

# Cylindrical diaphragm pumps

In one of Aesop's fables, a crow is rewarded with a drink by placing pebbles into a jar to raise the level of water inside to a point at which the crow could drink it.

Archimedes is reputed to have discovered the idea of displacement; as you push a solid object into a volume of water, its level will rise. This principle is used in the Vergnet pump which is hydraulically operated. The user presses down on a pedal with a foot. This pushes water into a bag or diaphragm inside a cylinder at the base of the rising main. As the diaphragm expands, it takes up more space inside the cylinder and forces water up the rising main.

The user then takes their foot off the pedal, the pressure on the diaphragm is removed and it shrinks in size, pushing the water inside back towards the foot pedal, ready for the next stroke. The space around the diaphragm inside the cylinder fills with water entering into it via a foot valve.

