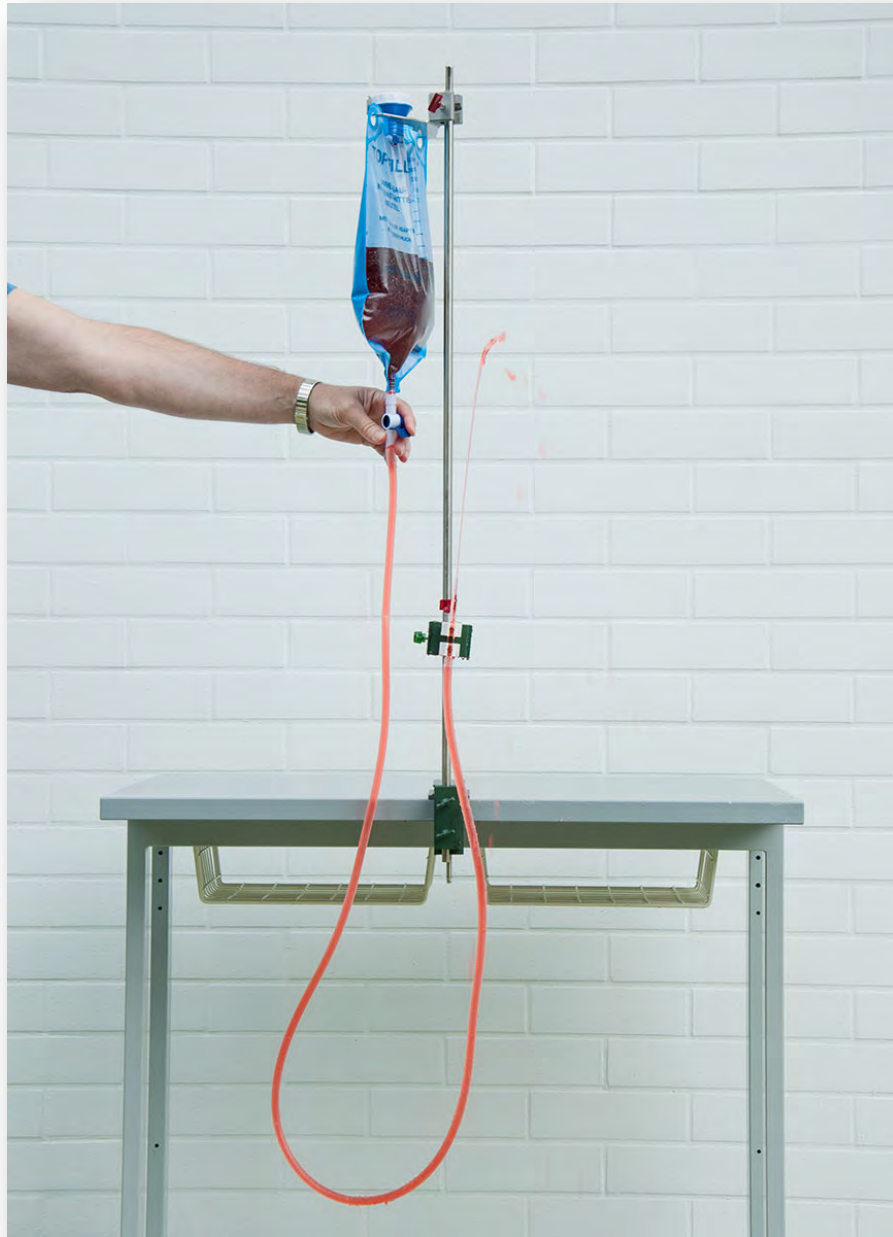




Material

Item-no.	Qty.	Description
DS500-1B	1	Table clamp, large
DS102-12	1	Stand rail base, L=125 mm
DS201-00	1	Support rod, round, L=1000 mm, D=10 mm
DS095-3K	1	Bosshead cross-pattern, demo 03
DS103-2H	1	Holder for stand rails, universal
DM345-2W	1	Water gun, unit
C6030-1C	1	Glass tube 3, straight, L=110 mm, with tip
DM461-1B	1	Discharge bag 3000 ml, with stopcock and holder

Purpose

To demonstrate a specific case of the conversion of energy.

