baby carrier

combining the need of carrying and keeping a baby

prashant vetoskar
guide: prof. ravi hazra

key role of attaching as well as detaching the baby from the parent

It could relieve the parents of carrying the baby all the time.

It can allow the parents to keep the baby in a safe and clean place.

There are a number of occasions when the baby is taken, that parents cannot continue to carry the baby on the body.

The project is aimed at creating a niche product that will address the need of carrying as well as keeping the baby, which would provide the baby with a secure ,hygienic and familiar environment at any time. It also addresses to the convenience of the parents who would be able to engage in activities which they may find difficult to do while holding the baby.

This gear tries to avoid a compromising situation by identifying the kind of situations where such a combination of the two functions was required. Not surprisingly a lot of frequently encountered situations require this combination.

The entire design process was underlain by the most important factor while considering designing baby products, which is safety. No baby product can serve any function that is incorporated unless it addresses all the safety issues.

This product does not try to provide an alternative to the existing product but rather caters to a specific need which is outings that require to carry as well as keep the baby.

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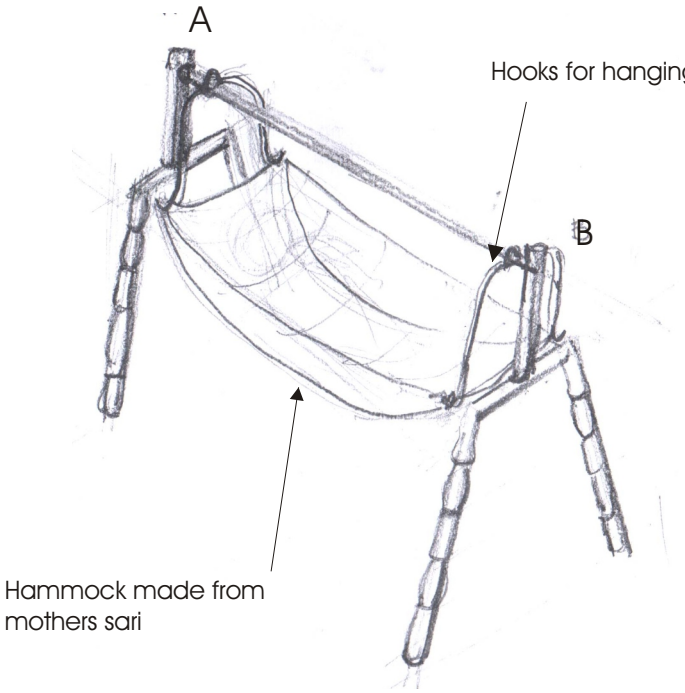
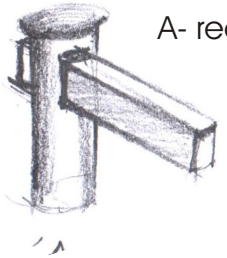
The ghodiya- the traditional cradle

-The carrying and keeping concept

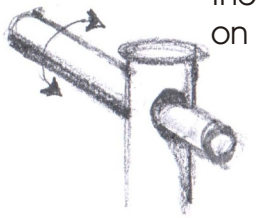
-why we cant use it in today's context

-carrying this concept forward to suite contemporary context

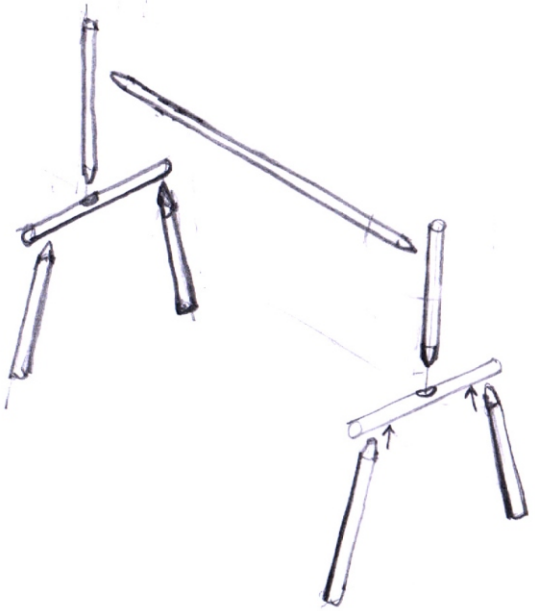




A- rectangular joint



B- circular joint that allows rotation and makes it posible for the ghodiya to rest on uneven ground



Dismantlable structure

user study

ergonomics

market study

materials

literature

Study

Who are the users

the users of these product would be primarily parents with babies upto 8 months of age after which the baby begins to walk on its own.

