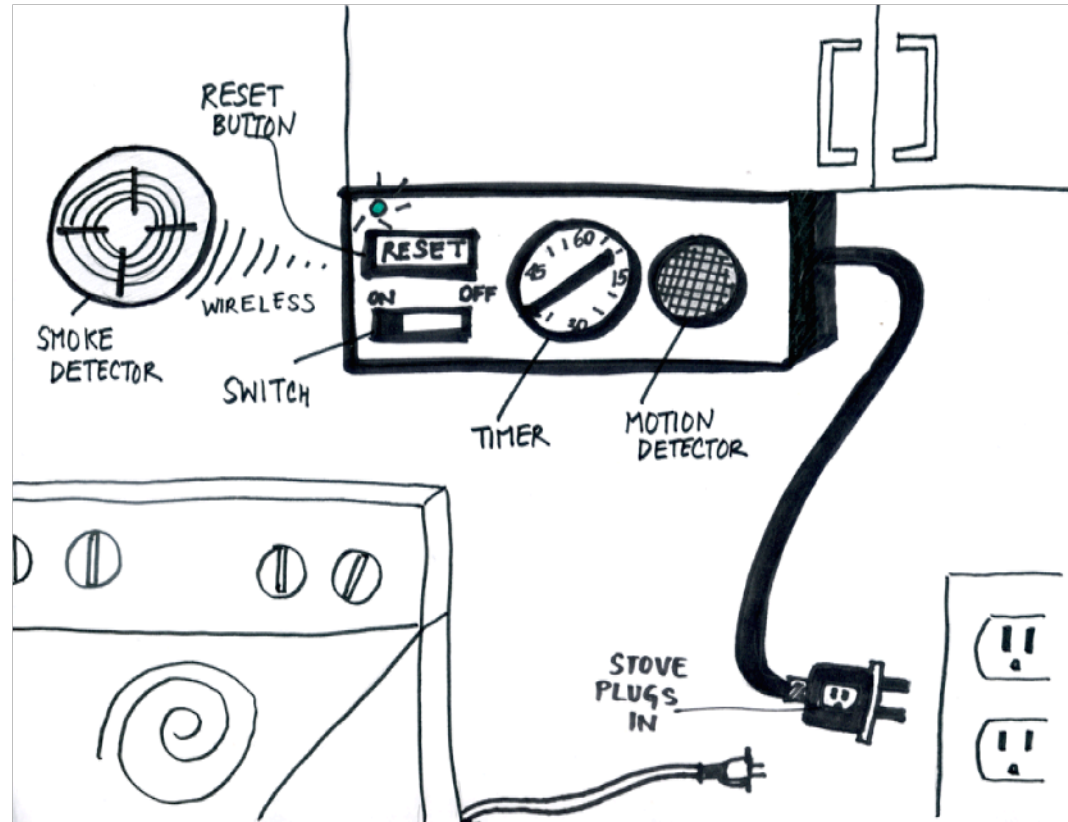


A



STOVESAFE

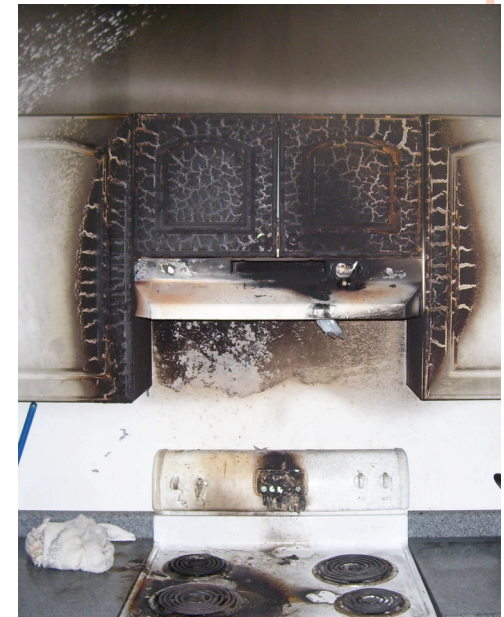
ALERT AND RESPOND

If you can't stand the heat, put stove safe in your kitchen

PROBLEM: STOVE SAFETY

Introduction

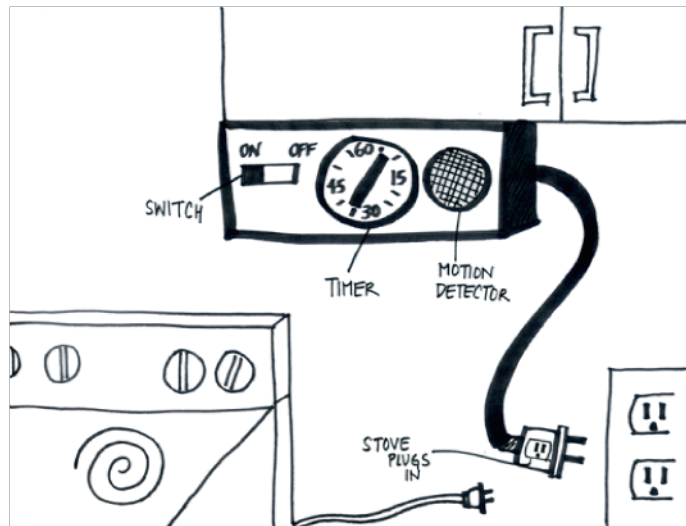
- 108,900 cooking related fires in 2006*
 - 58 fatalities, 2,236 injuries, \$104.85M
- Leading cause: **Unattended Cooking**
- 54% smoke alarm failures due to missing/**disconnected battery****



