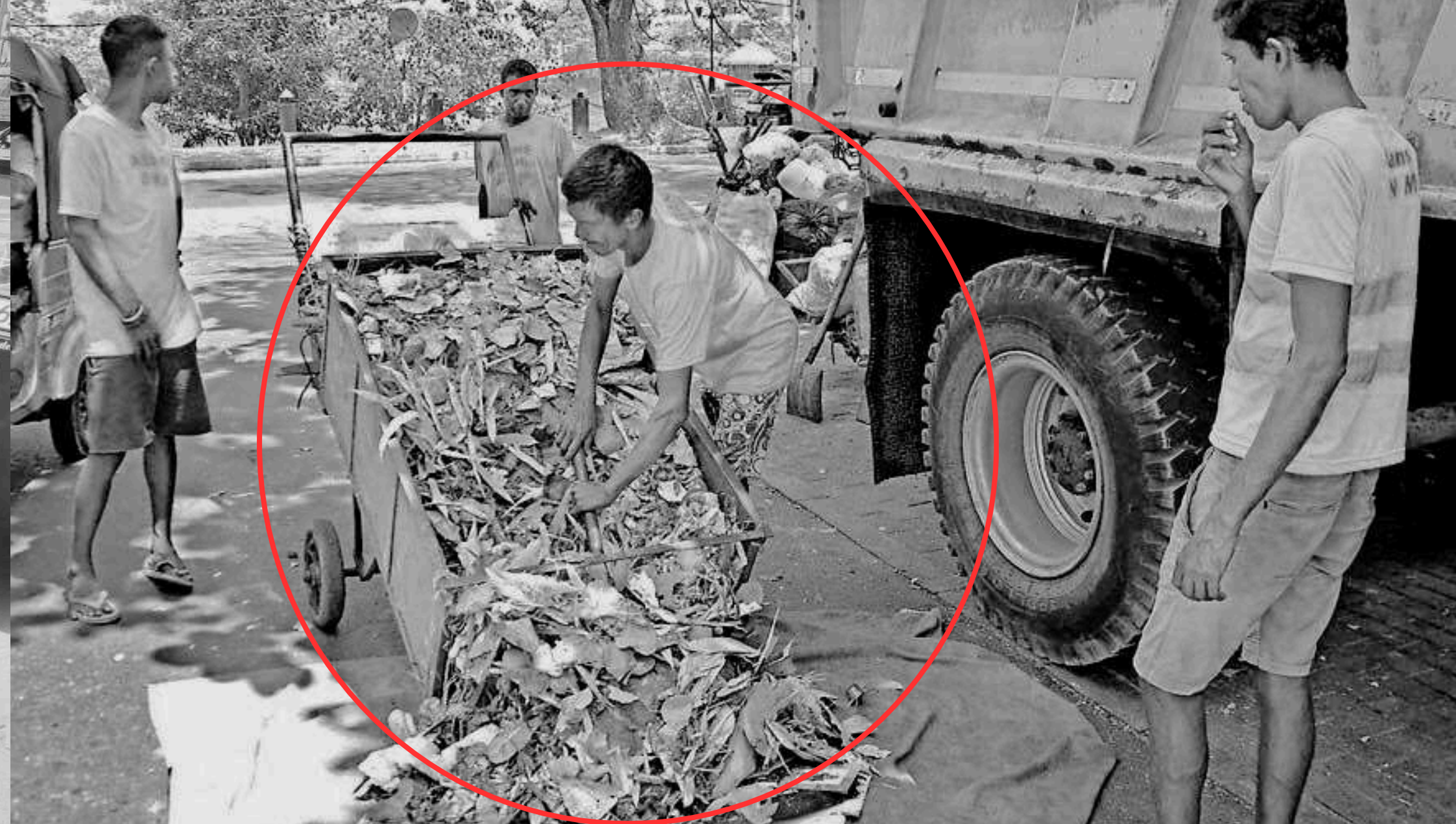


CLERO.

REDEFINING CLEAN FOR PEOPLE AND PLANET.



NISAL KODITUWAKKU



PROBLEM IDENTIFICATION.

NO PLACE TO KEEP THEIR PERSONAL STUFF

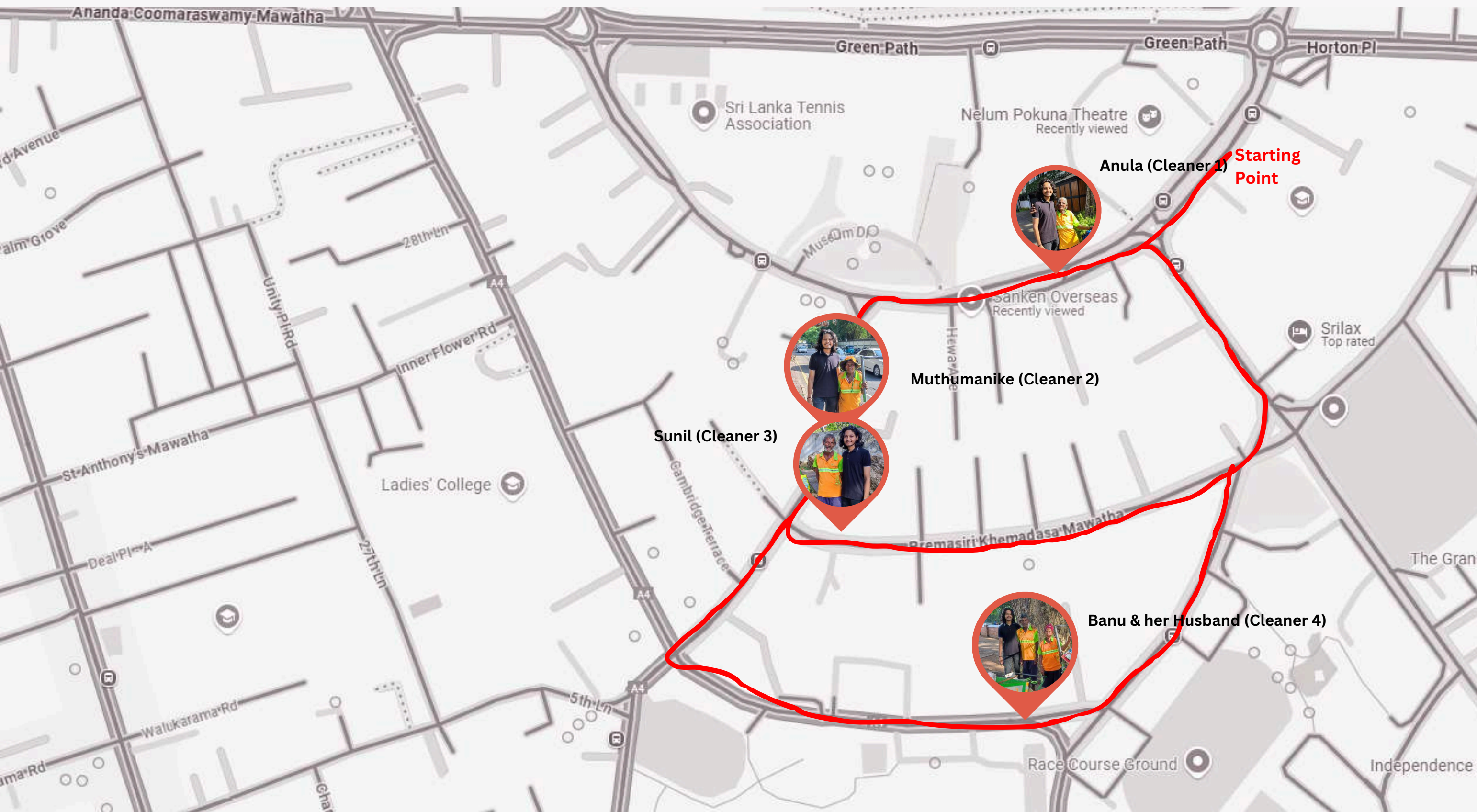
EATING ON THE ROADS

SORTING ALL COLLECTED GARBAGE BY HAND AT THE END

CART IS LITTLE BIT HEAVY IT SELF



PILOT VISIT 01



Anula (Cleaner 1)

Anula has 9 years of experience, working 12-hour days in the D3-Sri W.W. Kannangara Mawatha area. They are generally satisfied with their tools and love their job despite challenges like low salary and rain.



Muthumanike (Cleaner 2)

Muthumanike has been a cleaner for 18 years, also working long hours in the D3 area. They find their tools good and are content with their work, even with difficulties like removing grass and dealing with rain and tree leaves.



Sunil (Cleaner 3)

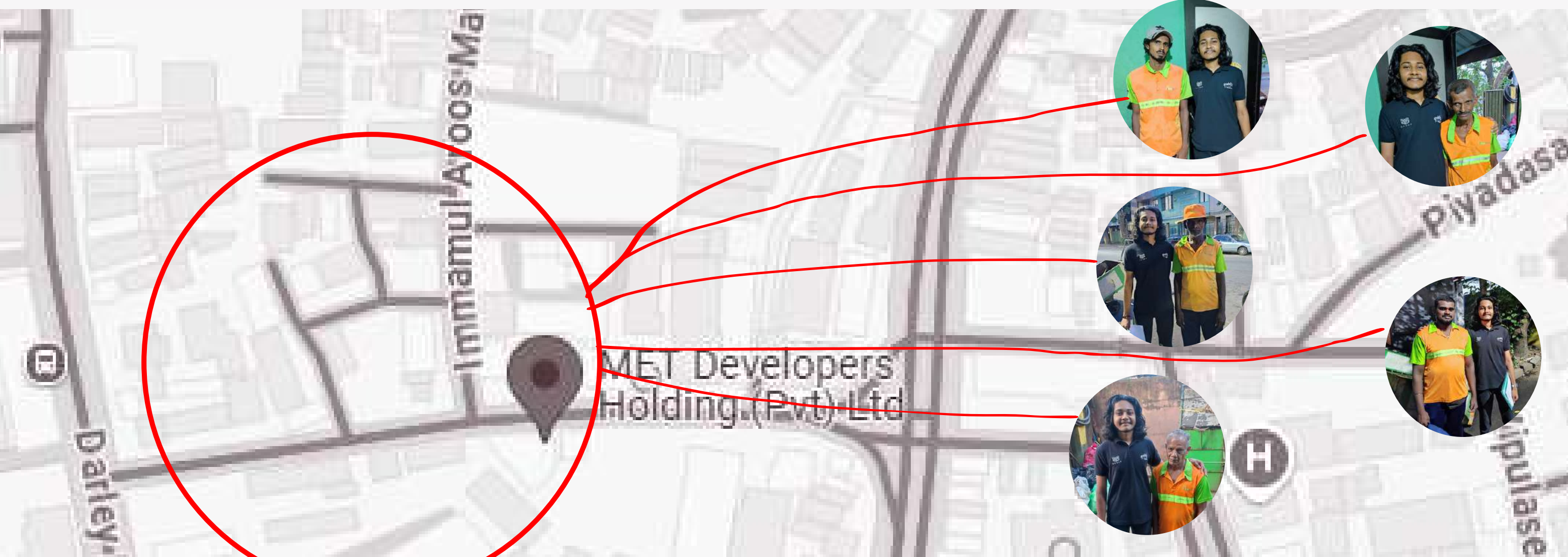
Sunil has 5 years of experience, working a 12-hour shift in the D3 area. He finds removing grass difficult, and has experienced a work-related fall. He emphasizes self-safety and appreciates community kindness.



Banu & her Husband (Cleaner 4)

Banu is the most experienced cleaner with 19 years in the D3 Reed MW area, working 12-hour days. They are satisfied with their tools and feel a strong sense of duty towards their job, although they are considering a career change.

PILOT VISIT 02



Analysis Findings.

IN BRIEF

3 Main Problems

- **RESTRICTIVE:** THE **LACK OF PROPER WASTE-SORTING COMPARTMENTS** FORCES ALL TYPES OF WASTE TO BE MIXED TOGETHER, REDUCING EFFICIENCY AND MAKING DISPOSAL MORE TIME-CONSUMING.
- **CRAMPED:** WORKERS OFTEN OPERATE IN CONFINED SPACES WITH ***NO DESIGNATED ROOM FOR PERSONAL BELONGINGS.***
- **UNSANITARY:** THE ***ABSENCE OF PROPER PLACES TO EAT*** DIRECTLY IMPACTS THE WORKERS' HEALTH AND DIGNITY.

Problem Statement.

Road cleaners currently face restrictive, unsafe, and undignified working conditions due to heavy carts, lack of personal storage, poor waste-sorting options, and no proper space to rest or eat.

INTO A DESIGN CHALLENGE

How Might I ?

Make road cleaning more efficient, comfortable, and dignified through organized waste sorting, personal space, and hygienic breaks?

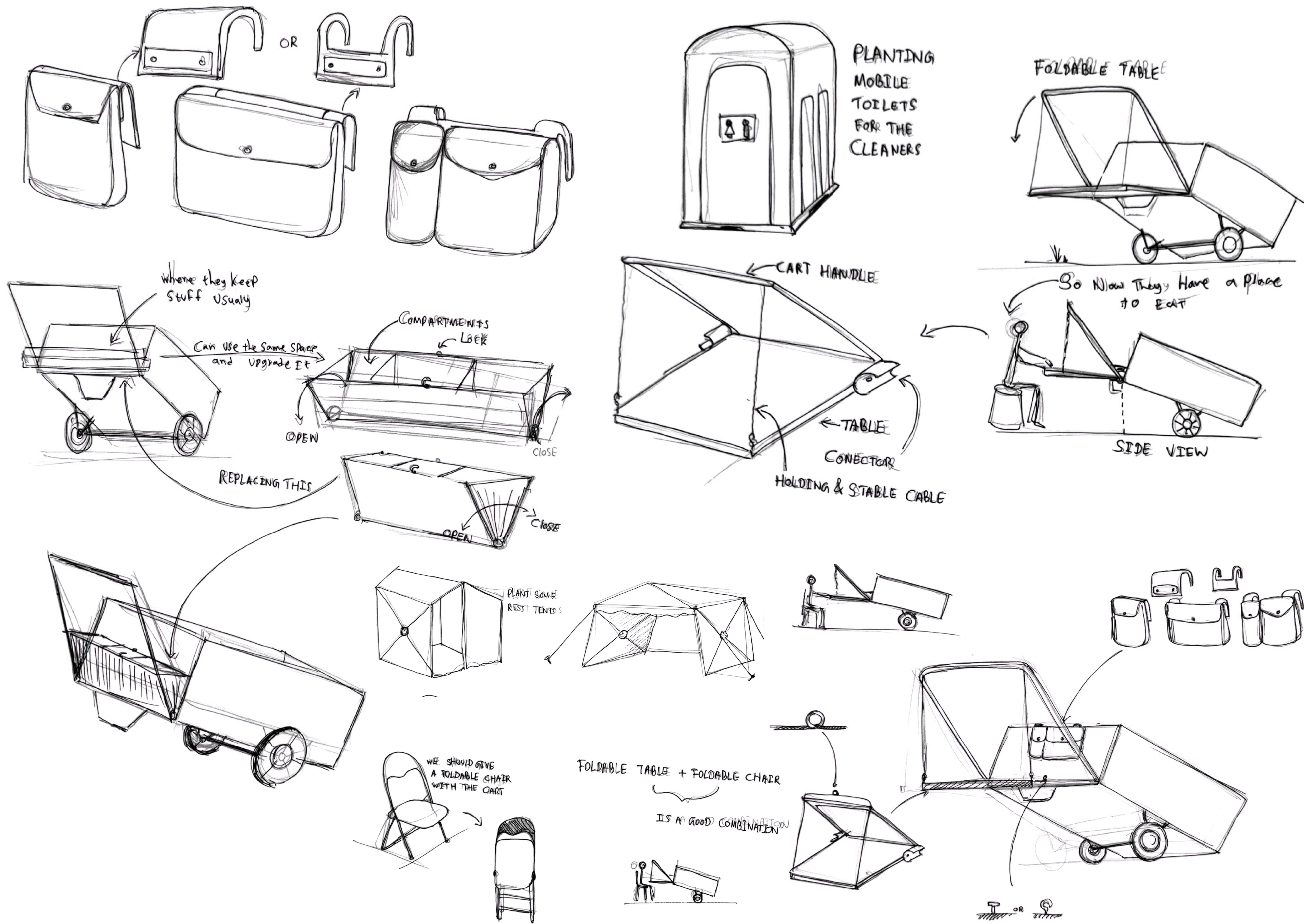
INSPIRATION

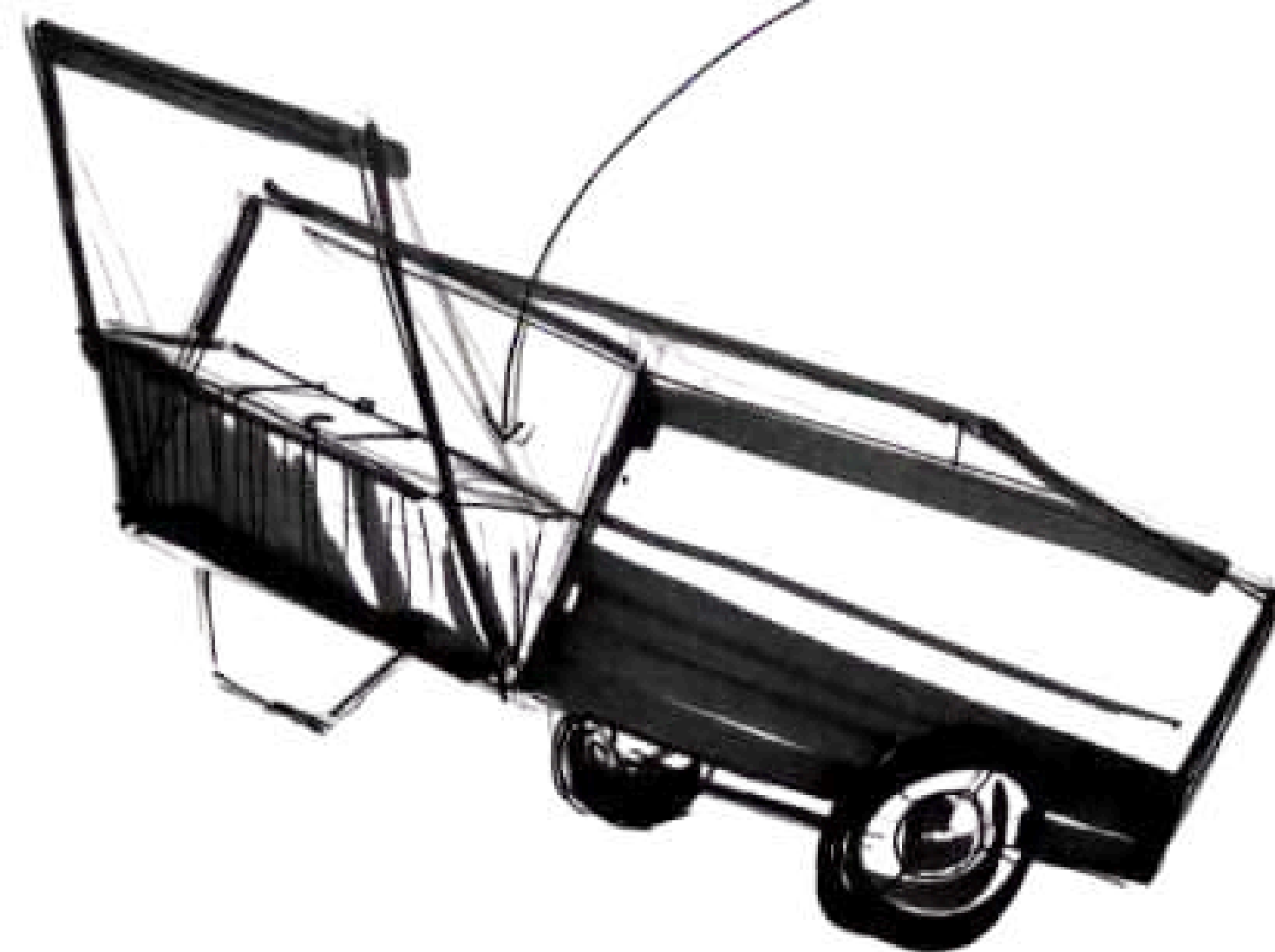
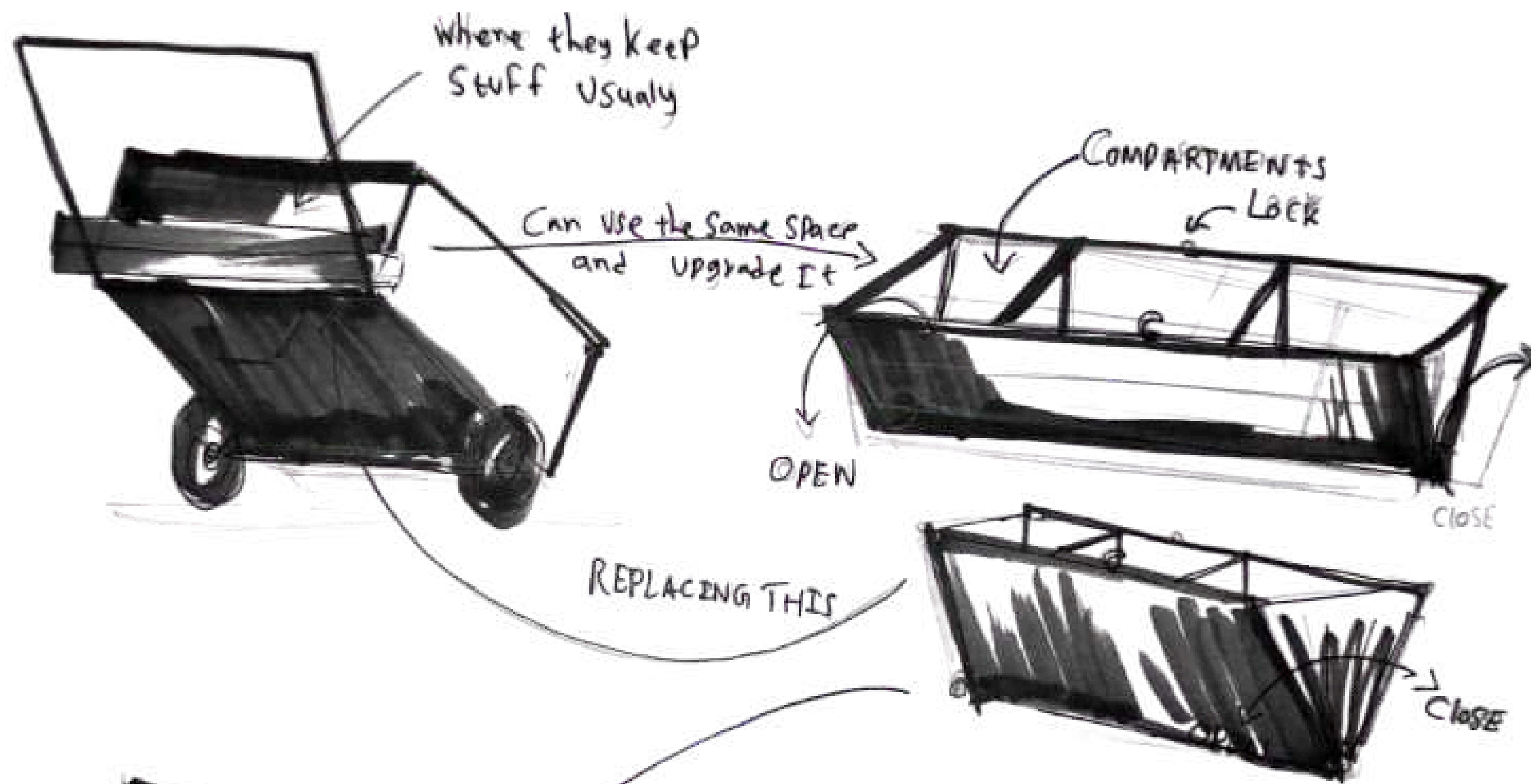
SCAFFOLDINGS

