HEAD LOCK

Jacob McMullen

Contents

4 Subject

6 Research

12 Persona

16 Ideation

22 Refinement

28 Final

34 Construction

40 In Use

Subject

Create an accessory for bicycle commuters that helps them throughout their day.

Research

Data, Market

Data

Student Data

- In 2017, 3.3% of SJSU's population or about 1,135 biked to campus.
- The average biking distance to SJSU was 2.9 miles
- Most people biked 4.5 days of the week

Working Data:

- Nationwide, more than 777,000 people rode bicycles as their primary means of traveling to work last year
- Median commute time by bike is 19.3 minutes

Other Statistics

- 1.5 million bicycles are stolen each year
- In 2016 there were roughly 467,000 bicycle related injuries in the U.S.

Market

Products:

- Carried-Backpack, Messenger Bag, Fanny Pack, Camel-back, Lunch bag
- Attached-Veneers, Saddlebags, Tool bag, Bottle cage, Baskets, Rear Rack, Front Rack, Lights, Pumps (some), Phone mount
- Worn-Gloves, Helmet, Reflective clothing, Shoe clips, Ear muffs, Sun Glasses

Issues:

- Carried-Can throw you off balance, Limits body movement, Causes discomfort (back, shoulders...)
- Attached-Adds weight to the bike, Some are difficult to install, Affects aerodynamics, Placement might get obtrusive
- Worn- no good place to put them when they are no longer being used

Persona

Brent

Brent

Qualifications:

- Rides 4 miles to and from work 7 days a week
- Bike: Hybrid commuter

Storage:

- Panniers, Backpack

Gear:

- Bike specific clothing, Sunglasses, Gloves, Helmet, Bike Lock

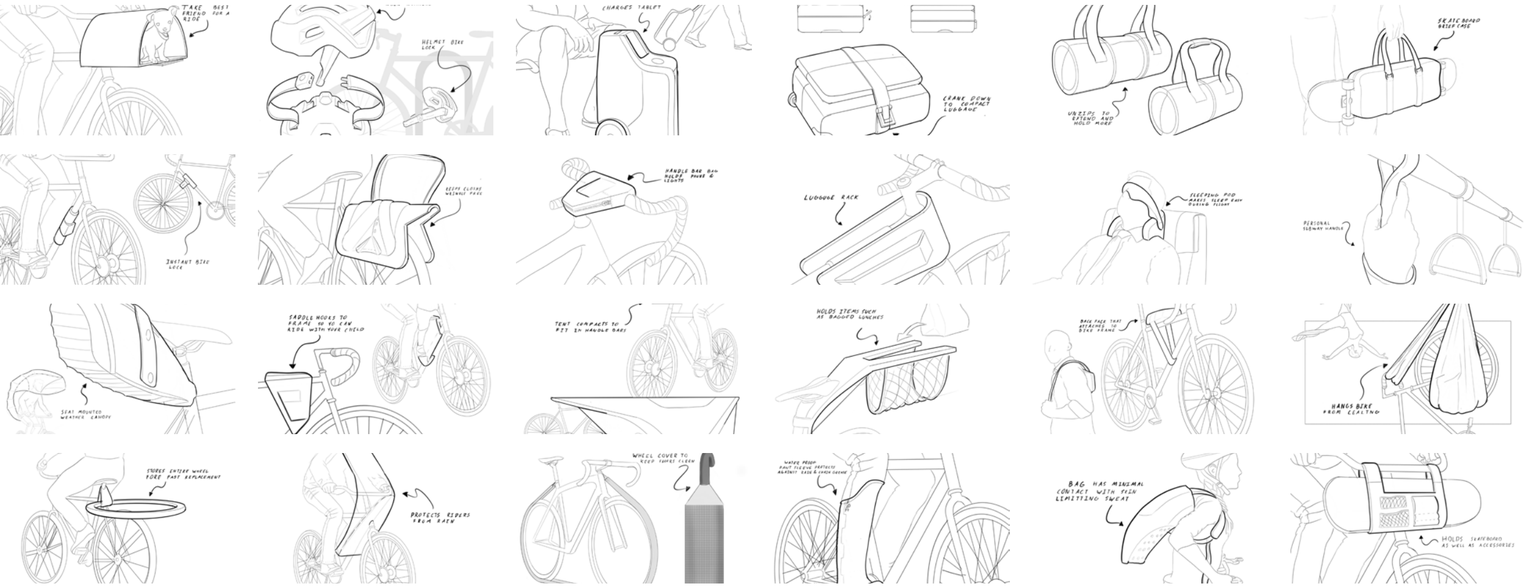
Needs:

