(a)
$$q_1 \stackrel{V_1}{\longleftarrow} q_2$$

$$v_2 \qquad v_2$$
(b)
$$q_1 \stackrel{Q_1}{\longleftarrow} q_1 \stackrel{Q_1}{\longleftarrow} x \stackrel{Q_1}{\longrightarrow} B_1$$

$$q_2 \stackrel{Q_2}{\longleftarrow} q_2 \stackrel{Q_2}{\longleftarrow} F_2$$