PLASTIC BINS

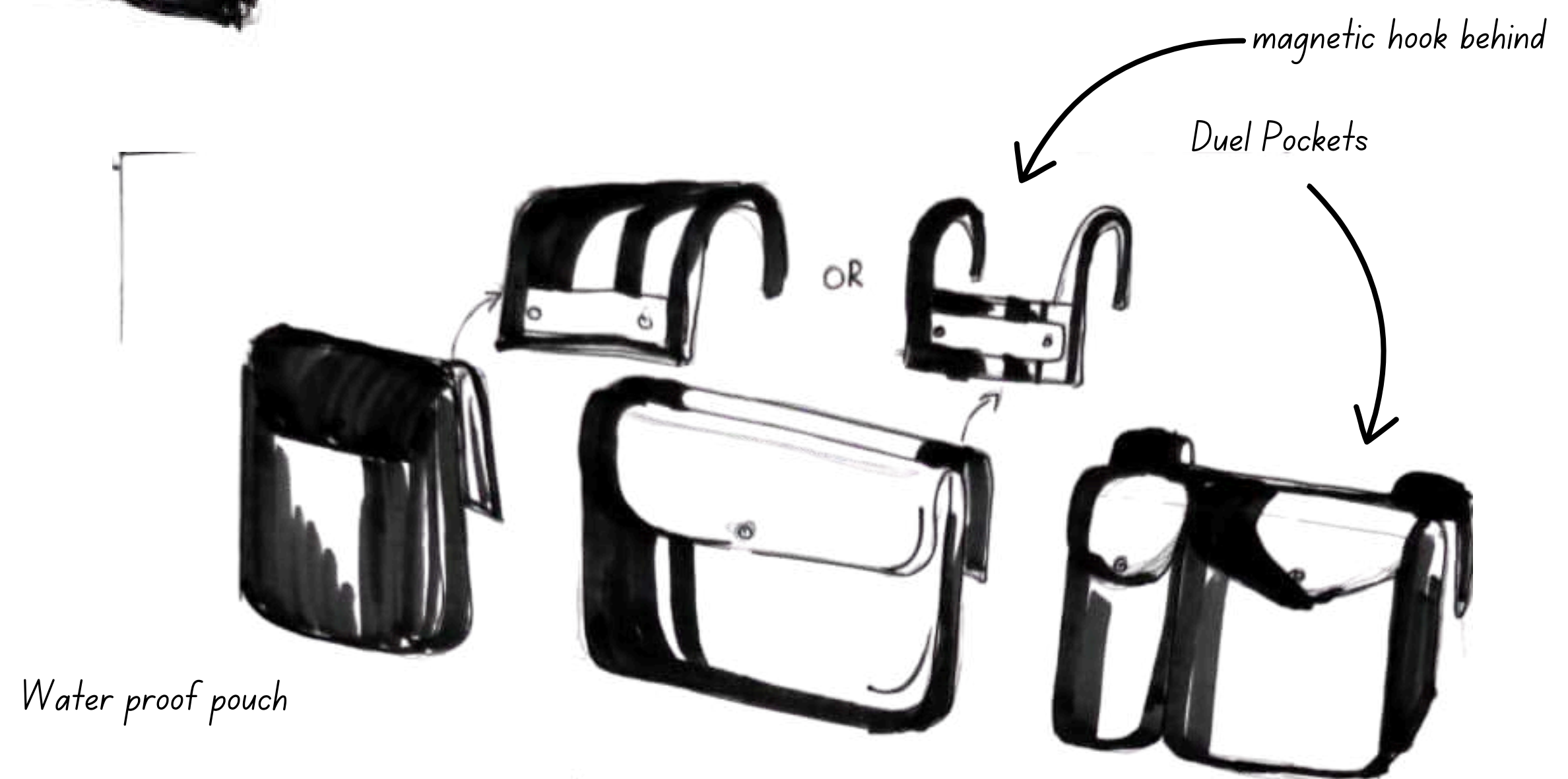
FOLDING CHAIRS

SKETCHING & IDEATING ●





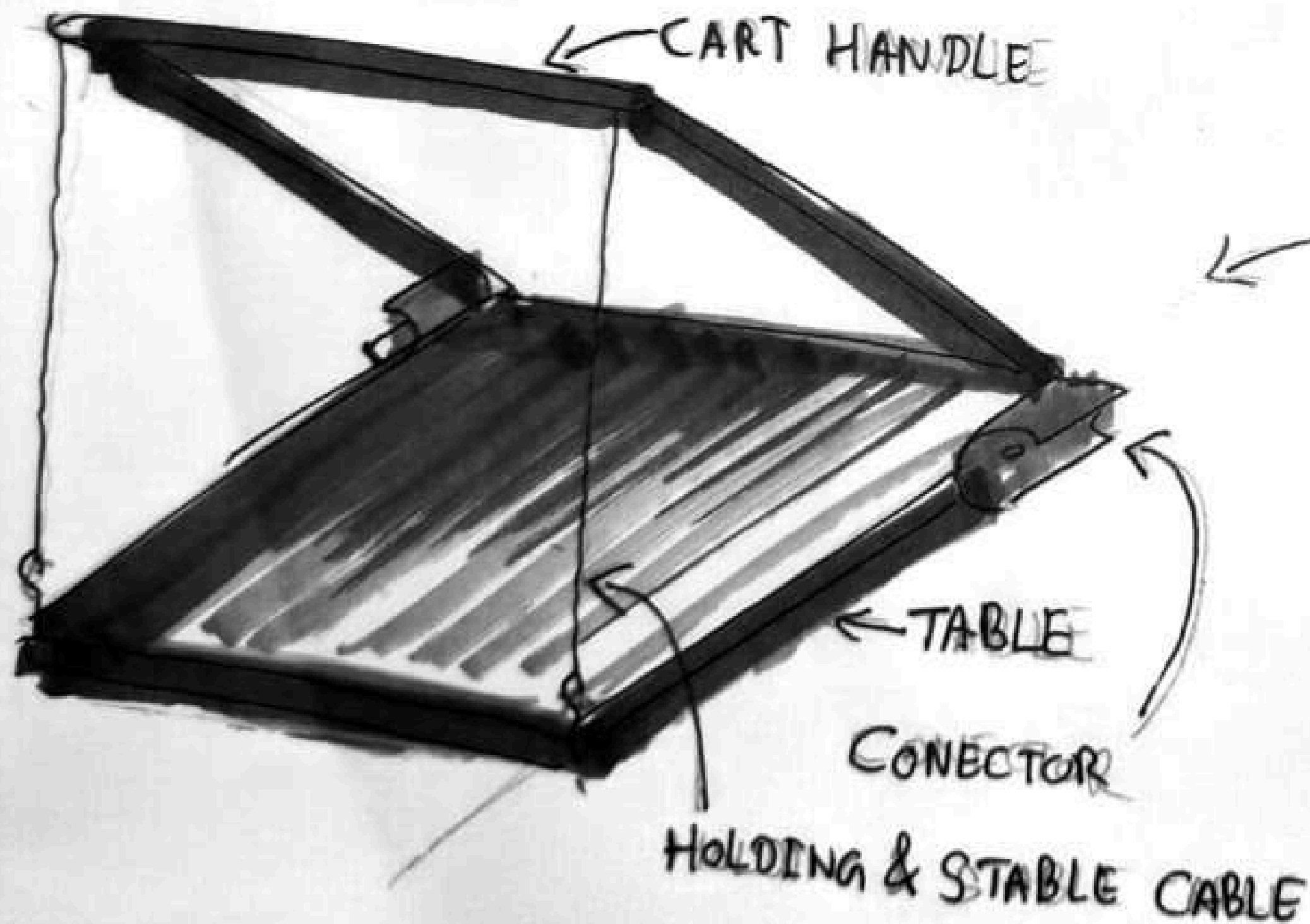
can be mount by hanging





PLANTING
MOBILE
TOILETS
FOR THE
CLEANERS

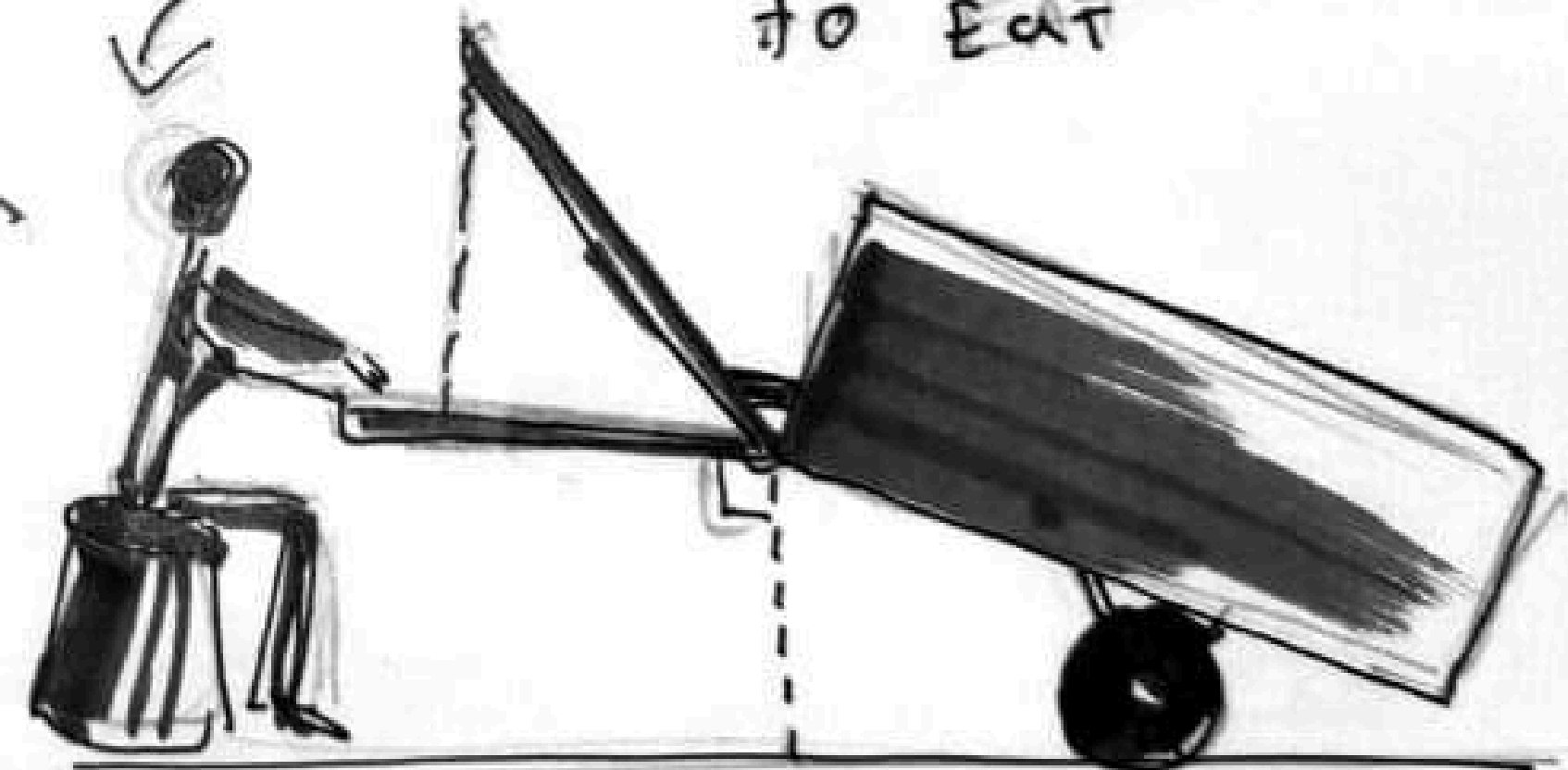
for sanitary preposes
Some Other ideas



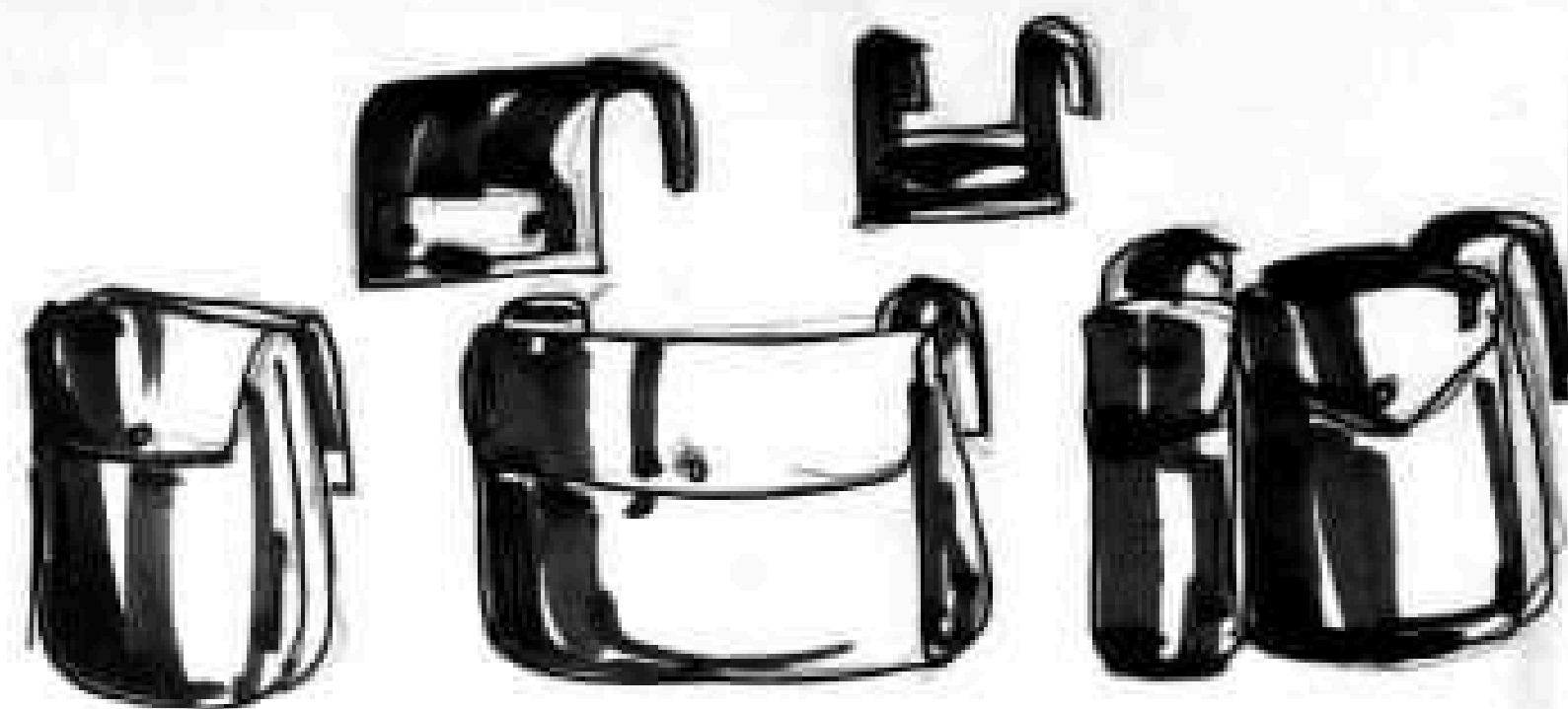
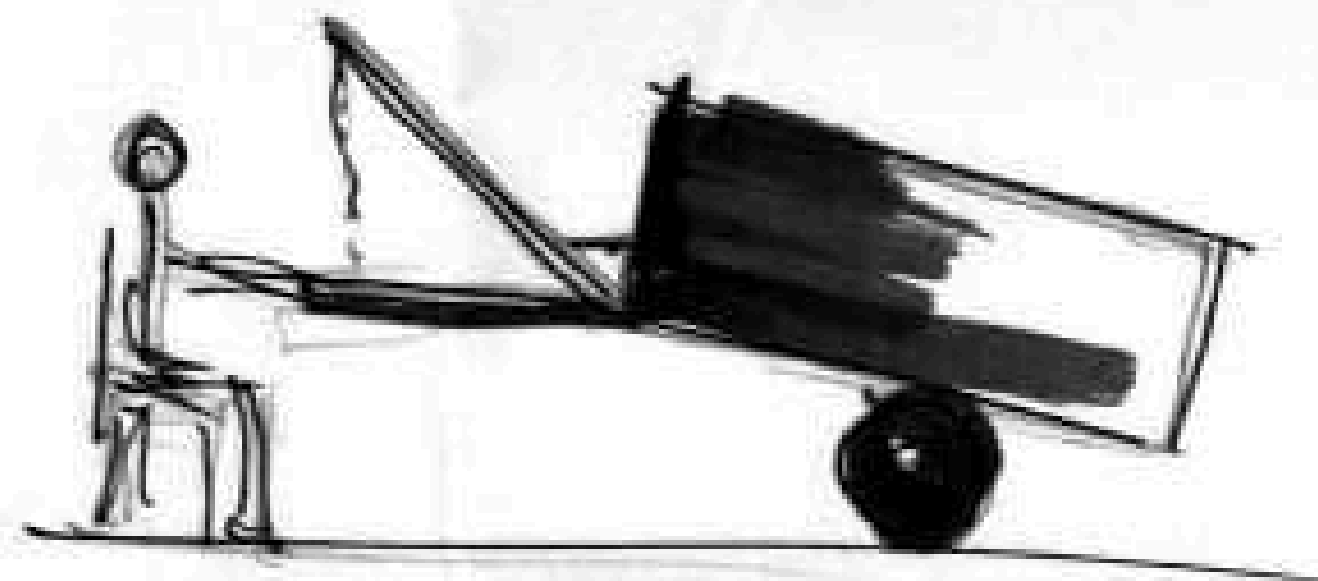
FOLDABLE TABLE



So Now They Have a Place
to Eat

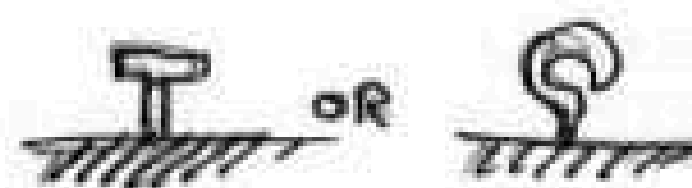
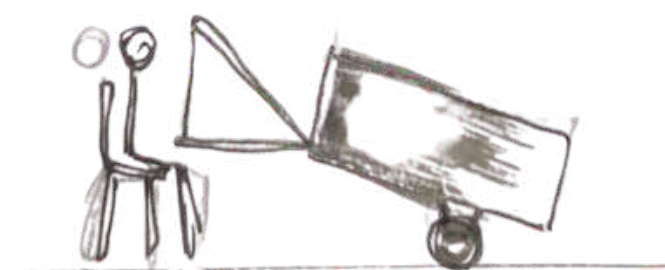