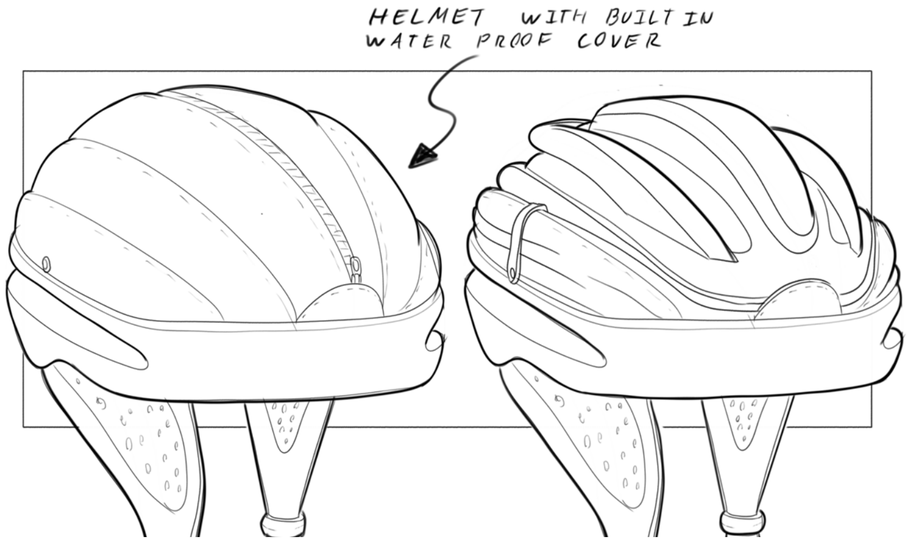
- A way to Lighten his load to he can feel less constricted during his ride

