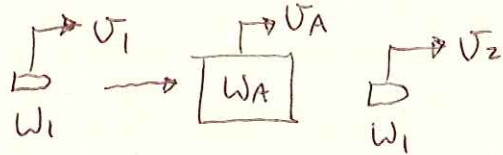


PROB. 14-5

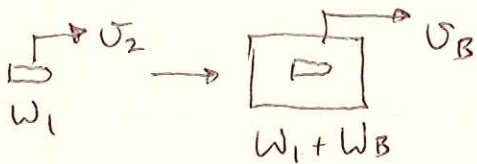
$v_1 = 1500 \frac{\text{ft}}{\text{s}}$, $W_A = 6 \text{ lb}$, $W_B = 4.95 \text{ lb}$, $v_A = 5 \frac{\text{ft}}{\text{s}}$,
 $v_B = 9 \frac{\text{ft}}{\text{s}}$, FIND W_1 , VELOCITY OF BULLET BETWEEN
BLOCKS.

$$M\bar{v} = \sum m_i \vec{v}_i$$



$$\left(\frac{W_1}{g}\right)v_1 = \left(\frac{W_1}{g}\right)v_2 + \left(\frac{W_A}{g}\right)v_A$$

$$W_1 v_1 = W_1 v_2 + W_A v_A$$



$$\left(\frac{W_1}{g}\right)v_2 = \left(\frac{W_1}{g} + \frac{W_B}{g}\right)v_B$$

$$W_1 v_2 = (W_1 + W_B)v_B$$

$$W_1 v_1 = (W_1 + W_B)v_B + W_A v_A$$

$$W_1(v_1 - v_B) = W_B v_B + W_A v_A$$

$$W_1 = \frac{W_B v_B + W_A v_A}{v_1 - v_B} = \frac{(4.95)(9) + (6)(5)}{(1500) - (9)} = 0.05 \text{ lb}$$

$$v_2 = \frac{(W_1 + W_B)v_B}{W_1} = \frac{(0.05 + 4.95)(9)}{(0.05)} = 900 \frac{\text{ft}}{\text{s}} \rightarrow$$