SIDE VIEW

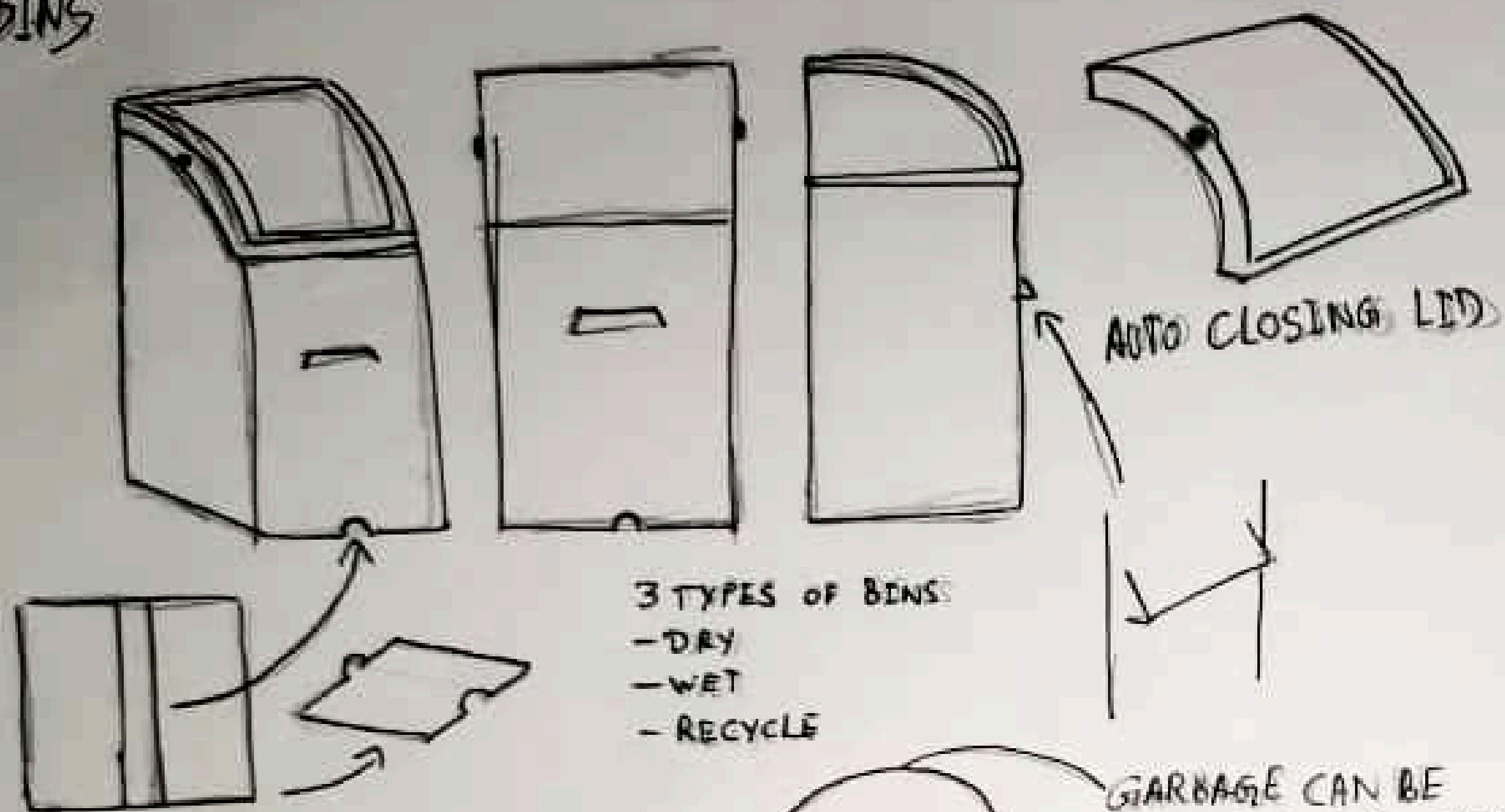


FOLDABLE TABLE + FOLDABLE CHAIR

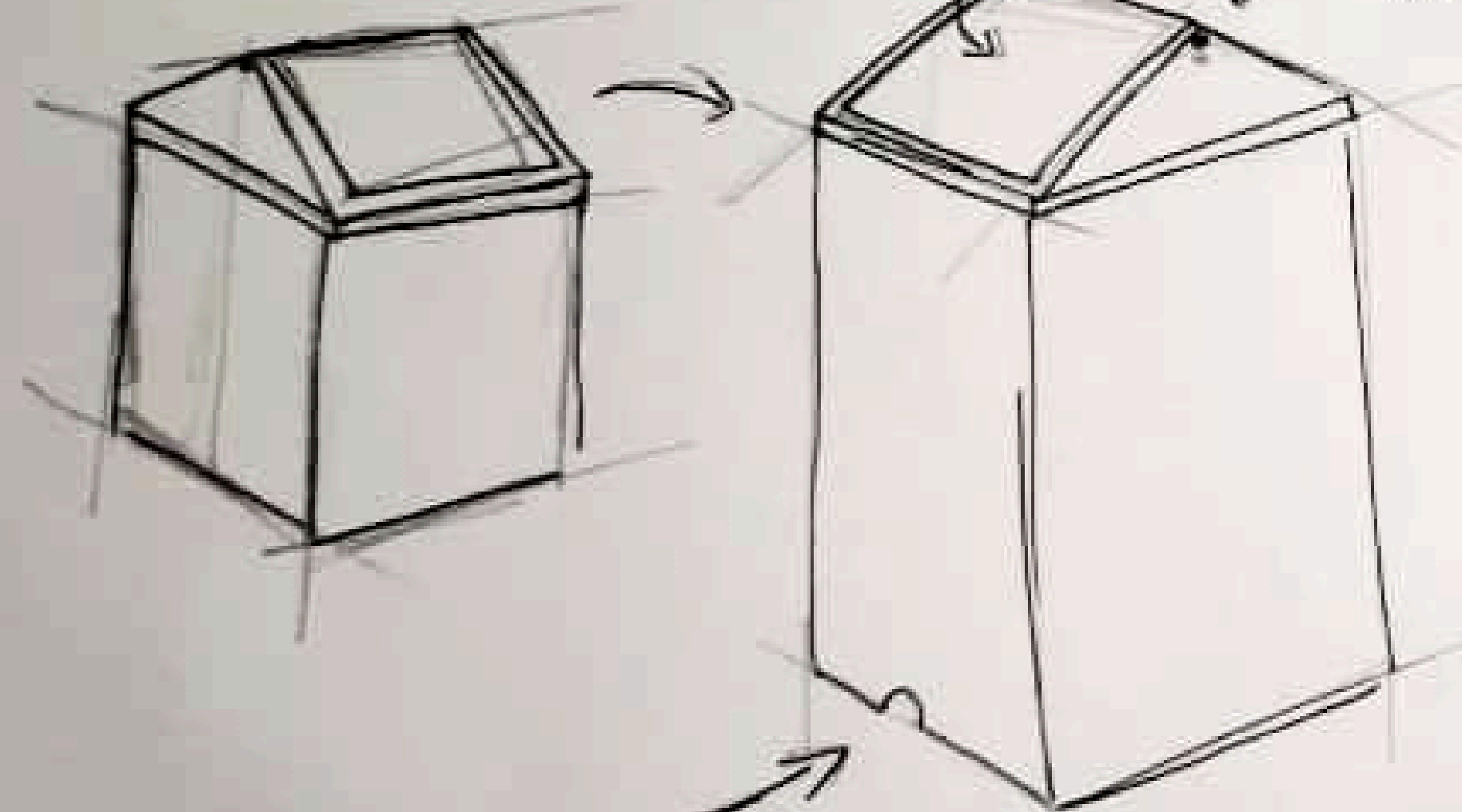
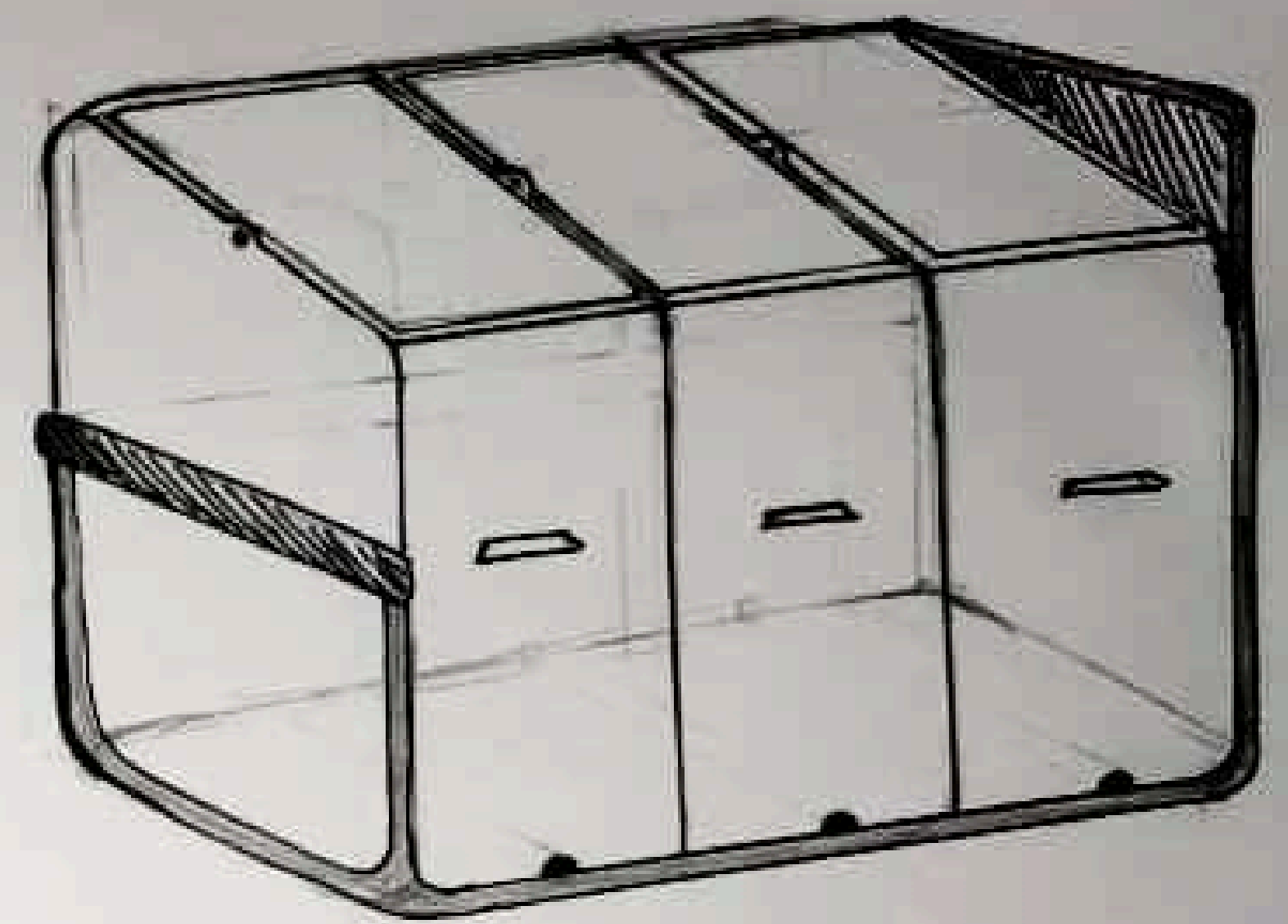
IS A GOOD COMBINATION