Study

Analyzing the user

All the parents surveyed preferred to carry their baby in front. They felt that they should have strong visual as well as physical contact with the baby.

growth chart for indian boys

Age(m)	Weigh t	Height
0	2.89	48.9
1	4.40	52.1
2	4.83	56.0
3	5.57	59.0
4	6.18	61.4
5	6.69	63.5
6	7.10	65.2
7	7.45	66.7
8	7.74	67.9
9	8.0	69.2
10	8.23	70.3
11	8.47	71.5
12	8.72	72.8

growth chart for indian girls

Age(m)	Weigh t	Height
0	2.82	46.3
1	3.72	52.1
2	4.51	56.0
3	5.20	58.0
4	5.80	61.0
5	6.31	62.3
6	6.72	64.0
7	7.14	66.7
8	7.47	66.8
9	7.79	67.9
10	8.00	69.3
11	8.24	70.26
12	8.44	72.0

user study

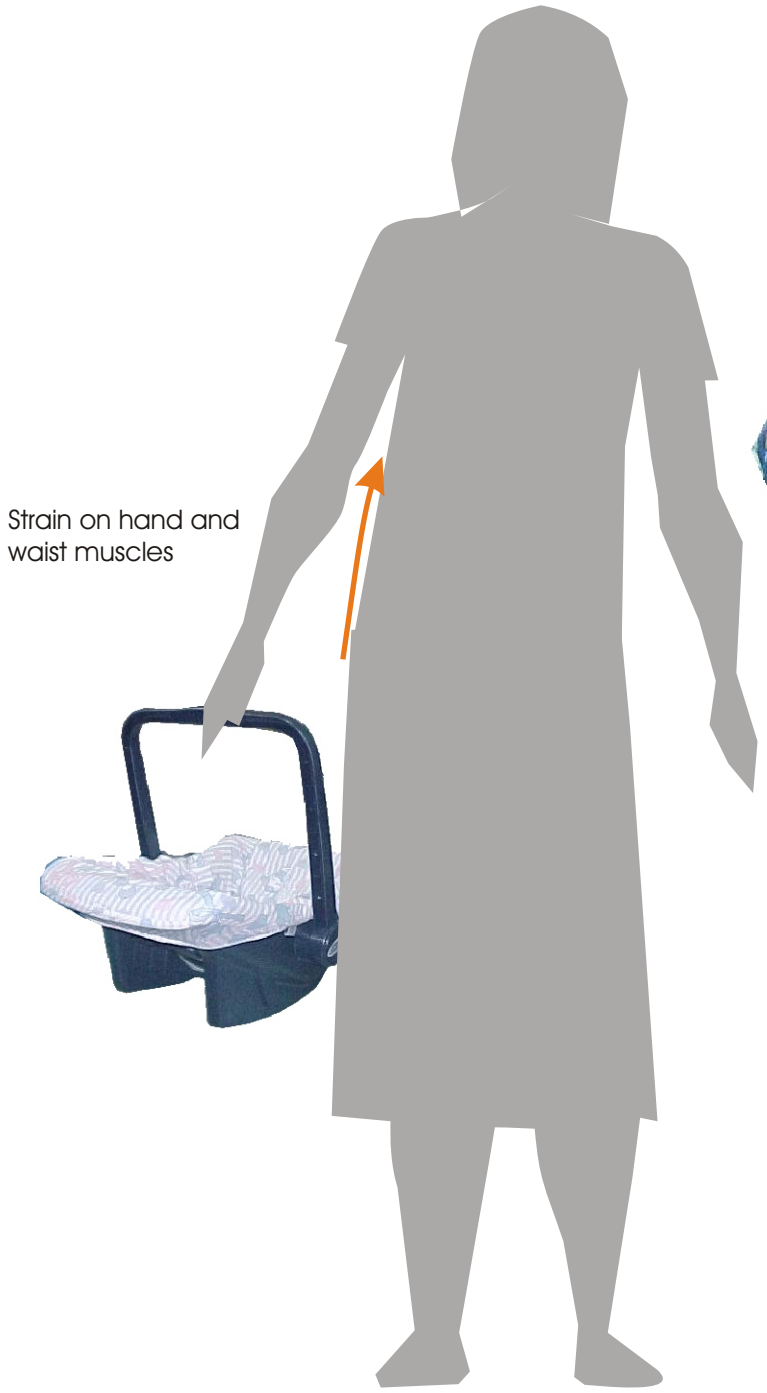
ergonomics

market study

materials

literature

Study



Similar products

- Major players
- Bench marks
- Form analysis of bench marks.