Preparation

Fix the 125 mm stand rail to the table with the help of the table clamp; afterwards clamp the 1000 mm support rod into the table clamp and fix it firmly there with the two screws.



Mount the bosshead at a height of 10 – 20 cm at the support rod.

Fix the holder for stand rails in this bosshead; afterwards you can fix the water gun unit on this holder.

Hang the discharge bag on its suspension to the upper end of the support rod.



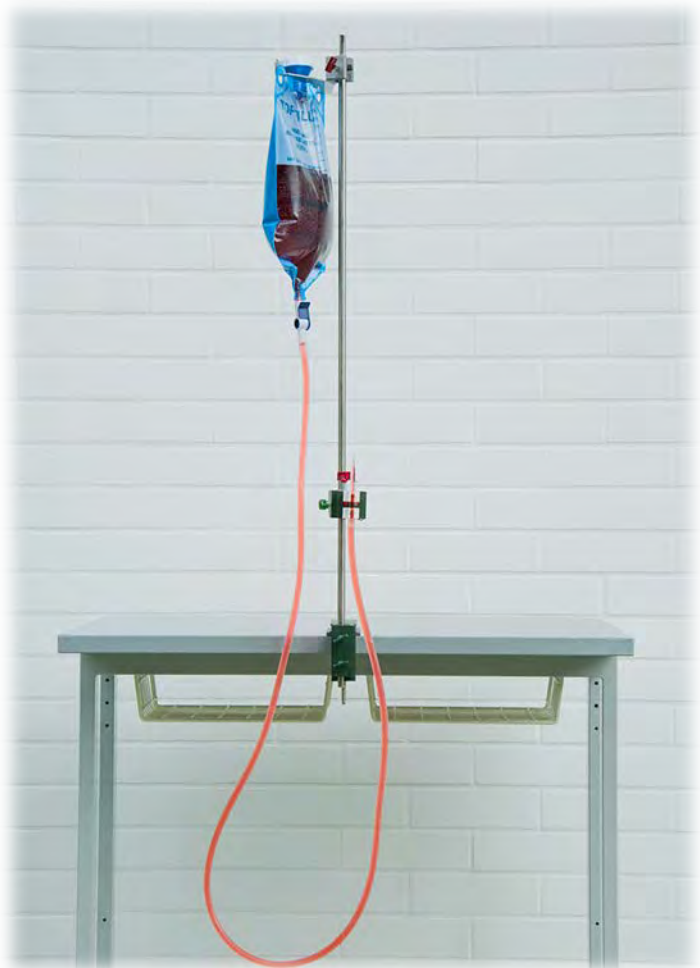
Connect the hose of the discharge bag to the glass tube; it is recommended to moisten the end of the glass tube before to ensure that the hose can be easily removed afterwards.

Now connect the glass tube to the water gun unit.



Close the tap of the discharge bag.

Open the inlet of the bag and pour approximately 2000 ml of coloured water into the bag.



Experiment

Open the tap and observe how high the water fountain reaches.

Loosen the suspensions and move the bag first down and then up again.

Result

The water jet (fountain) reaches nearly the water level of the discharge bag.

The water level is not fully reached since there is friction in the water hose and the glass tube.

Additionally the water jet is collapsing at some point, thus the falling drops prevent other drops from rising up.

This shows the conversion of the potential energy of the water into kinetic energy and vice versa.

Hint

If the glass tube with its holder is mounted slightly aslant the water fountain becomes better visible.

Note

A fountain of this type was found in the Artesian landscape in France in the 12th century, hence the name "Artesian Fountain".

Naturally occurring wells of this type usually do not spray up like a fountain because the outlet openings are covered with water.