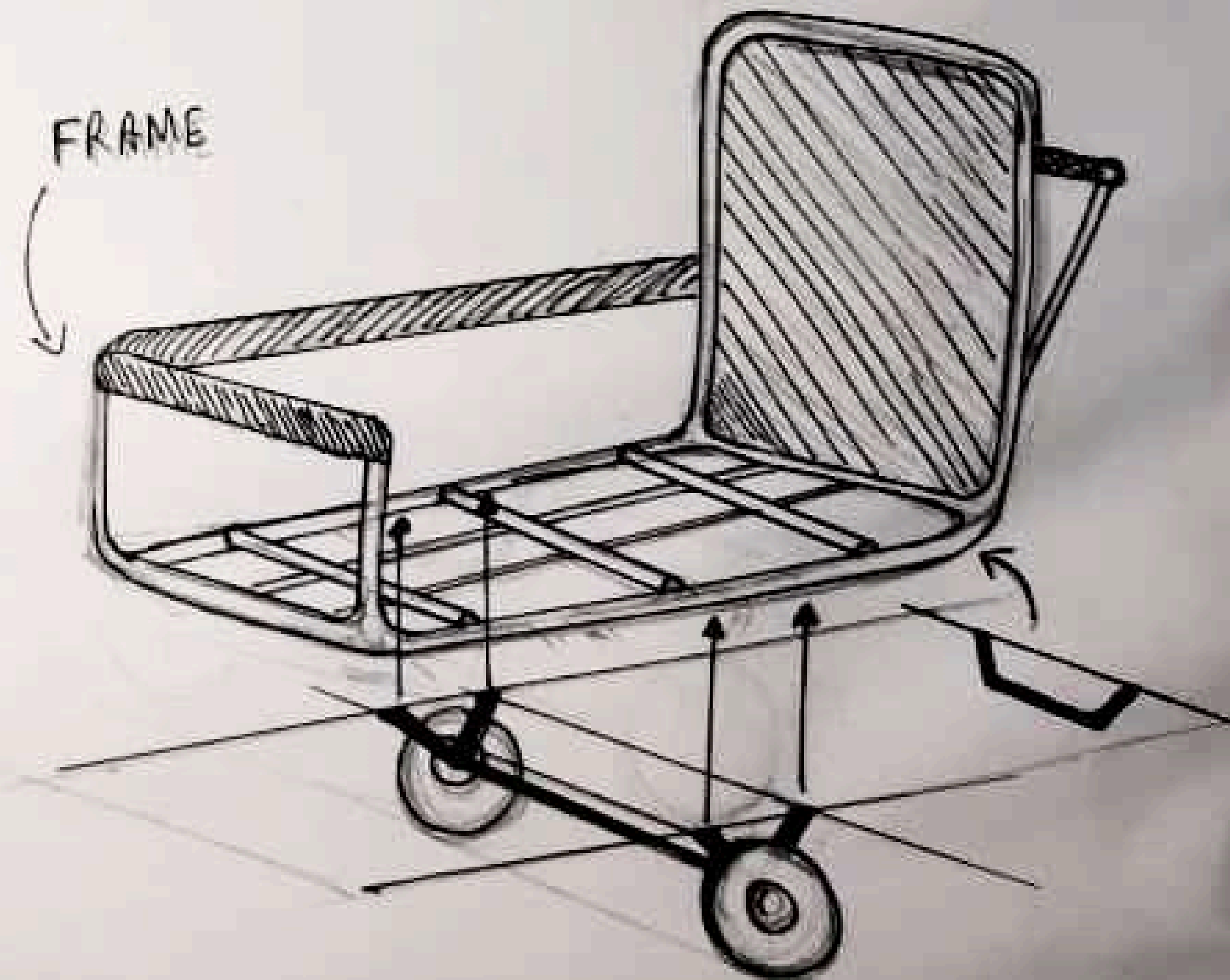
BINS

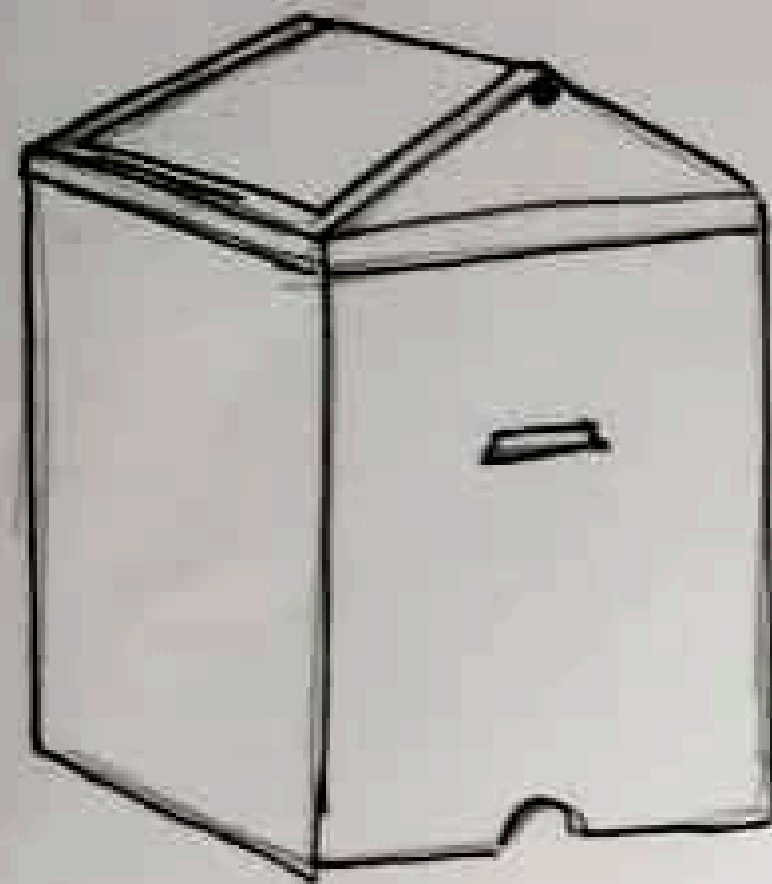


GARBAGE CAN BE PUT FROM BOTH SIDES



CAN SLIDE TO THIS DIRECTION

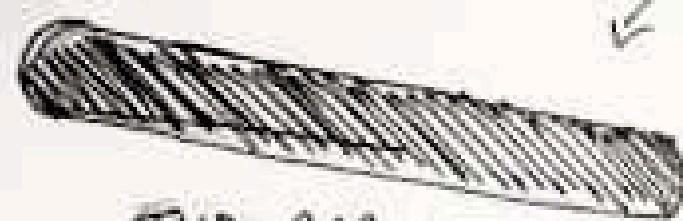




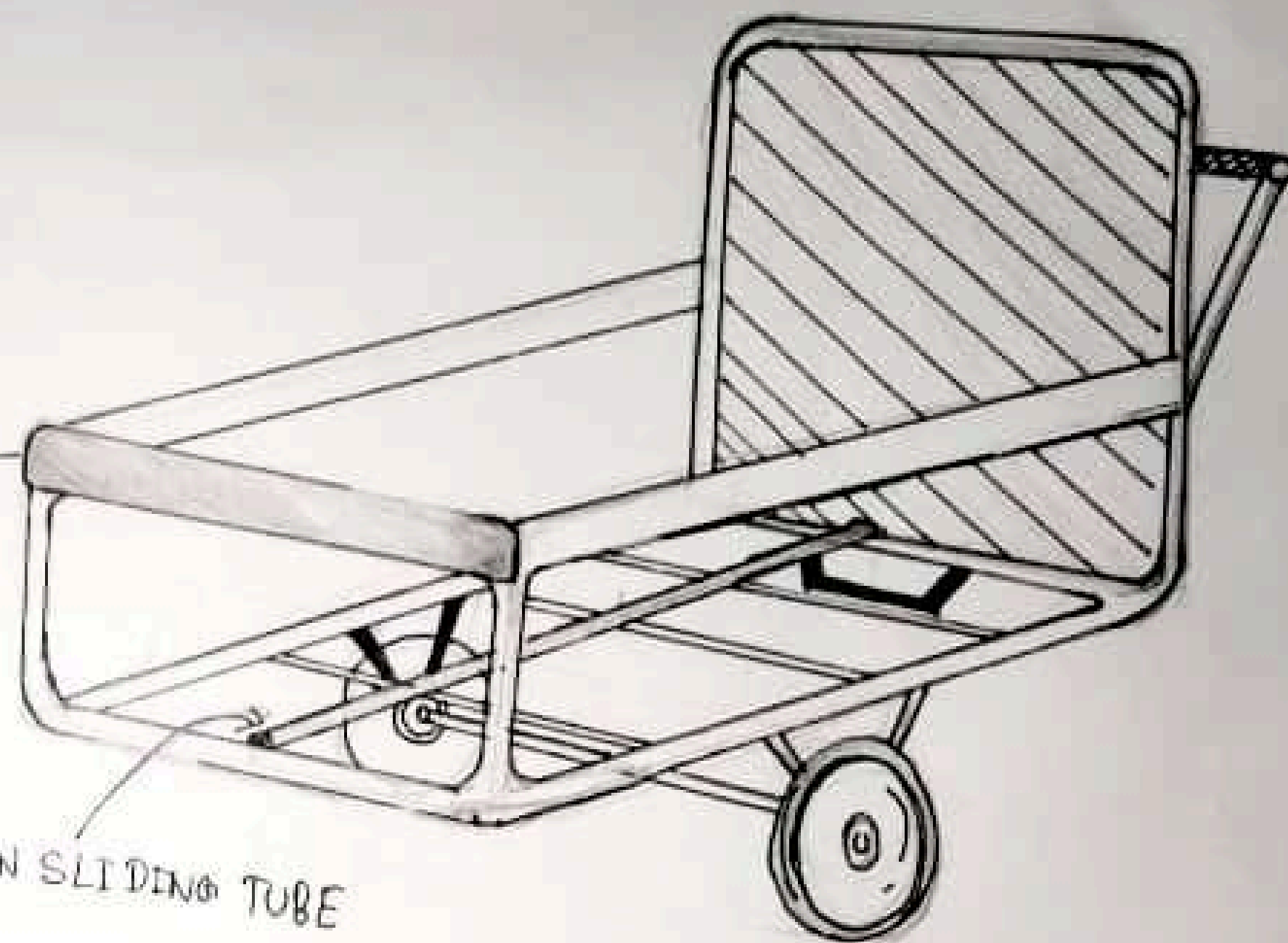
LID



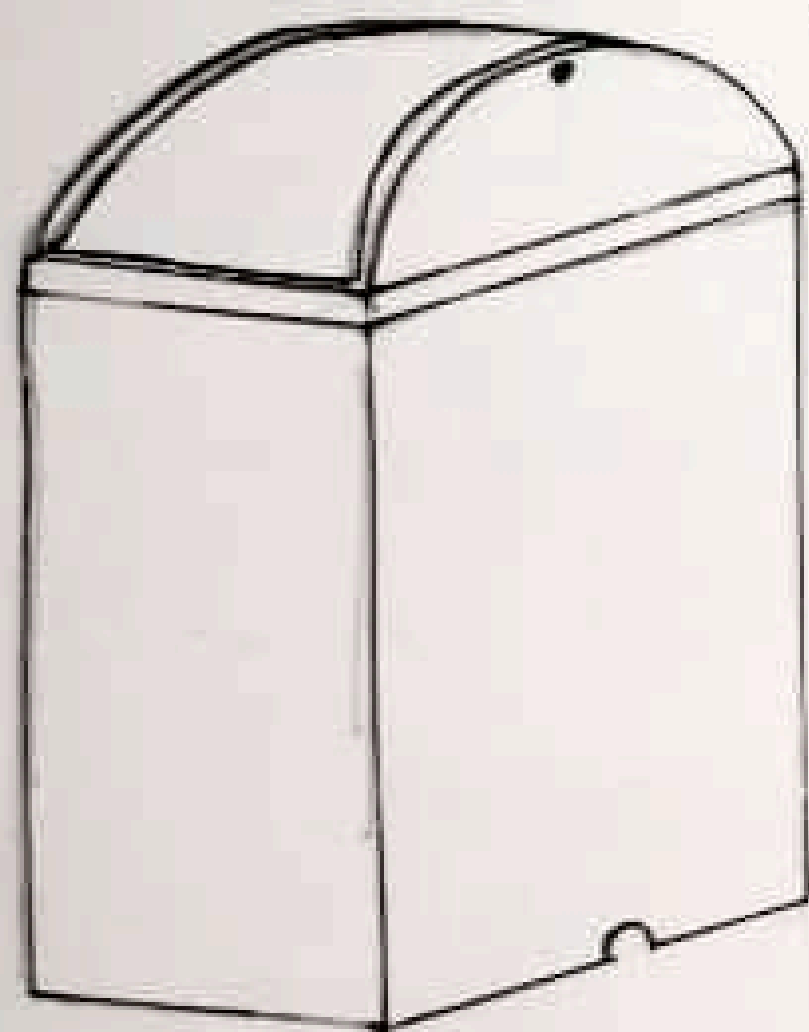
THE LID SWINGS



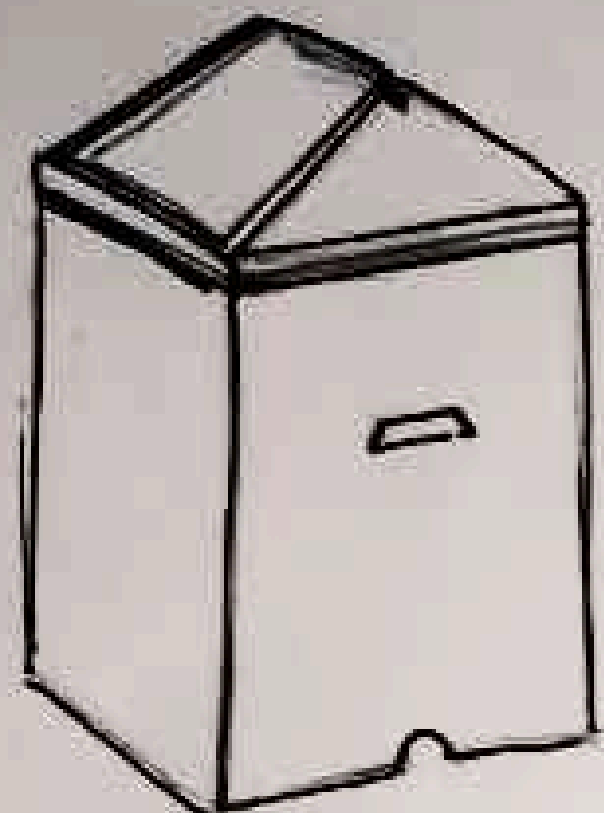
THIS BAR CAN BE
REMOVED



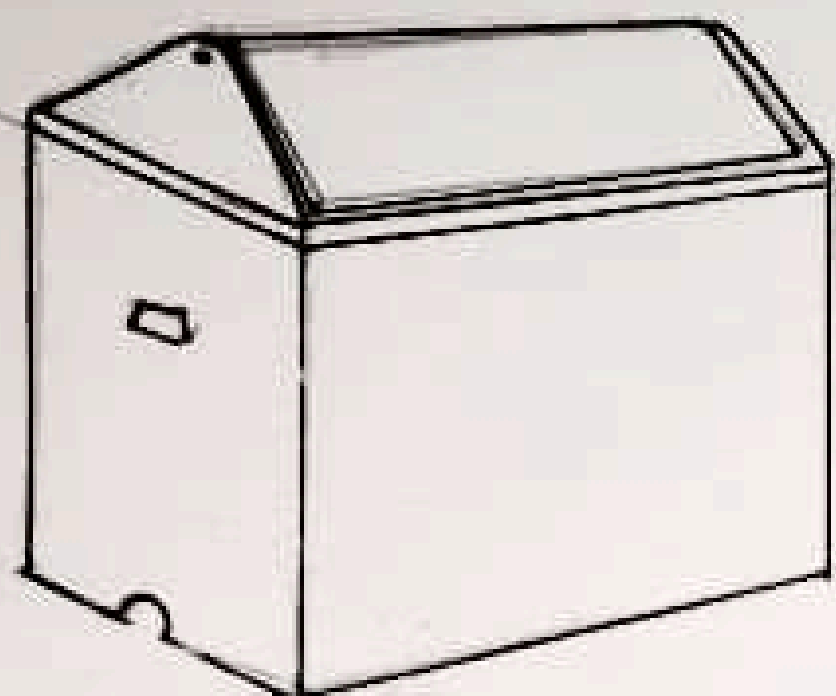
BIN SLIDING TUBE



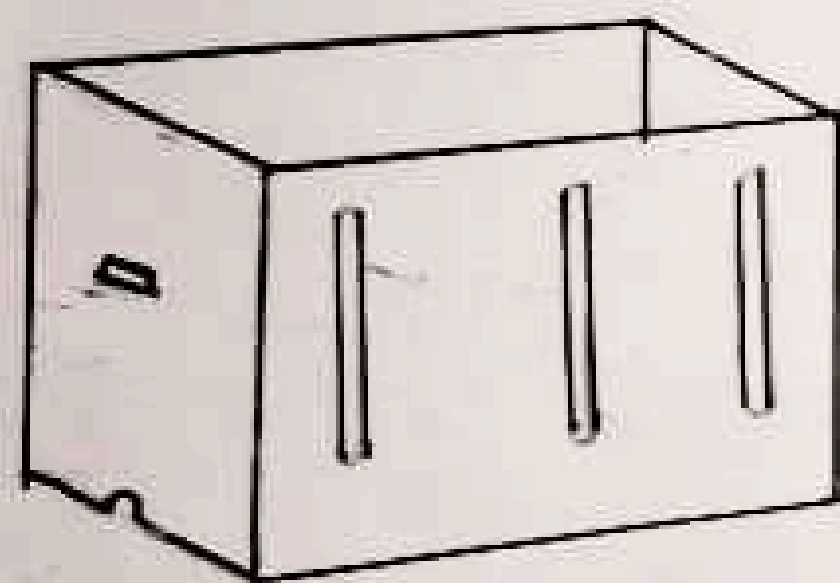
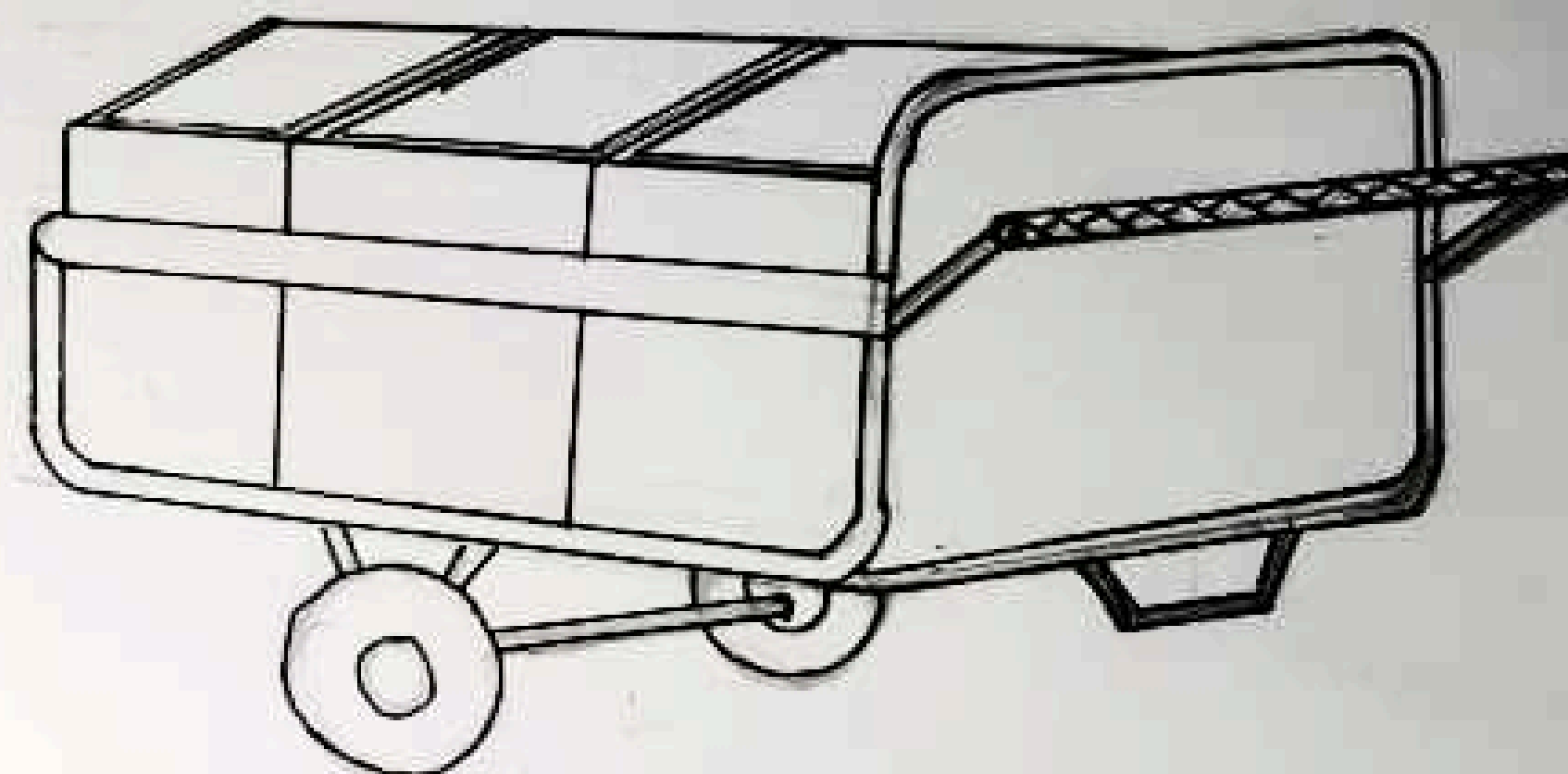
TYPES OF BINS THAT CAN BE MOUNT IN TO THE CART



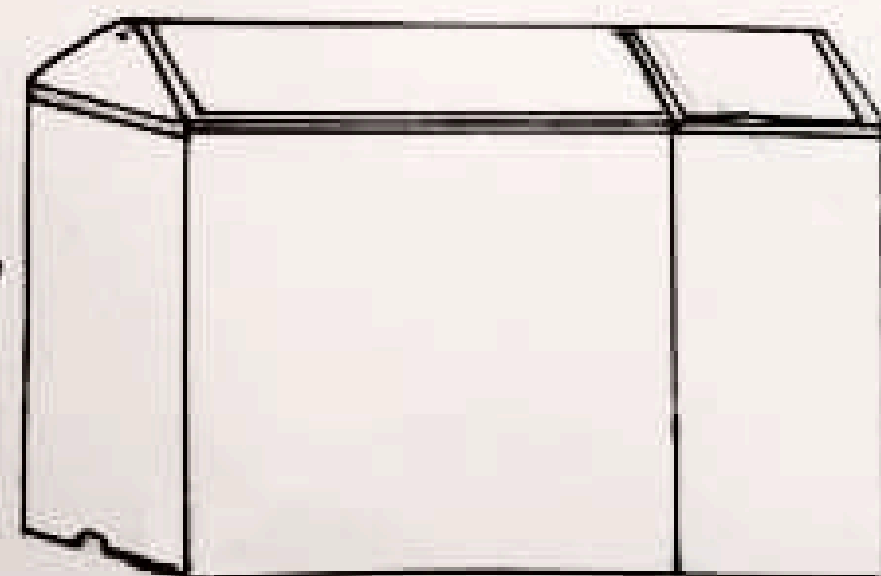
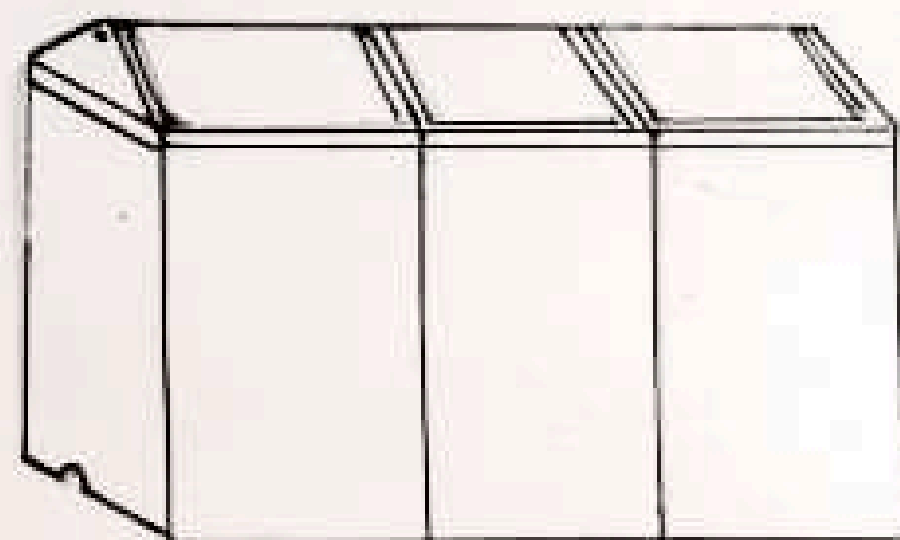
Solo Bin



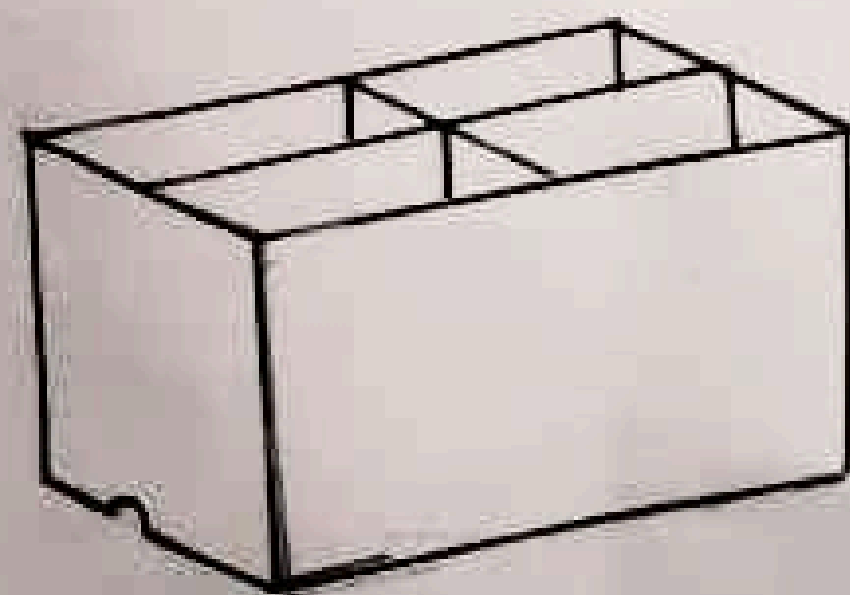
DUAL BIN



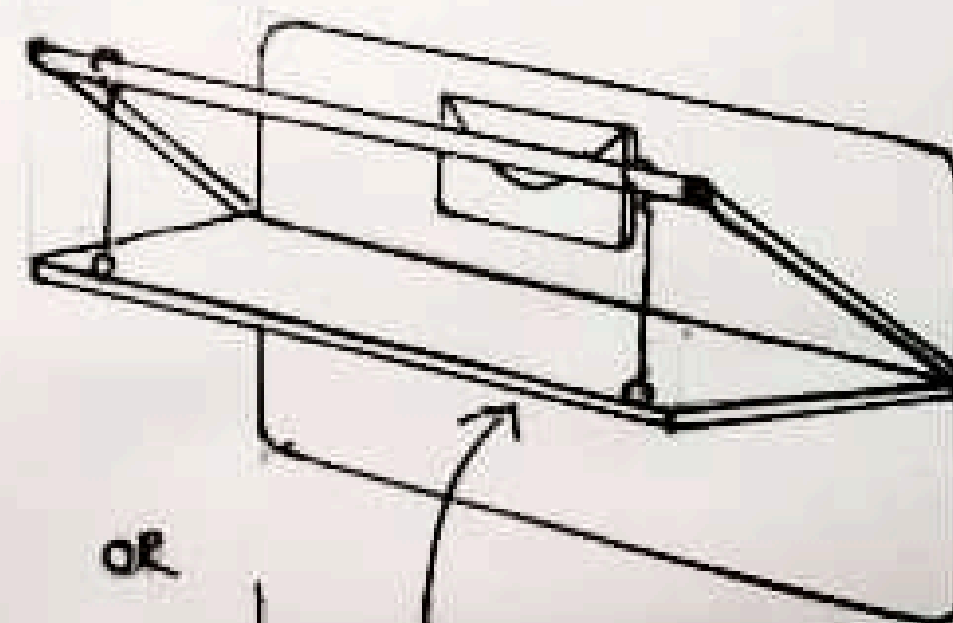
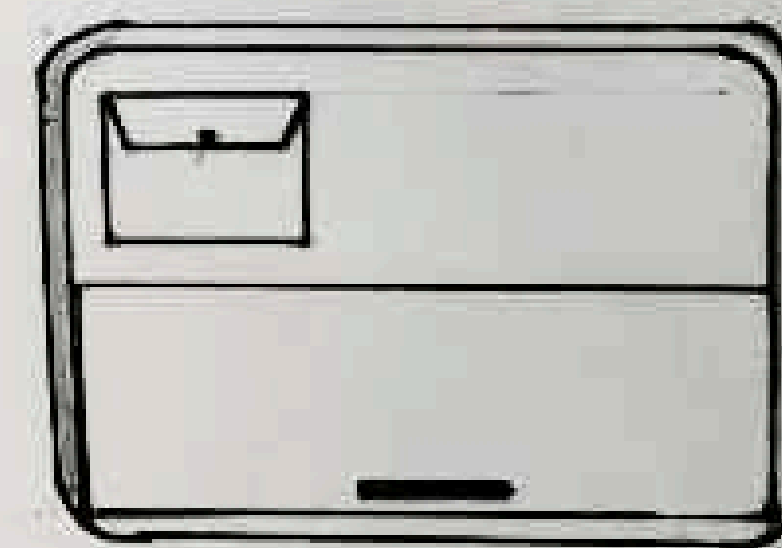
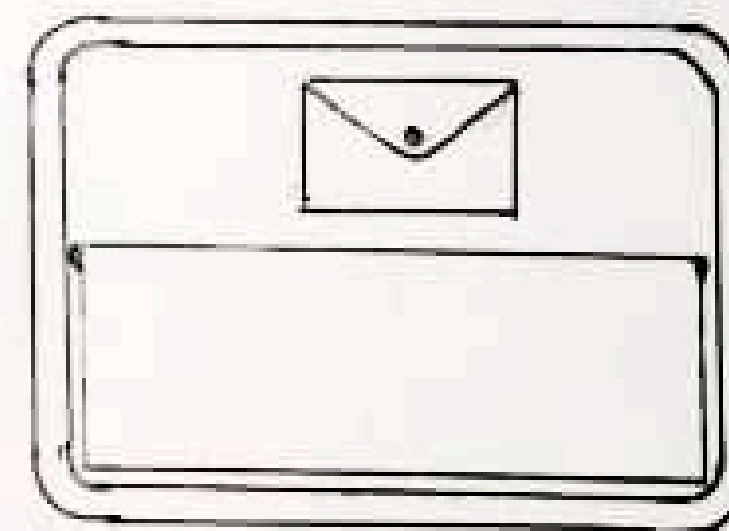
LARGE SOLO BIN