user study

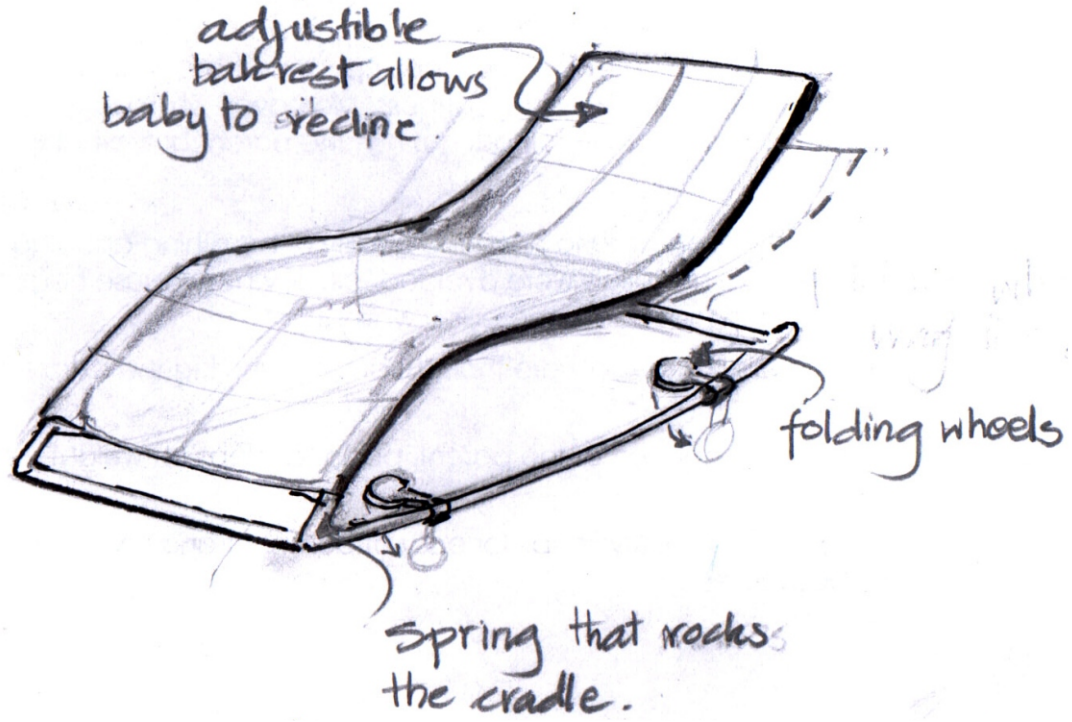
ergonomics

market study

materials

literature

Study


adjustible backrest allows baby to recline
folding wheels
spring that rocks the cradle.

Study

user study

ergonomics

market study

materials

literature

Study

user study

ergonomics

market study

materials

literature

Study

defining users

users primary need

desire

unstated needs

user survey

user study

ergonomics

market study

materials

literature

Study

user study

ergonomics

market study

materials

literature

Analysis

the product should promote intimacy between the parent and child.

the feel and appearance needs to be parently.

the targeted age group is babies upto 9 month**s**

comfort- it should be soft and adjust to the baby's body.

safety- should be stable when the baby moves

no sharp and hard edges

no place that will squash the babys fingers

should secure the baby while transporting

materials should be skin friendly and non toxic

the mechanism should promote safe ingress and

outgress from the carrier

the forces acting on the carrier during different uses should be

studied to impart strength.

its aesthetics should speak of its safety

ergonomics- should not cause back stress to either baby or the parent

it should consider the physical growth of baby upto 9 months

it should provide neck s and hip support

the product weight should be minimized to facilitate the carrying

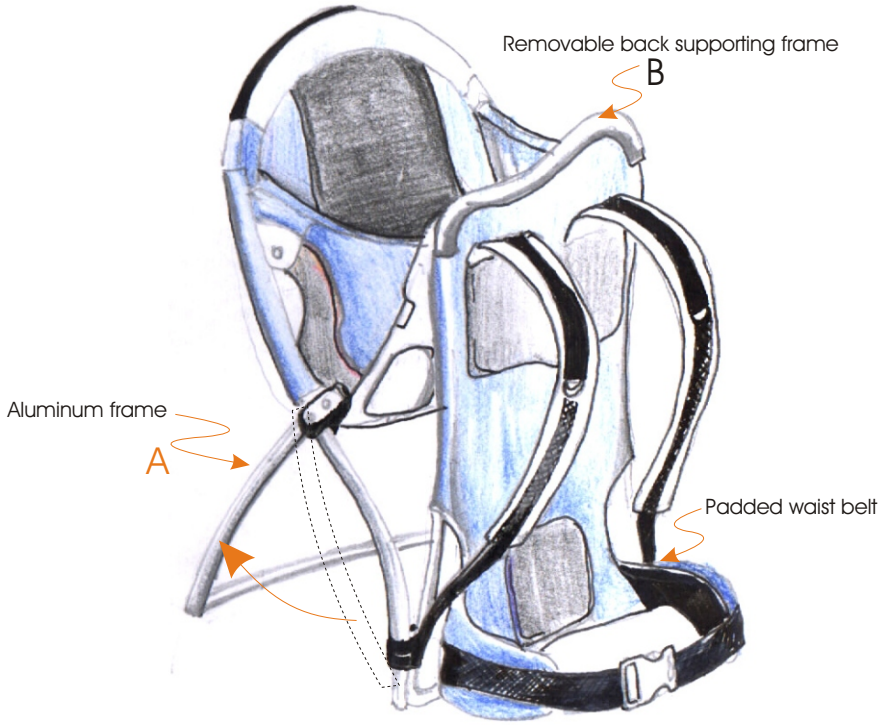
ease of operation- the operating mechanism should involve the minimum number of steps

