

Mechanical Aid for Traction on Ice

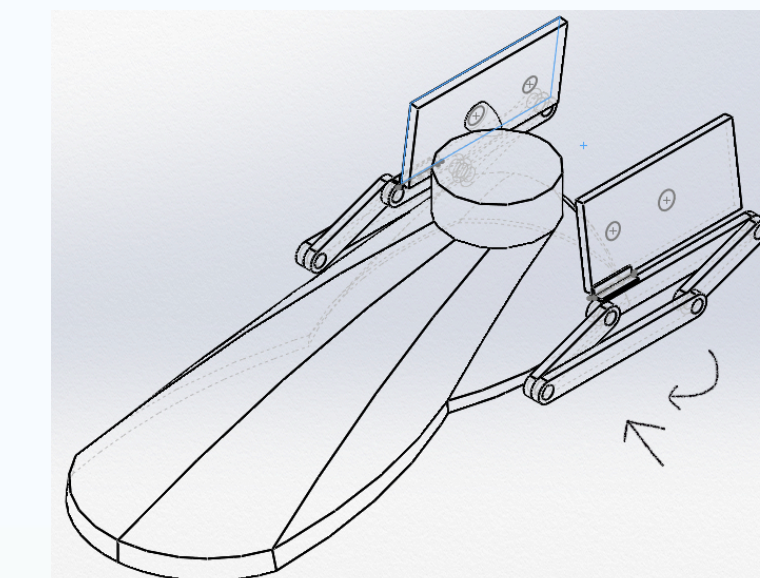
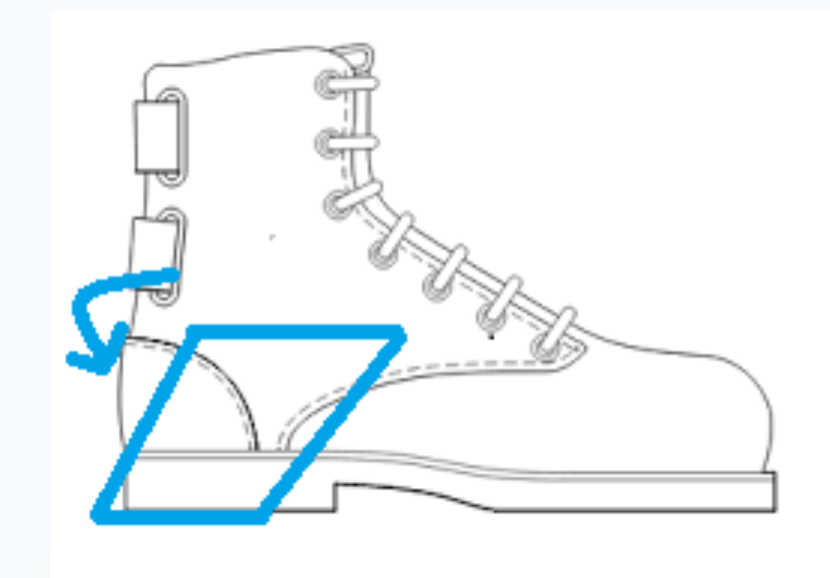
Background:

- Ice causes injuries due to slips and falls in the winter months
- Maine Dept. of Labor estimates:
 - Ice related falls are 6 times more common than ladders, buildings, and structures
 - Ice accidents leads to 25,000 days of lost work time
 - \$2.3 million costs each year to Maine state employees
- Current ways to minimize slippage:
 - Special footwear with built in traction - costly
 - Additional Traction devices (e.g. Crampons) – messy and inconvenient to use

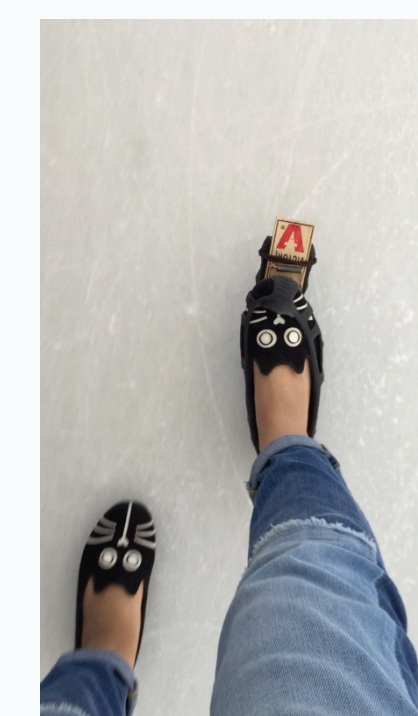


Design:

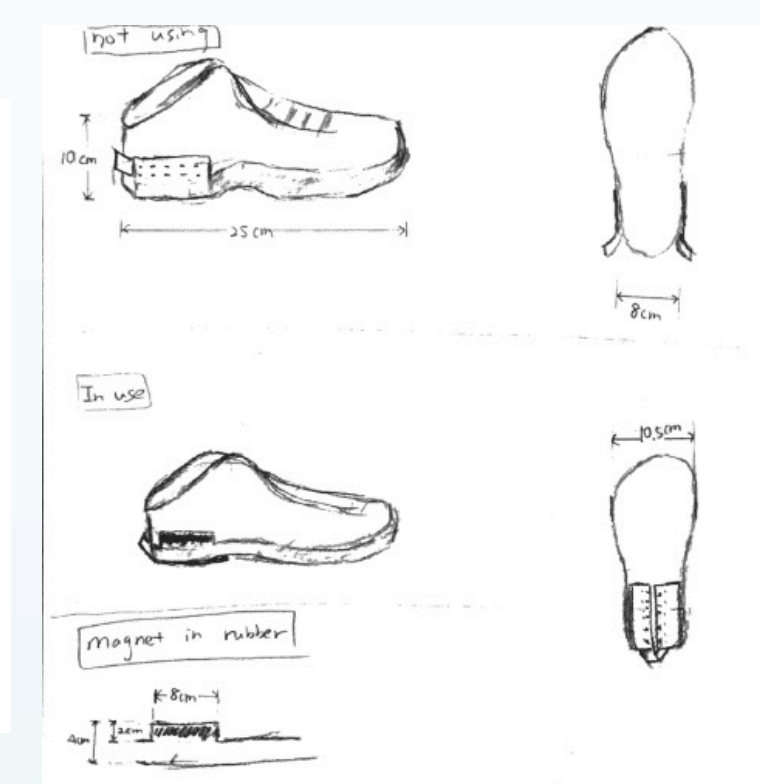
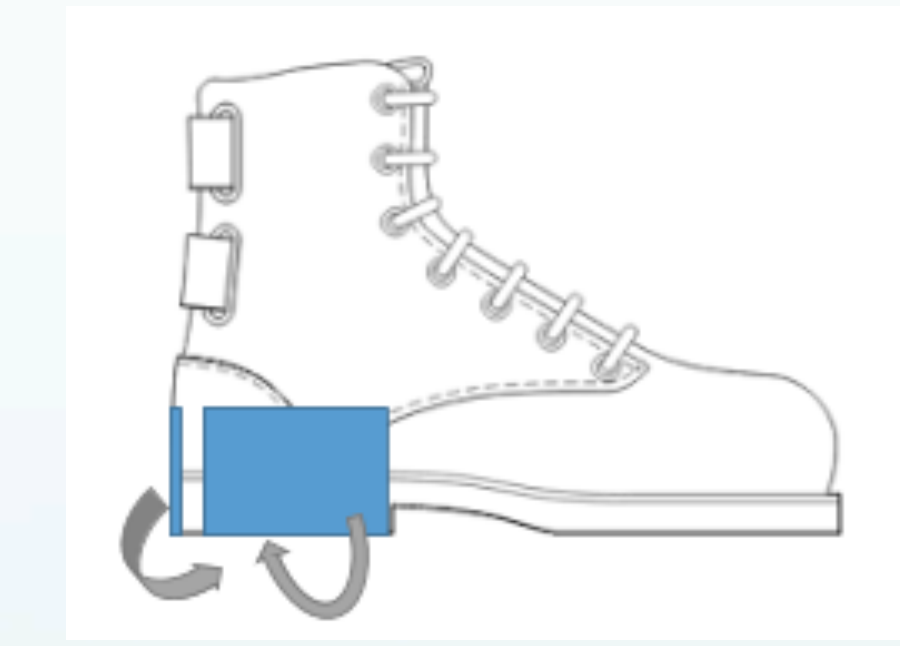
1) Linkage