Ideation

Round One, Round Two

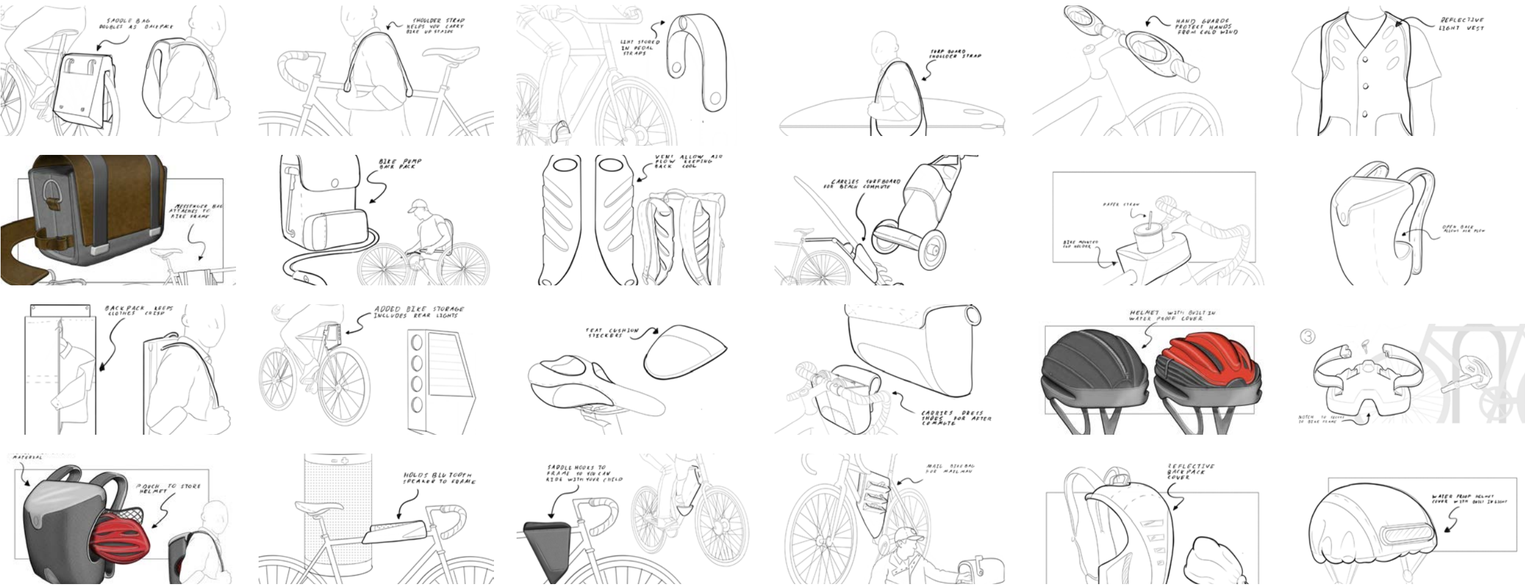
Round One

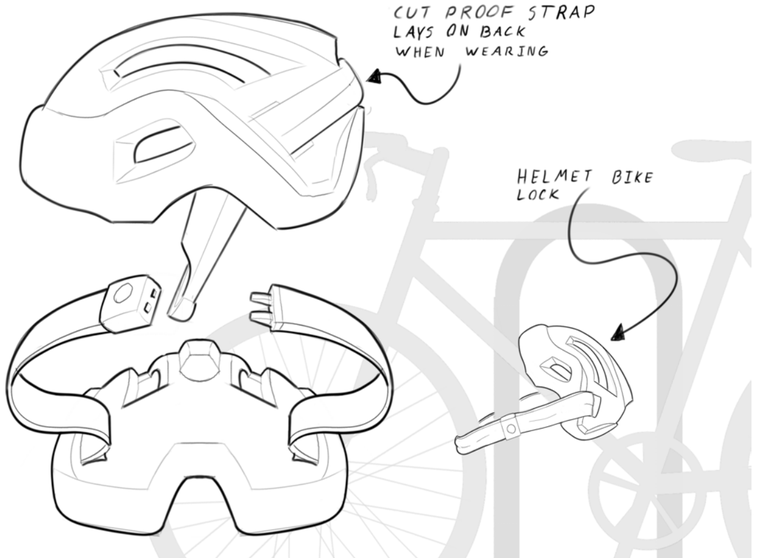




Exploring a range of different design solutions for the average commute.

Round Two



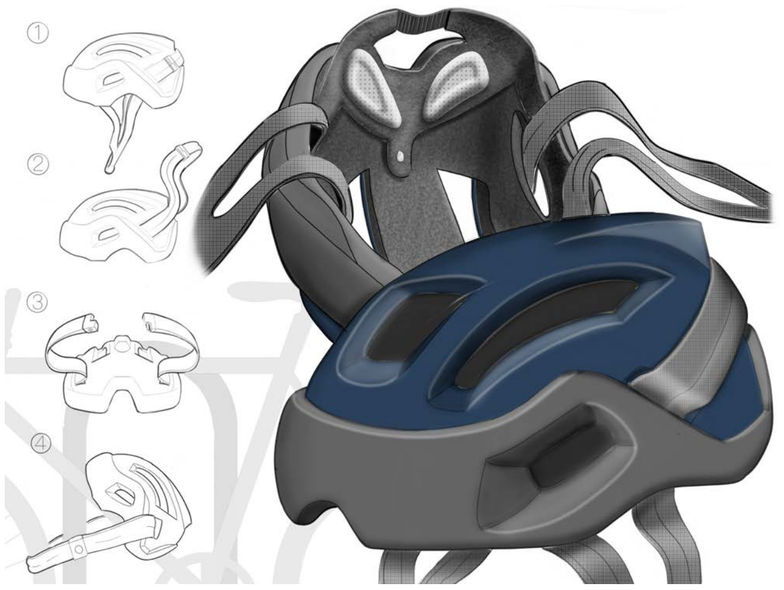


Narrowing design focus and expanding on ideas.