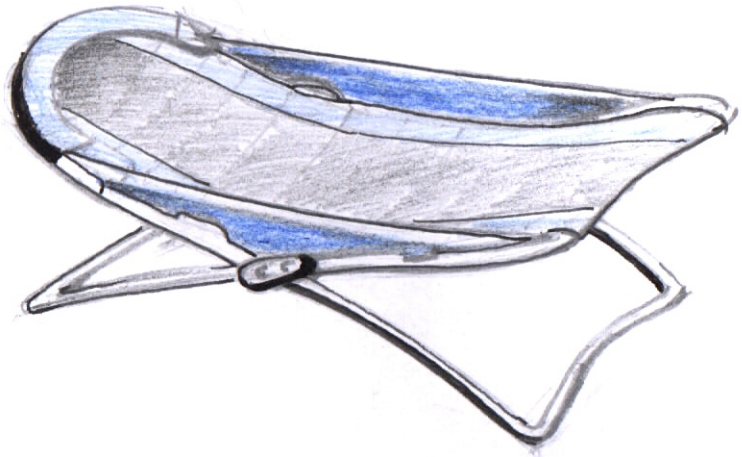
facilitate activities- sitting, diapering, feeding

Interaction- it should promote interaction of the baby with the environment

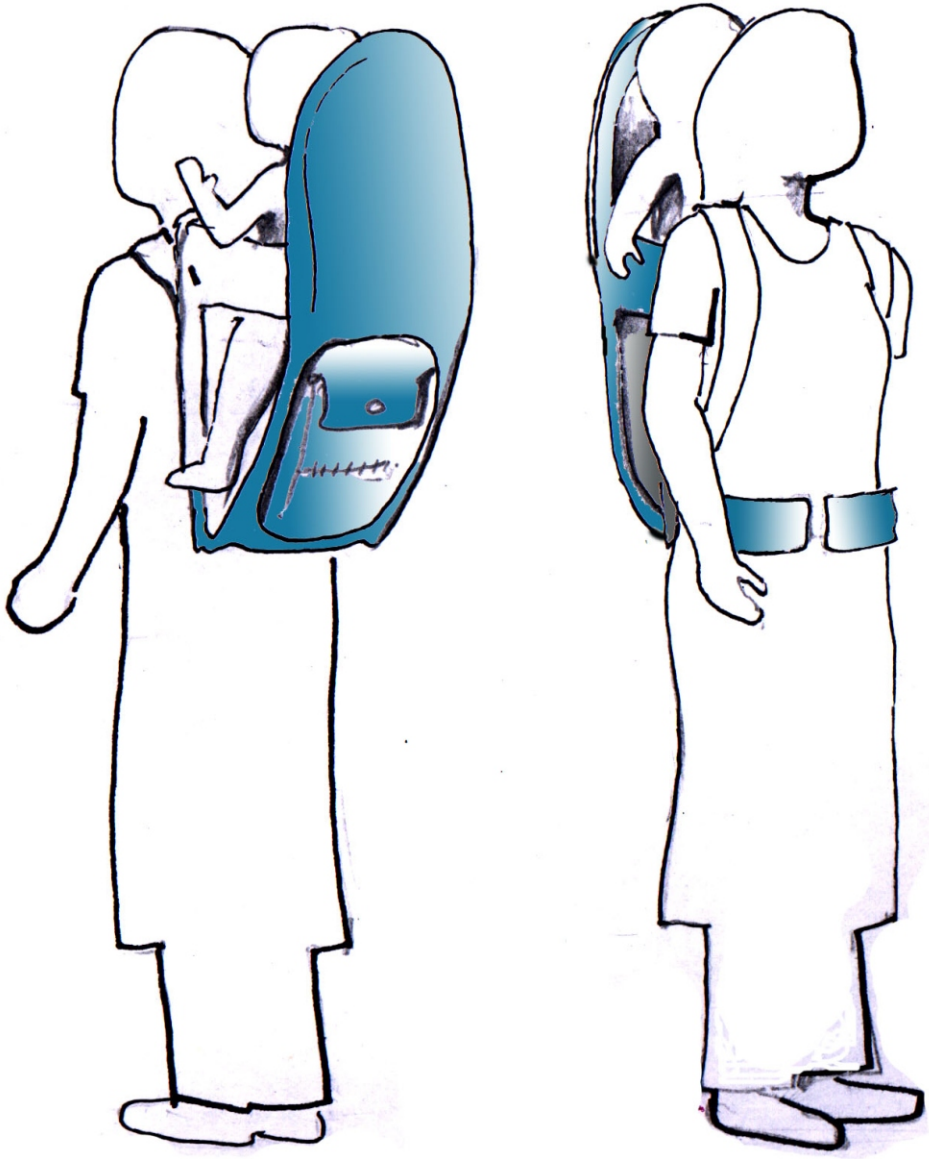
product brief

design


Removable back supporting frame
B
Aluminum frame
A
Padded waist belt
Carrier position


Cradle position

concept 1



concept 1

Evaluation of concept

Comfort- the back carrier is comfortable for a baby of age above six months as this is when it can hold its neck well.