TYPES OF SETS WE CAN MAKE



DIVIDED SINGLE BIN



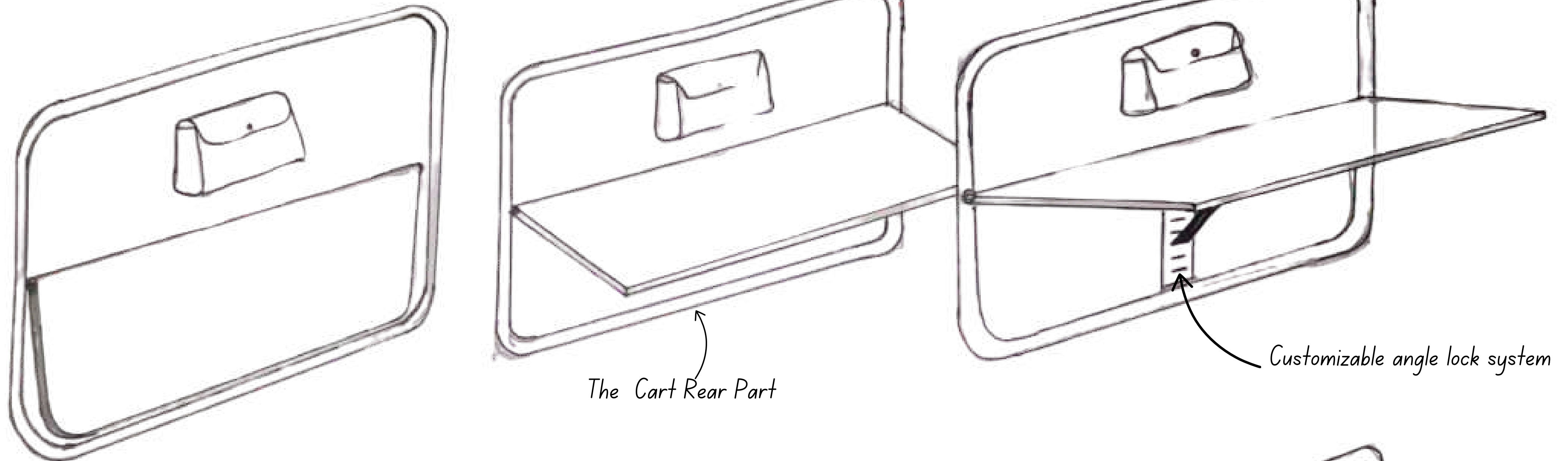
OR



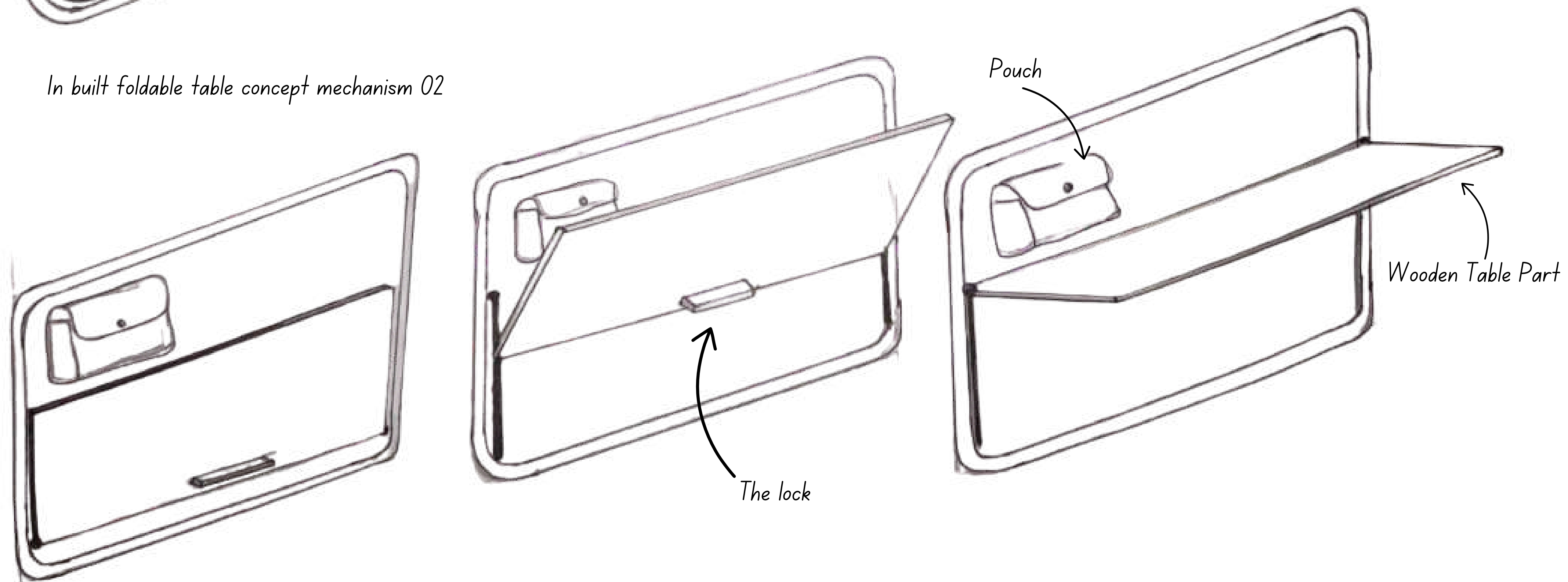
Lock

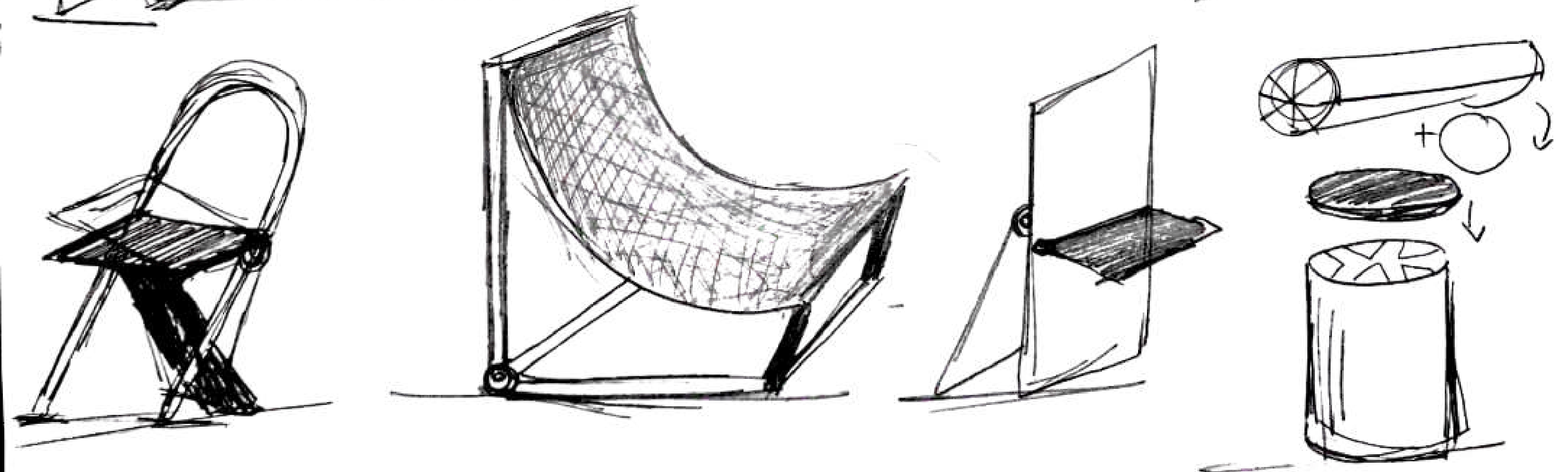
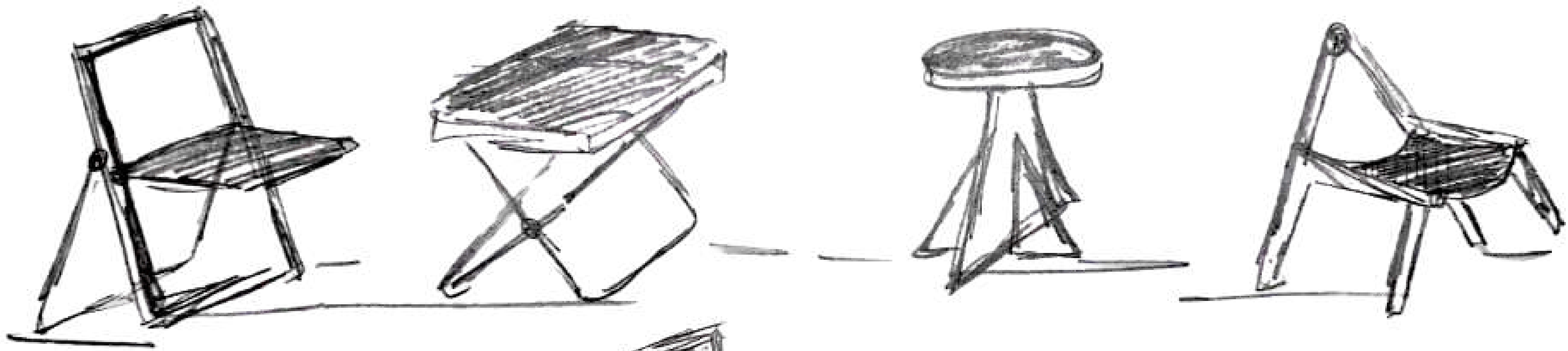


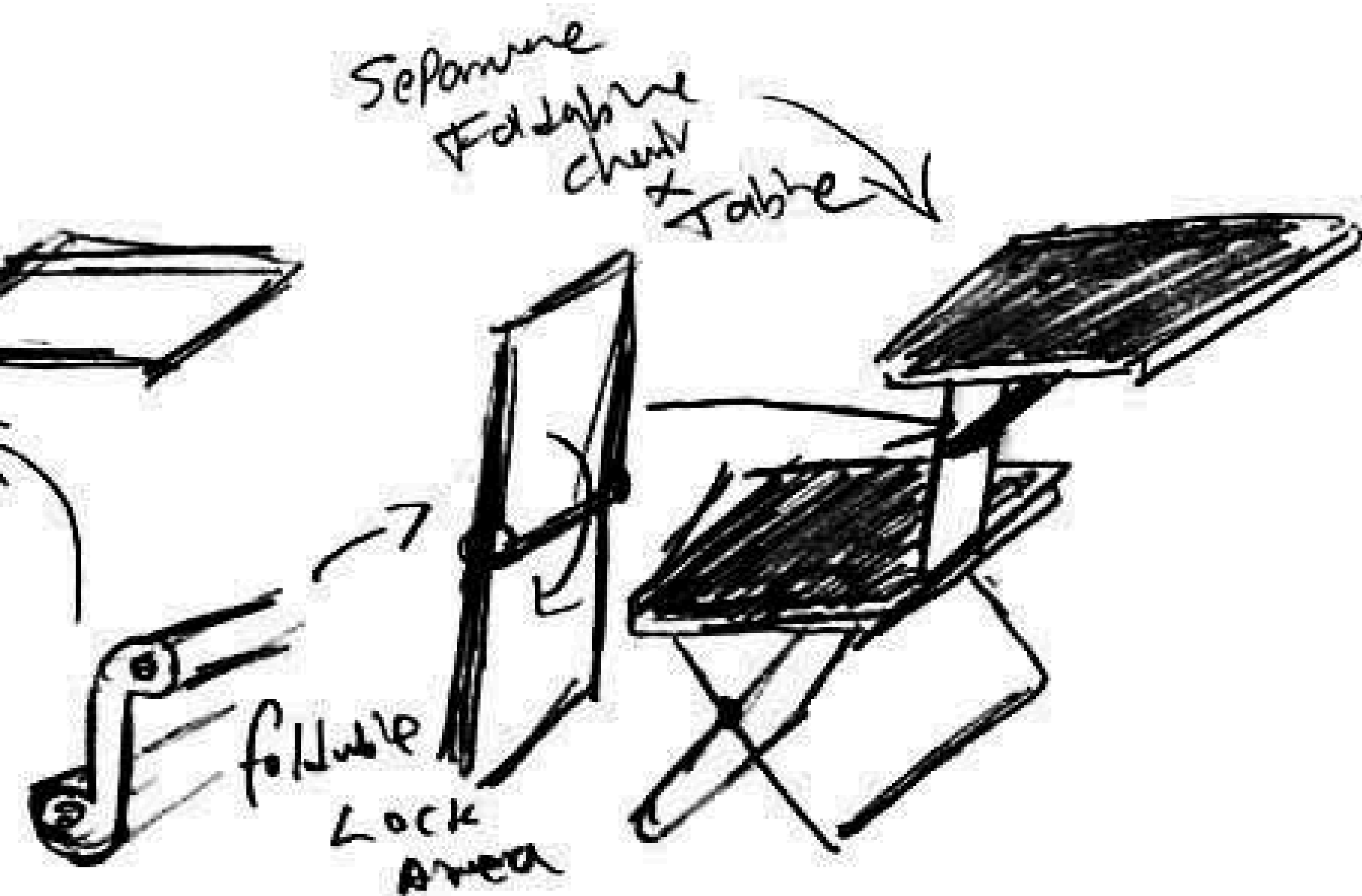
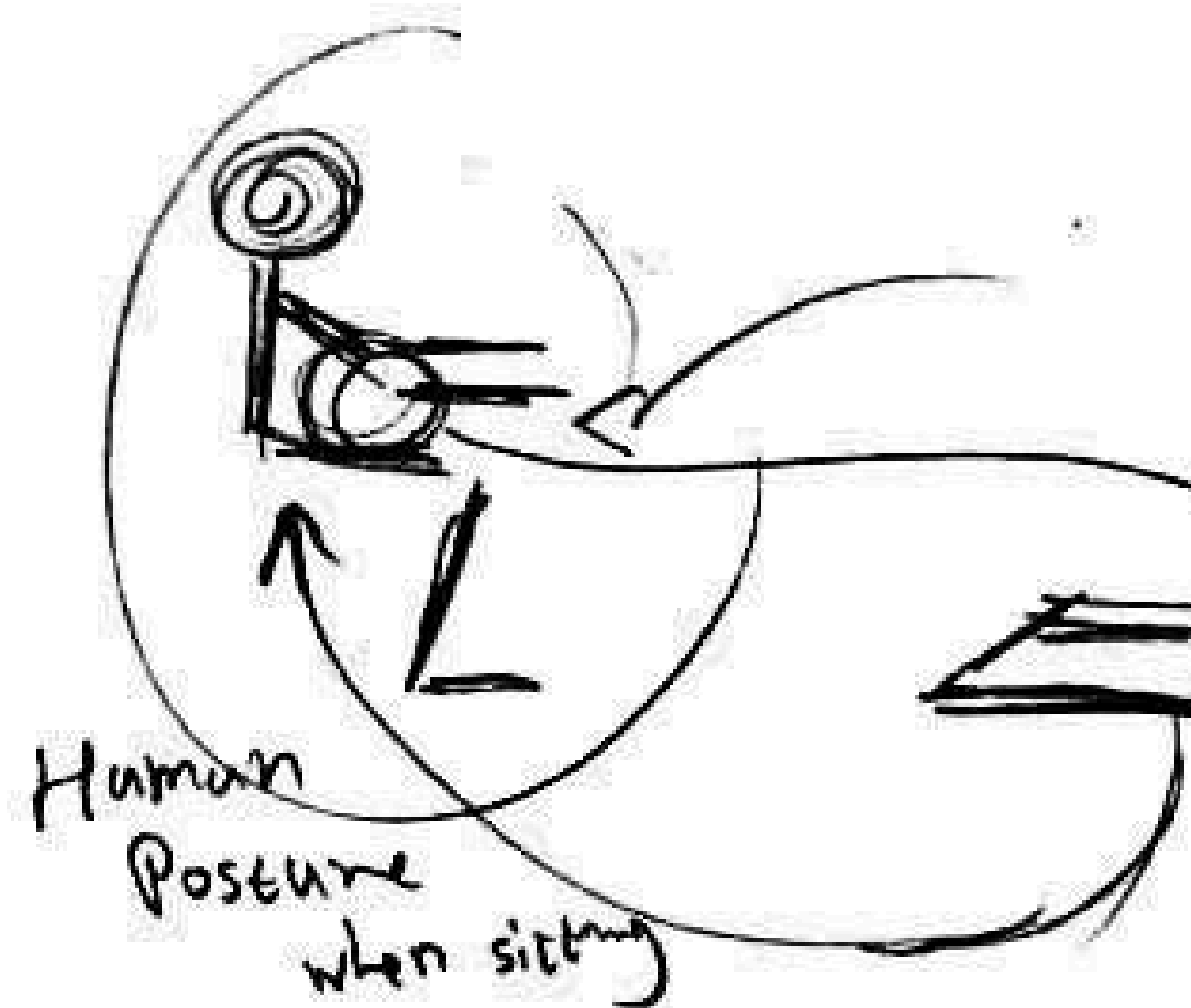
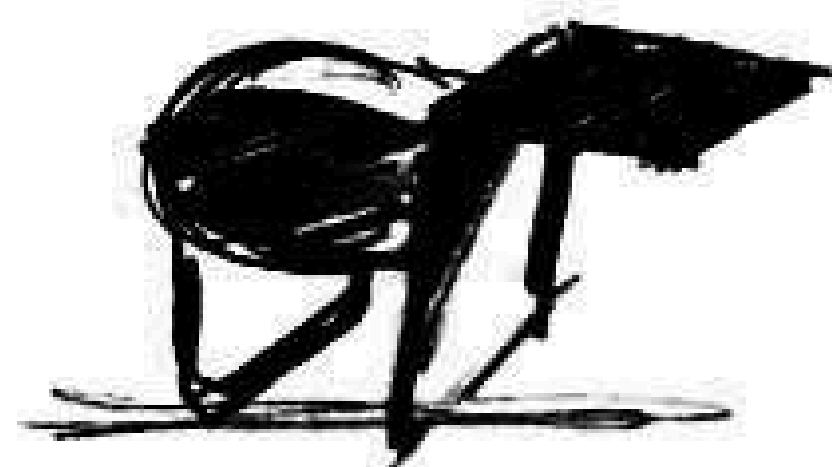
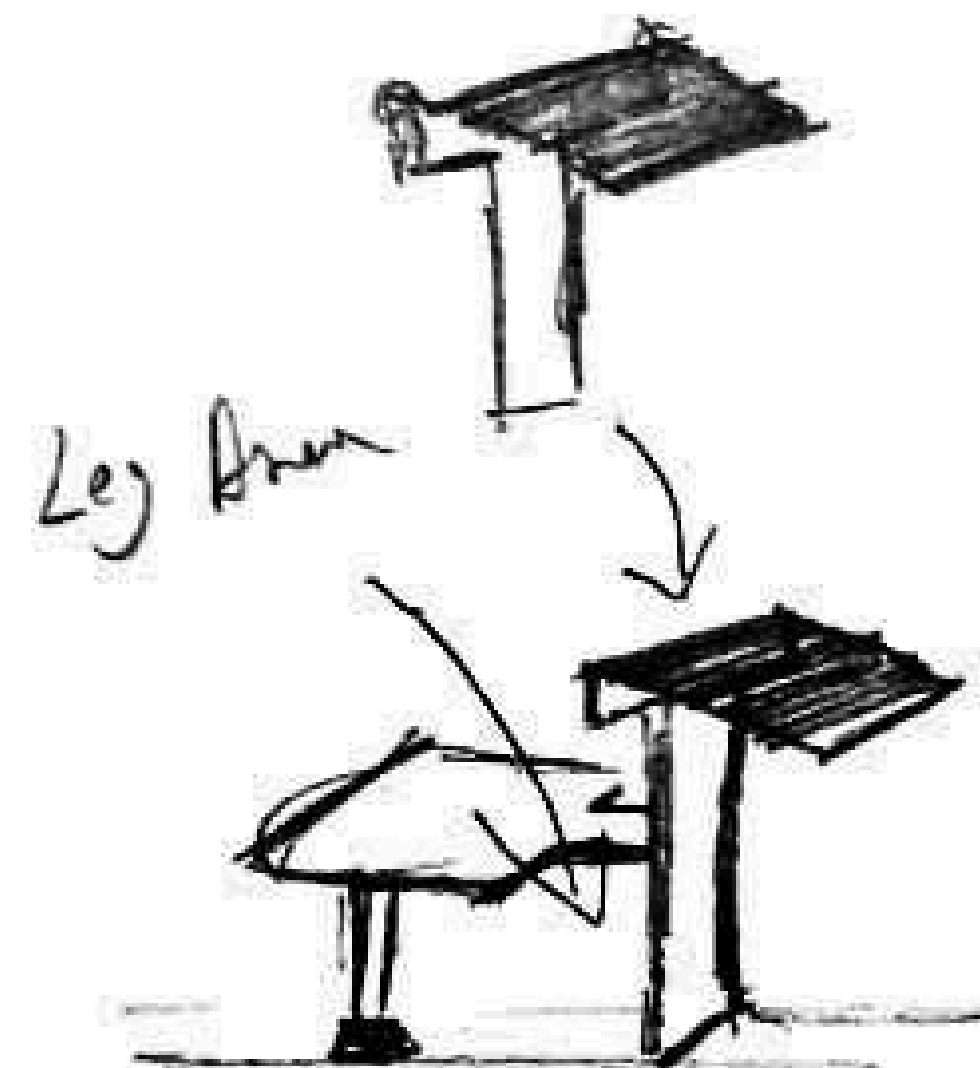
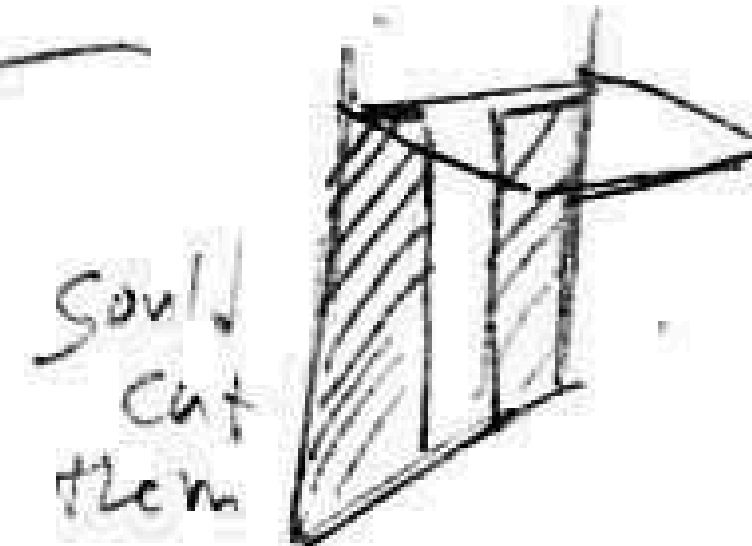
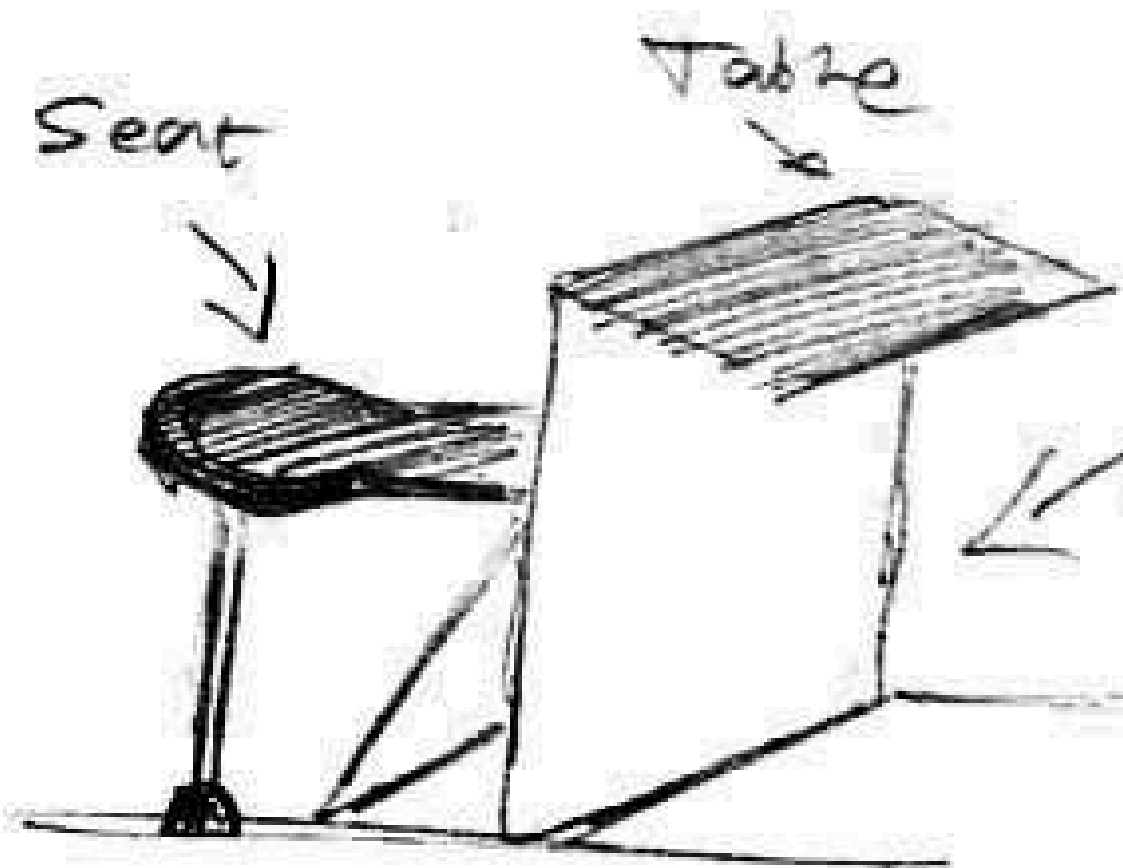
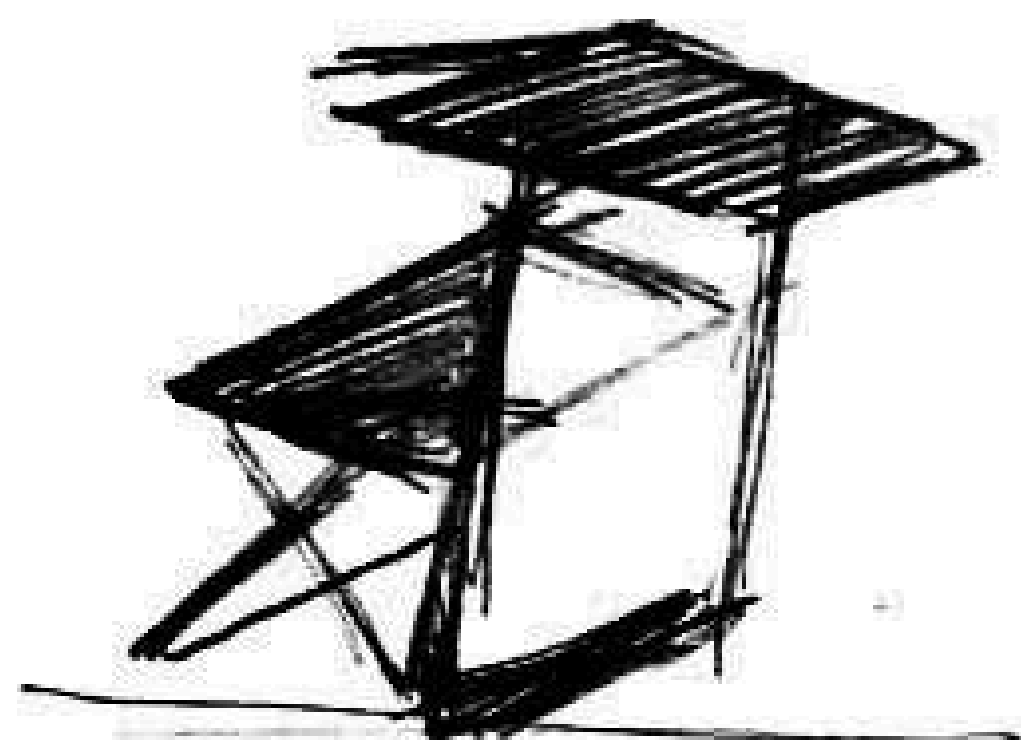
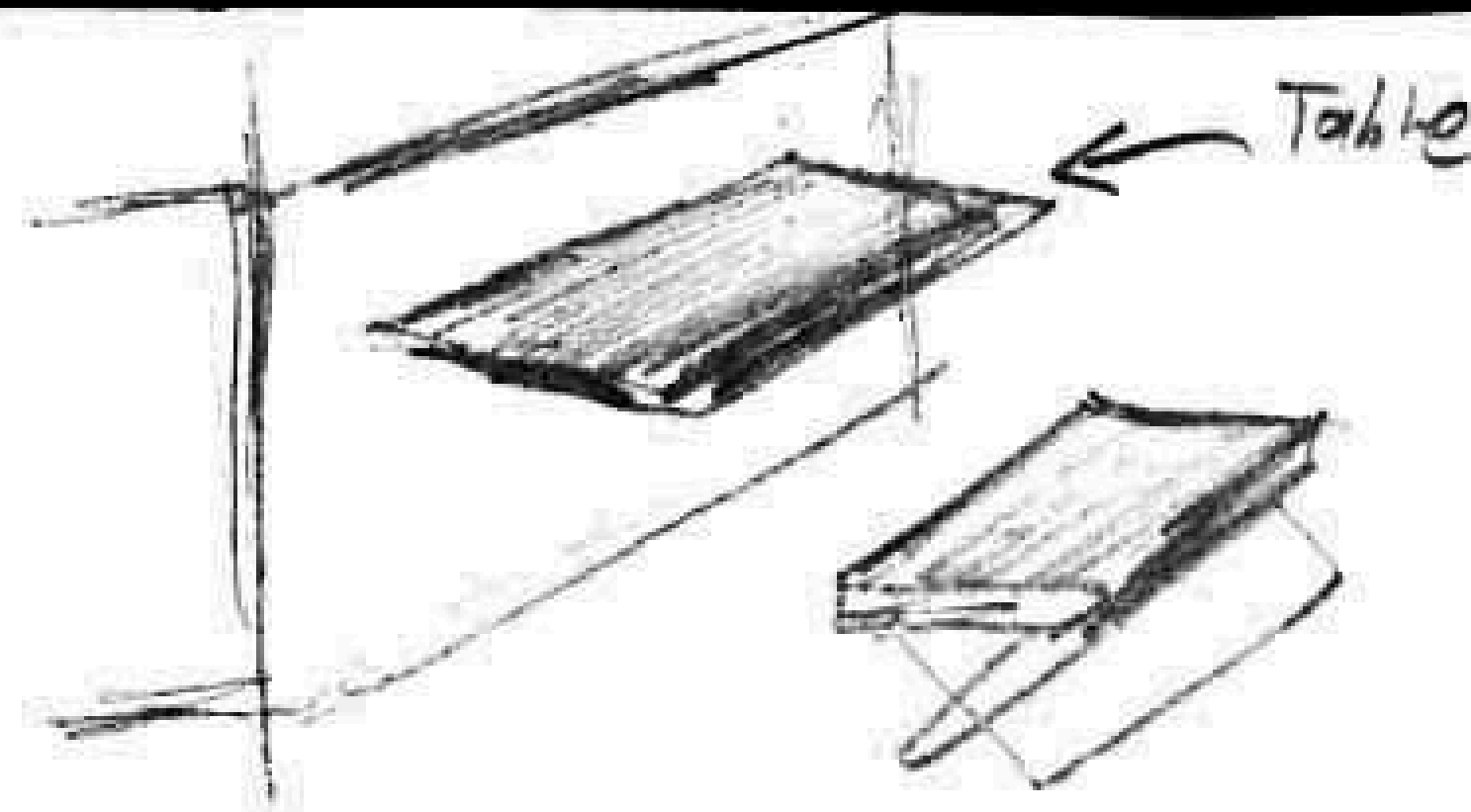
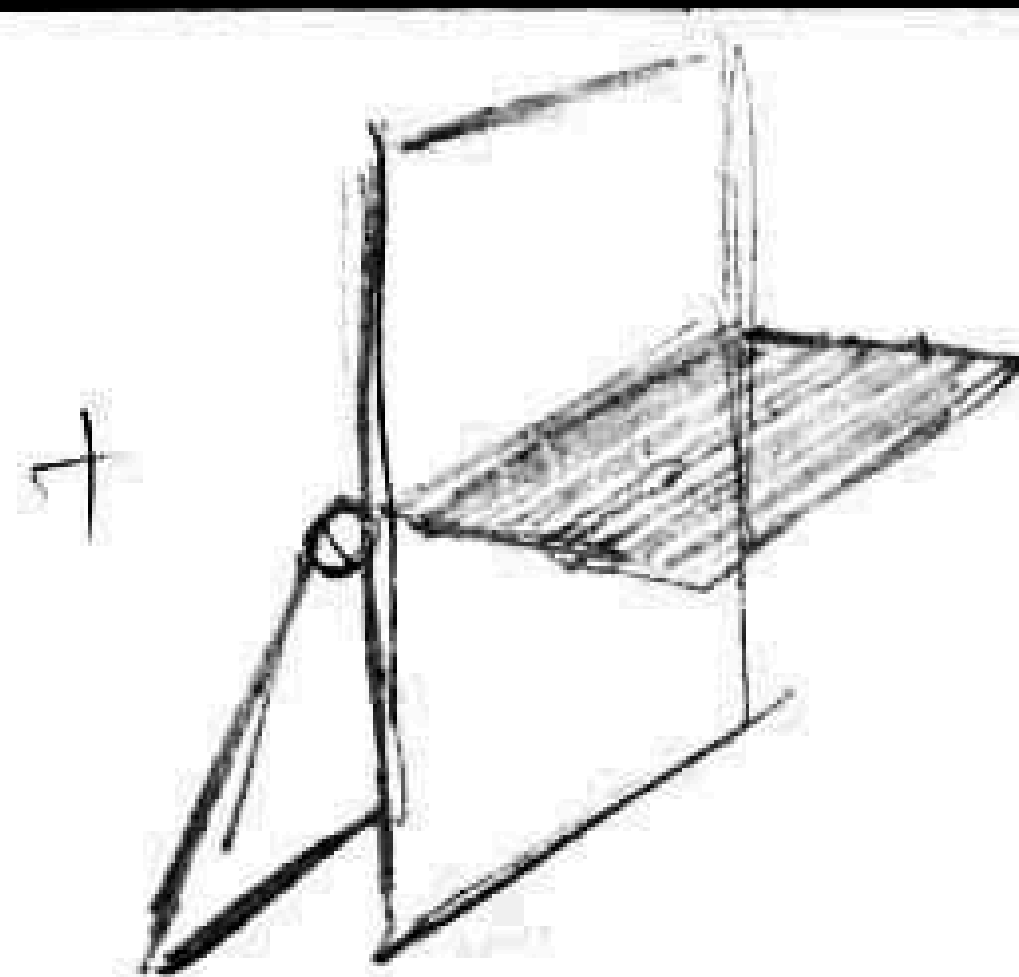
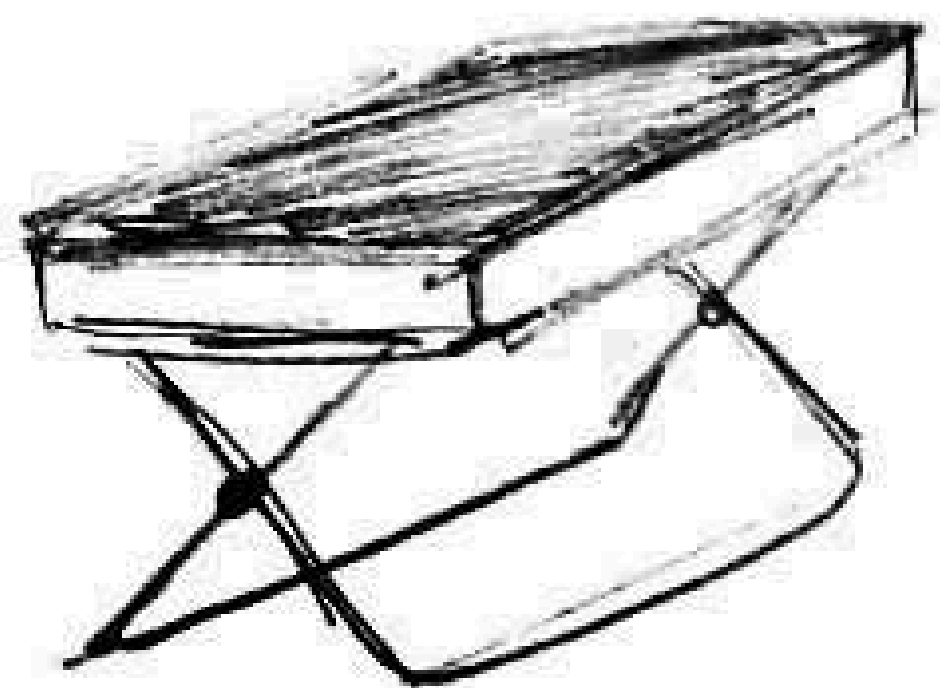
In built foldable table concept mechanism 01