* US Fire Administration, **NFPA Fire Analysis and Research
<http://smbycleanway.com/>

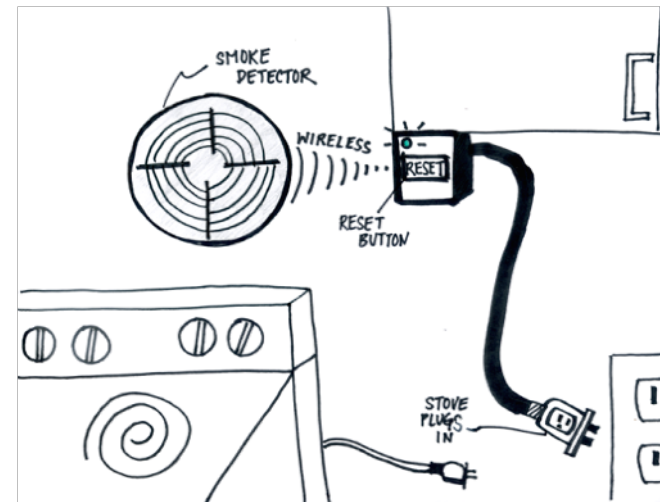
STOVESAFE SOLUTIONS

Design and Requirements



○ Motion Detection

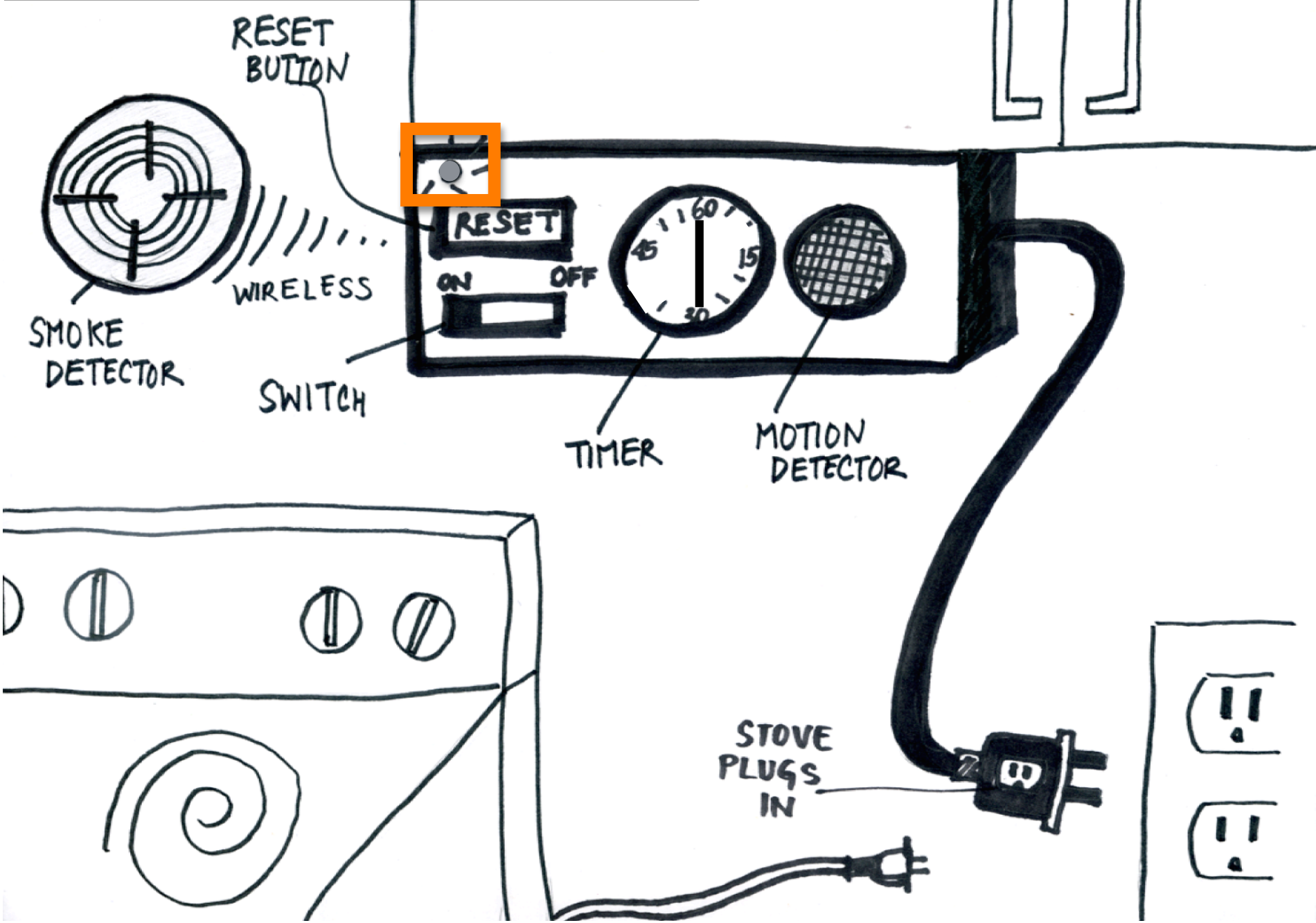
- Shuts off stove after preset time
- Cheap
- Compact
- No temperature interference
- Control Stove