Safety- the baby is held securely between the two frames and its legs pass through the leg holes ensuring that the baby does not fall out.

Ergonomics- parents can carry the baby for long distances as the weight is evenly distributed over the back. The parent has to bend forward slightly to balance the weight.

Ease of operation- basically there are three steps. 1)Flipping out the stand and putting down the frame and removing the baby, and 2)detaching the back frame. 3)Opening the frame to cradle position.

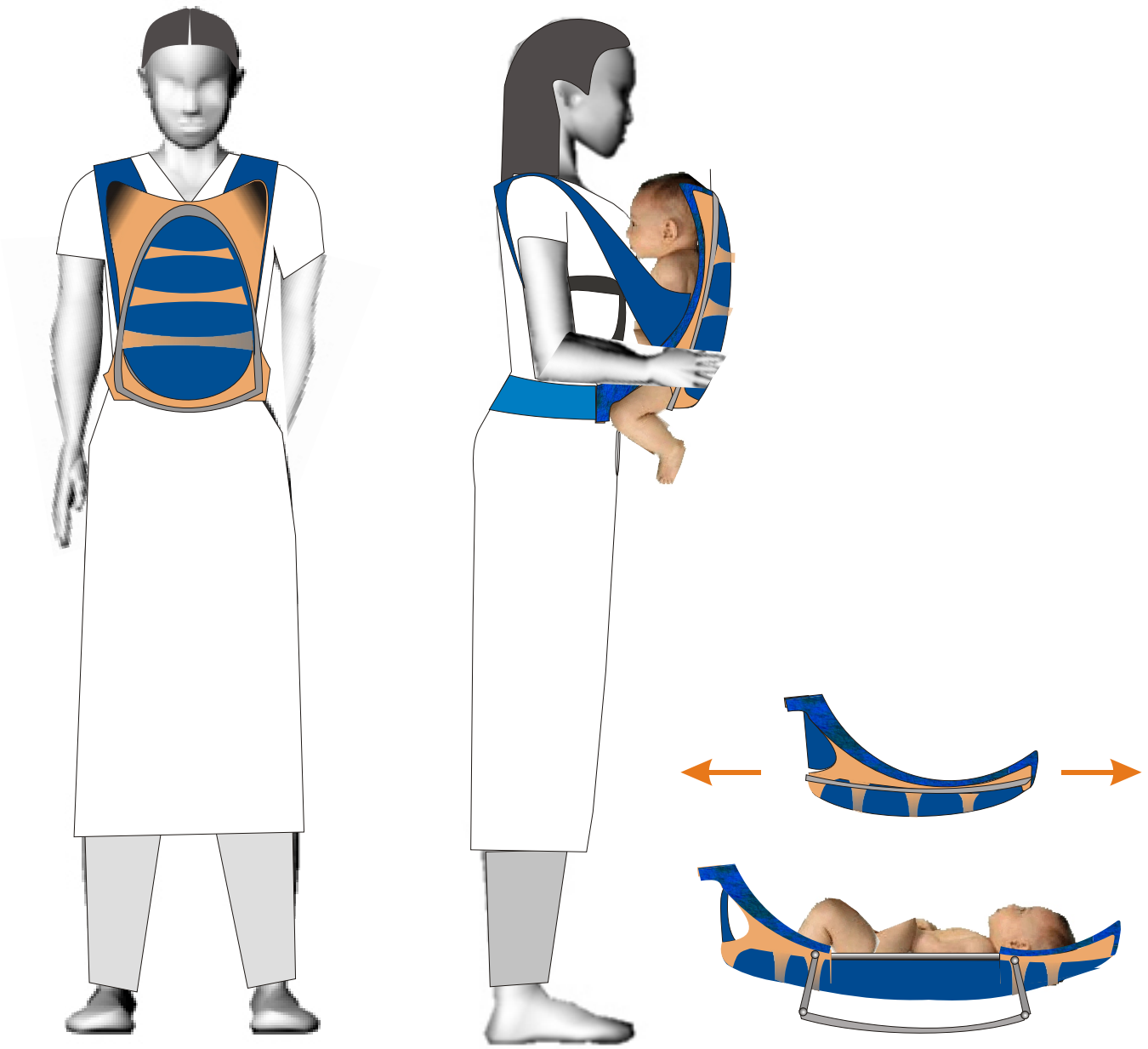
Product weight- aluminum frame reduces weight and would weigh slightly more than a haversack with a frame.

Interaction- it would lead to better interaction of the baby with the environment as it can see in the direction of the parent by peering over the parents shoulders.