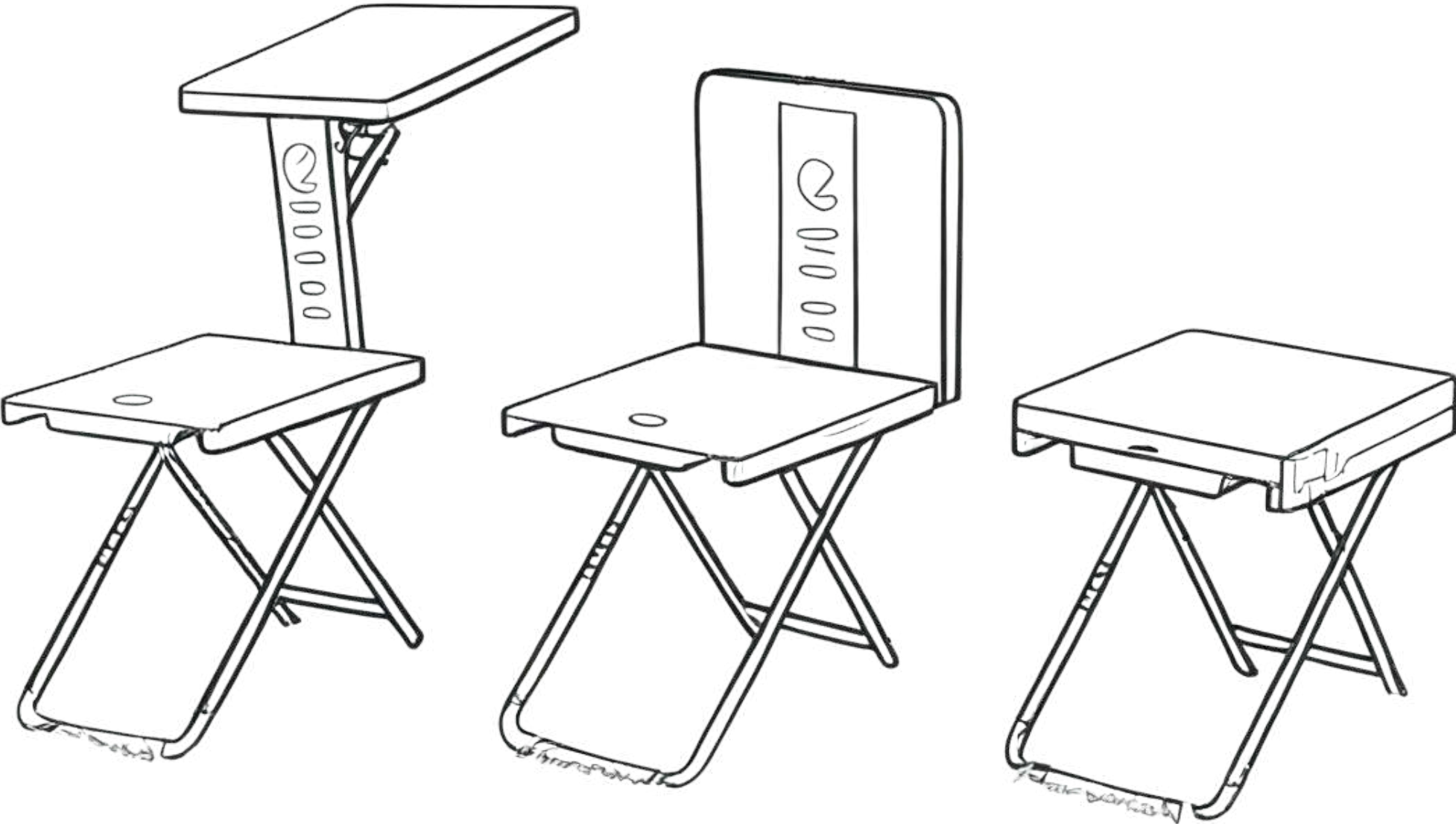
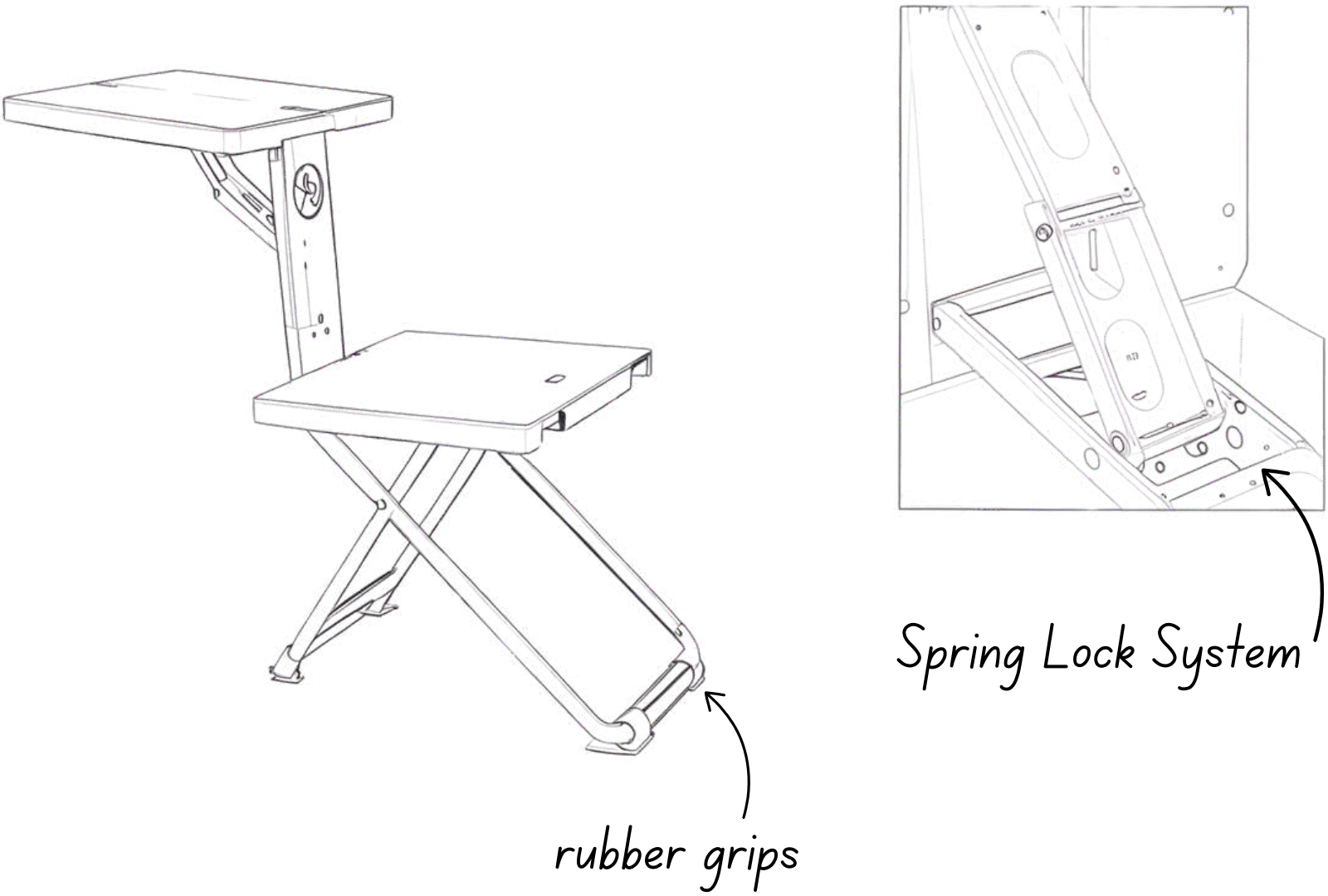
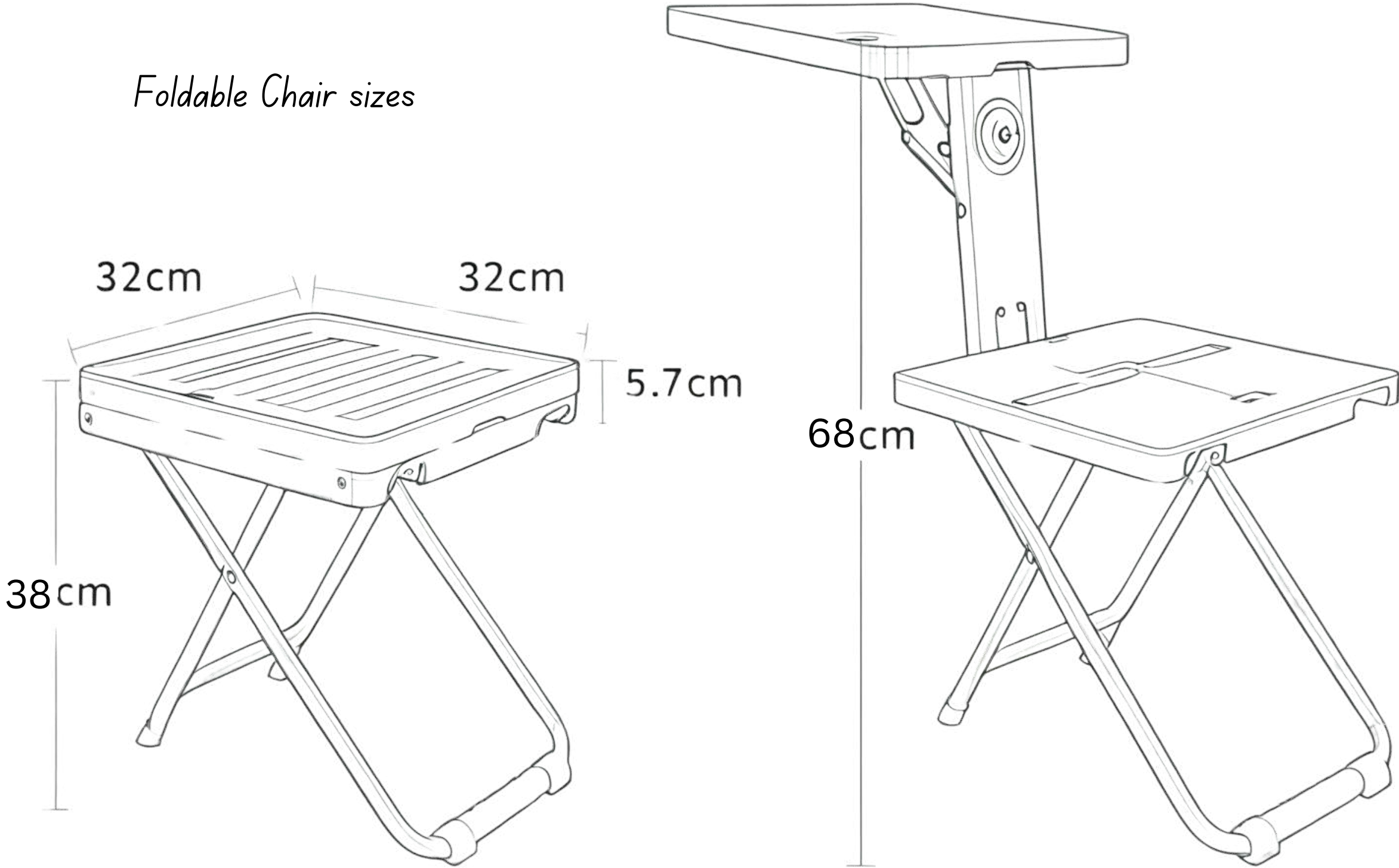
In built foldable table concept mechanism 02







Foldable Chair sizes



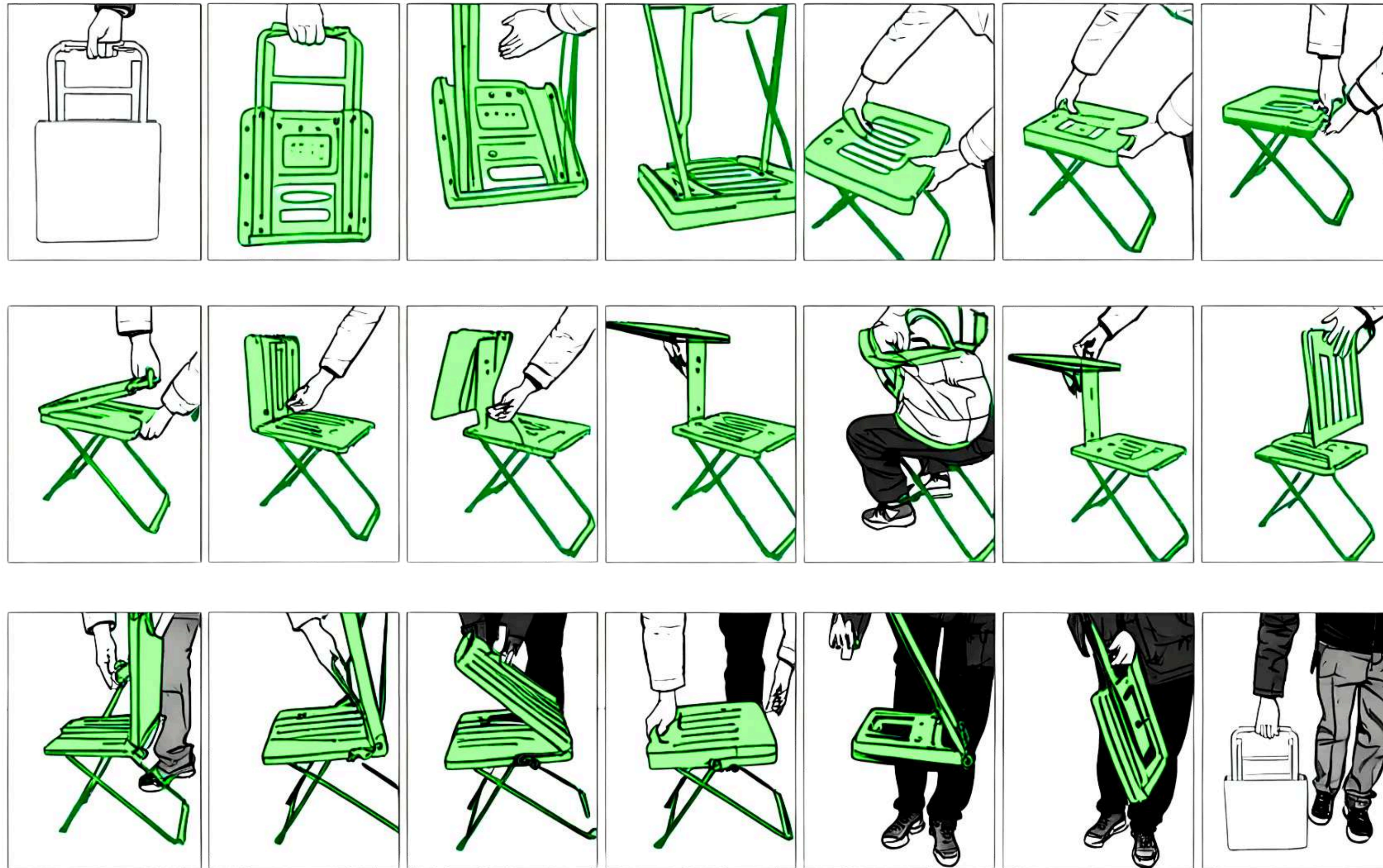
CONCEPT VISUALIZATIONS.