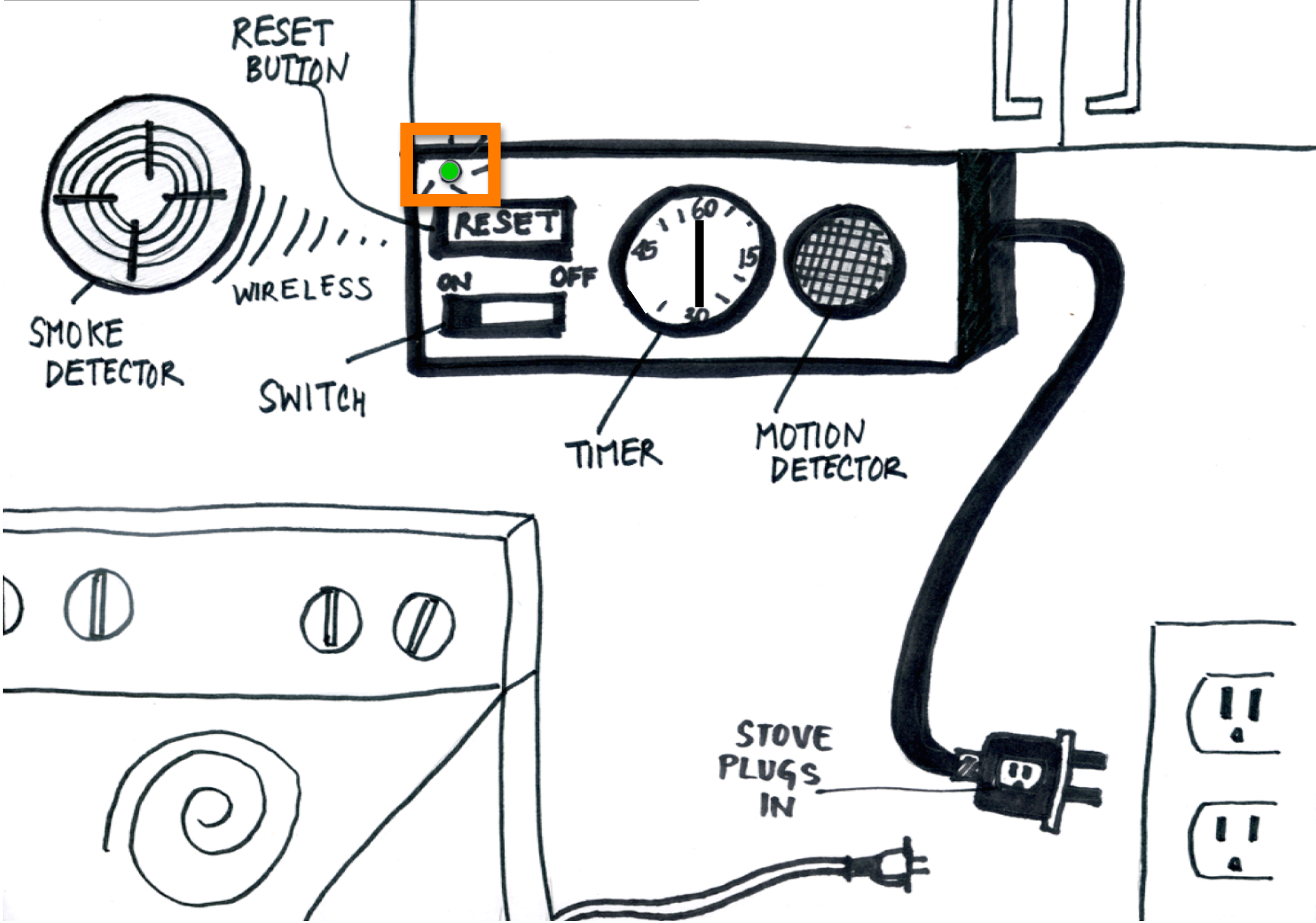
○ Smoke Detection

- Turn stove off
- Snooze button

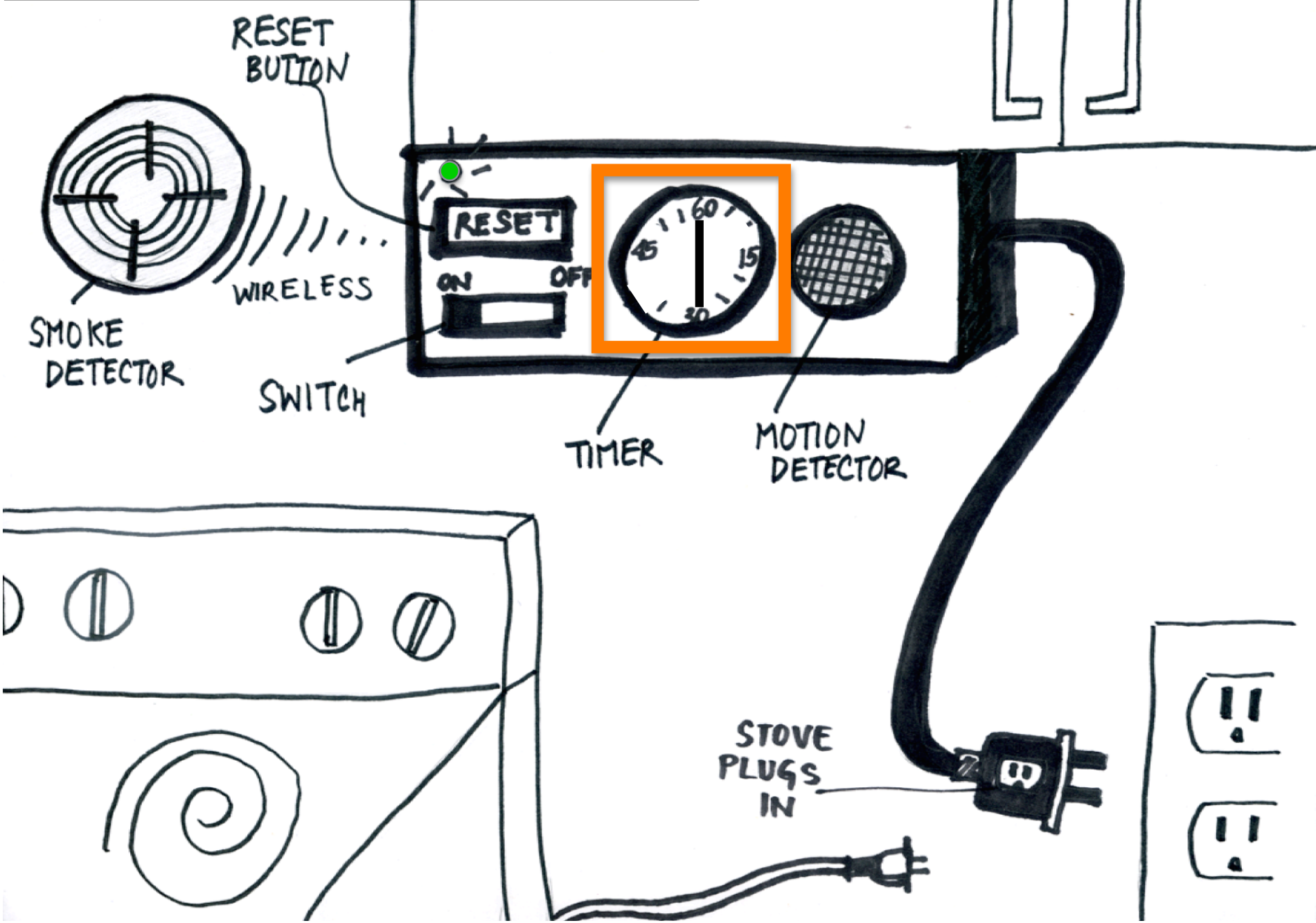
DETECTOR



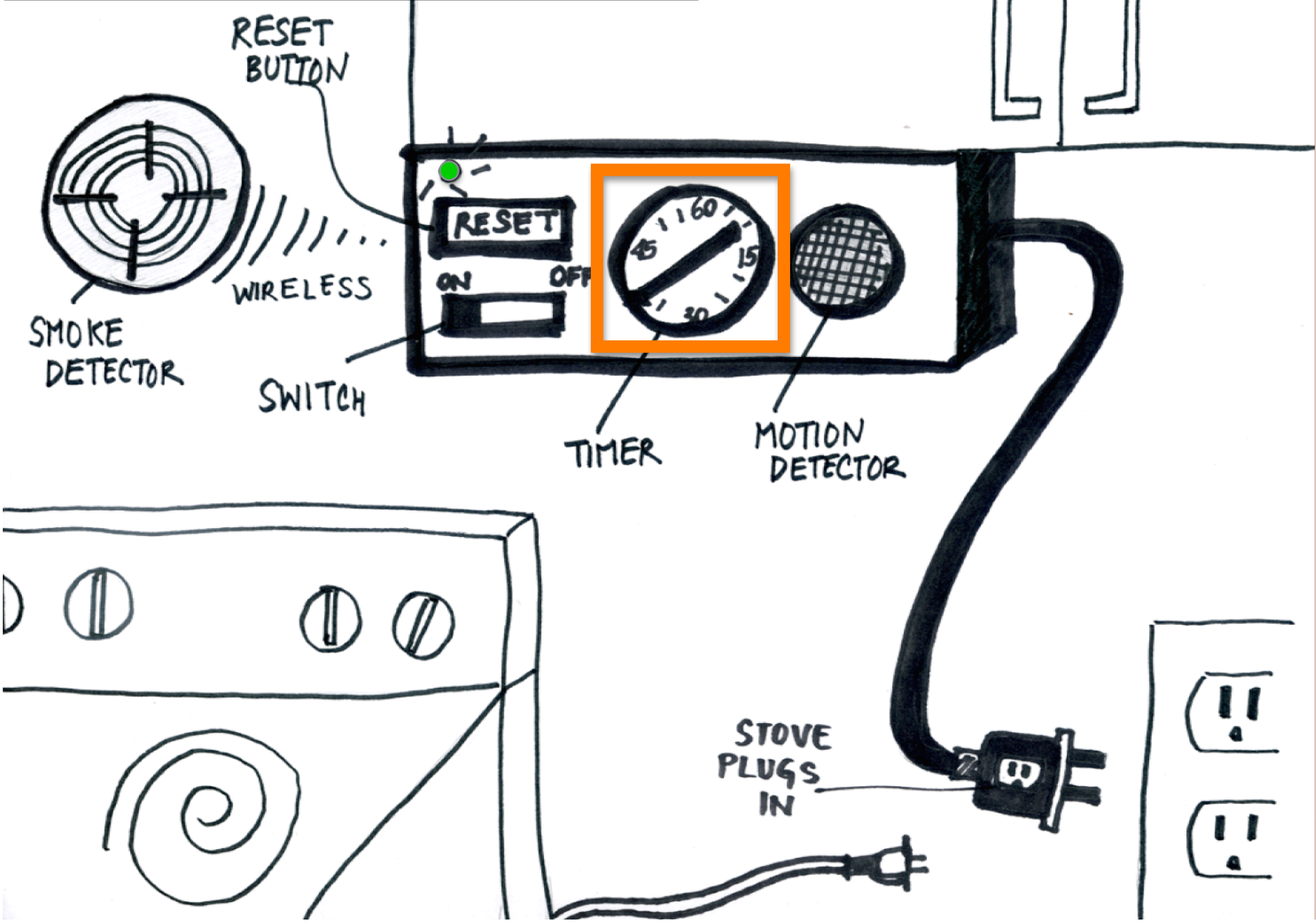