Refinement

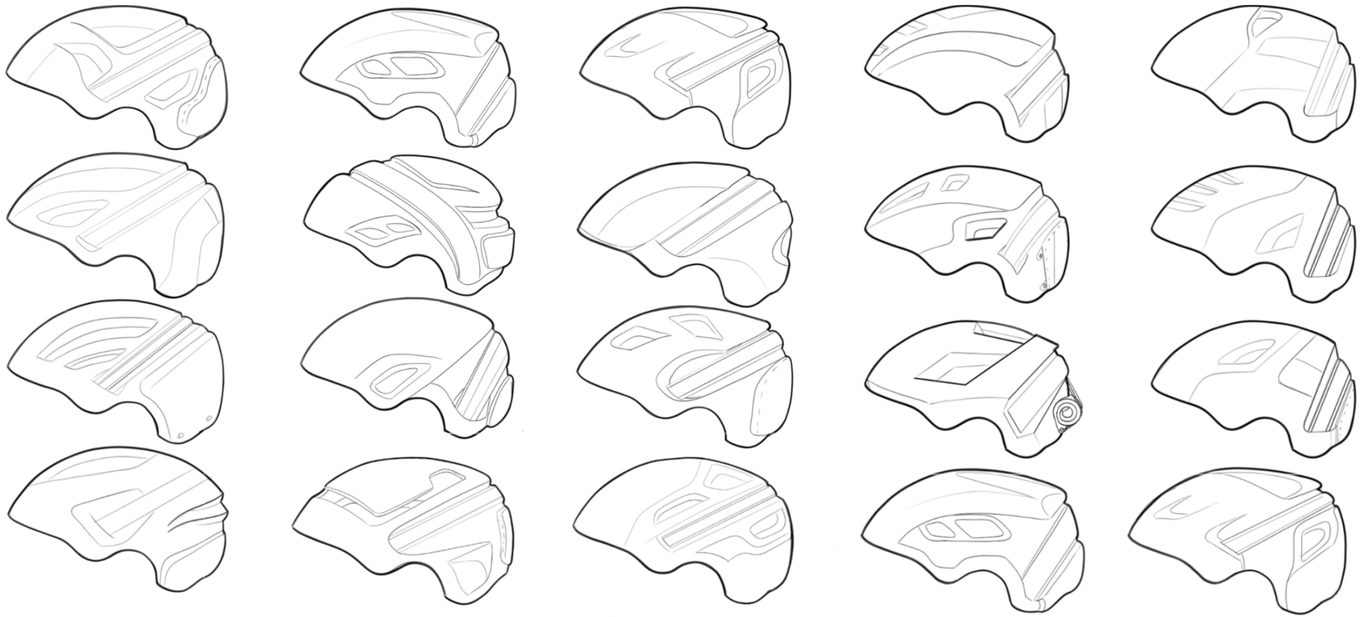
Function, Form

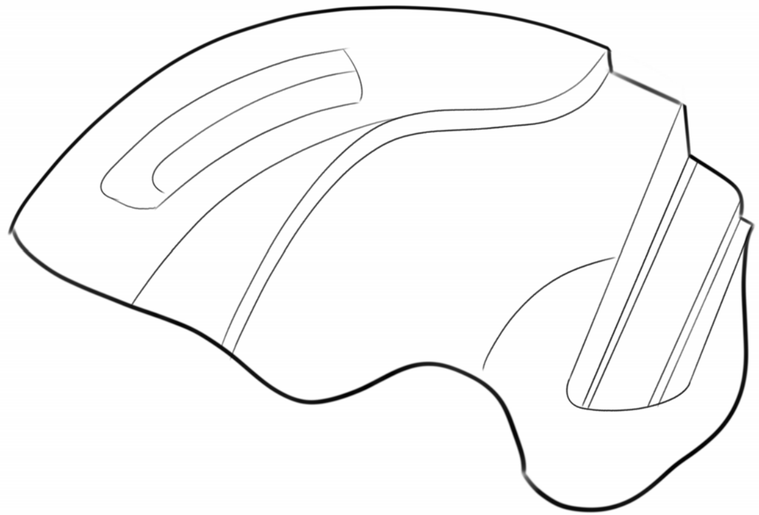
Function



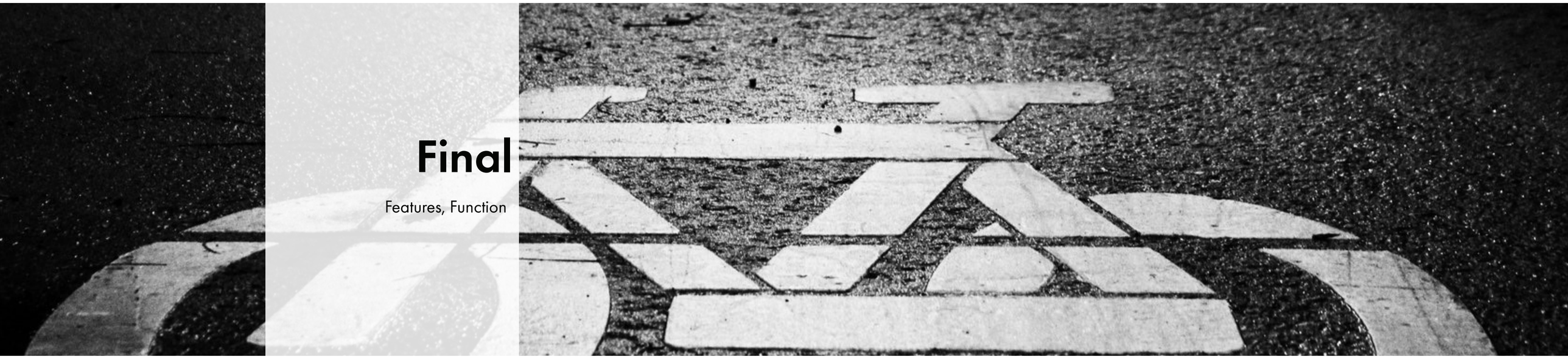
