



Raffles
InternationalCollege
Success by *Design*

Research for the life and work of Marc Newson

Course : Design theory & 3D Conceptualization

Department: Product design

Submitted To : Lecturer Salapol Ansusinha (Ben)

Submitted By : Sungyong Lee (Sun)

He majored in jewelry and sculpture at Sydney College of the Arts. He started to make a name for himself in the world when his 'Lockheed Lounge' chair, created with a grant from the Crafts Council of Australia, won the Australian Craft Association Design Award. As an industrial designer, his design scope is wide and diverse, ranging from jet airliners and cars to watches, shoes, bags, and aircraft interiors.

He moved to Japan in 1987 and collaborated with IDEE, creating iconic works such as the Charlotte chair (1987), the Super Guppy lamp (1987), the Embryo chair (1988), the Black Hole table (1988), the Orgone lounge (1989), the Felt chair (1989), and the Wicker chair (1990). In 1991, he moved to Paris and collaborated with Philippe Starck, Alessi, Magis, and others. He also founded a watch company in partnership with a Swiss businessman and designed watches.

In 1997, he moved to London and designed the MN01 bicycle (1999), the 021C concept car (1999), and the private jet Falcon 900B (1999).

In 2006, Newson was appointed Creative Director of Qantas Airways, where he designed luxurious first-class lounges at Melbourne and Sydney International Airports. In 2014, he joined Apple and participated in design work.

It is Newson's approach to creating unique forms that speak to the aesthetics of his time, by experimenting with materials, processes, and technology, while also reflecting on the history of modern and postmodern design that came before him.

Furthermore, his unique design style, a design philosophy known as 'Biomorphism', is based on minimizing straight lines as much as possible while

pursuing soft, flowing curved lines, translucency, and clarity. It exudes a strong futuristic atmosphere and is expressed in an original and witty way.

When talking about his design, it seems impossible to leave out curves. Marc Newson's curves convey a sense of familiarity to people. Looking closer at the characteristics of these curves, we can see that they extend stably compared to typical curves, and their width is not large. Furthermore, he often uses curves borrowed from parts of a perfect circle. Standardized geometric elements like circles, squares, and triangles feel familiar and stable to the eye, and Marc Newson uses parts of these geometric elements as curved components. It is rare to see free-form curves, and even when used, it can be observed that he tries to maintain a stable form by giving a lot of weight to the bottom.

Marc Newson usually adopts only one point color. It seems he finishes the form by using a single point color on a base of achromatic metal or plastic materials. The colors he mainly uses as point colors are warm colors in the orange and yellow range, and their effect is amplified when combined with cool metal or glass.

To summarize, Biomorphism, streamlined forms, integrated design, translucency, simplicity, and fusion with other industrial fields are keywords related to him, and he uses these to create futuristic and unique designs.



Emergency solar + hand crank powered cooking station with kitbashing + recycled parts

Design theory & 3D Conceptualization

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Sungyong Lee (SUN)

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Mood Board



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Inspiration



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Materials



stainless steel

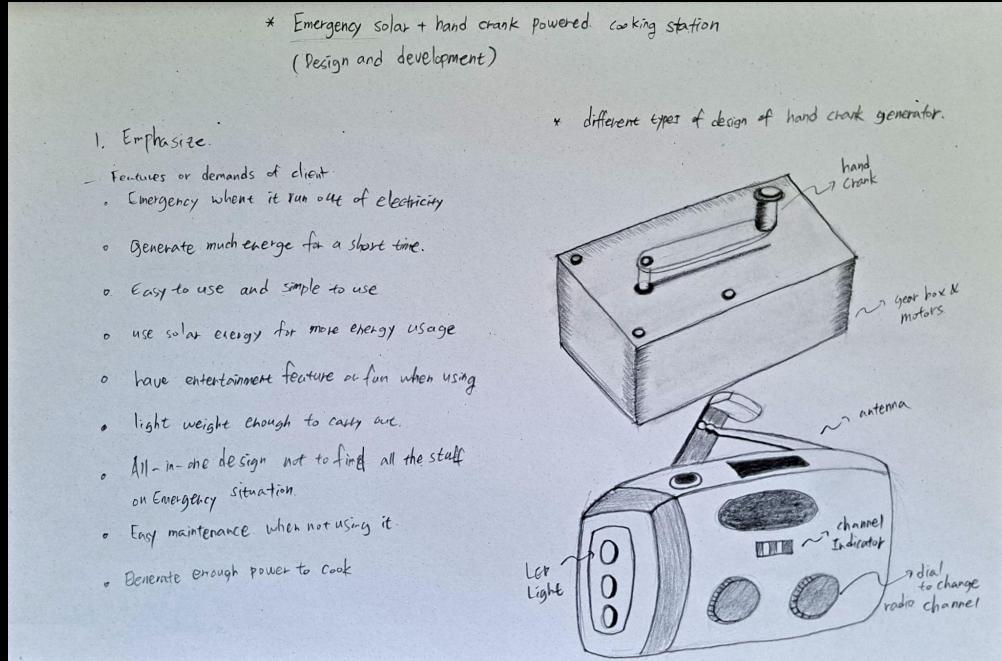


polycarbonate

Stainless steel has good corrosion resistance and high-strength. So it is good to use it on harsh circumstances like outdoor.

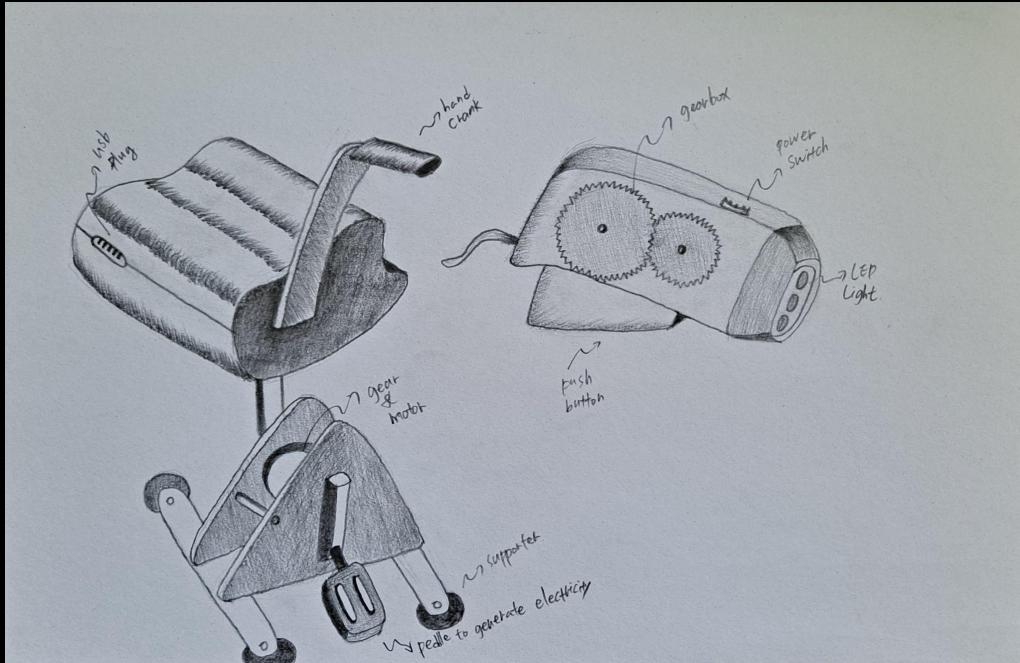
And i chose polycarbonate because it is also a strong, transparent thermoplastic known for its exceptional impact resistance, high temperature resistance, and good optical clarity. So it is also good for outdoor. I used polycarbonate to show some transparent part to show user mechanism of this product like marc newson.

Design and Development (1/29)



There are many types of hand cranks
turning crank handle is one type

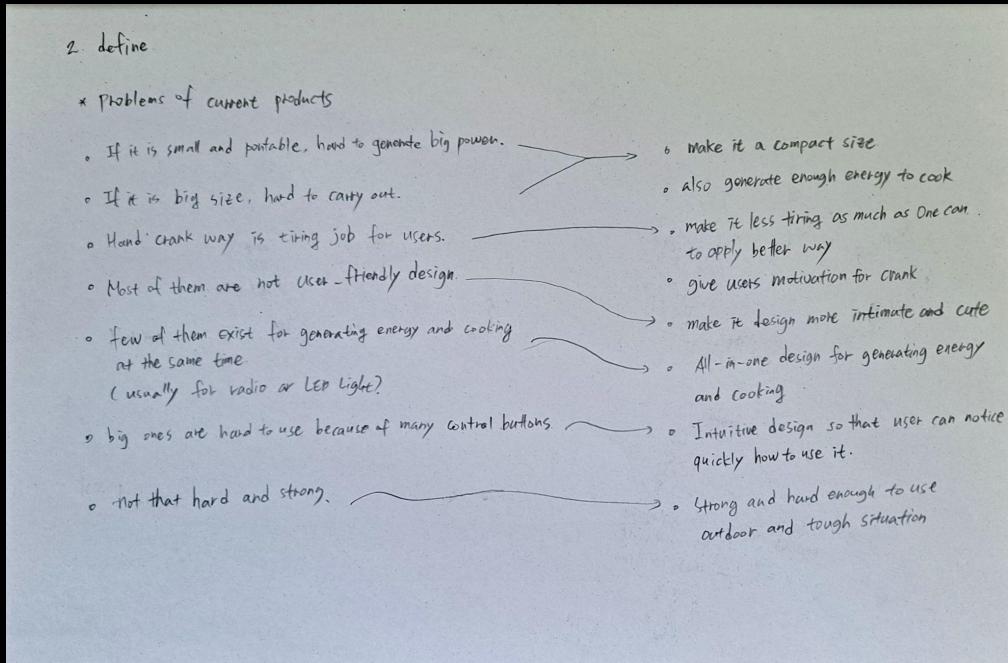
Design and Development (2/29)



There are many types of hand cranks

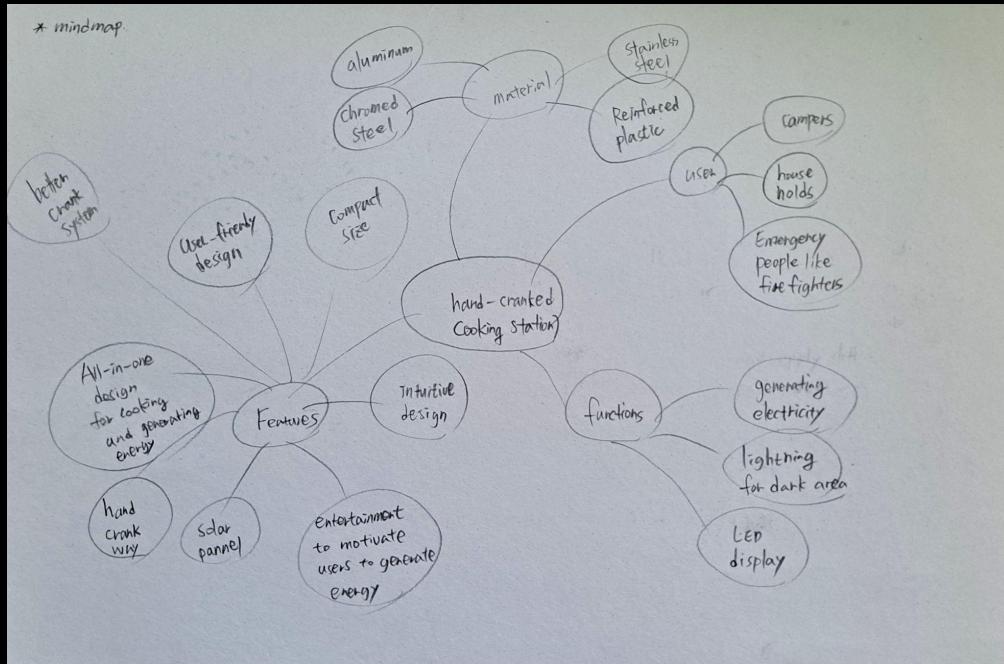
pushing crank is another type and pedal is unique way but it is not hand-crank strictly speaking