DETECTOR



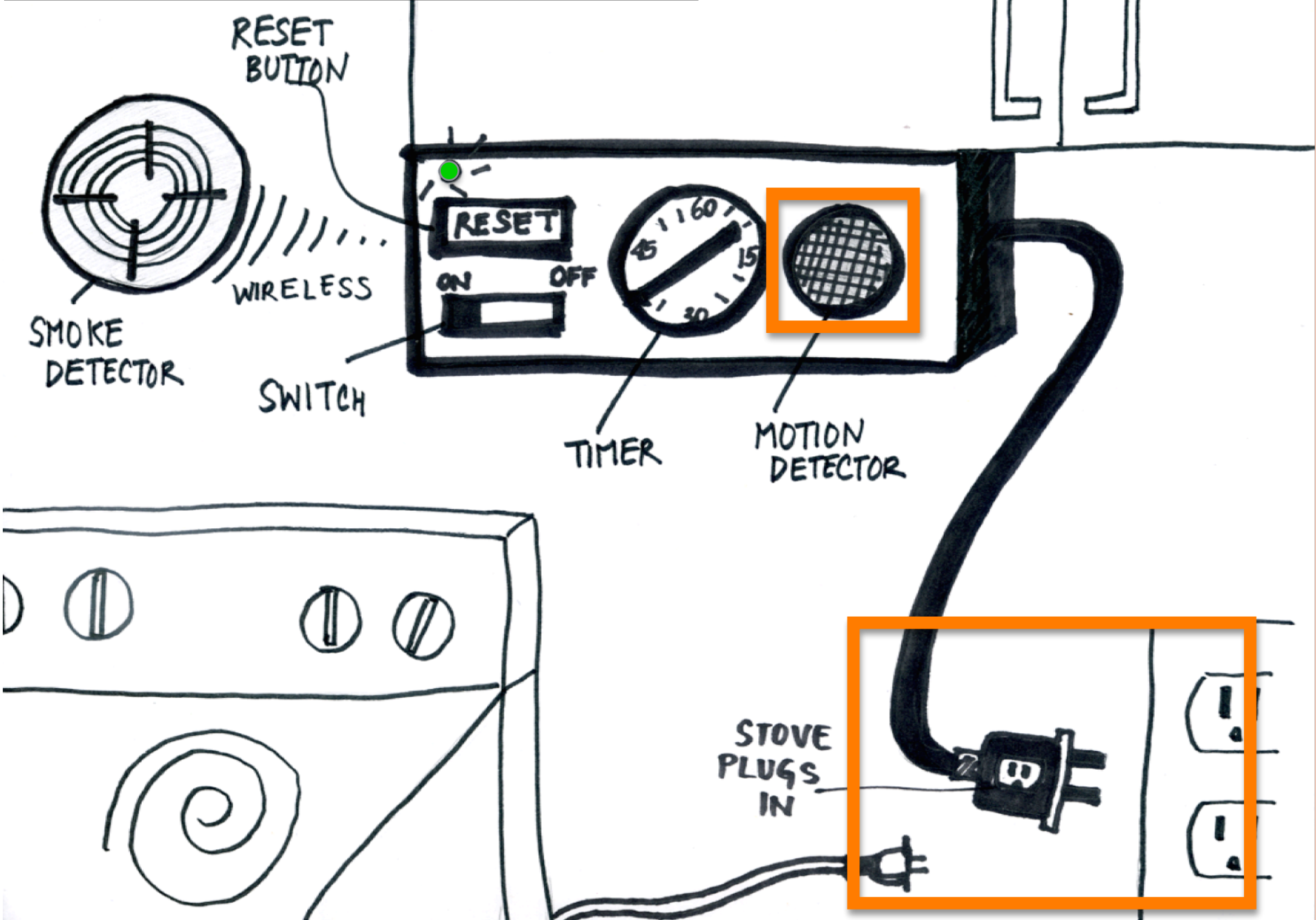
DETECTOR



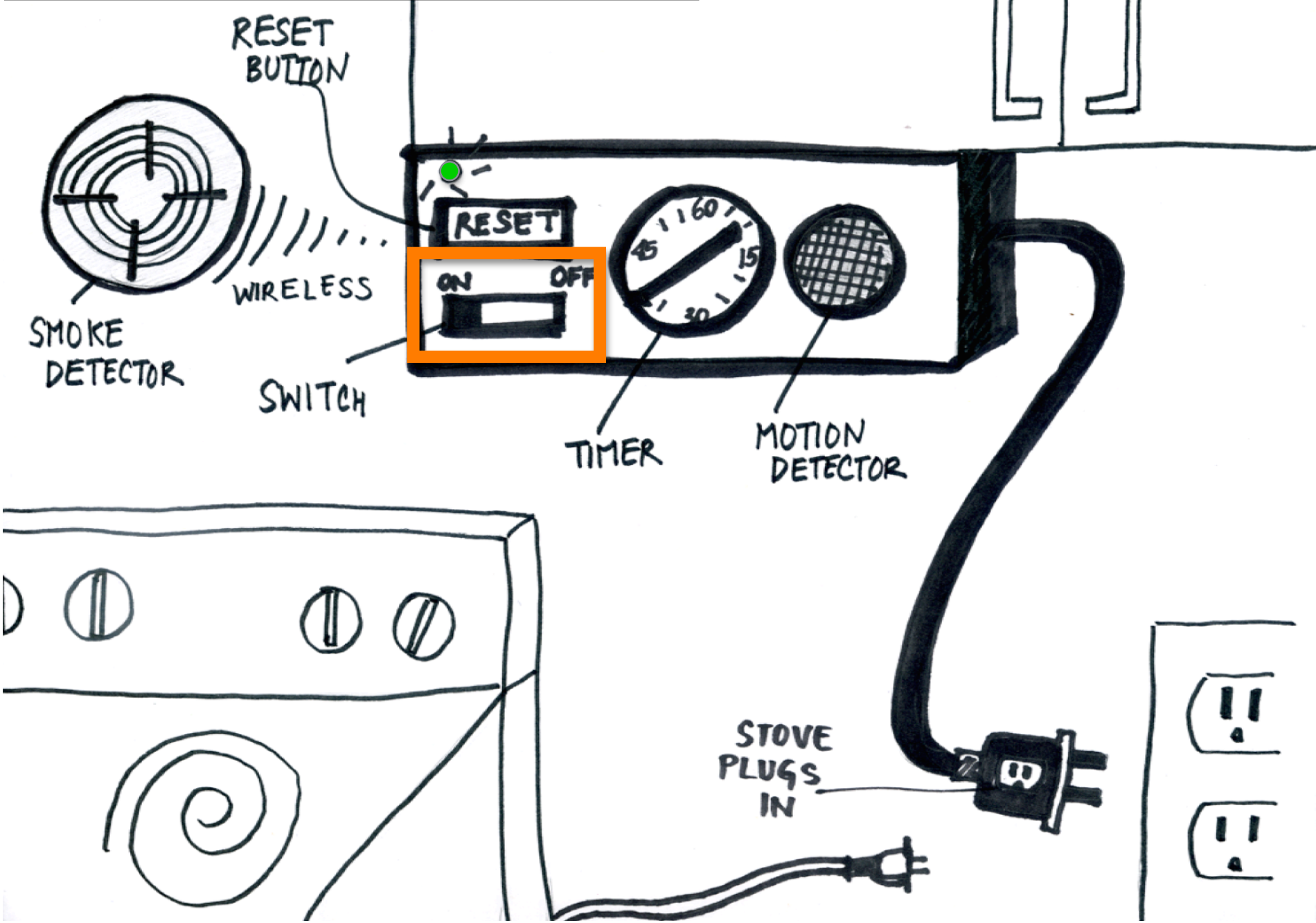
DETECTOR



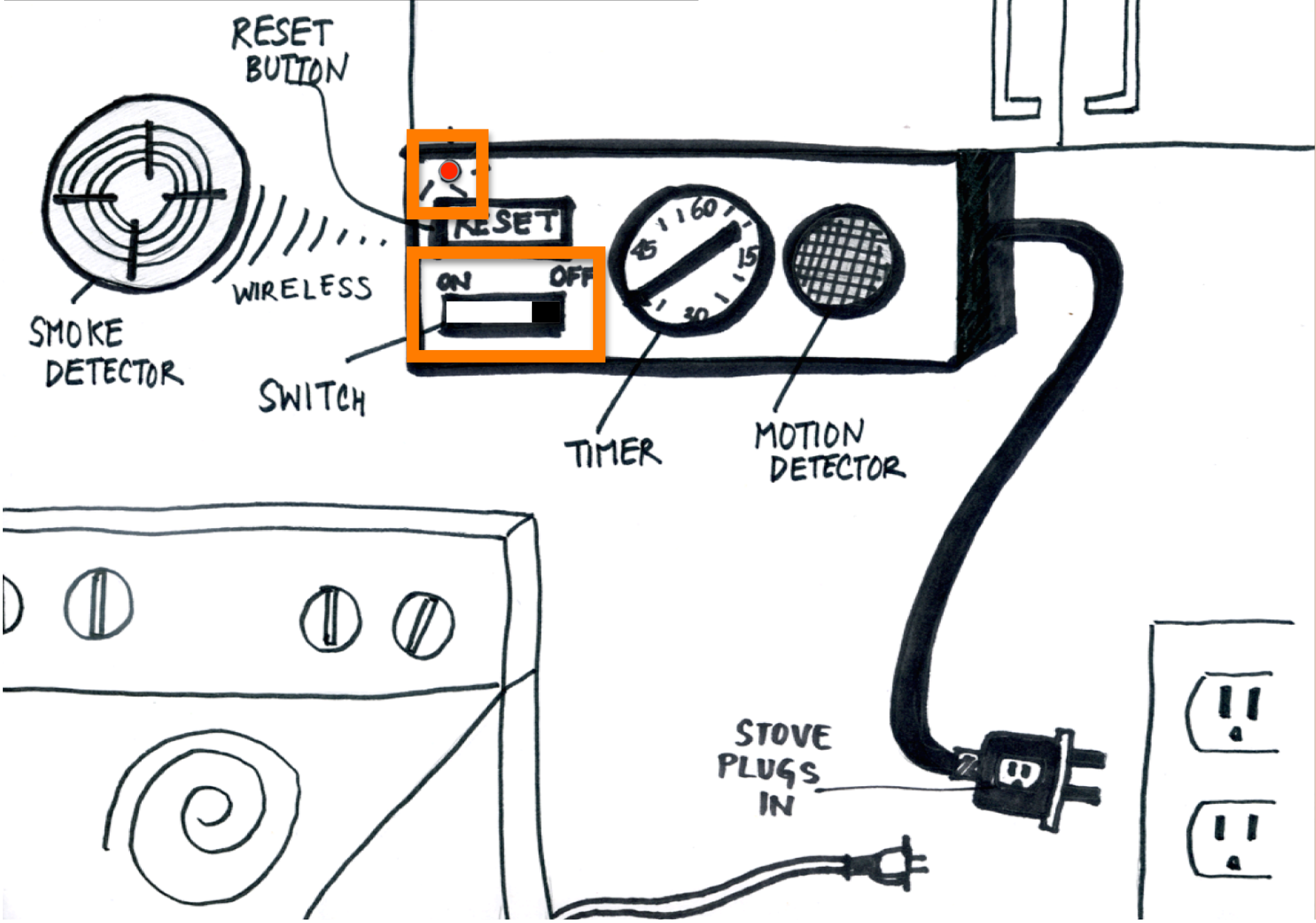
DETECTOR



