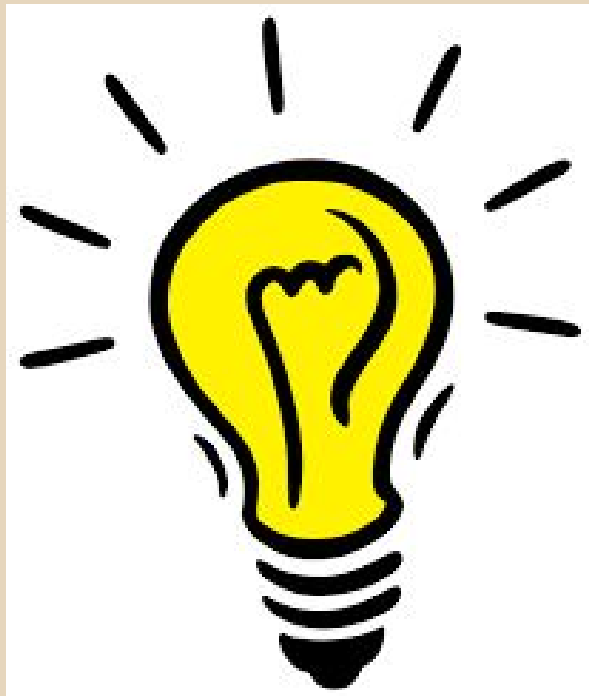# Safewalk

Michael Behrens and Casey Osborn

- Personal experiences with falls involving walkers

Inspiration

Evolution of the Idea

Problems with Walkers

- Limited Mobility

- Fall Easily

Preliminary Ideas

- Issue of Mobility - difficult to turn around corners
  - Solution - Omni Wheels
    - rollers around the circumference of the wheel which allow the wheel to move forwards and sideways at the same time.

Falling Stats

- ⅓ adults over 65 have at least 1 fall a year

- Approximately 41,000 walker related falls occur every year
 - Over 100 per day

Leaning

- Elders often lean over the walker while in use
- Tilted Handles
  - Through testing, we determined that the slanted handles were a bad idea, as they made it very easy for the walker to slide forward out of control

Preliminary Ideas

- ## Issue of the user's center of gravity
  - One of the main issues with modern walkers is that the user tends to hunch over and lean on the walker. We wanted to design a walker that eliminated this problem. We experimented with forearm and underarm support. After experimenting with these ideas, we determined that the classic walker was the best way to go, but there was still something to be done to eliminate falls.
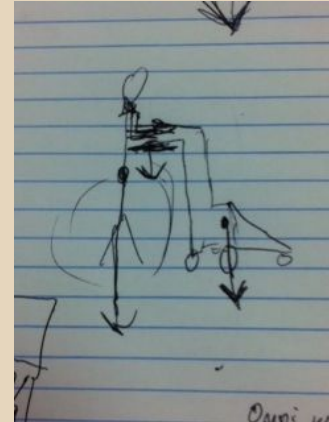
What if the Walker could not Fall?
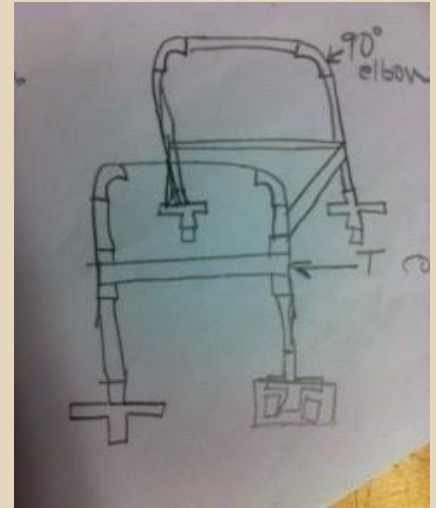
Anti-Fall System

- Tilt Sensor with Spring loaded Arm to prevent walker from falling
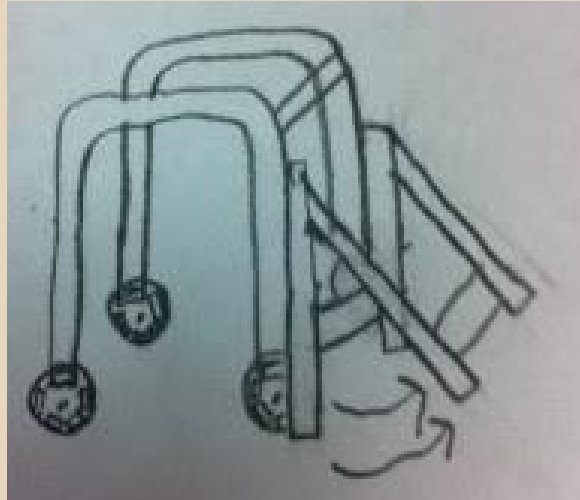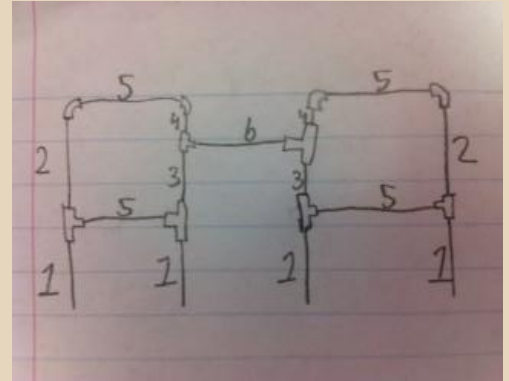
Building

Parts

- Copper Tubing
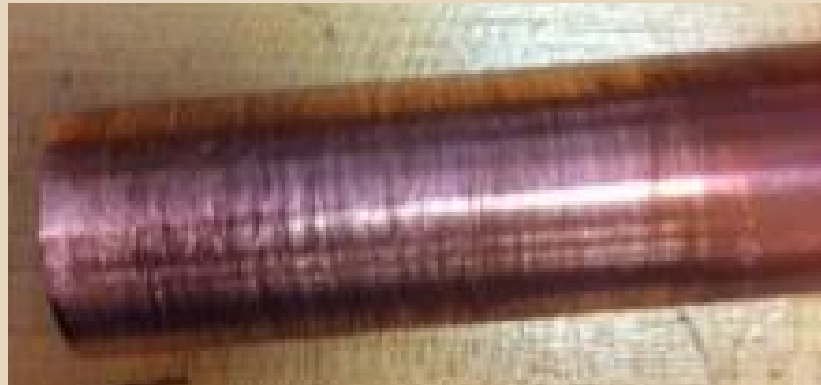 - ½" diameter copper tubing
  - 90° elbows
  - T's

Planning

- Miniature Model

- Proportional

Cutting/Sanding the Pipes

● Pipe Cutter and Sandpaper

Soldering

- Copper fittings attached with solder

Frame Assembly

Anti-Fall System

Spring Loaded → Motor Powered

- Our design changed from a spring loaded arm to a motor powered arm
  - Spring loaded was not fast or powerful enough

Completed Assembly

Possible Ideas for Future Development

- Bluetooth Connectivity
  - connect to a smartphone to dial for emergency services or relative after a fall
- Voice-Activated Assistance
  - after a fall, the walker could ask the user if it should call for help