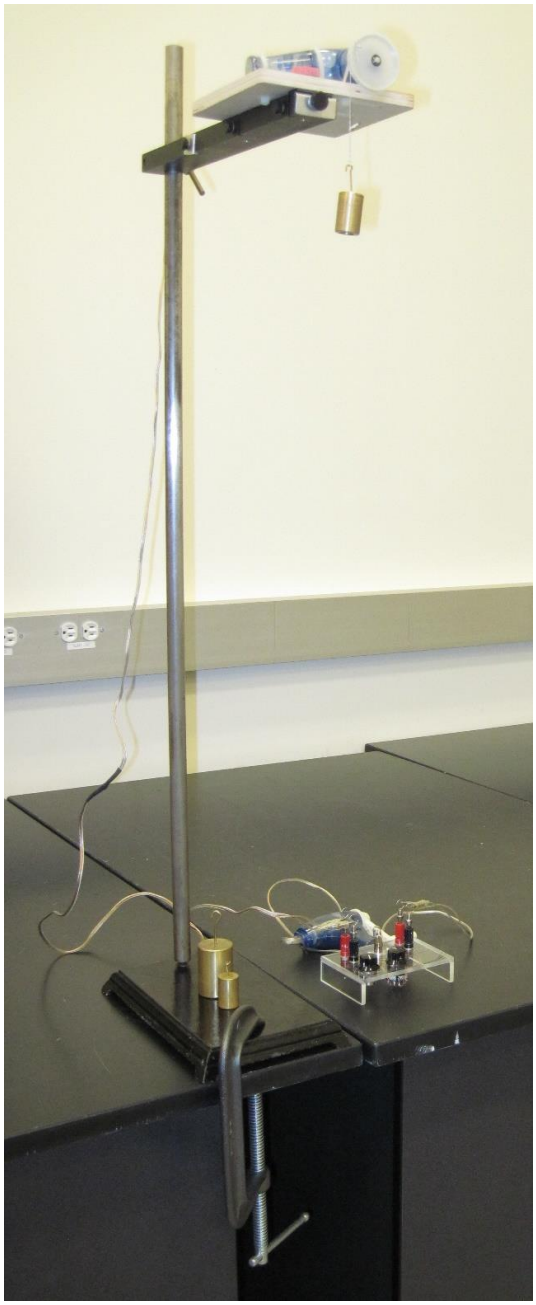
Energy from a Falling Mass

The Conversion of Gravitational Potential Energy to Electrical Energy

A mass suspended from a string attached to a Genecon generator falls to the floor. The electrical energy is used to light a light bulb. In addition, a variable resistor can be used for the electrical load, acting as a variable brake on the falling mass (regenerative braking).

Parts:

Vertical Support Rod and Base
C-clamp
String
Fall Down Genecon with Pulley attached to a rod arm.
Two 100g Masses
500g Mass
Control Panel with Lamp and Brake
Second Crank Up Genecon with Crank
2-meter Stick



Procedure:

1. Attach the Fall Down Genecon with the pulley to the vertical support rod and clamp the rod base to the table so that the pulley overhangs the table and has a clear path to the floor. The center of the pulley should be 170 cm above the floor.

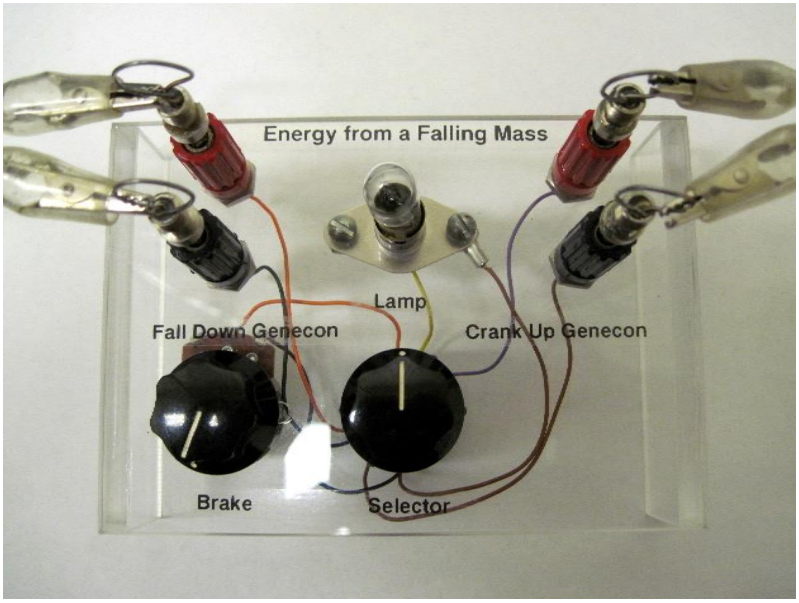
2. Slip the knotted end of the string into the notch in the side of the pulley and wind up the string. Hang the 100g mass on the end of the string to keep the string from slipping off the pulley. 100g is not enough weight to turn the Genecon against its resistance.

3. Connect the Fall Down Genecon leads to the binding posts on the left side of the control panel.

4. Connect the second Crank Up Genecon leads to the binding posts on the right side of the control panel.

5. Set the Selector switch to Lamp

6. Exchange the 100g mass for the 500g mass and let it fall. The lamp bulb will light up!



7. Change back to the 100g mass. Change the Selector switch to Crank Up Genecon, turn the crank and wind the string back on the pulley.

8. Set the Selector switch to Fall Down Genecon and turn the Brake variable resistor counterclockwise down to slowest speed (maximum braking). Add the second 100g mass to the load and let it fall. It should start falling slowly but may need a little nudge to get started. Use the Brake control to vary the speed.