The Power Bike!

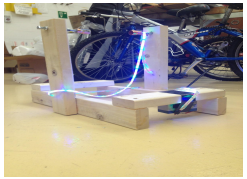
Jacob Lehrer, Jack Armstrong, Josh Castleman

Introduction

- Our goal was to make a bike generate WIFI. Sounds a lot more complicated than you think, but it is still pretty hard.
- Our main question was what is the most efficient way to generate power from a bike.
- Another goal was to spend as little money as possible, using recycled and old parts, like the motor from an old treadmill

Materials and Methods

- We made 2 different bike stands, one with outer supports, and one without.



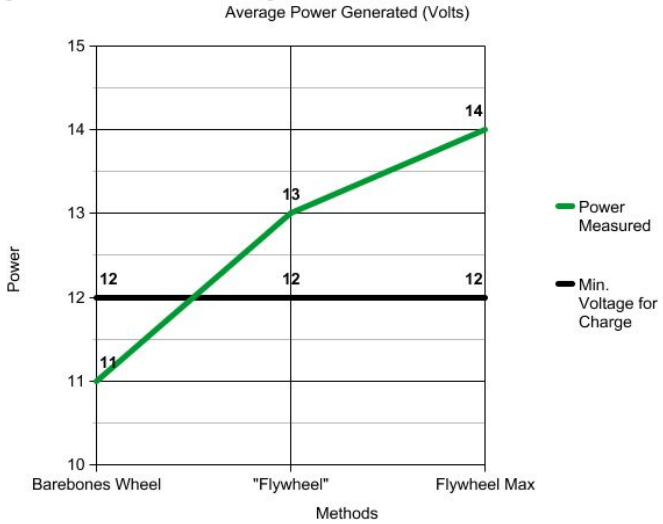
- We used the stand without the supports, because it was lighter and easier to move.
- We used wood 2x4s to make the supports.

Results-Flywheel

•The flywheel, made with solid iron bars, helps the bike wheel move faster and keep momentum at high speeds.

•The flywheel makes it easier to generate higher voltages of electricity to charge the batteries.

•Because of the ease of charging, now anyone who can reach the pedals can generate electricity



Results-Bike Stand

- Two bike stands helps increase the stability of the bike making it easier to continuously petal
  - This allows for more power to be generated
- **One Bike Stand**
  - Allows for some stability
  - Let’s back wheel keep contact with motor
- **Two Bike Stands**
  - Allows for even more stability

Results-Bike Circuit

- Circuit involving a motor turned by the bike, a 12 volt battery, and a power inverter all connected to a device that charges and discharges the battery.

- This system allowed us to save valuable time while charging the battery and power inverter because we didn’t have to constantly disconnect and reconnect the battery to the motor.

- When I charged the battery by itself and then connected it to the power inverter, the battery usually dropped below 12 volts within 3 minutes. With our new system, we were able to charge the power inverter while keeping the voltage above 12 volts at the same time.

Conclusions / Next Steps

- I am surprised by the amount of power that the bike can generate, and how cheap it was to build it.
- This bike helped show how hard and complicated generating electricity from a bike really is.
- Some next steps would be to figure out how to make power more efficiently be used, and also to make the bike stand more stable and safe.

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