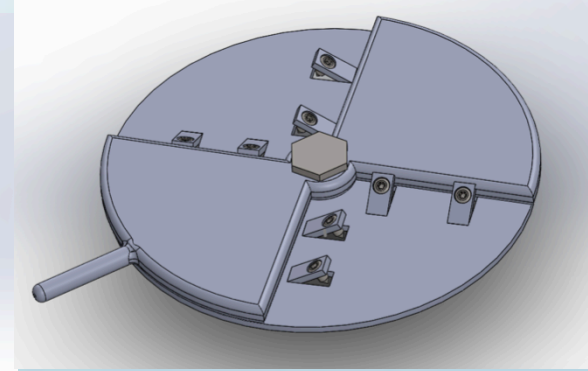
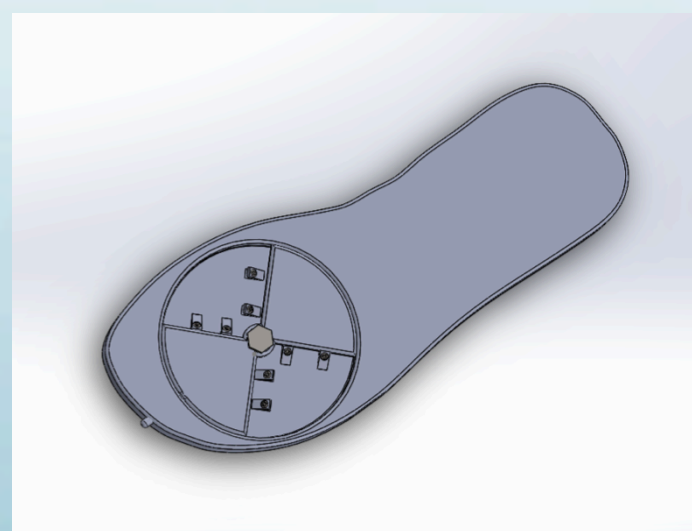
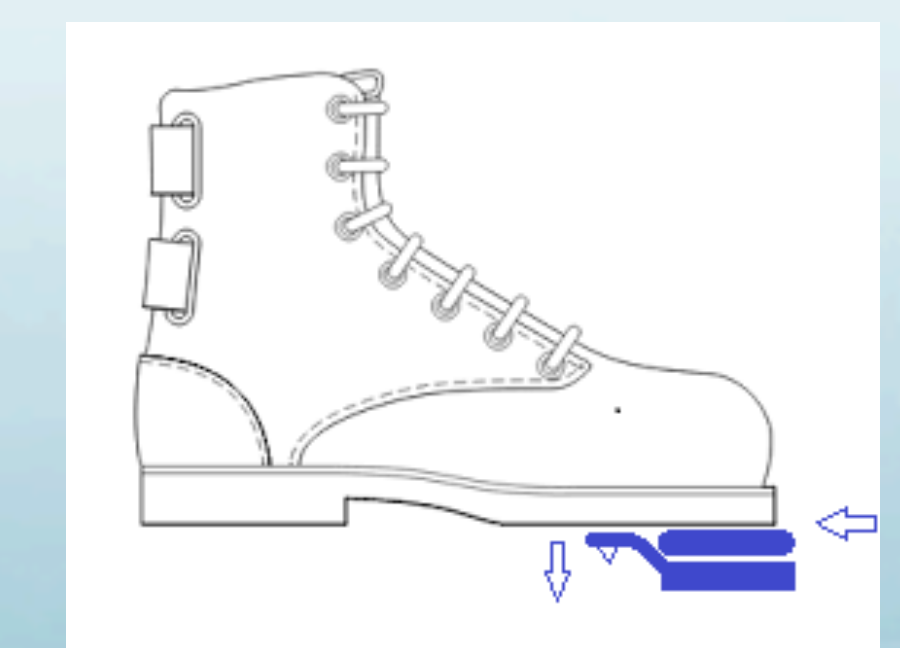
2) Flip



3) Butterfly



4) Slide



Requirements:

- The device will be secured to the footwear and left on.
- When disengaged, there should be minimal interference with the footwear sole and no interference with normal activities such as walking and driving.
- The traction will be engaged / disengaged using the opposite foot or the floor.
- There cannot be any sharp parts in the device that can cause injury to the customer.
- Be able to work under very cold conditions.
- The clearing of any ice, rock, slush from the device to properly operate the device should be as simple as knocking the obstruction off against the opposite shoe or the floor.
- The device should be easily adaptable to at most 4 common sizes: S, M, L, XL.