Design and Development (3/29)



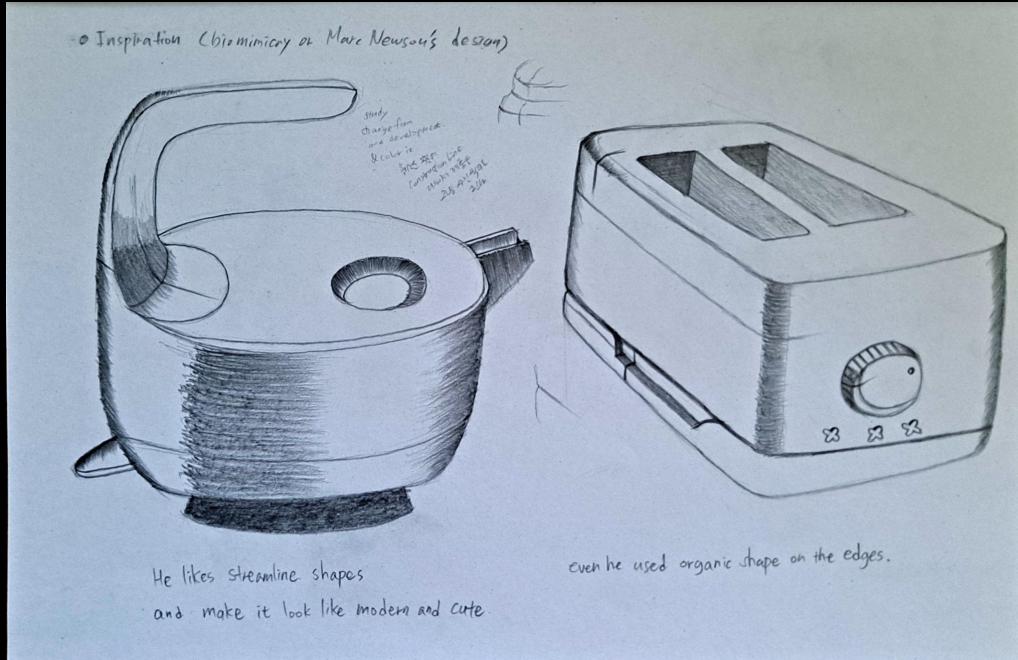
I defined the problems of current products and solution depending on the demand of clients to use this product

Design and Development (4/29)



I draw mind map thinking about many kinds of way to solve this problem

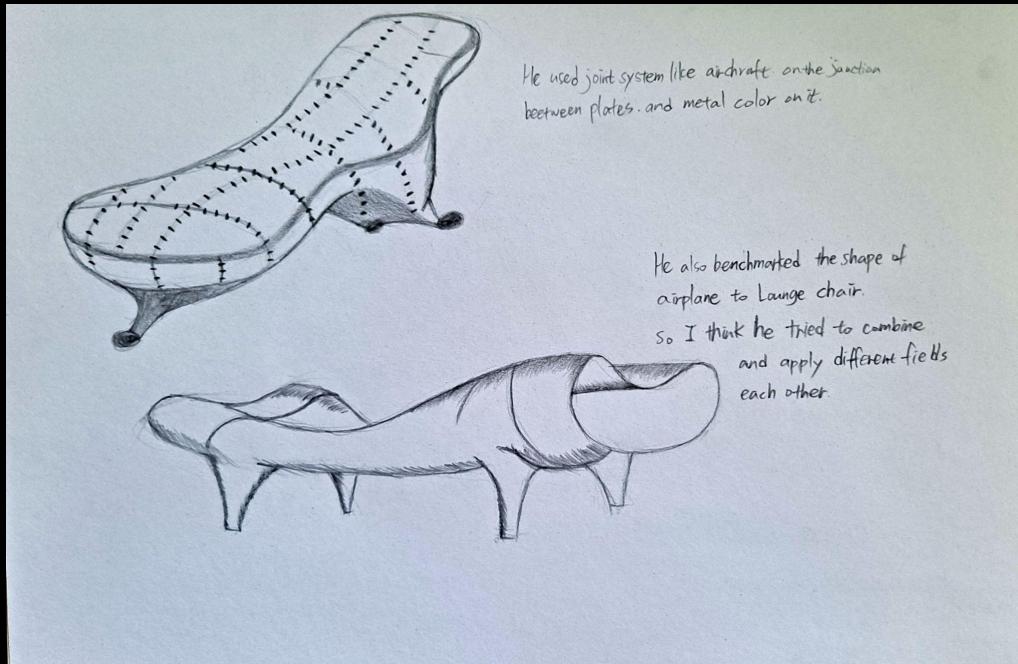
Design and Development (5/29)



Research for Marc Newson's products and design

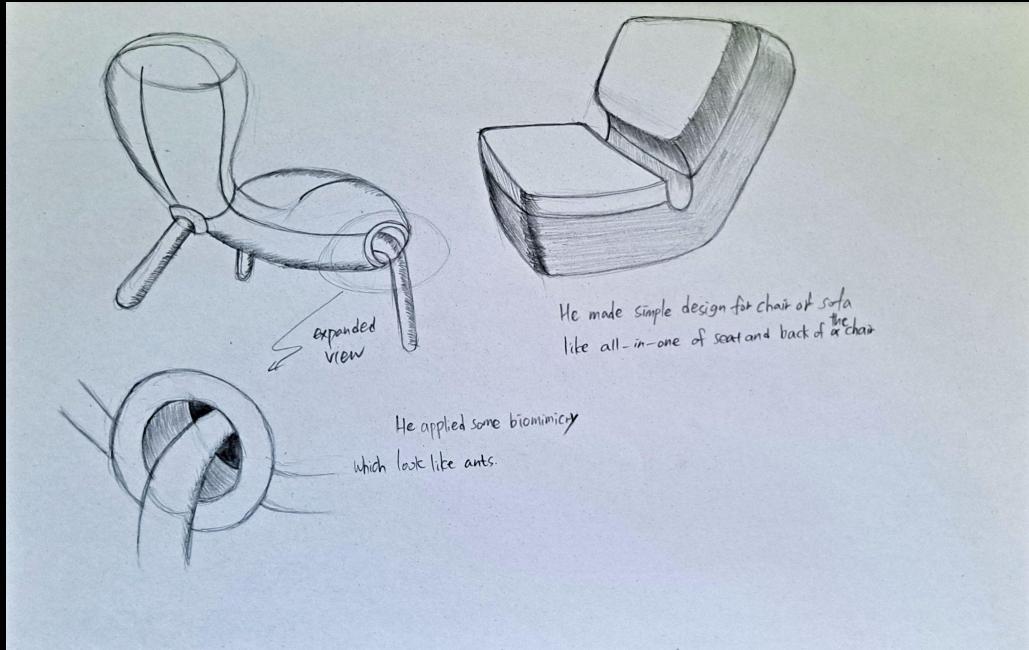
He mostly used streamlined shapes and make it a bit cute. And he used one point color to those products

Design and Development (6/29)



These streamline shapes are not so much dynamic. it give users comfortable feeling and make it look futuristic

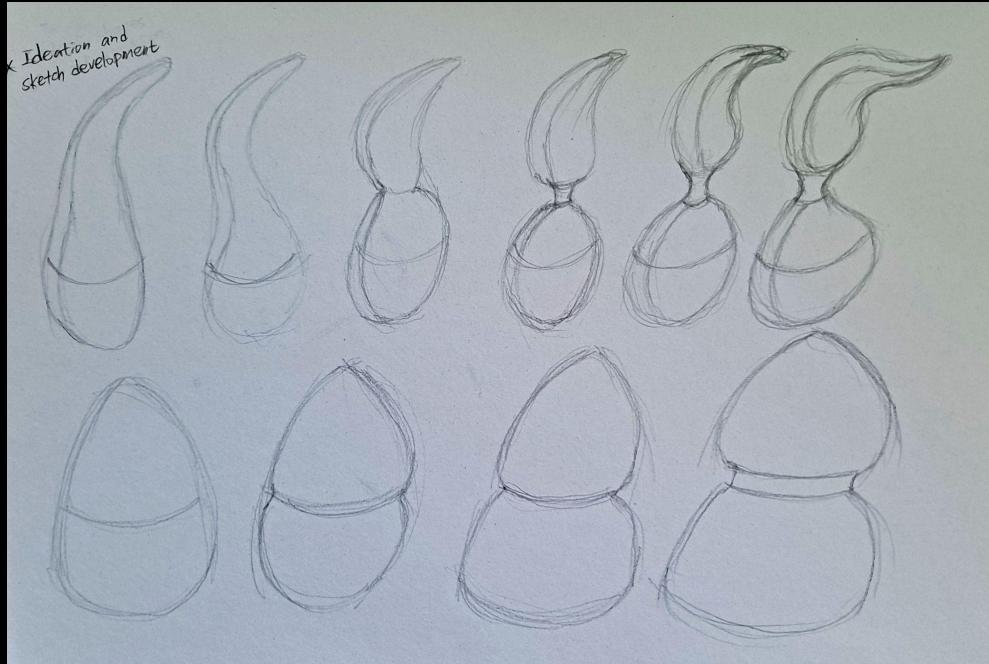
Design and Development (7/29)



When i see chair in the left, I guess he used biomorphism copying the shape of ants

The chair in the right, he designed the product like All-in-one

Design and Development (8/29)