Exploring what the helmet would need in order to function as a lock

Form





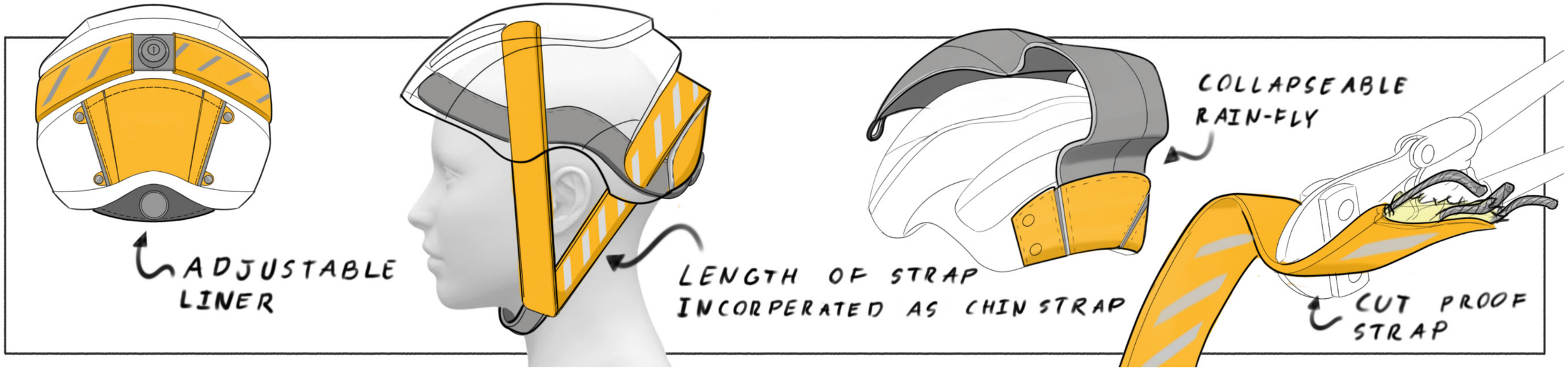
Exploring Aesthetics and physical shape of the helmet