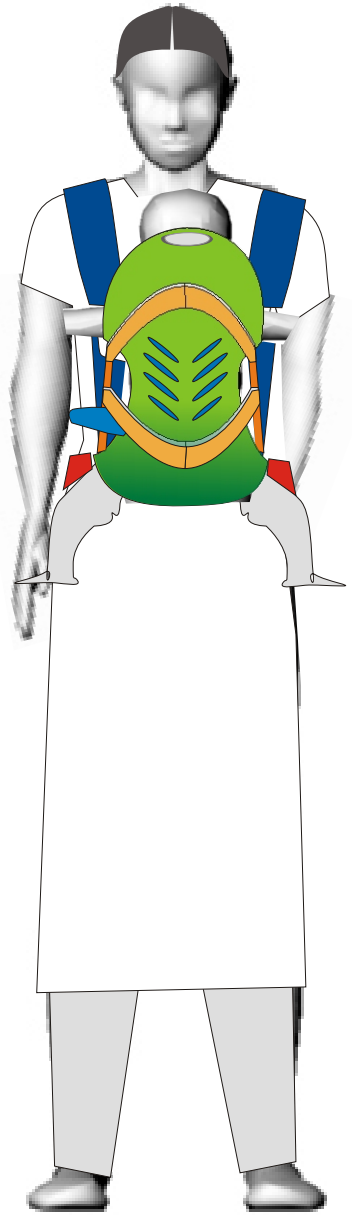
Aesthetics- it has the feel of a trekking gear and would look absurd in an urban situation and with Indian clothing thus reducing the range of users tremendously.

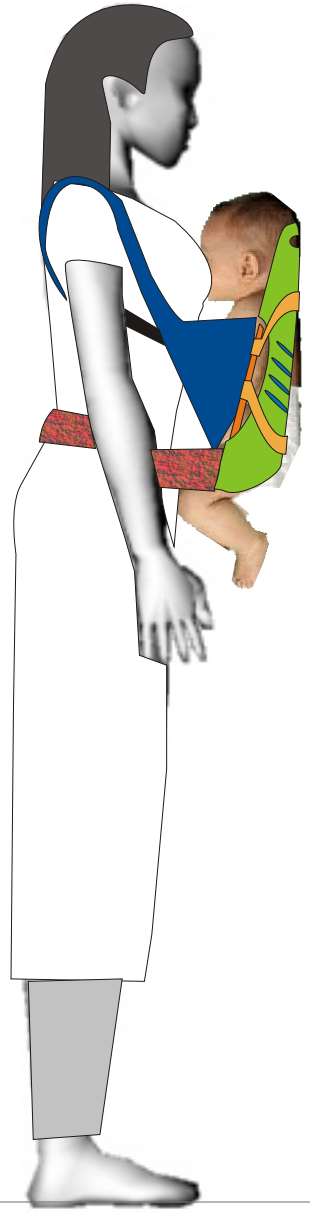
materials- a aluminum pipe frame structure with nylon cloth used in bags. The interior is cotton padding.

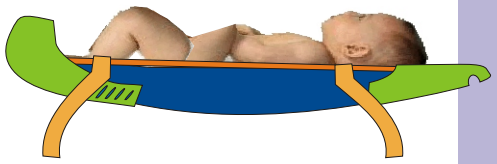
Miscellaneous- It cuts off direct eye contact with the baby and a lot of parents were not comfortable with this.

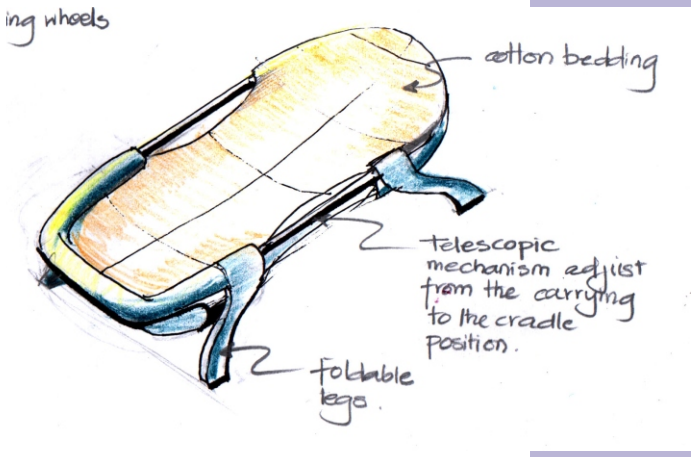


concept 2








ing wheels
cotton bedding
telescopic mechanism adjust from the carrying to the cradle position.
foldable legs.

concept 2

Evaluation of concept

Comfort- the plastic back frame cannot modify from the cradle posture to the carrying posture. The telescopic mechanism makes the frame rigid and so heavy padding is required where the frame touches the body.

Safety- the baby is secure in front of the mother and can be held by the mother.