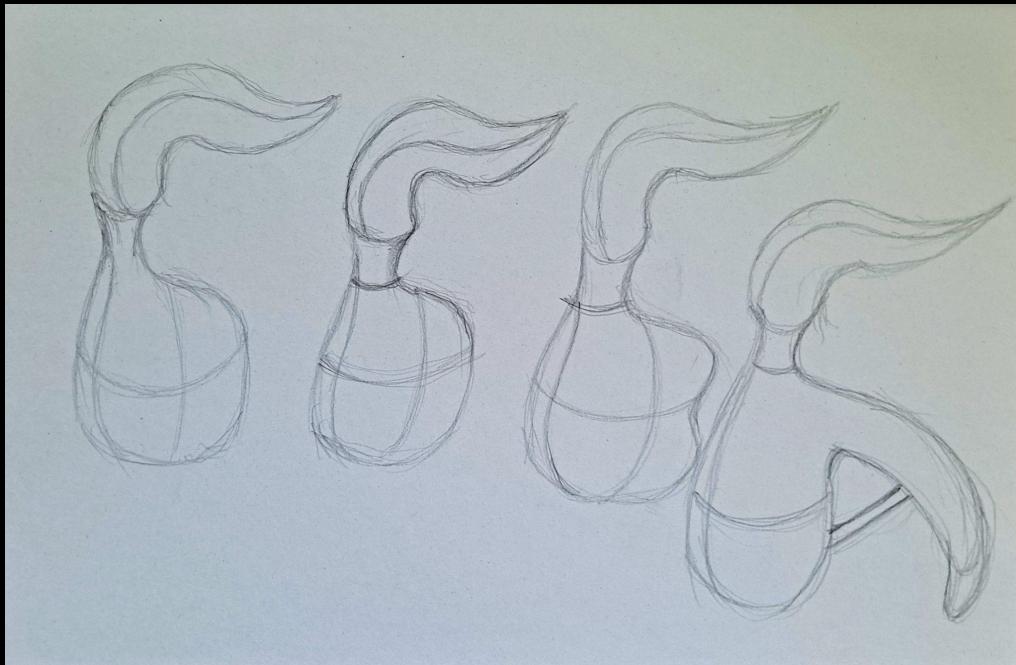
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I cut off the specific part in the kettle of his design and try to develop my own design

Some of them look shampoo handle, others look mushroom shape

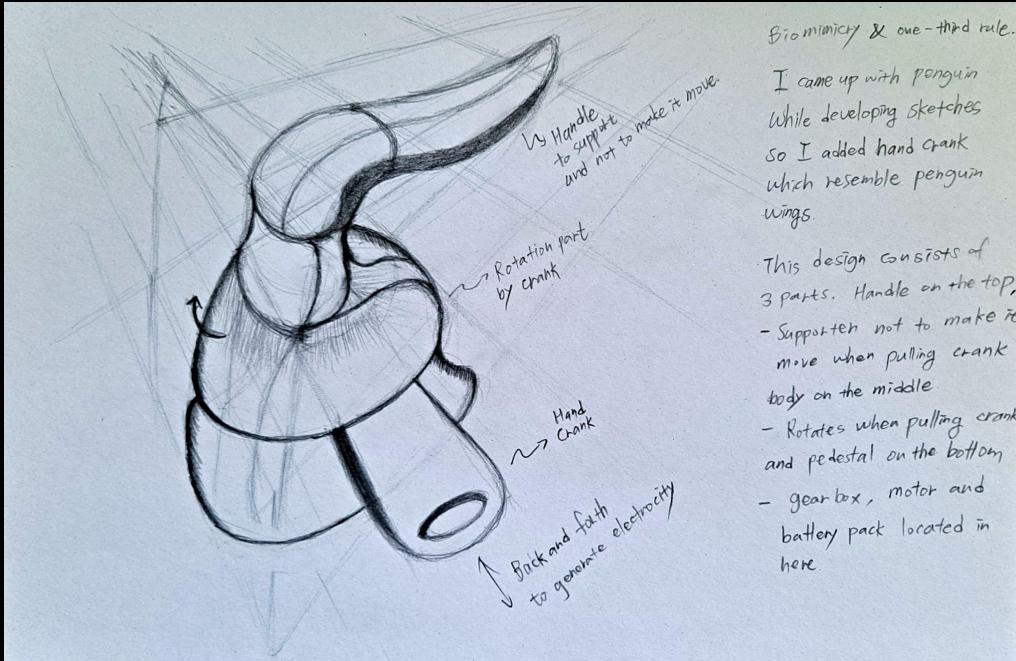
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Design and Development (9/29)



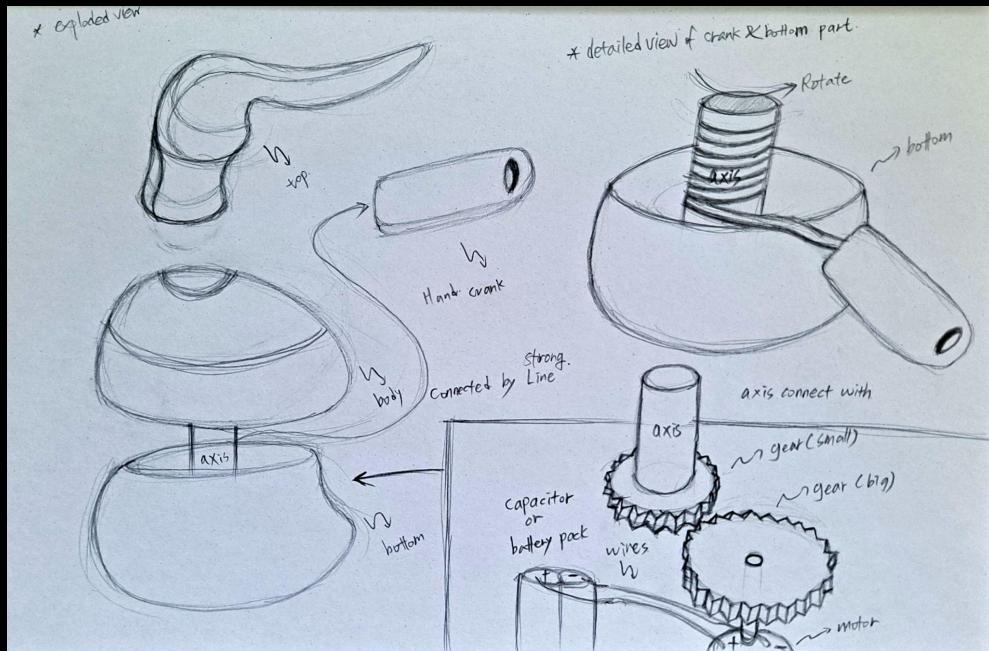
The last one looks penguin

Design and Development (10/29)



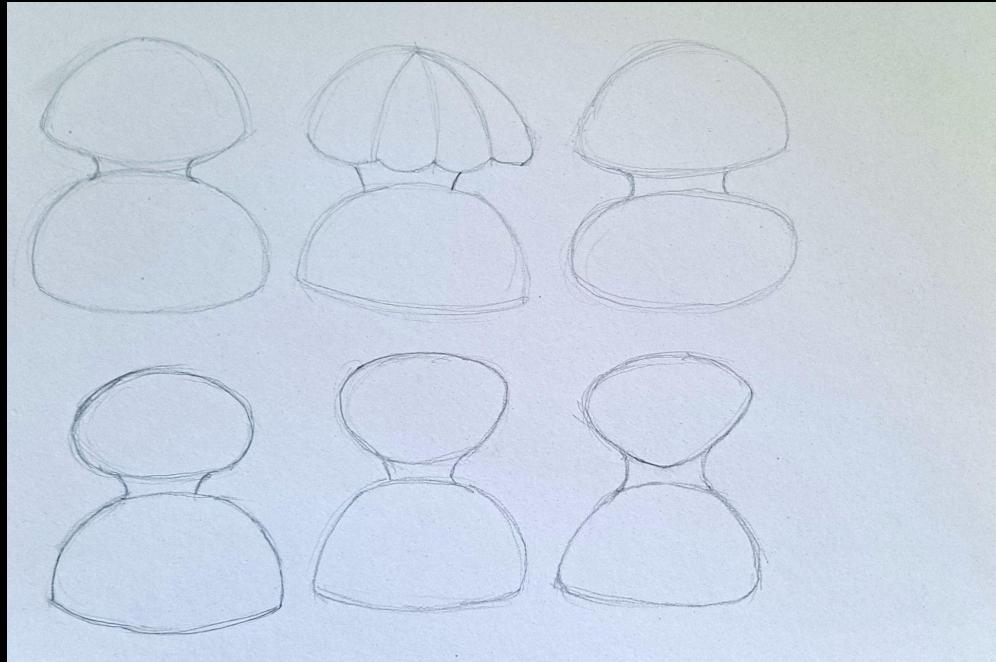
So i look into penguin in more detail and apply the notion of penguin's wing. But penguin's wing moves up and down. So it would be much better for crank move like that. I forgot to implement like it.

Design and Development (11/29)



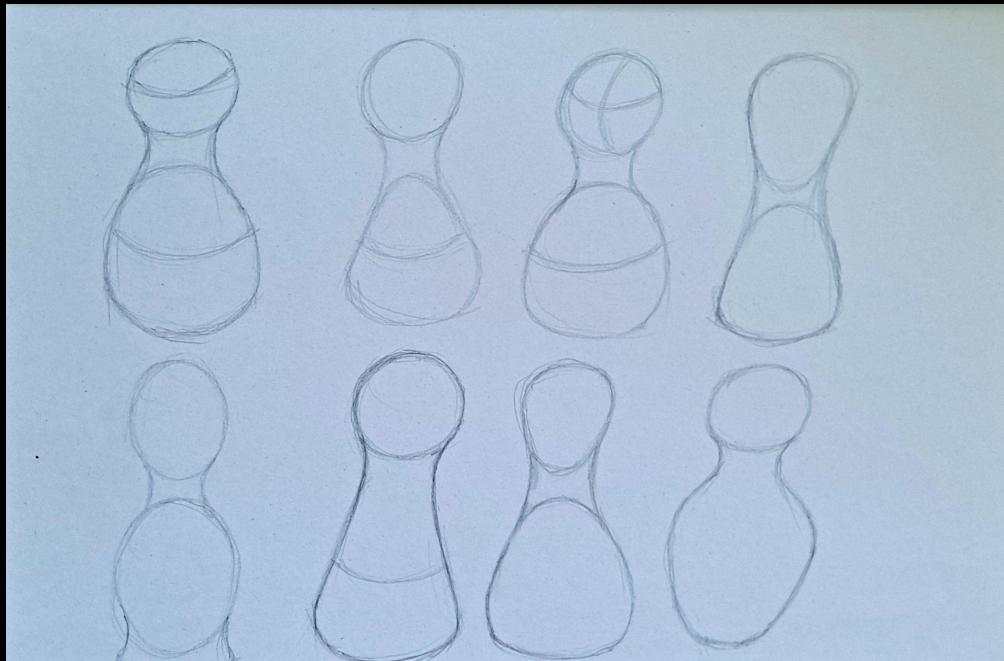
Anyway strong wire is connected to the main axis. So if you pull it out, motor generate electricity while gears spin.