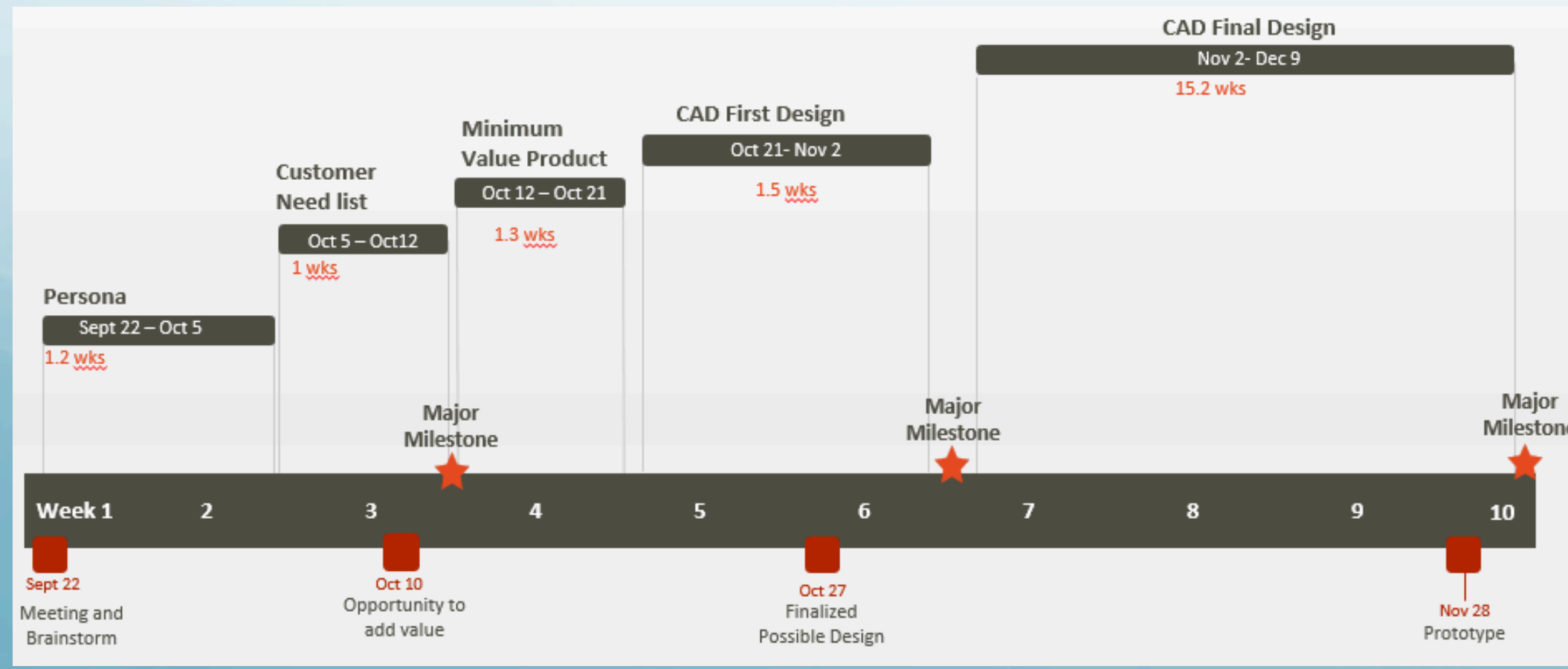
Budget:



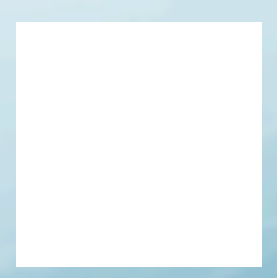
Goal:

- Design and prototype mechanical ice traction device that is secured to the footwear once and left on
- The method providing the traction for the device needs to be engaged and disengaged with the opposite foot or the floor
- By having it always available and easily engaged, it makes the choice between convenience and safety unnecessary

Timeline:



Team Members:



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