

$$A = \varepsilon + Aa + Bb \dots \textcircled{1}$$

$$B = Bb + Aa + Cb \dots \textcircled{2}$$

$$C = Ba \dots \textcircled{3}$$

$\textcircled{3}$  in  $\textcircled{2}$ .

$$B = Aa + Bb + (Ba)b.$$

$$B = Aa + B(b+ab) . \quad R = Q + RP, \quad R = QP^*.$$

$$B = Aa(b+ab)^* \dots \textcircled{4}$$

$\textcircled{4}$  in  $\textcircled{1}$ .

$$A = \varepsilon + Aa + (Aa(b+ab)^*)b.$$

$$A = \varepsilon + A(a+a(b+ab)^*)b . \quad R = Q + RP, \quad R = QP^*.$$

$$A = \varepsilon (a+a(b+ab)^*)^* b . \quad \varepsilon \cdot R = R .$$

$$A = (a+a(b+ab)^* b)^*$$

from  $\textcircled{3}$ .

$$C = Ba .$$

$$C = Aa(b+ab)^* a .$$

$$C = (a+a(b+ab)^* b)^* a (b+ab)^* a .$$

$$\text{Hence; } \text{Reg } \mathcal{E}_X = (a+a(b+ab)^* b)^* a (b+ab)^* a .$$

Fairing Machine that accepts a language  $L = \{a^n b^n c^n ; n \geq 1\}$ .