Design and Development (12/29)



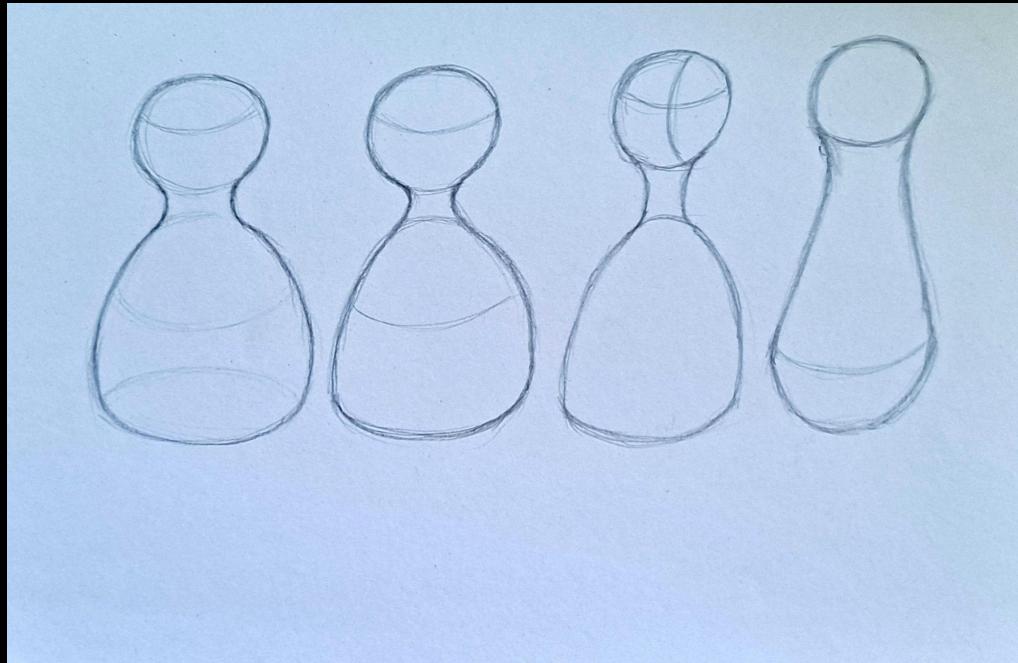
I keep developing mushroom shape
thinking about pushing way of hand crank
and Marc Newson's design philosophy

Design and Development (13/29)



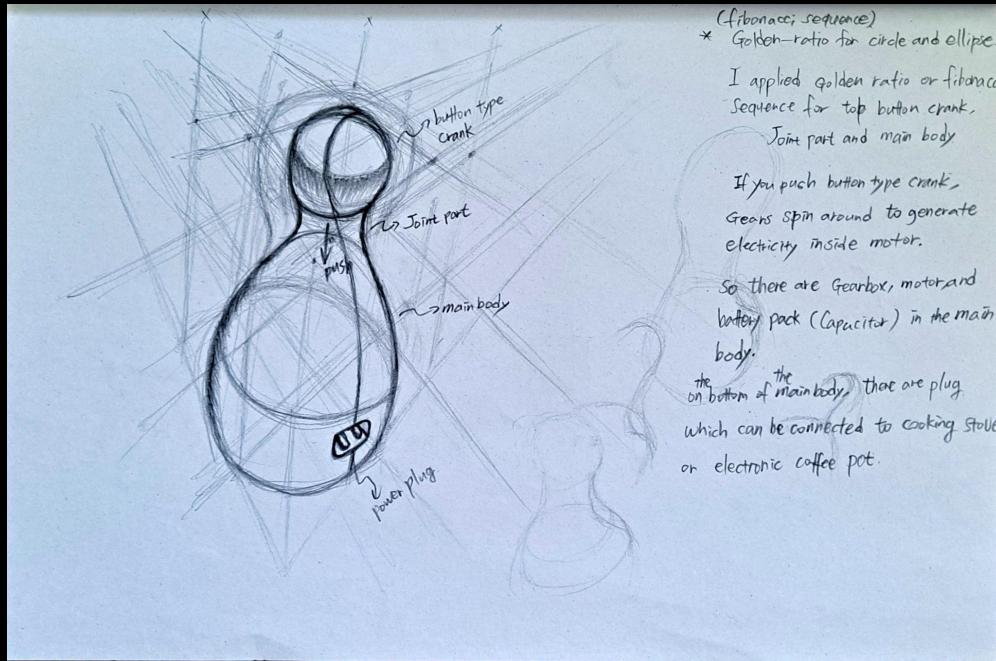
These look like bowling balls

Design and Development (14/29)



And i try to change the shape a little bit like ellipse to sphere and body shapes too

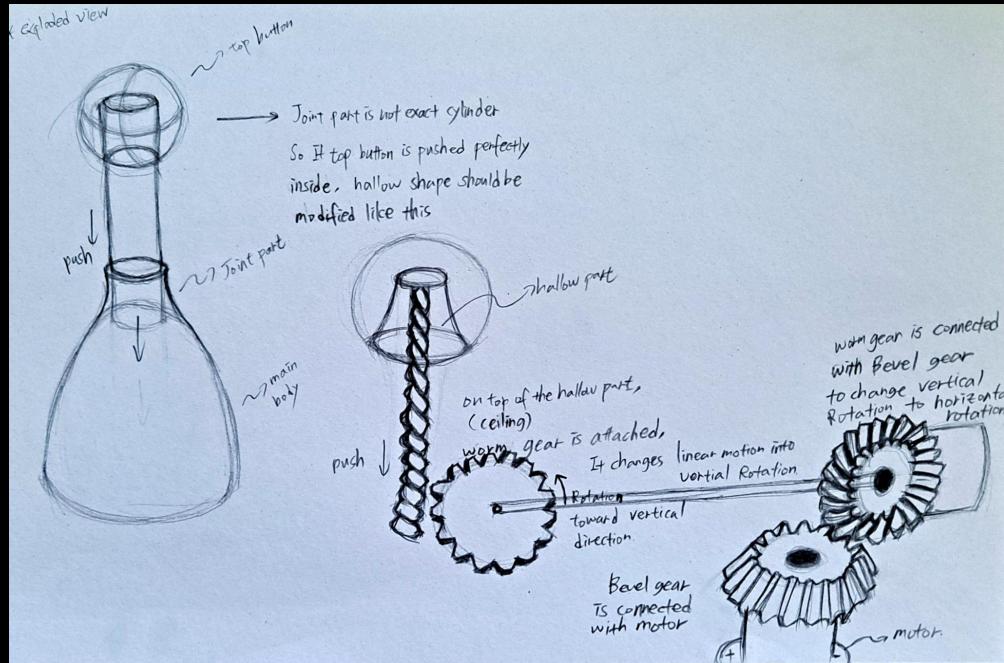
Design and Development (15/29)



And i choose the most cute one like bowling ball. Because he used no dynamic streamline to make it cute.

It is crank of way to push button to generate energy. There are plug you can connect to use it.

Design and Development (16/29)



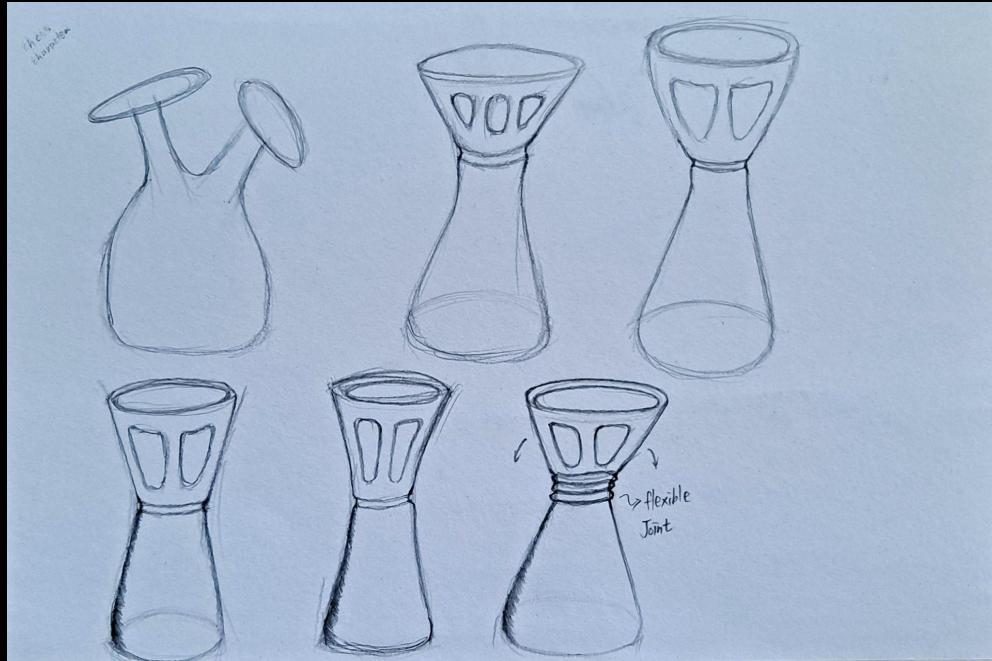
Inside product, When you push button on the top, gear like screw driver spin horizontally to make worm gear spin vertically. And bevel gear change the direction of movement into horizontal rotation again

Design and Development (17/29)



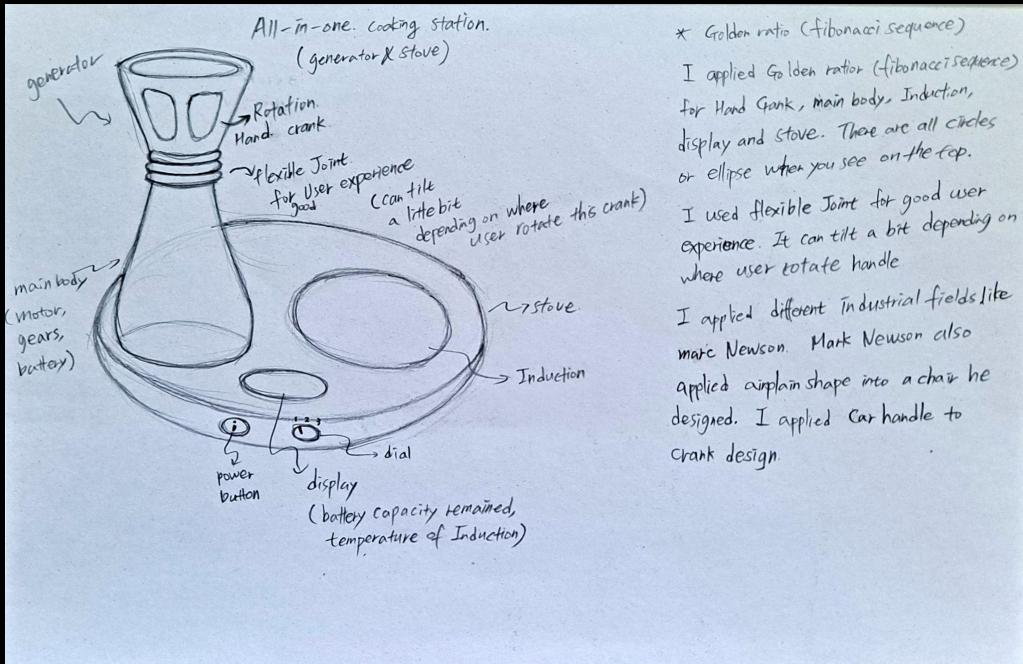
I was inspired by car handle for hand crank.
So i tried to change this shape.
Because Marc Newson try to combine
different industrial fields together.