Ergonomics- the cradle position width is larger than the carrying width but the telescopic mechanism allows for growth only longitudinally and not width wise.

Ease of operation- basically there are three steps. 1) removing the baby from the carrier, and detaching the plastic frame from the body straps 2) pulling the two parts using the telescopic mechanism 3) placing the baby in it.

Product weight- plastic back and the telescopic mechanism would add to the weight.

Interaction- there is better interaction with the environment but lesser with the surroundings

Aesthetics- it combination of soft translucent plastic straps that hold the fabric would make it look quite trendy.

materials- in first option the frame is polypropylene with a breathing fabric at in between held by soft translucent plastic straps. The second option the entire structure is made in pp. Plastic telescopic sections are used for the telescopic mechanism

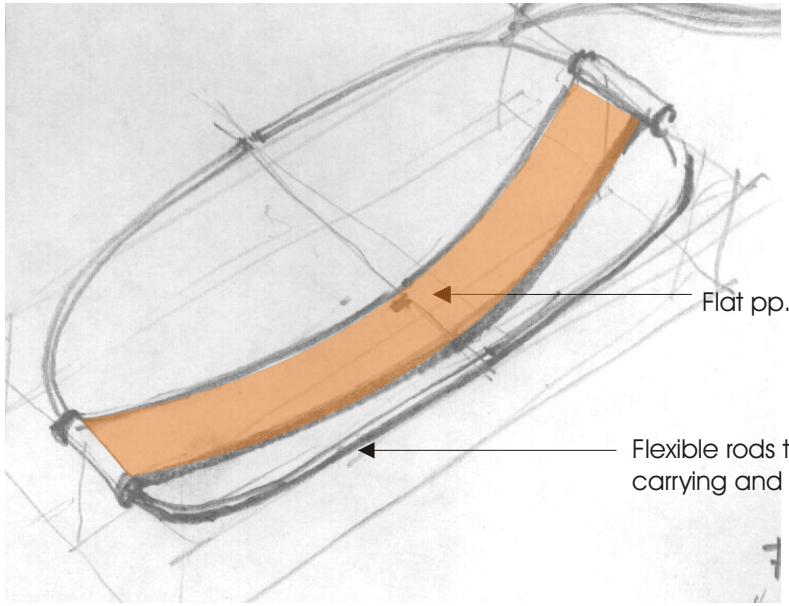
Miscellaneous- It enhances proximity between parent and baby.

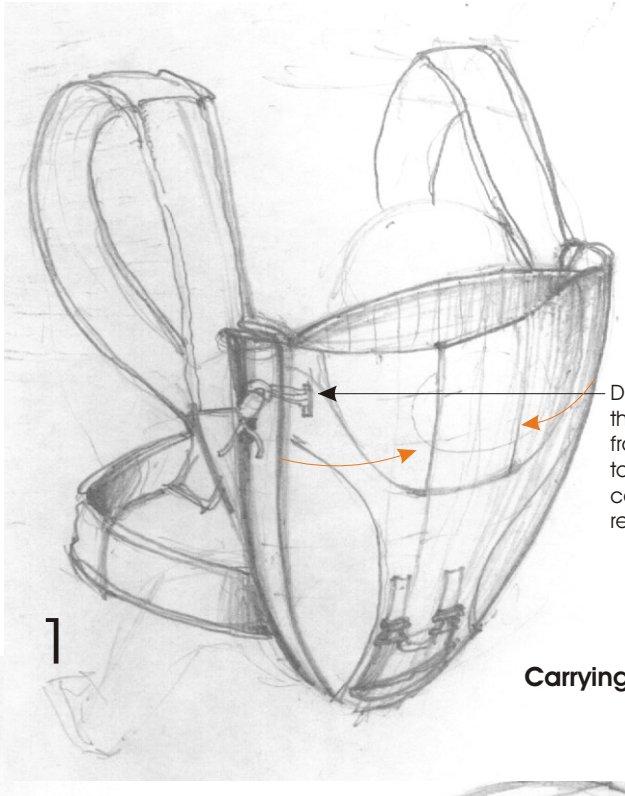
The folding front carrier

This was a front carrier in which instead of using a telescopic mechanism the folding frame was used. An attempt was made to make the carrier grow length wise as well as along the width by using flexible materials.

The structure consisted of a flat polypropylene piece at the centre that allows it to bend as shown in the sketches. At the ends is a flexible plastic rod that tends flex out when in the cradle position but can be pulled towards the central pp. structure when one wants to carry it on the body. The idea is to adjust the frame to the different purposes.