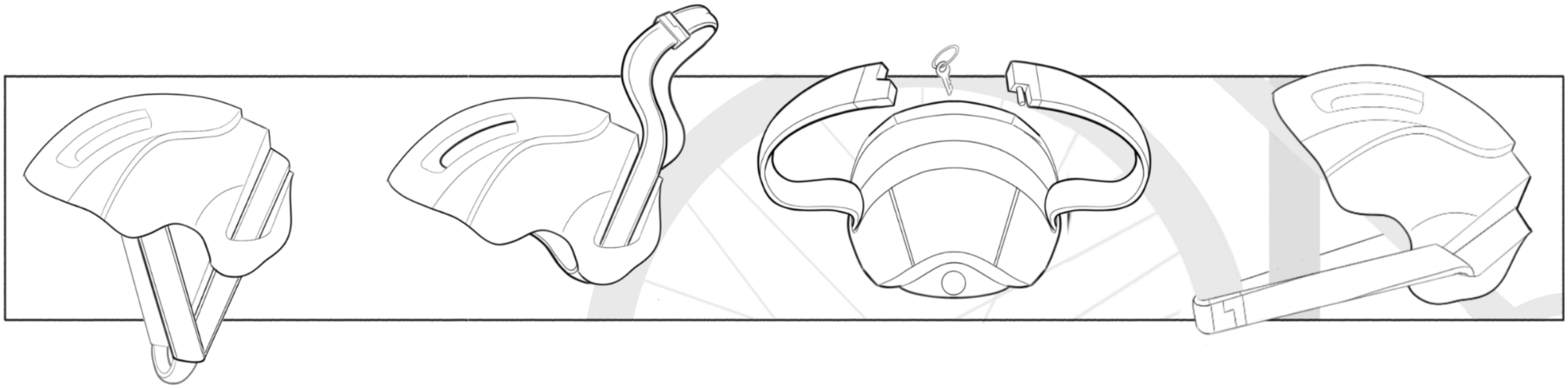
Final

Features, Function

Features

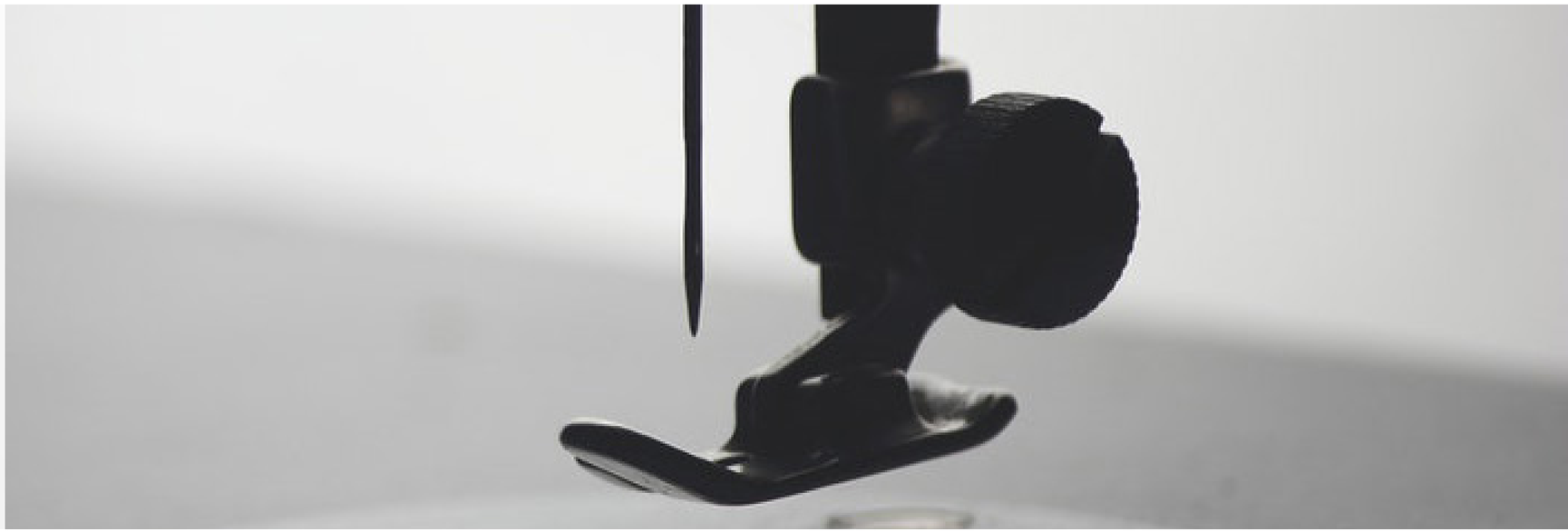

ADJUSTABLE LINER
LENGTH OF STRAP INCORPERATED AS CHIN STRAP
COLLAPSEABLE RAIN-FLY
CUT PROOF STRAP

Function

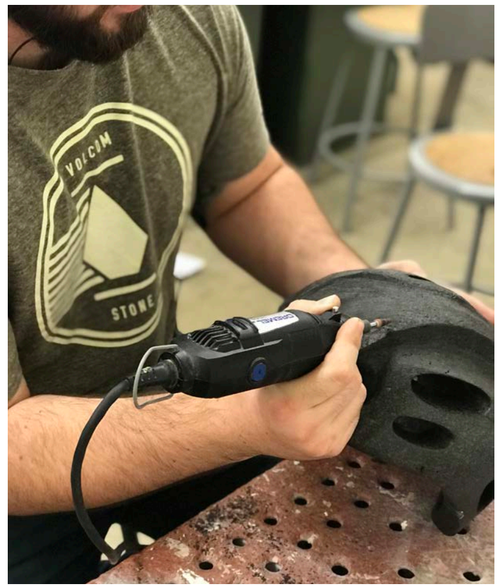


Making It

Hard, Soft

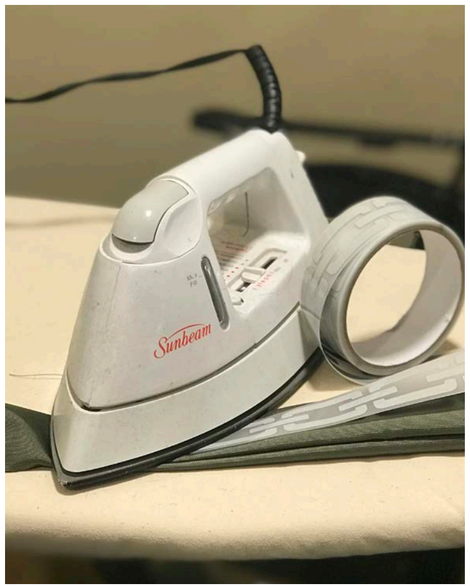


Hard Good

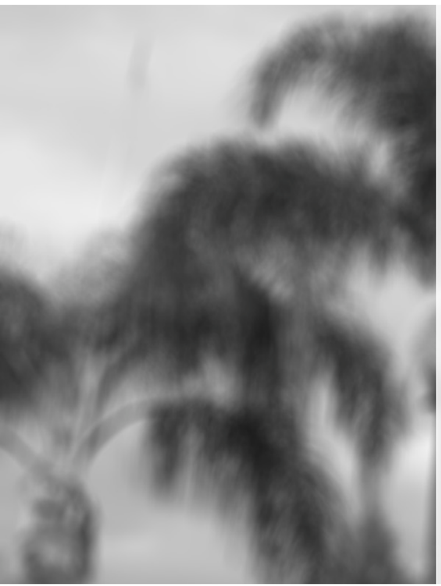


Using an existing helmet as a base, I carved out a custom shape and applied a glaze to refine its form.

