b2})^2} - r_{p2} \sin(\alpha)$$

Path of contact LM

$$= \sqrt{(r_{a1})^2 - (r_{b1})^2} + \sqrt{(r_{a2})^2 - (r_{b2})^2} - (r_{p1} + r_{p2}) \sin(\alpha)$$