Design and Development (18/29)



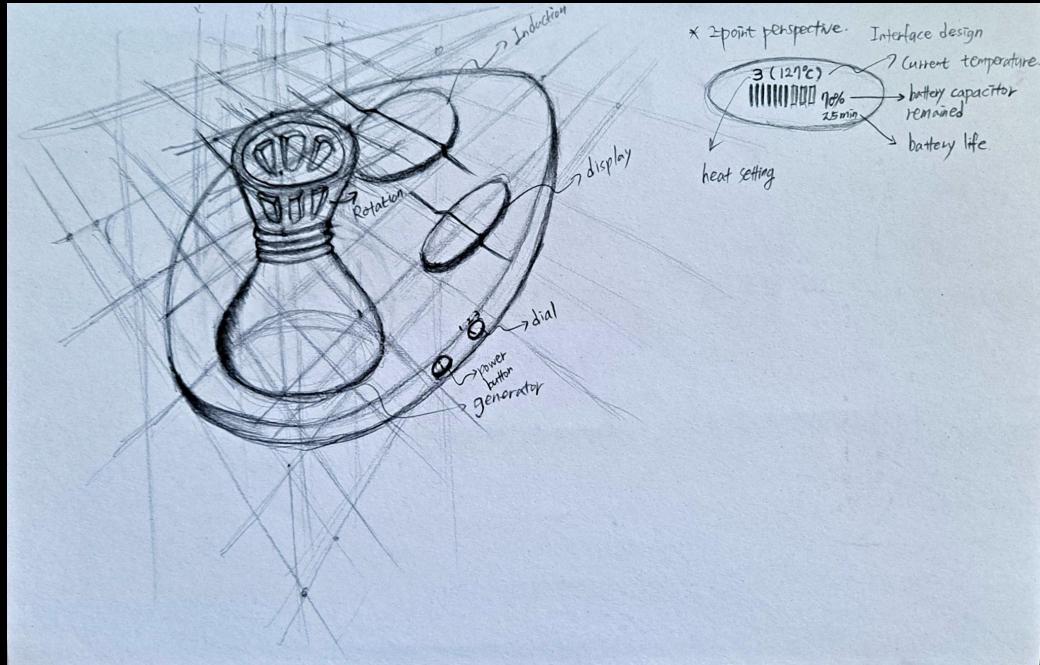
Some of them looks mushroom again and others look chessmen

Design and Development (19/29)



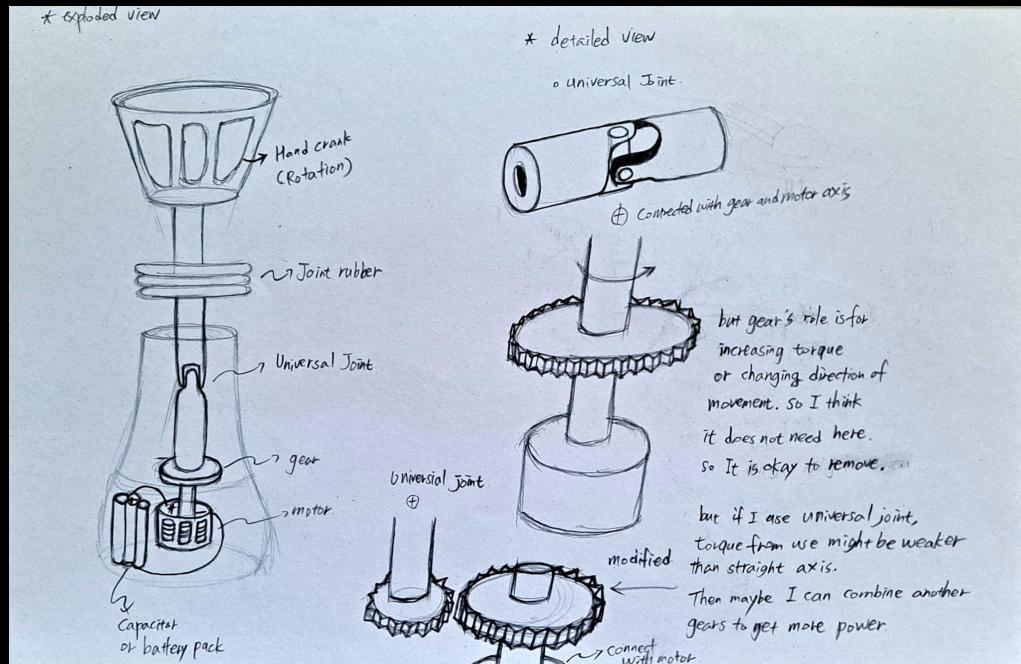
I try to follow the design philosophy of marc Newson. He design to make it all-in-one. So i wanted generator and cooking stove into one piece

Design and Development (20/29)



On the right, There is simple interface design for display

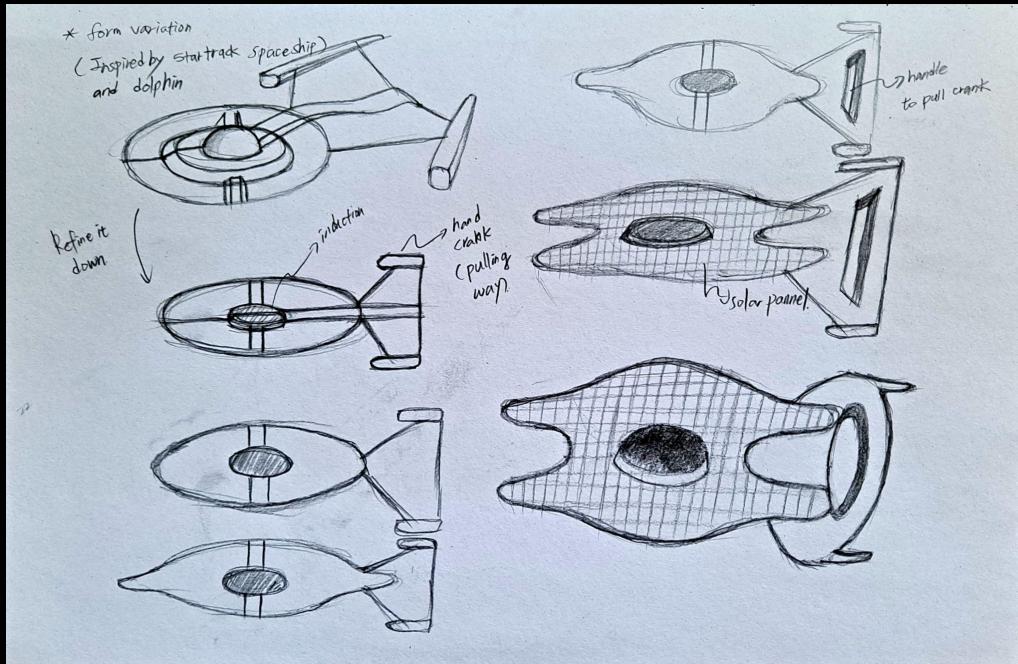
Design and Development (21/29)



Marc Newson wanted to give good user experience. So i applied joint in the middle so that when user turn crank in any direction, hand crank tilt a bit to that direction. And thus user don't have to turn it watching the exact top position.

To make it implement, I used universal joint

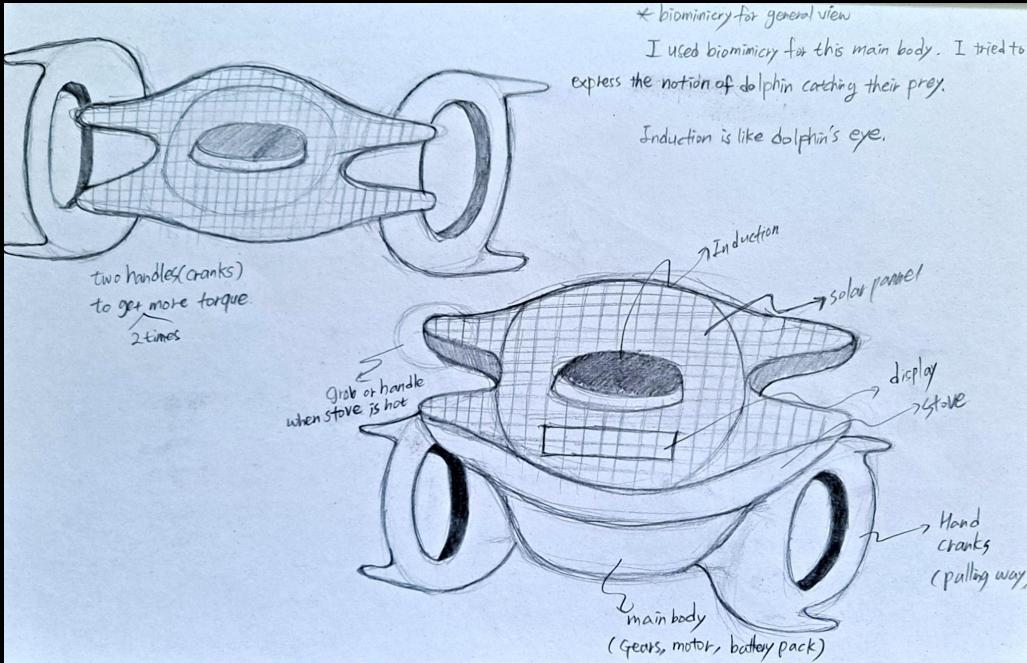
Design and Development (22/29)



The last one is inspired by star trek's spaceship. Because Marc Newson's design is futuristic. spaceship is the most futuristic stuff.

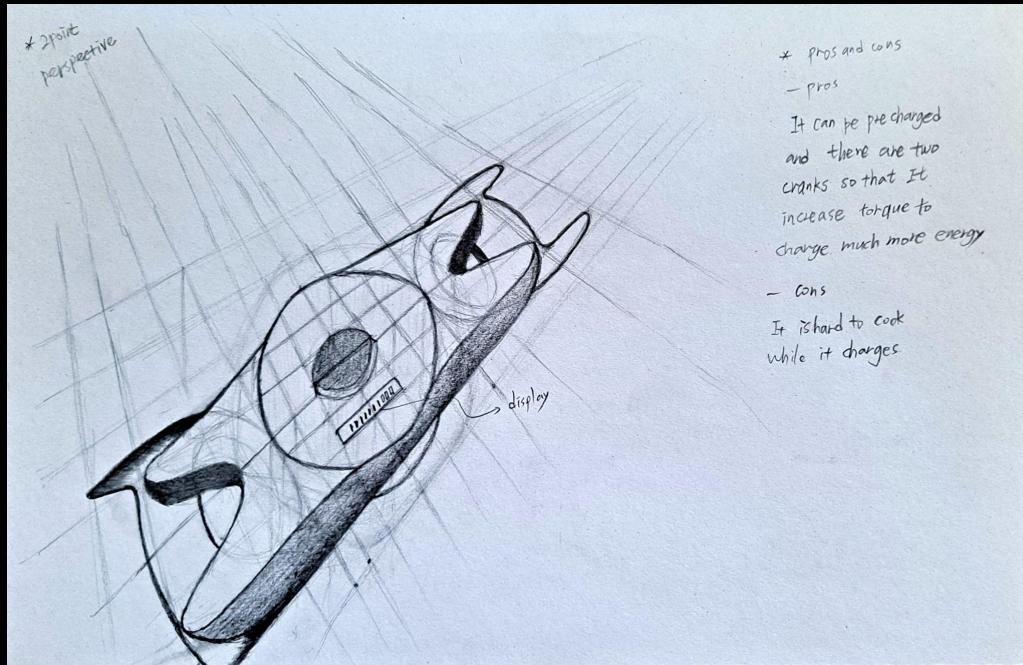
So I refine it down and develop furthermore. And i am also inspired by dolphin. Finally, I combine spaceship and dolphin together for my design