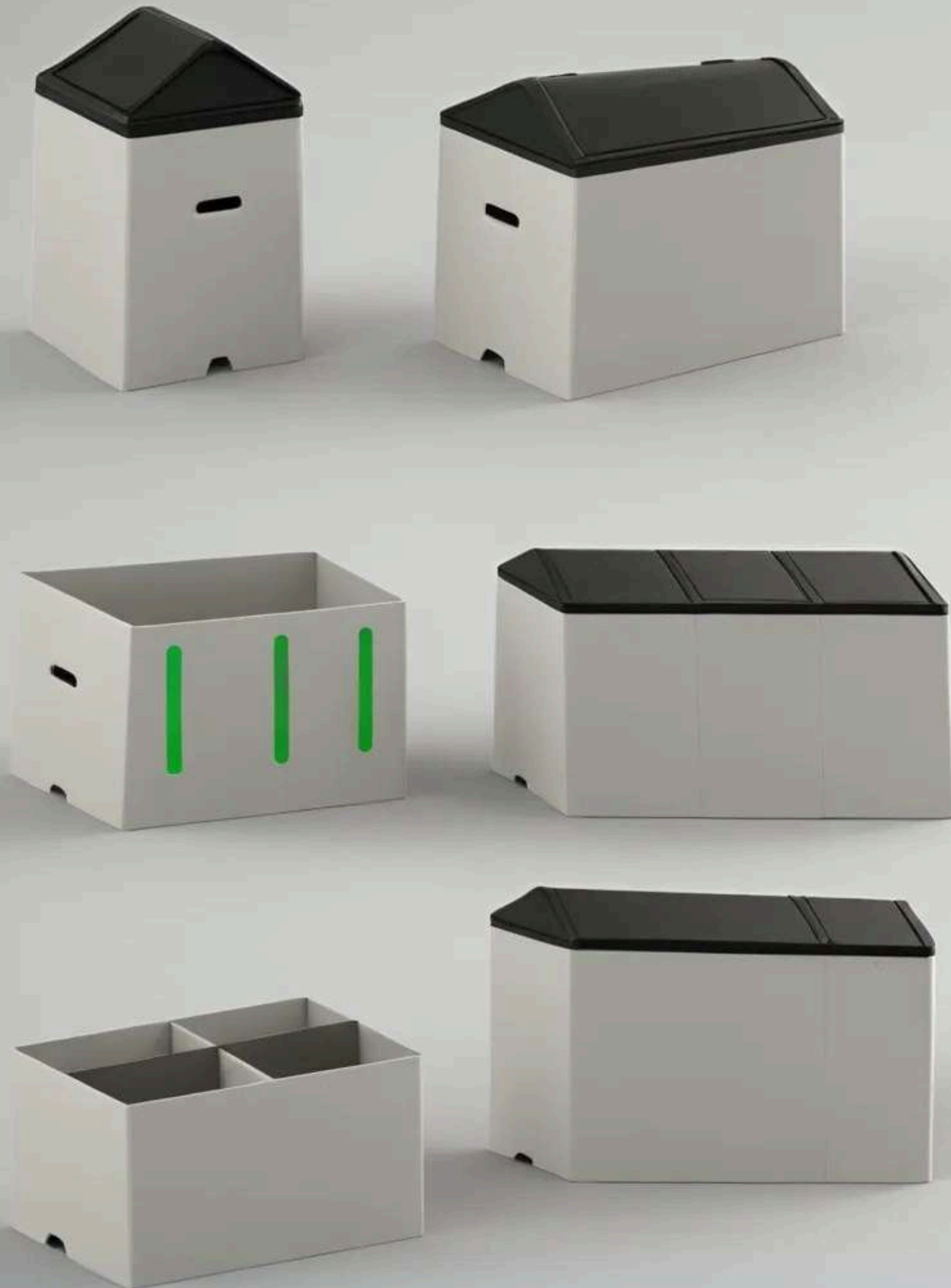
Other Lock systems



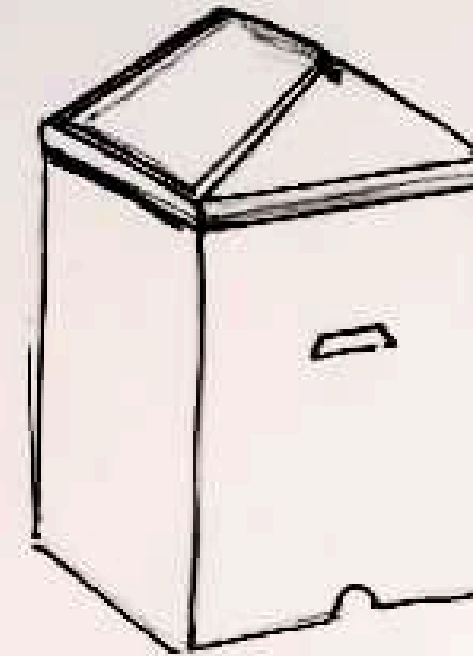
Folding Steps



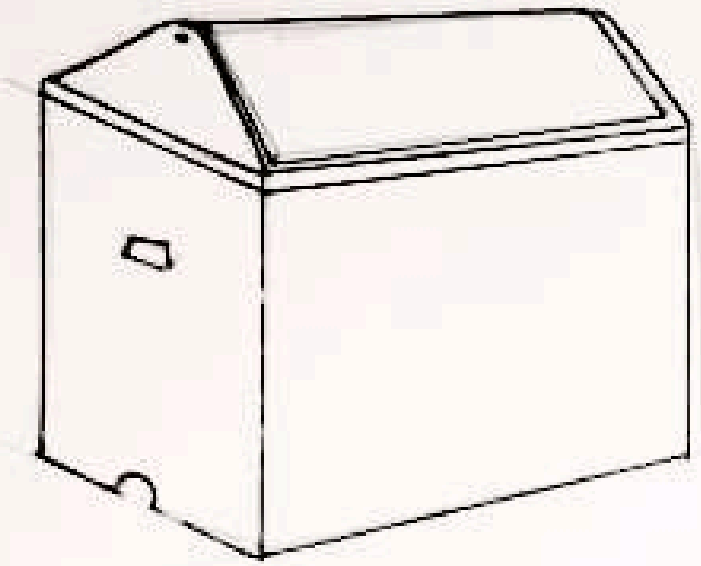
Types of Bins



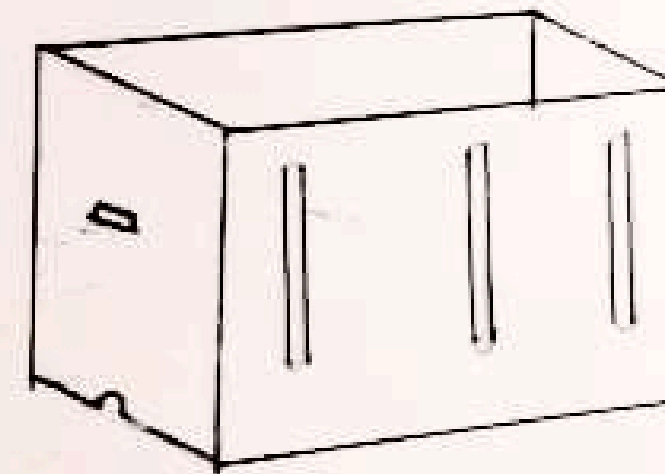
TYPES OF BINS THAT CAN BE MOUNT IN TO THE CART



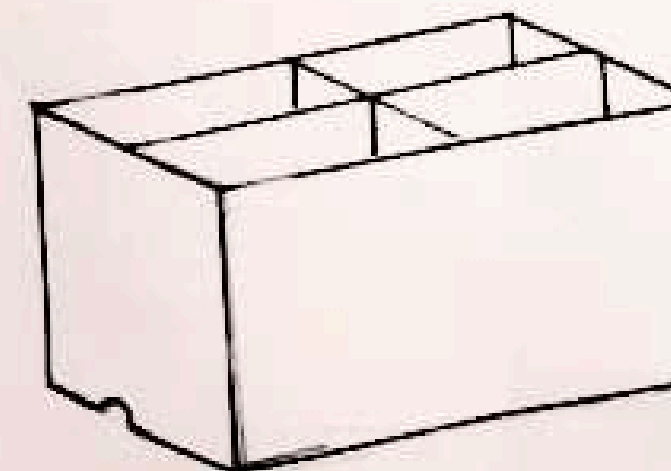
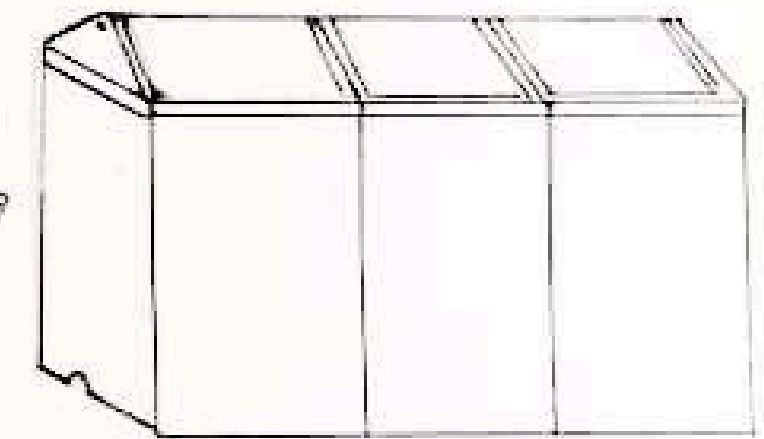
SOLD BIN



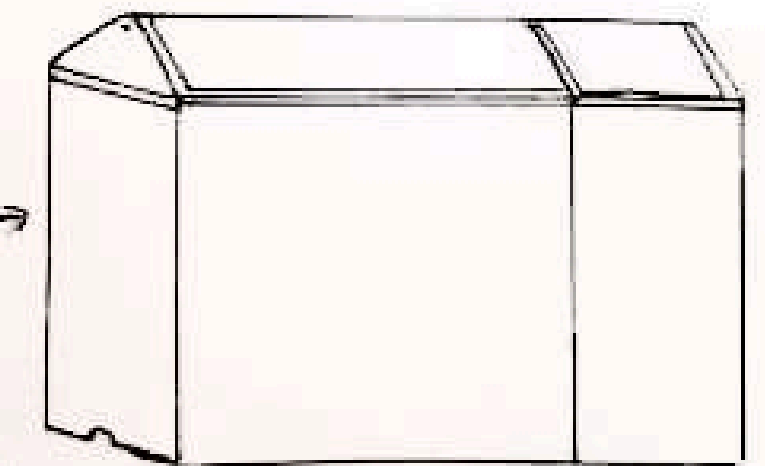
DUAL BIN



LARGE SOLD BIN

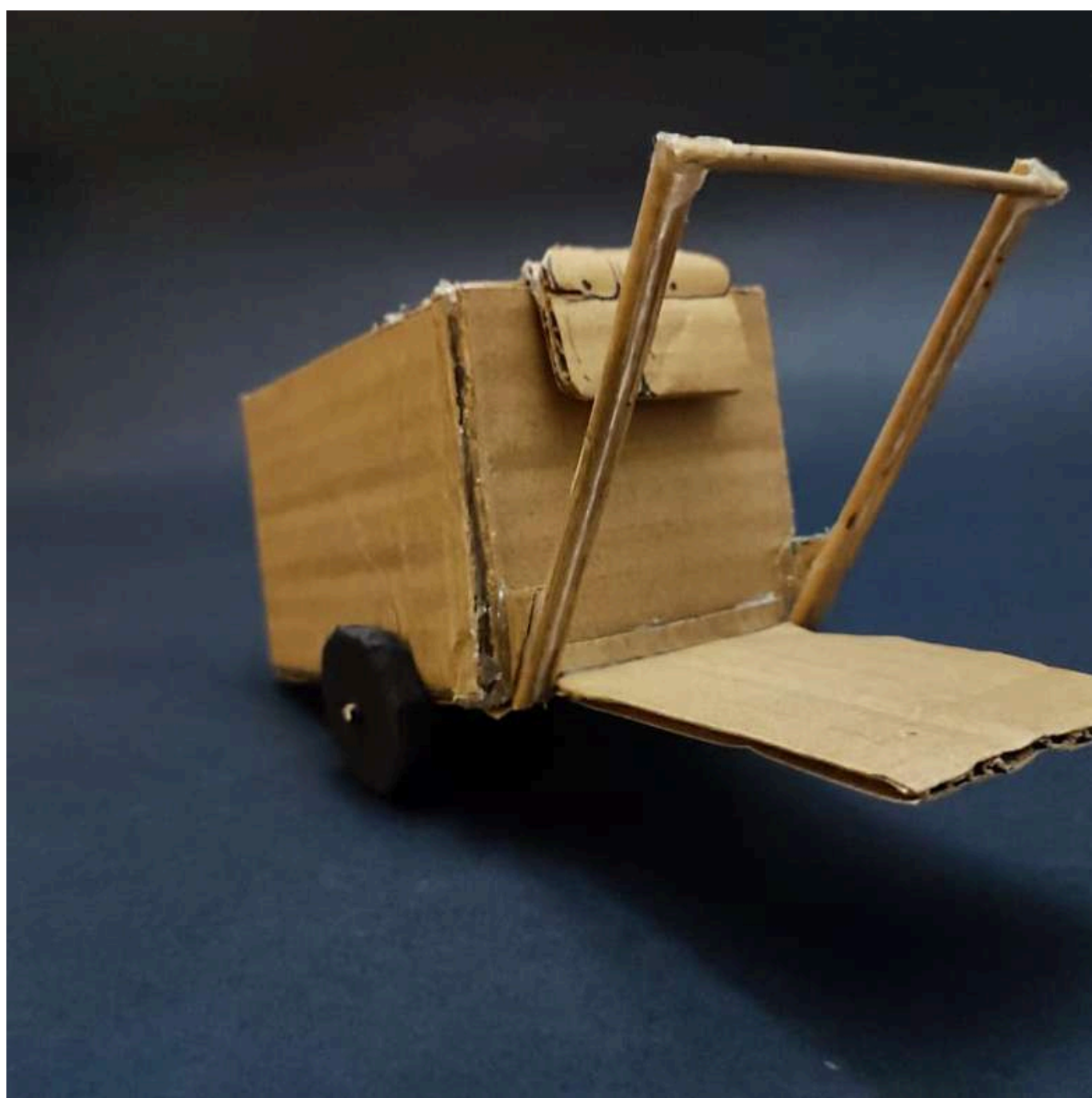
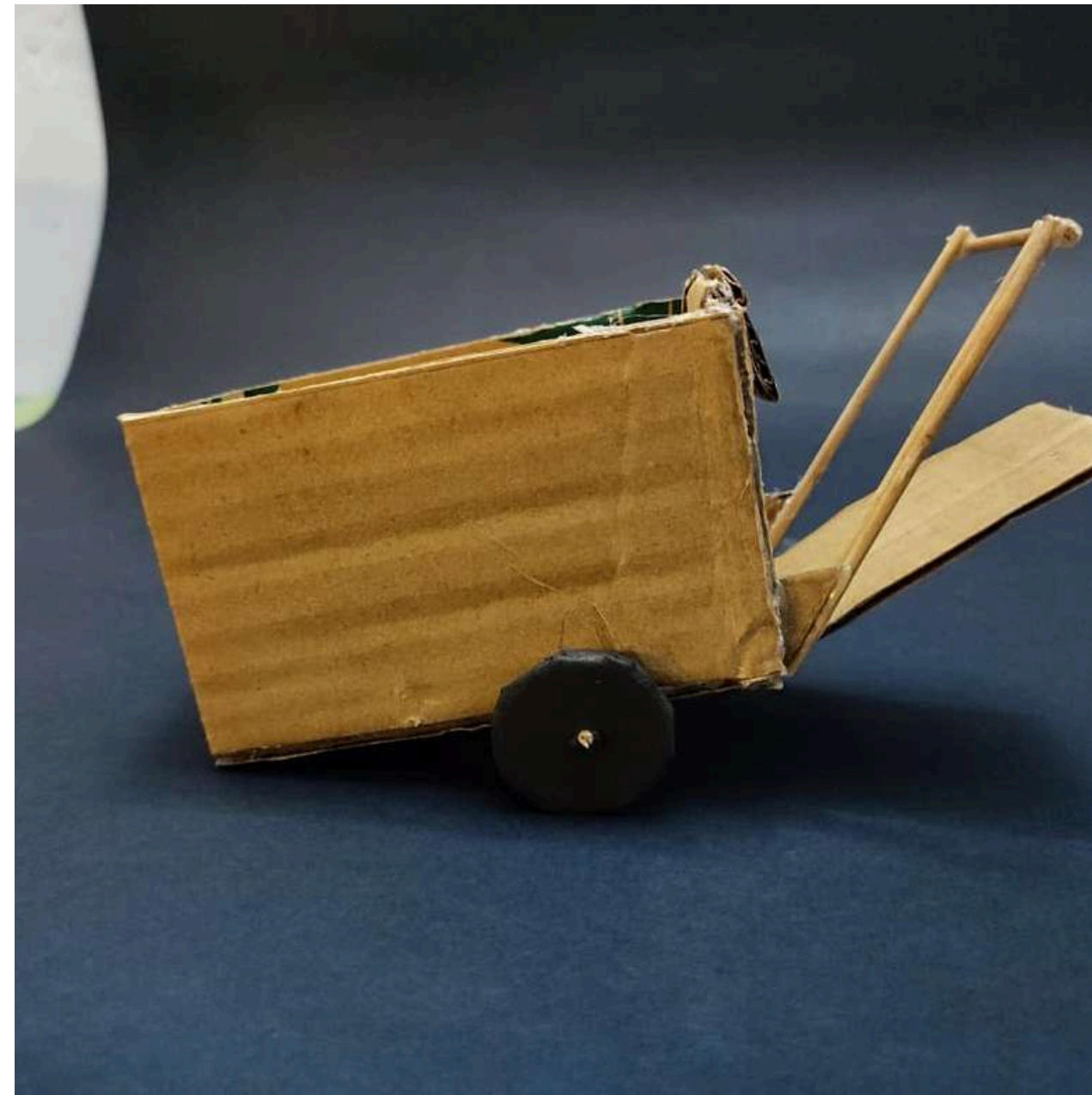


