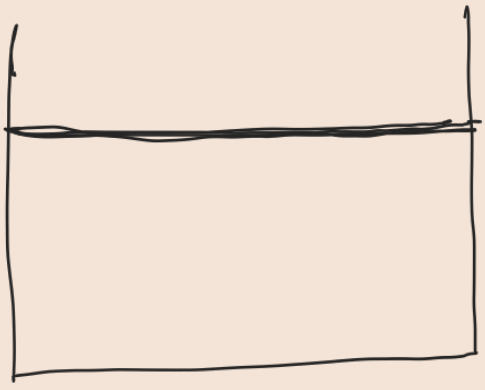


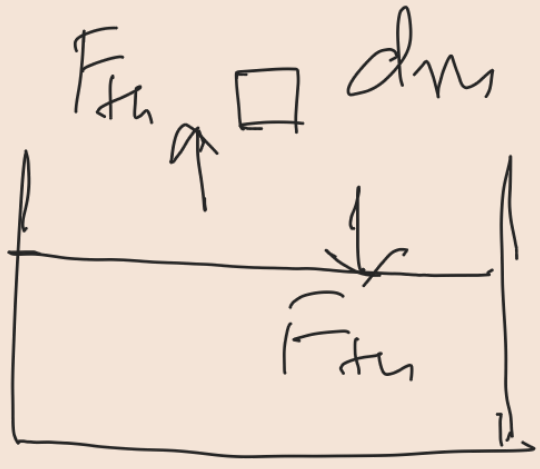
$\uparrow \dot{m}_1$ enters, and stops.

exits with velocity v_2, $\uparrow \dot{m}_2$

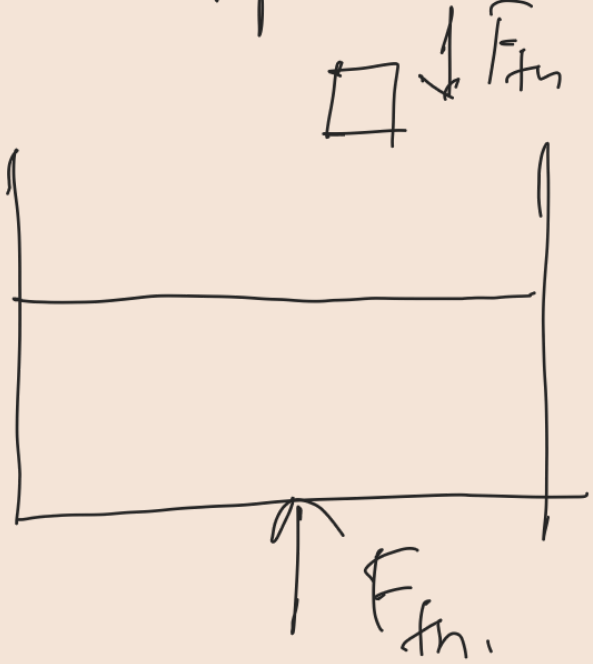
Let's consider any general time instant of the pumping process, and let's assume upward pumping. In a time interval of dt, $\dot{m}_1$

man exits the bottom container with some velocity & dm' man enters upper container with some velocity & stops. Let analyse thrust force on both containers individually,

Lower



Upper



However, upper vessel

is placed on 'pan'.
Hence, F_{thrust} by upper vessel on 'pan' is ↓.
So, net reading by weighing machine must be $W + 2F_{thrust}$.

'v' of exit must be $\frac{\mu}{\rho S}$.

$$F_{thr} = \left(\frac{dm}{dt}\right) v$$
$$= \mu^2/\rho S.$$

Reading is $W + \frac{2\mu^2}{\rho S}$.