Design and Development (23/29)



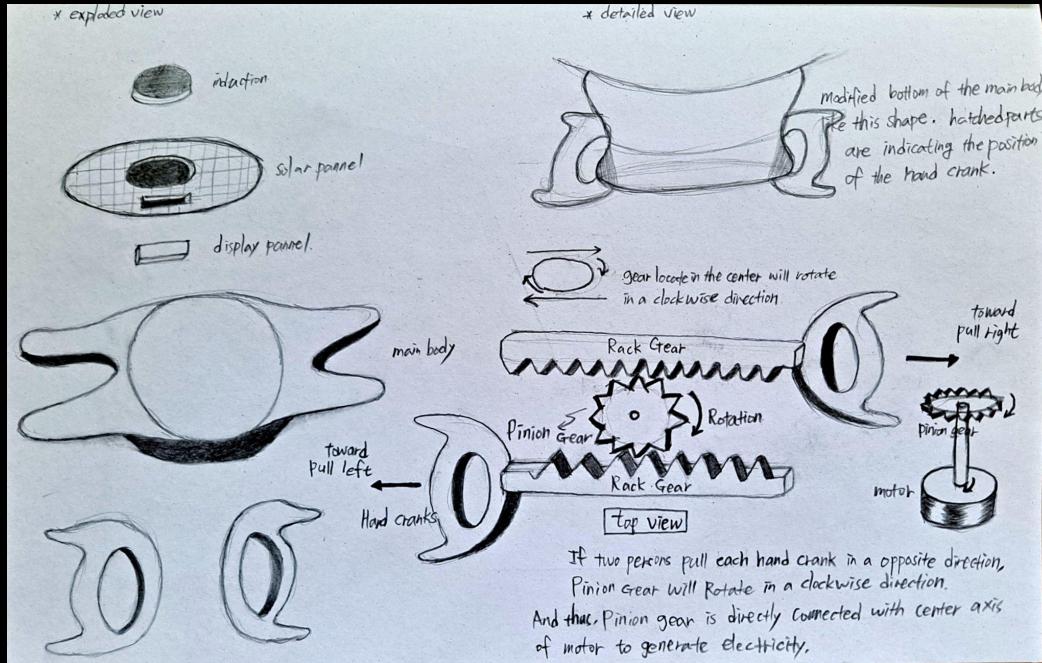
At this time, I also used solar panel and two crank handle to make more energy

Design and Development (24/29)



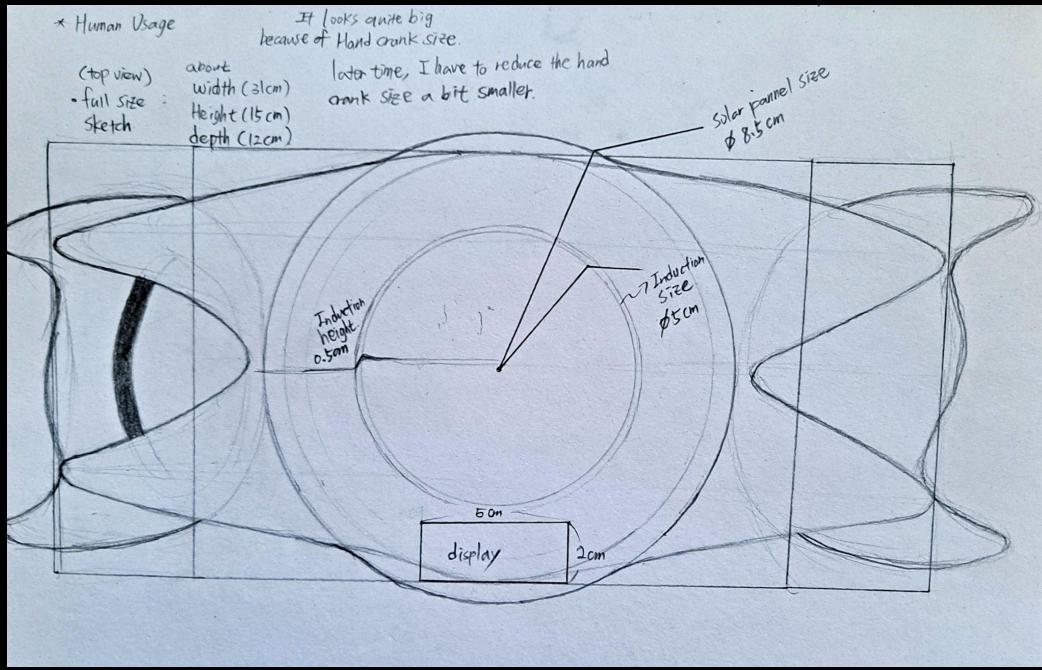
But in this design, it is hard to cook while charging electricity. It can only be precharged before usage

Design and Development (25/29)



To charge with two cranks, I look into gears and found Rack and Pinion gear. I use rack gear for two cranks and in the middle, there is one pinion gear connected to motor directly

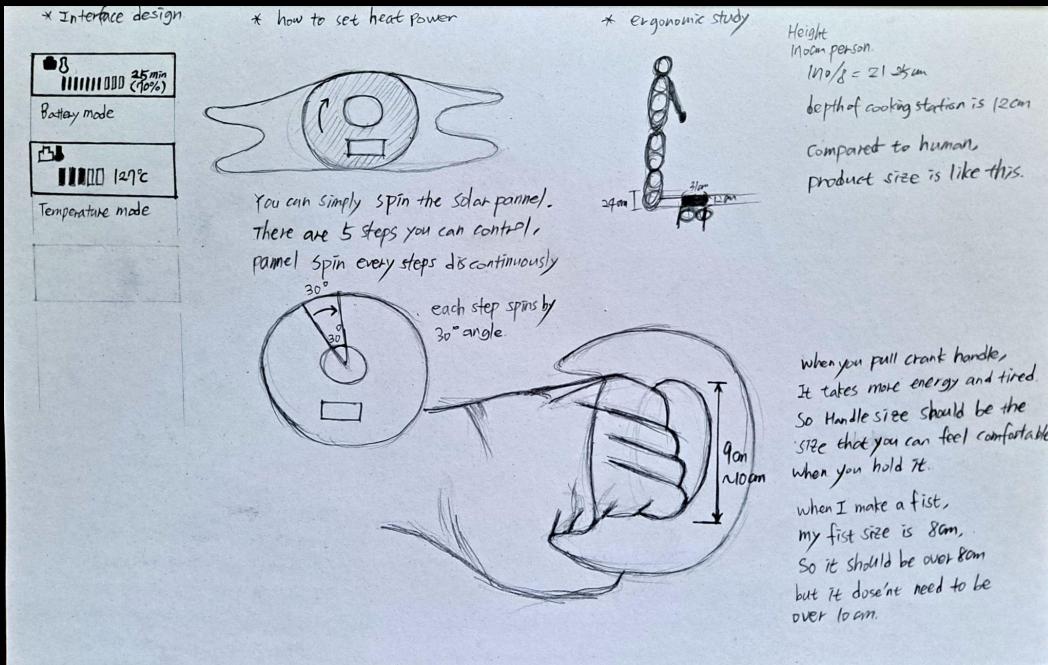
Design and Development (26/29)



I think about the real size of this product it is full inside A3 page

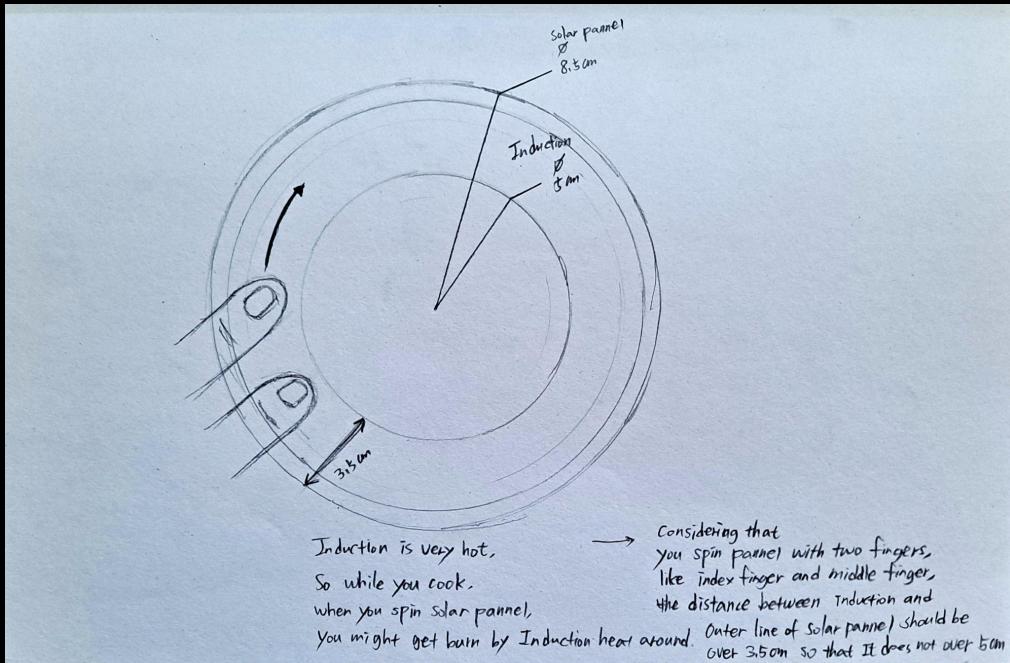
If i make handle a bit smaller, i can make it more compact size

Design and Development (27/29)



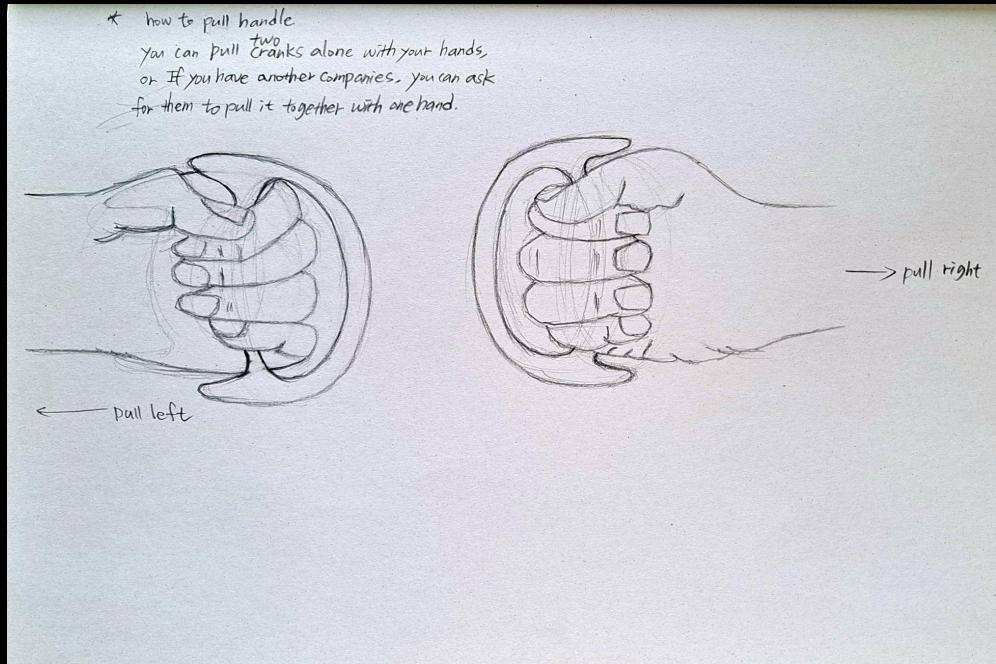
I try to do interface design also here and how to control heat strength and think of handle size to make user comfortable