DIVIDED SINGLE BIN



TYPES OF SETS WE CAN MAKE

PROTOTYPING ●



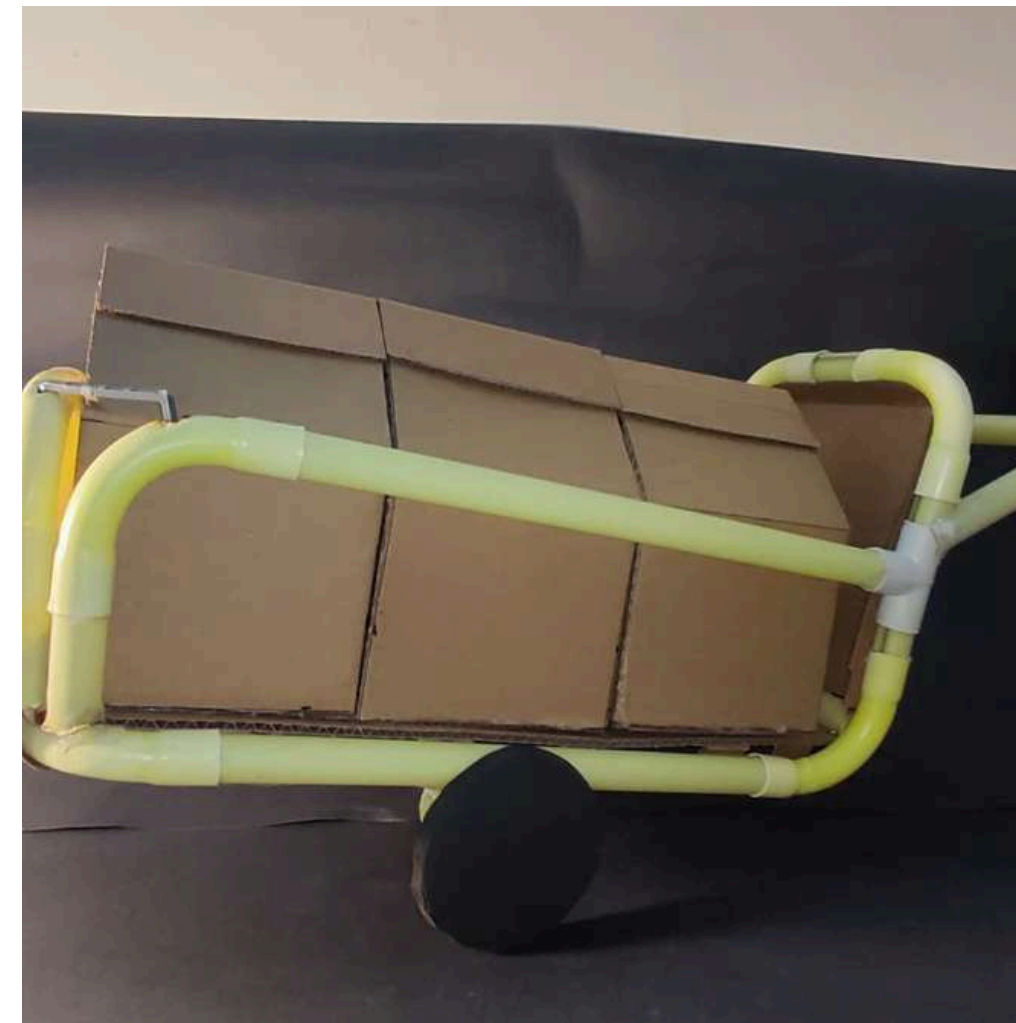
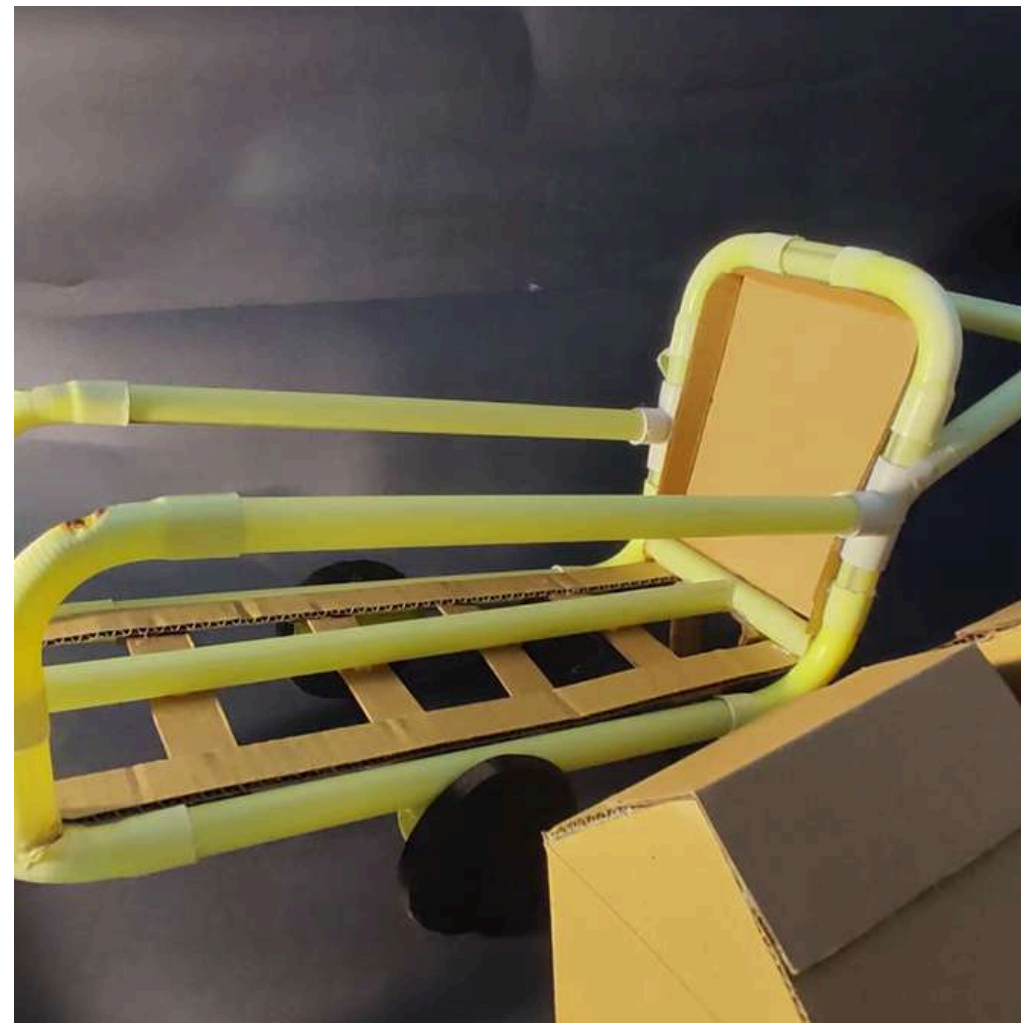
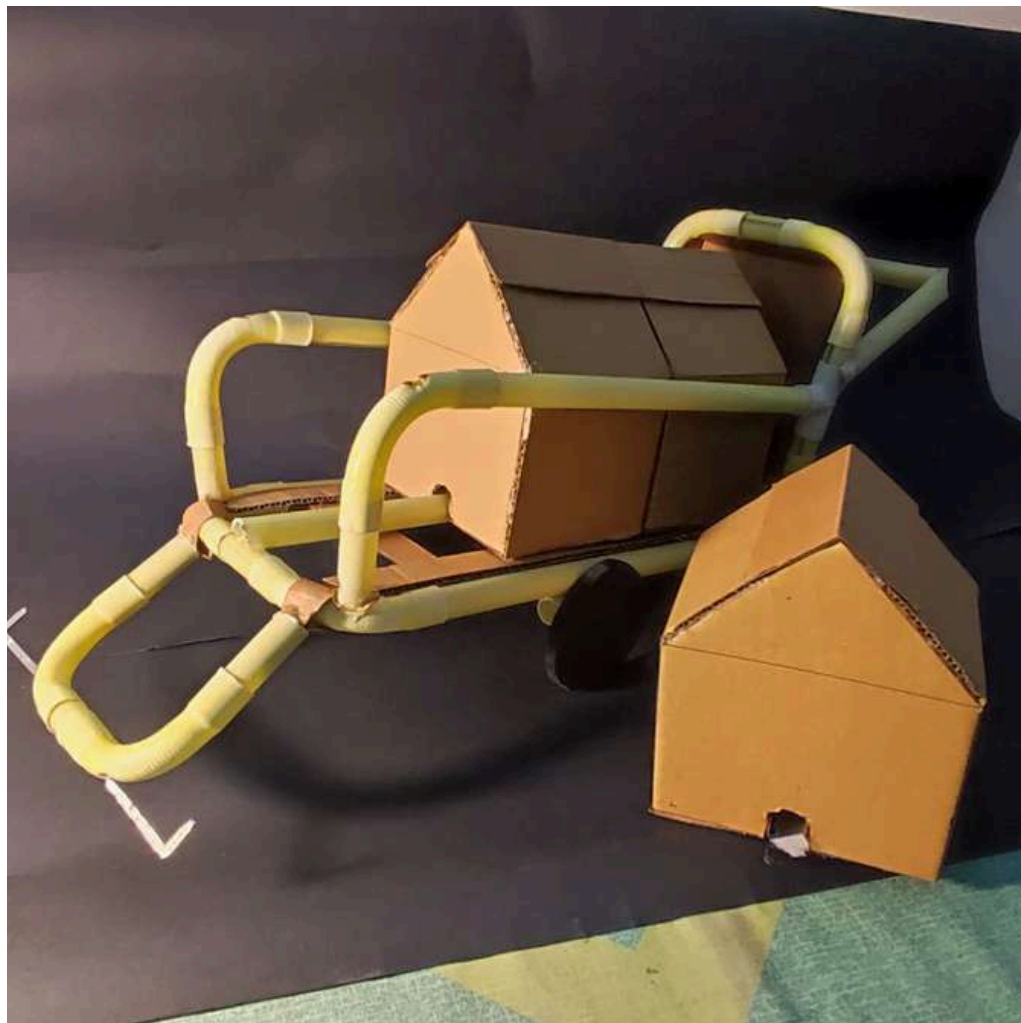
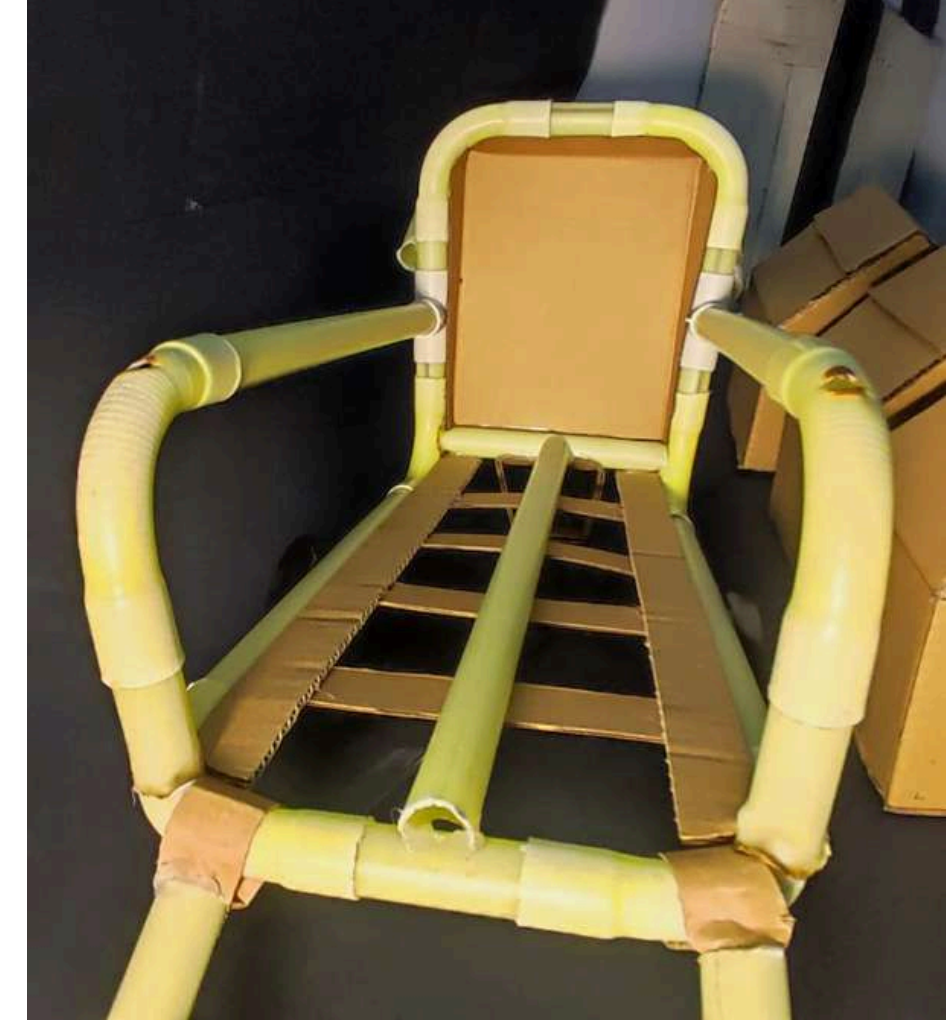
GARBAGE CART
PROTOTYPE 01

PROTOTYPING ●



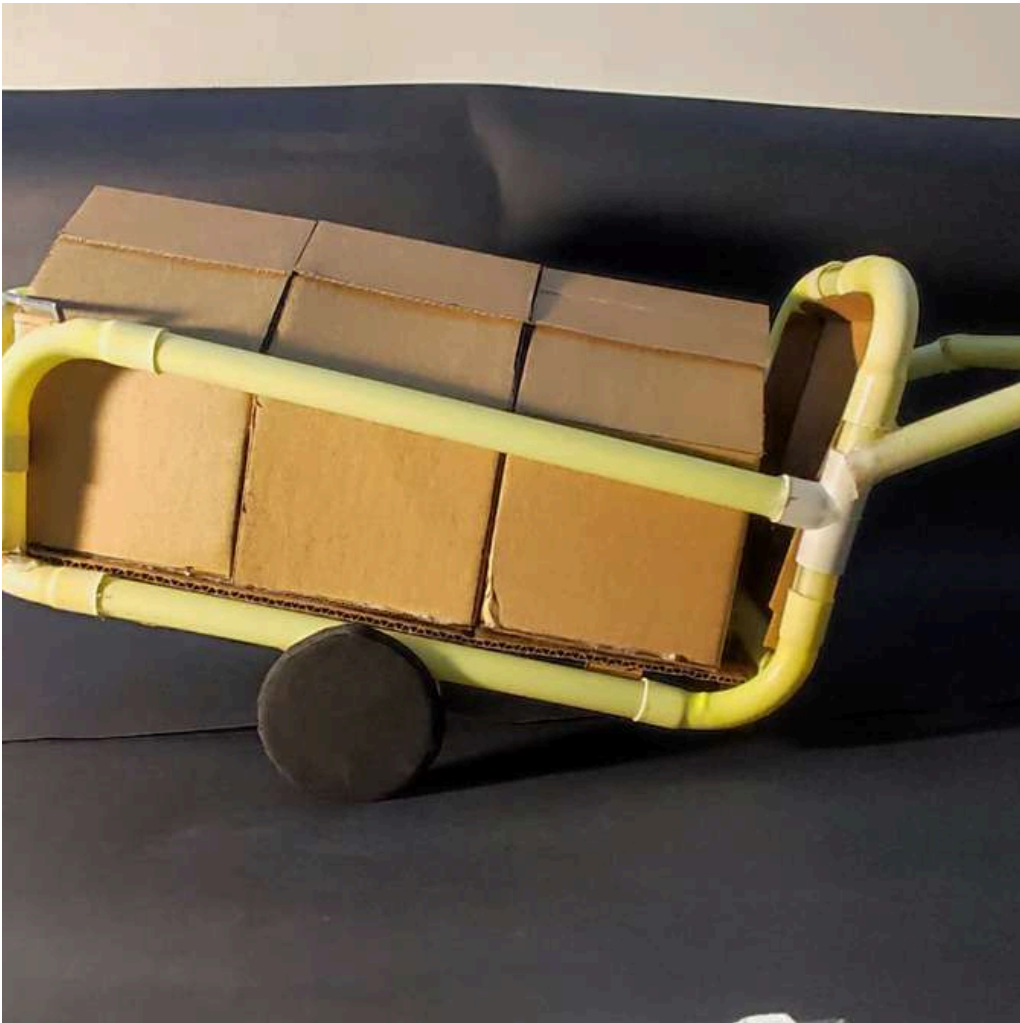
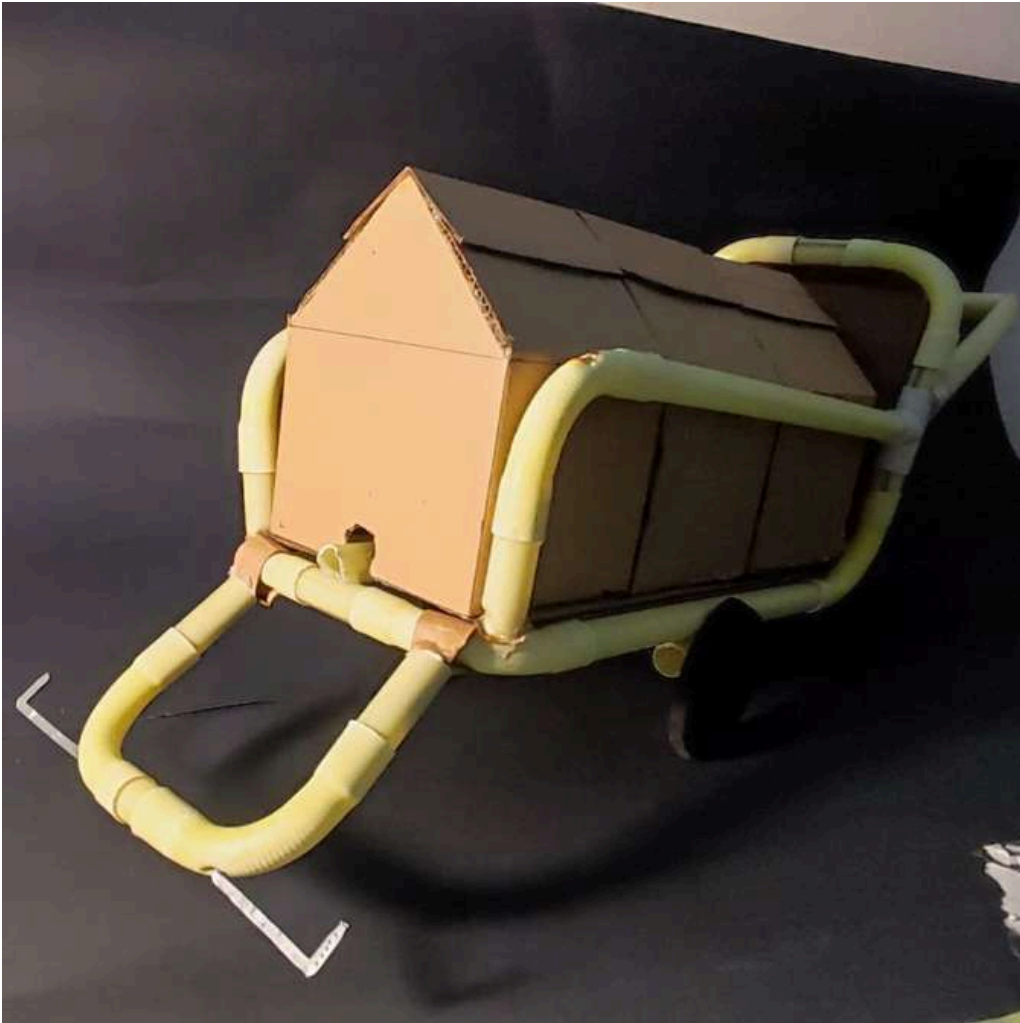
FOLDABLE CHAIR X TABLE PROTOTYPE

PROTOTYPING ●



GARBAGE CART PROTOTYPE 02

PROTOTYPING ●



POUCH PROTOTYPE



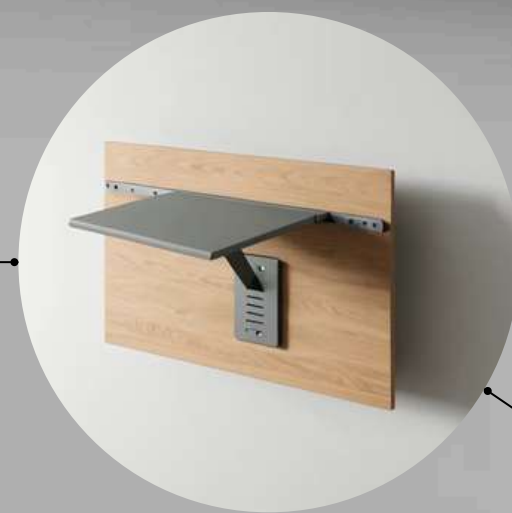
Product Concept

Stage 01



Product Concept

Stage 02





Product Concept

Finalized

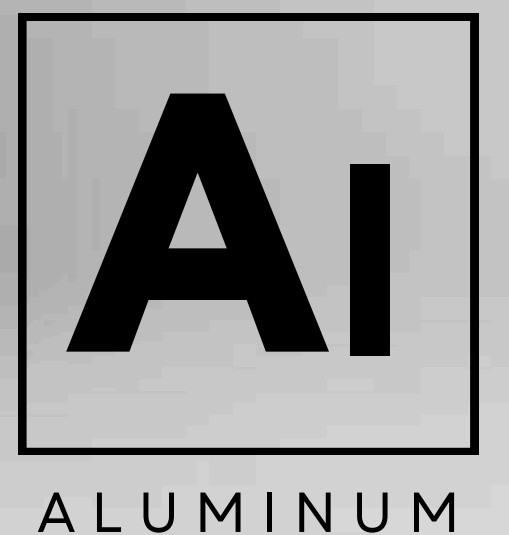




FEATURES •

Takes less materials to make

AND LESS WEIGHT



Secure and clean storage

WATER BOTTLE,LUNCH PACKET
AND SOME EXTRA CLOTHES.



Easy waste- sorting compartments

DRY/WET AND RECYCLE



Built-in space to rest and eat.

HYBRID FOLDABLE CHAIR X TABLE



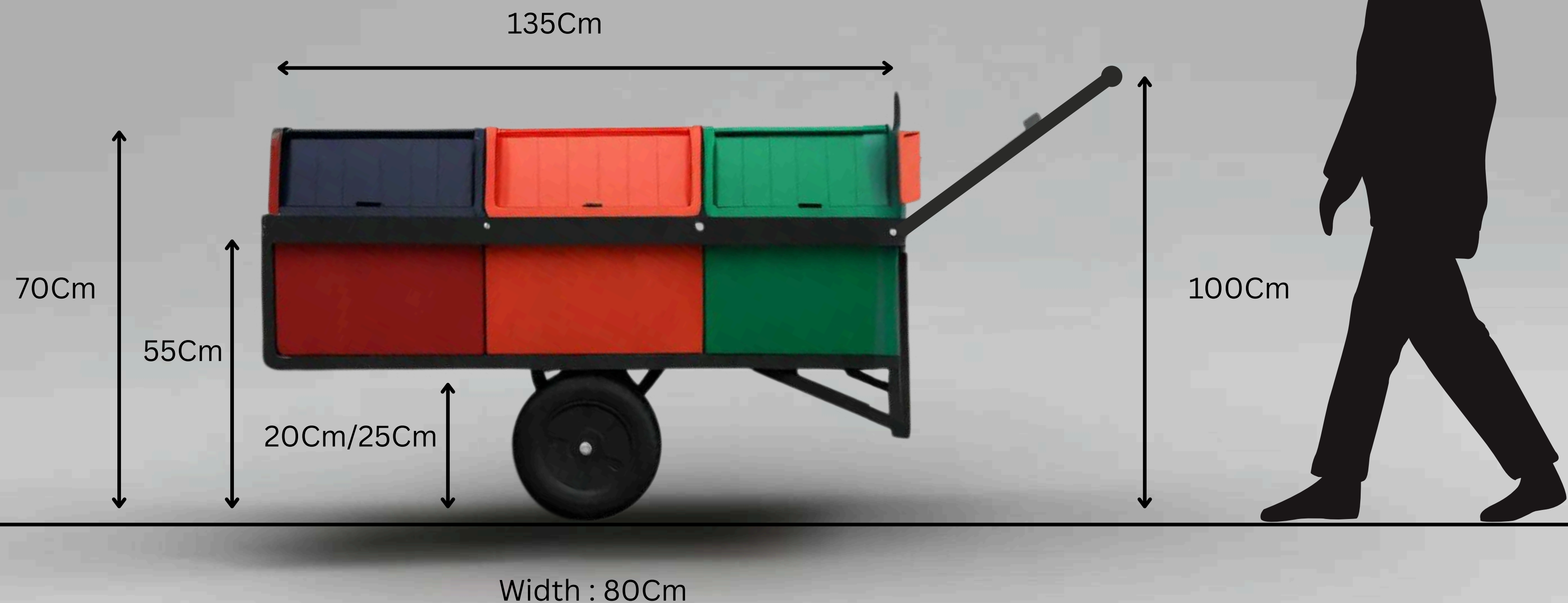


ERGONOMICS & MATERIALS

- **Frame:** Aluminum alloy
- **Wheels:** Solid rubber tires + steel axle
- **Bins:** Recycled plastic (from bottles / HDPE)
- **Personal Storage:** Waterproof pouch – synthetic leather
- **Seat & Table:** Aluminum hinge + recycled plastic panels
- **Handles:** Rubber grips
- **Safety:** Reflective strips

The average height
of a Sri Lankan

151.4 cm - 163.6 cm





Thank You