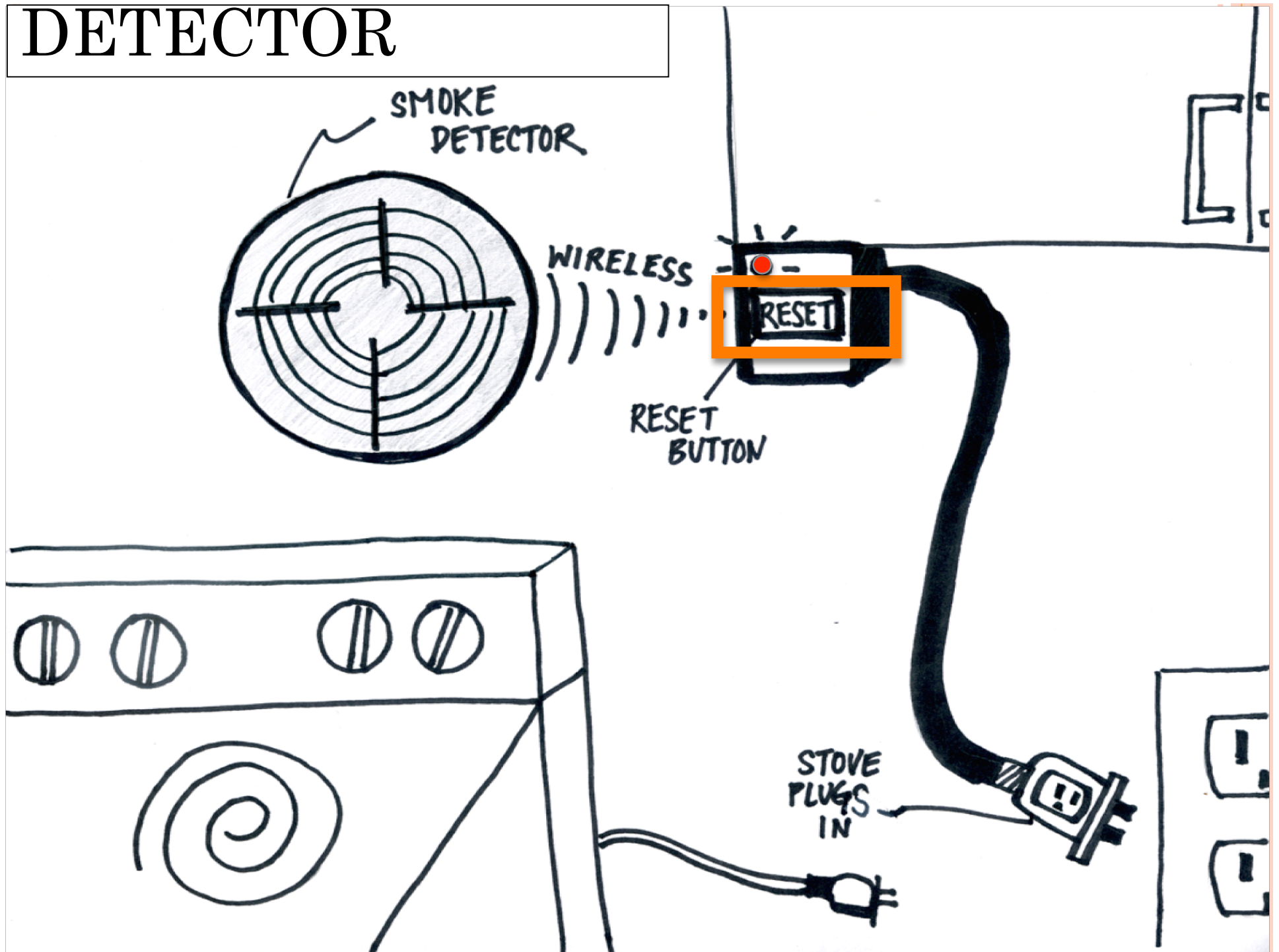
DETECTOR



DETECTOR



DETECTOR



TARGETING ELDERLY

Customer and Market Analysis

- Adults purchase for elderly parents
- Made for older adults
 - Cooking fires leading cause of fire injuries
 - 3rd leading cause of fire deaths
- 90 million homeowners
- Survey College Students, n=40
- Thought useful for:
 - Older Adults
 - Working Parents



*Montgomery County Fire and Rescue Service

http://choices.retireathome.com/UserFiles/Image/iCooking_Couple.jpg

http://www.hfpd.org/cooking_safety.htm

DETECTOR TELL US ABOUT STOVE USE?