Design and Development (28/29)



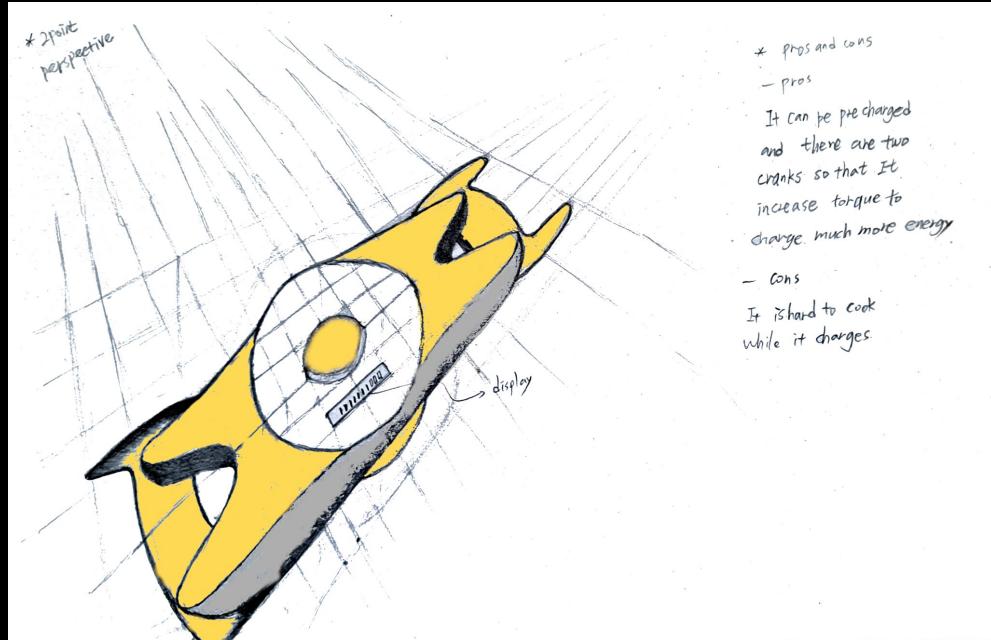
Furthermore, If i spin solar panel to control heat strength, I found out that there is enough space between induction and solar panel. Because induction is quite hot to make user get burned

Design and Development (29/29)



If user hike up the mountain or do camping alone or with company, It is okay to use this product. Because user can pull two handle alone, or with company together at each hand

Rendering (1/2)



Marc Newson used one point color especially warm color. And when you go into camp, You can see usually orange color in a lamp like below photo. So i chose yellow orange color. And i also used metal color on the bottom of the body. Furthermore, I try to show mechanism inside generator like marc newson. So it is transparent on the solar panel.

Color palette



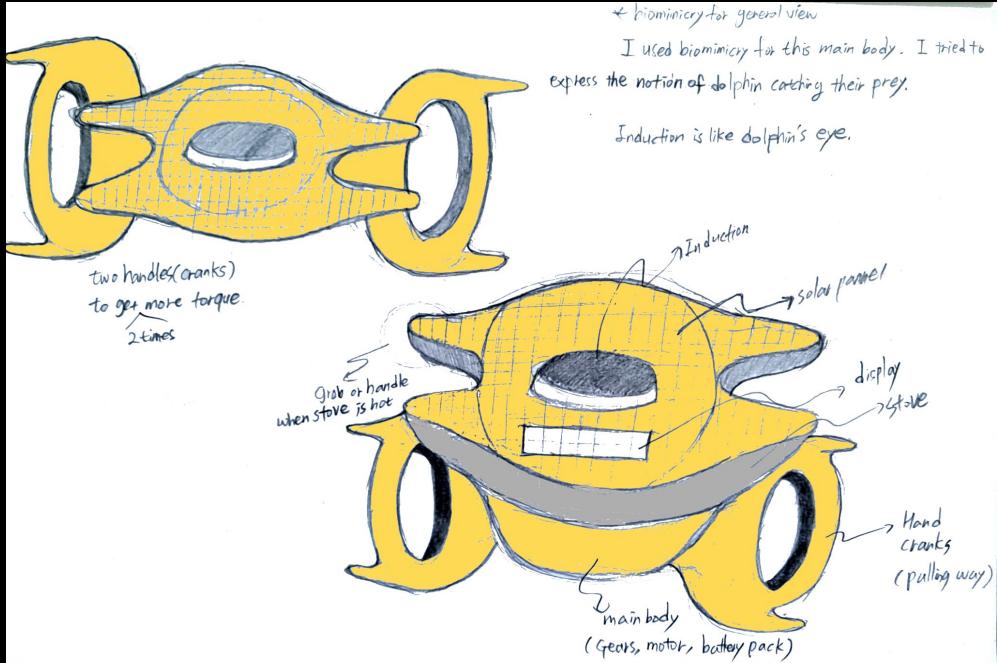
fed954



aeaeae



Rendering (2/2)



Marc Newson used one point color especially warm color. And when you go into camp, You can see usually orange color in a lamp like below photo. So i chose yellow orange color. And i also used metal color on the bottom of the body. Furthermore, I try to show mechanism inside generator like marc newson. So it is transparent on the solar panel.

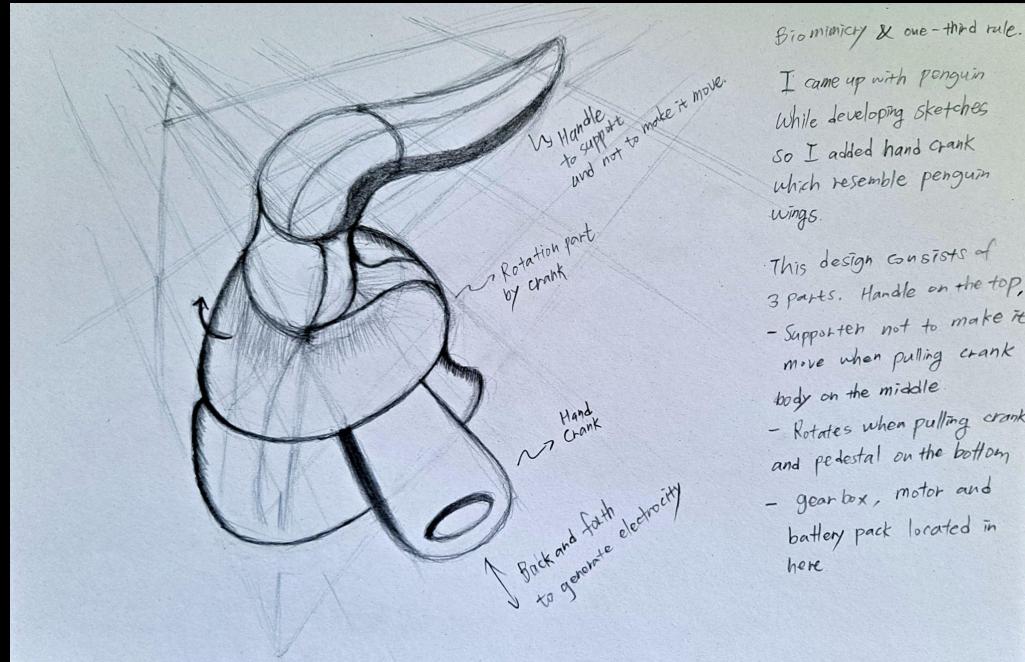
Color palette

fed954

aeaeae



Prototyping - Concept Model (1)



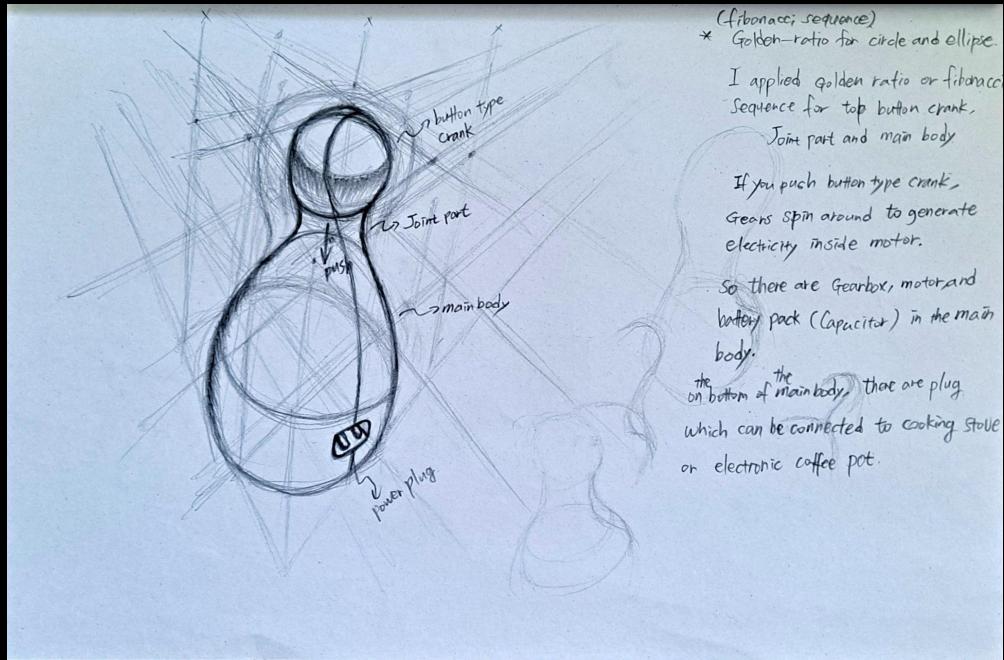
Prototyping - Concept Model (1)



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Prototyping - Concept Model (2)



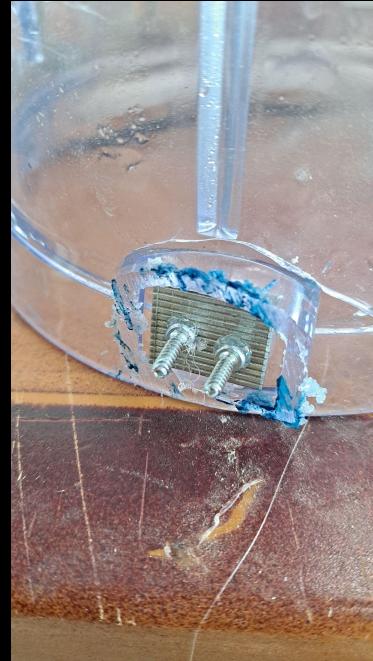
Prototyping - Concept Model (2)



