

Timelapse camera dolly

Mark Logue

Monday, 1 June 2009

Objective:

The objective of this project is to build a self propelled rig which will travel across an urban terrain (ie pavement, road, path), to photograph buildings in timelapse while the camera is in motion.

The rig consists of:

- a) a stable structure to hold the camera at average eye level (1.6m)
- b) a pan and tilt mechanism to control the camera's point of interest
- c) a drive motor to propel the rig at varying interval speeds; from 5mm per exposure, to 250mm as quickly as possible.
- d) a computer to control the drive motor, pan and tilt head and camera exposure, shutter, zoom and focus control
- e) the ability to pre visualize the speed and trajectory and plan for obstacles.

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History:

The concept was tested using a wheelchair and proved to work. The wheelchair was propelled manually, and the camera was controlled using basic time-lapse software. (GBTimelapse from <http://www.granitebaysoftware.com>). However, there were inherent steering problems with using a wheelchair, and keeping it holding a straight line.



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My next prototype rig used a Baby Jogger 3 wheeled pram, which provided a lighter and more rigid, better suited for travelling in straight lines. This used a cordless screwdriver to power the front wheel with a rubber friction wheel. This gave me two speeds, 1 rpm, and 4rpm (that's the speed of the 19inch pram wheel not the motor). This level of control together with GBTimelapse produced some good results. (image below)



(This images shows the pram at an early stage before it was fully assembled)

What I'd like to do next, is have more control of the speed, acceleration and deceleration, camera pan and tilt, and be able to adjust the direction. And preferably be able to control all of these from the same interface.

Is this a project anyone could advise me on. There is some budget for this, but I don't have much time, deadline is June 19th.

Mark