Fundamental Question

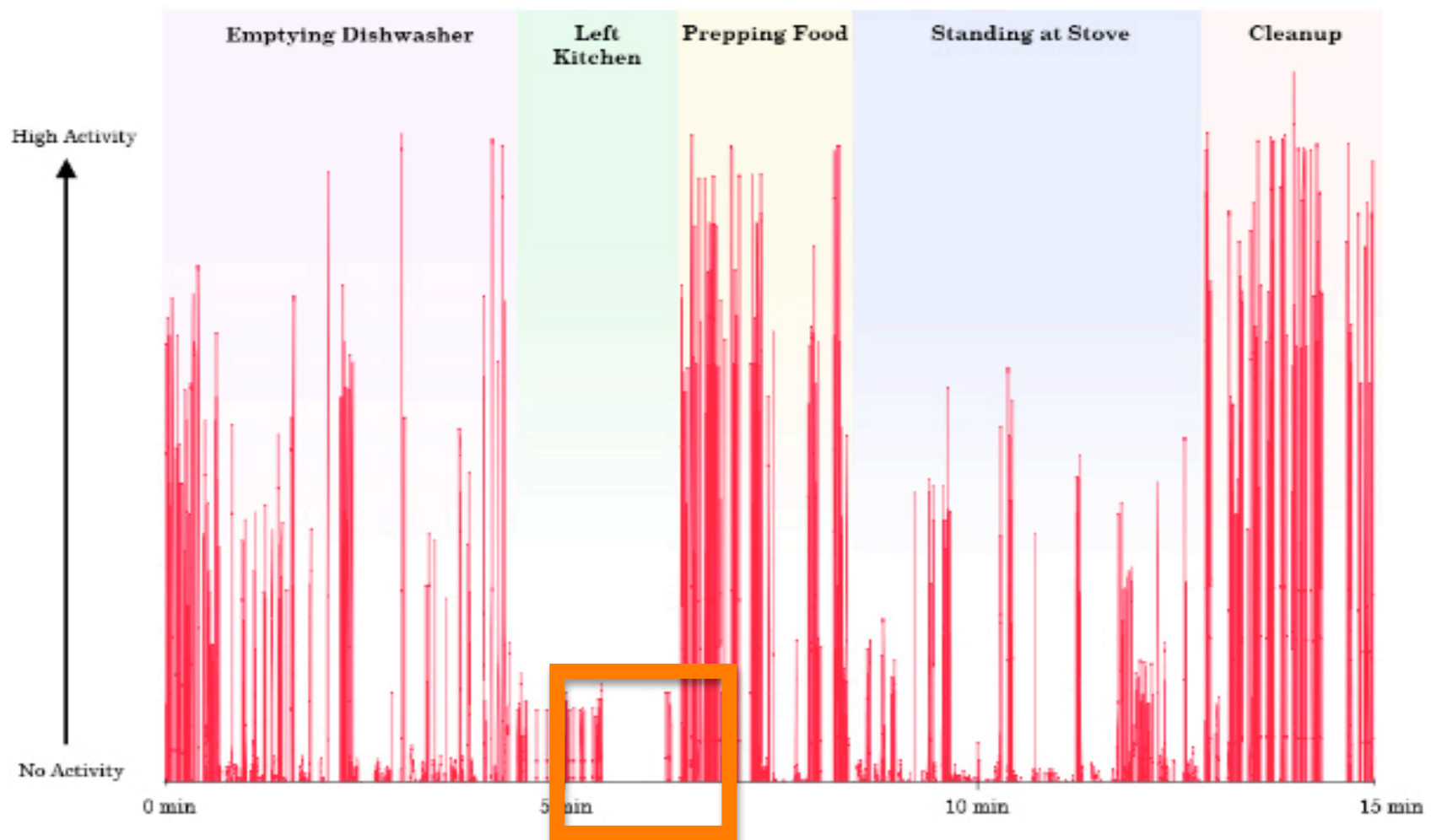
- UltraSonic Range Finder



MOTION SENSOR ANALYSIS

Fundamental Question

Detection of Activity by Wall-Mounted Motion Sensor



MOTION SENSOR IN PRICE RANGE?

Fundamental Question

- Devantech Ultrasonic Range Finder
 - Price: \$24
 - Range: 15cm – 6m
 - Size: 24mm x 20mm x 17mm



USABILITY

Lessons Learned

- Placement
- Sensing Zone

- Adjustability
 - Timer
 - Controls



STOVESAFE RECAP

Key Takeaways

- Motion sensor and smoke detector technically feasible
- Products available for benchmarking
- Target population excited
- Challenges:
 - Adjustability Logistics
 - Integration
 - Combine
 - Stove vs. Oven



QUESTIONS?



MORE DETAILED SURVEY RESULTS

Back-Up Slides

- N=40
- Users: 36/40 → Age 18-24
- 50% users leave stove unattended 2-10min
- 85% use smoke detector switch
 - 10% interest 8-10
 - 67% pay <\$20



BENCHMARK PRODUCT: STOVE GUARD

Competition



Stove Guard

Ordering

- Features:
 - Motion sensor with shutoff timer
- Drawbacks:
 - Expensive - \$359.95 + S/H



SWITCH DIAGRAM

Design Features