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Prototyping - Concept Model (2)



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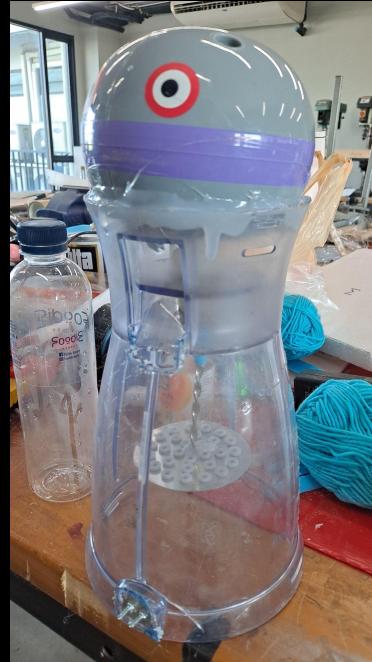
Prototyping - Concept Model (2)



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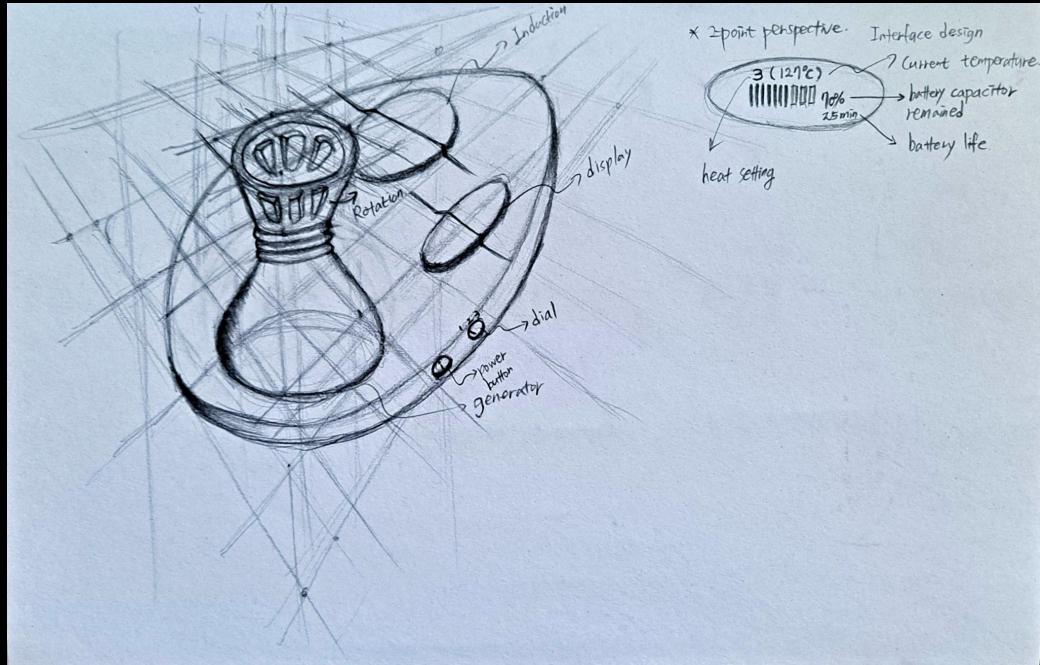
Prototyping - Concept Model (2)



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Prototyping - Concept Model (3)



Prototyping - Concept Model (3)



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Prototyping - Concept Model (3)



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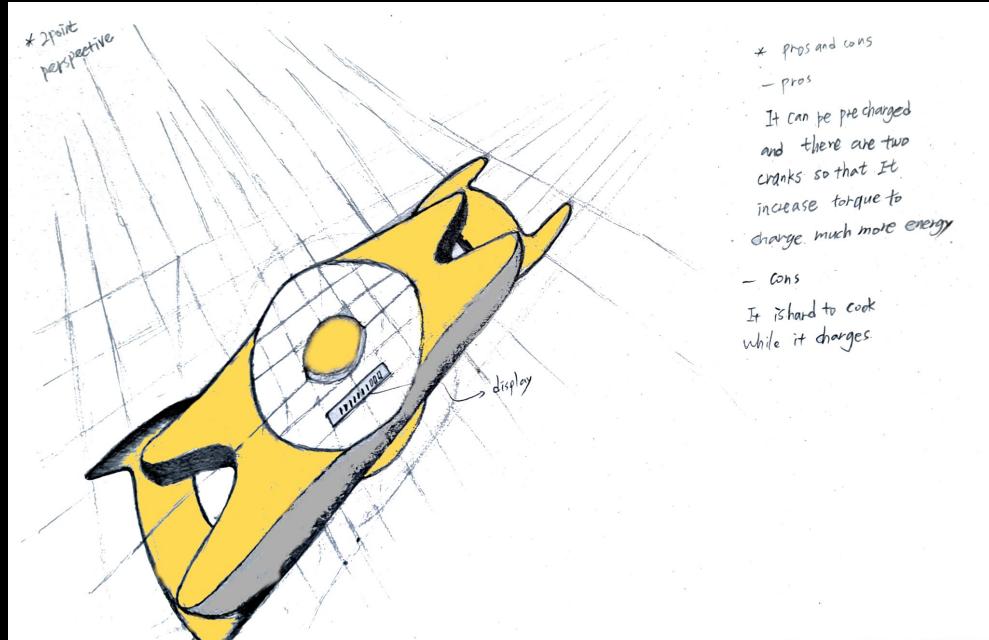
Prototyping - Concept Model (3)



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Prototyping - Final Model (1/6)



+ pros and cons
- pros
It can be pre charged
and there are two
cranks so that It
increase torque to
charge. much more energy
- Cons
It is hard to cook
while it charges

Prototyping - Final Model (2/6)



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Prototyping - Final Model (3/6)



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Prototyping - Final Model (4/6)



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Prototyping - Final Model (5/6)



I try to make streamline shapes like i sketched. But it was so hard to make with kits and recycled parts.

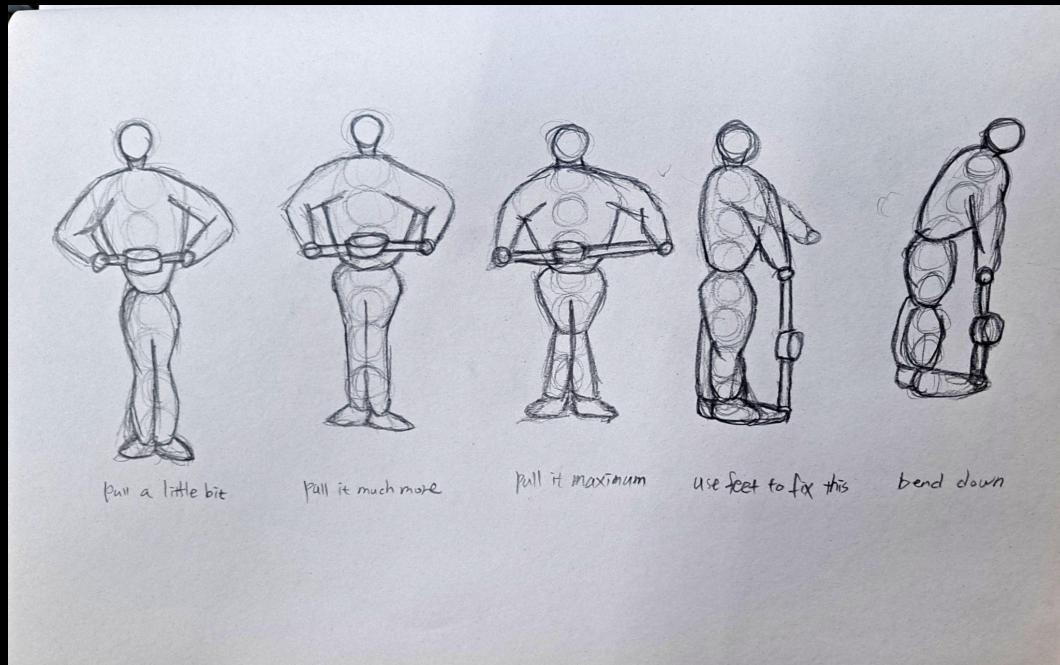
Prototyping - Final Model (6/6)



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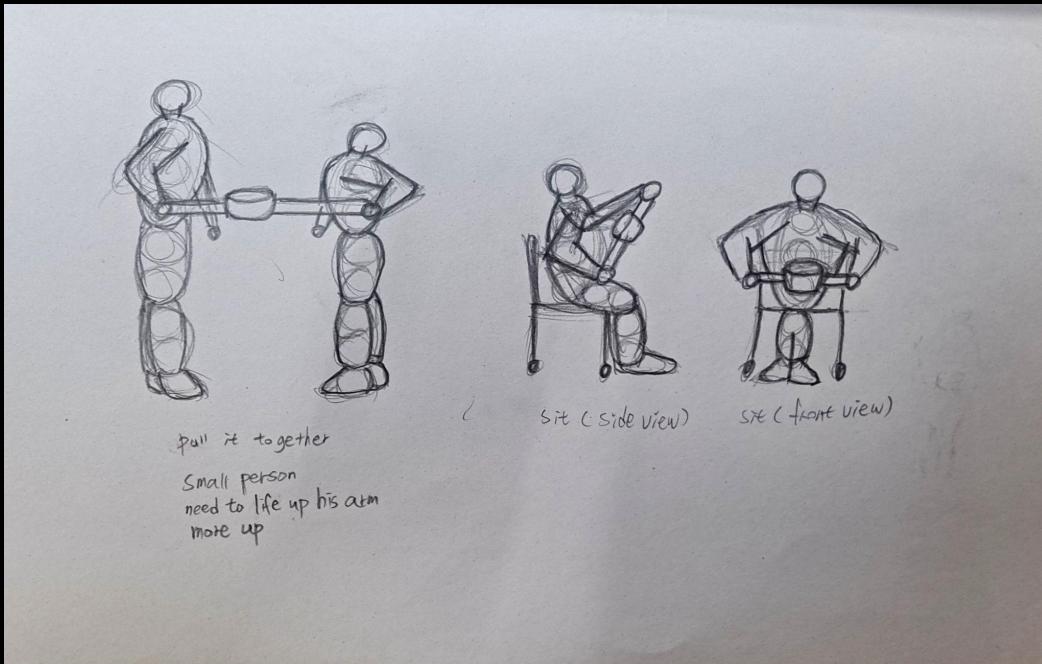
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Ergonomic study (1/4)



I studied many types of using this product like sketches.

Ergonomic study (2/4)



Ergonomic study (3/4)



When i try to pull hand cranks like this, i tensed my shoulder a bit. So hand crank would be better to pull smoother like fitness equipment.

It would be much better for user to feel like exercising with this.

Ergonomic study (4/4)



It is hard to use it like this posture. Because my product is not that big enough. So the more taller, the more difficult to use it.