Soft Good



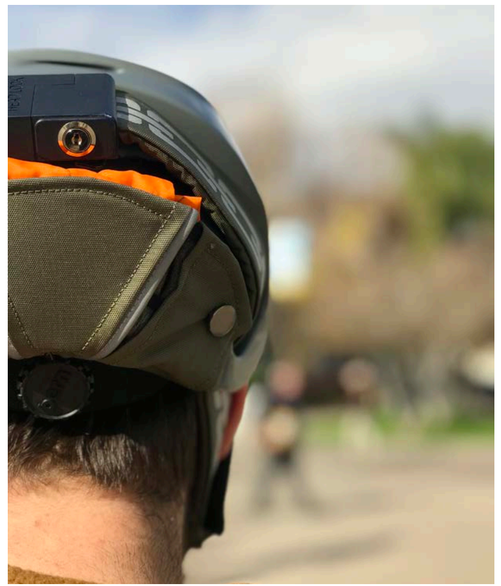
Using a Singer Sewing machine I was able to fabricate the Fabric aspect of my helmet.



In Use

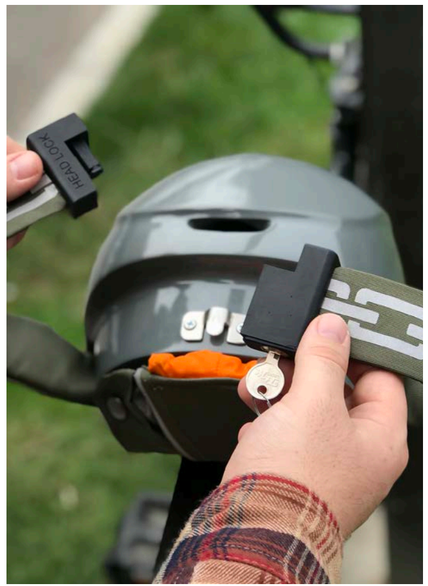
On the Head, On the Bike

On the Head



A collapsible rain fly and adjustable liner give the rider comfort and adaptability.

On the Bike



The locking system allows the enough space to securely lock the frame and front wheel to a secured post.

Thank You