4.5. A parts assembly station on a production line exhibits a severe vibration problem. A simplified schematic representation is shown in Fig. 4.26. Two large tables of mass m_1 and m_2 are each mounted to a sliding metal plate on resilient rubber mounts with shear stiffness K_1 and K_2, as shown. The tables are each subjected to a vibrational excitation force, $F_1(t)$ and $F_2(t)$. The plates are able to slide viscously on a second pair of deformable rubber mounts, with shear stiffnesses K_3 and K_4. The viscous sliding coefficients are B_1 and B_2. The two plates are coupled by a shaft with longitudinal stiffness K_5. Draw a linear graph for the system using the two forces F_1 and F_2 as inputs.

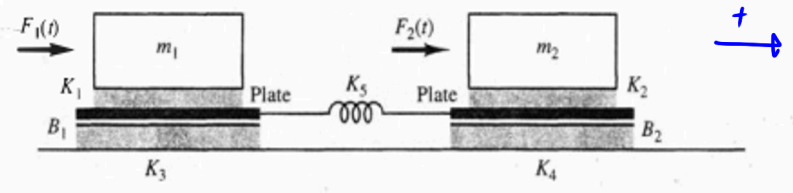

Figure 4.26: A parts assembly station.