CALCULATION OF ENERGY SURPLUS OF THE TWO-STAGE MECHANICAL OSCILLATOR IN THE EXPERIMENT WITH MANUAL DYNAMO LAMPS

Introduction

In this analysis energy surplus of the two-stage mechanical oscillator by Veljko Milković (www.veljkomilkovic.com) has been calculated in an experiment performed with help of manual dynamo lamps, by placing a certain number of such lamps under the lever while the oscillation of the pendulum has been maintained with exactly the same lamp and in that way input and output work have been measured (*Force x Distance)*.

The experiment described above was one of the first experiments conducted by Veljko Milković at the very beginning of his work as a researcher. I have repeated it on my own and by doing that I have managed to draw some conclusions based on the registered measurements.

In addition, the entire procedure of the same experiment can be seen on Milković's site (www.veljkomilkovic.com) and video presentation[1] (http://video.google.com/videoplay?docid=6377655322209610872), but with a different model and with a fewer number of shining lamps, therefore anyone can calculate the energy surplus on that machine with help of the following formulas and experiment, and by estimating the distance that Milković's hand travels in order to maintain the oscillations of the pendulum.

[1] the video of the experiment conducted by Veljko Milković can be downloaded on the following link:
http://www.veljkomilkovic.com/Video/Veljko_Milkovic_(video-8)_Universal_two-stage_oscillator_full_presentation.wmv

or segments of the video presentation refering to this experiment:
http://www.veljkomilkovic.com/Video/Veljko_Milkovic_(video-13)_Universal_two-stage_oscillator-generator-1.wmv

http://www.veljkomilkovic.com/Video/Veljko_Milkovic_(video-14)_Universal_two-stage_oscillator-generator-2.wmv

The machine on which I have personally conducted the experiment is presented on the following figure:

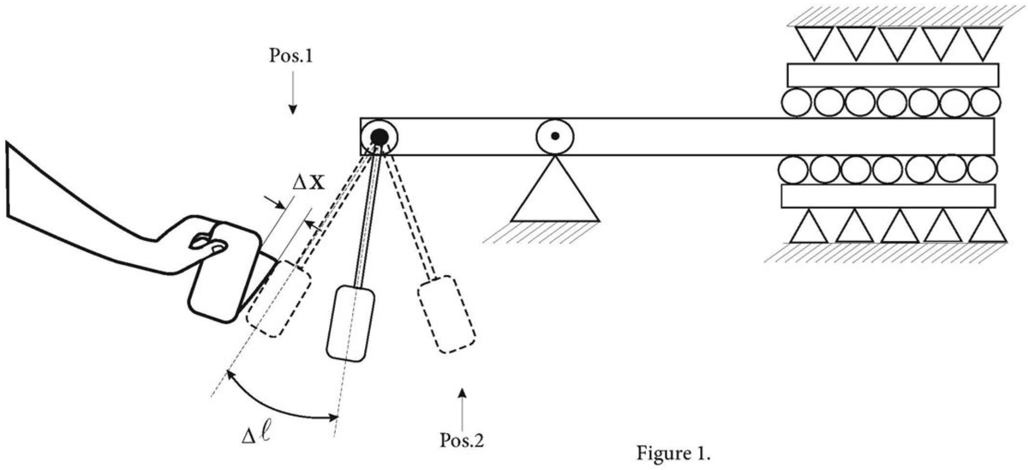

Figure 1.

In order to turn on the lamp so that it shines with its maximal shine it is necessary to act on the handle of the lamp with the force of intensity *F*.

At the same time the same force is exerted on the weight of the pendulum along the distance Δl.

In case of the model on which I have conducted the experiment (presented on the figure 1.), on its secondary end 14 lamps are attached which are same as the one with which the oscillation of the pendulum is maintained on the primary side of the mechanism.

7 lamps are attached to a stationary fulcrum (holder) which is above the secondary arm of the lever, and the same number of lamps is attached to the stationary fulcrum under the secondary arm of the lever.

All the lamps have shone with the same intensity as well as the lamp with which I have pushed the weight of the pendulum. From this I have drawn the conclusion that on a handle of each lamp the lever has exerted the same force *F* with which I have pushed with my hand the lamp on the primary side of the mechanism.

During the time at which the handle of the lamp has been pressed to its maximal length $\Delta x = 2\ cm$ the pendulum has moved along the distance $\Delta l = 20\ cm$ (i.e. $\Delta l = 10\Delta x$).

So the work done during the maintaining of the oscillation of the pendulum is

$$A_{input} = F\Delta l \tag{1}$$

While the weight of the pendulum has gone back again to the extreme left position (position 1.) the secondary arm of the lever has turned twice on both 7 upper and 7 lower lamps to the maximal intensity.

That is, the total length of the trajectory that the secondary arm follows is:

$$\Delta y = 2\sum_{i=1}^{14} \Delta x_i = 28\Delta x \tag{2}$$

while exerting a force F on each particular lamp (because they have shone in their maximal shine which was of the same intensity as the lamp with which I have been maintaining the oscillations of the pendulum).

Based on this it can be concluded that on the output side the mechanical work done is:

$$A_{out} = F\Delta y = F28\Delta x \tag{3}$$

Then we get that the efficiency of this model of two-stage mechanical oscillator by Veljko Milković is 2.8 times:

$$\eta = \frac{A_{out}}{A_{input}} = \frac{F\Delta y}{F\Delta l} = \frac{F28\Delta x}{F10\Delta x} = 2.8 \tag{4}$$

Energy result - net gain of energy is 180%!

Conclusion

Given the fact that this electro-mechanical system has been built in a private house workshop, and that the main part which transforms mechanical energy into electrical (manual dynamo lamps) has an obvious flaw, which is that the force of the lever exerted on the handles of the lamps is not at all times vertical (because the motion of the lever arm is arcuated), I can only conclude that the amount of the energy of the two-stage mechanical oscillator is considerably bigger than the one obtained in this calculation.

Although it is already clear that even with these results the two-stage mechanical oscillator by Veljko Milković is the most energy efficient machine in the world, further improvements and experiments on this system would result in an even more efficient and productive system.

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