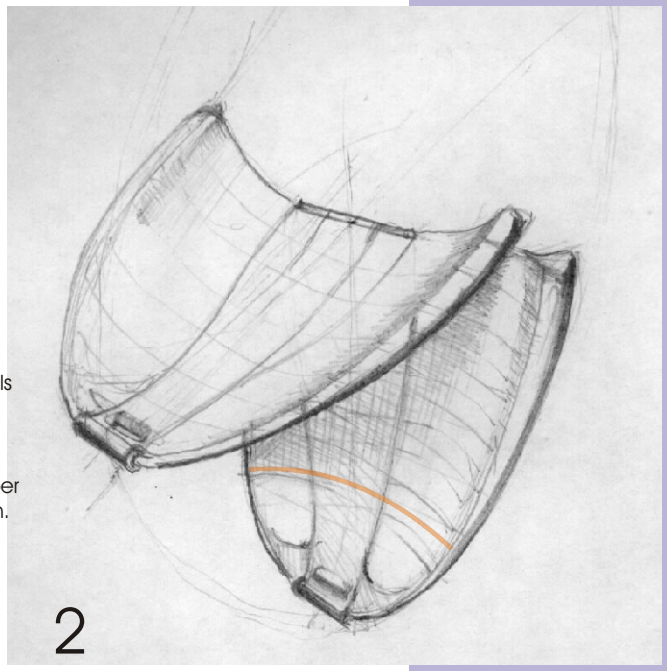
Another advantage is that it would be much lighter than using the telescopic mechanism.





1

Carrying position



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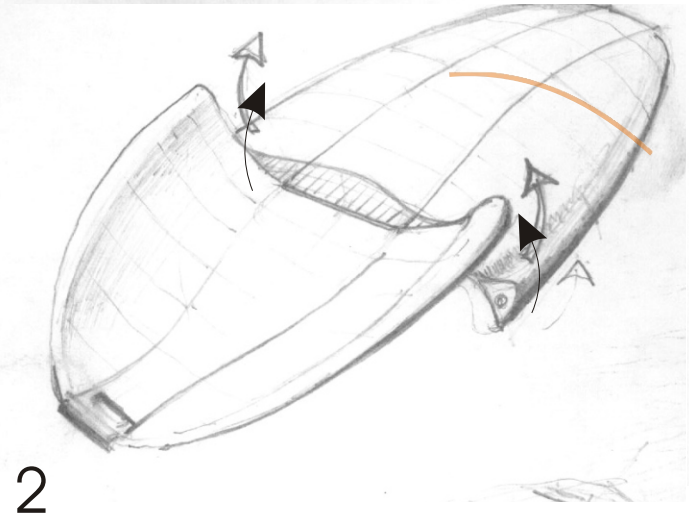

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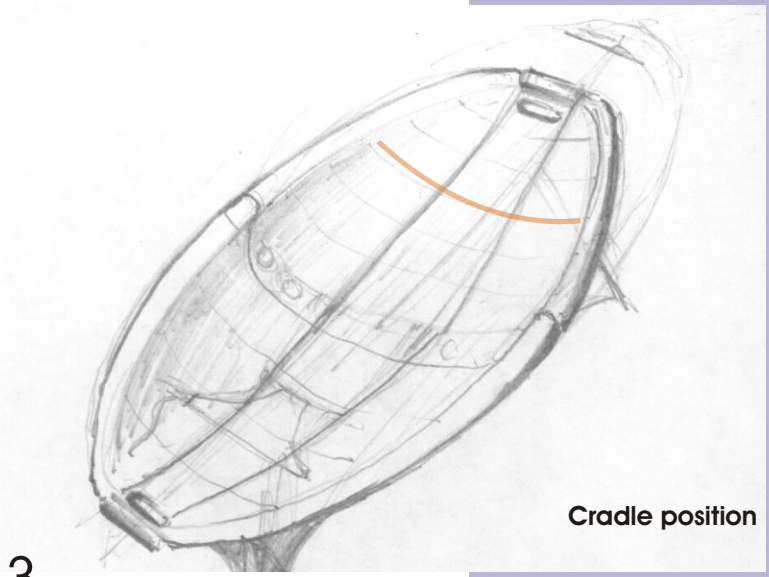


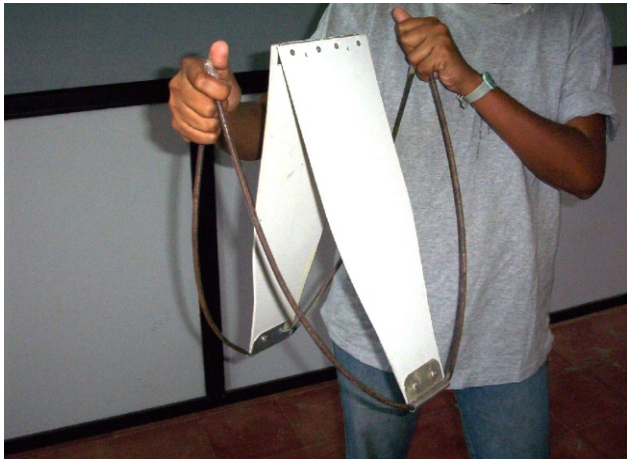
Cradle position

3

Converting from the carrier to the cradle

concept 3

Carrying position

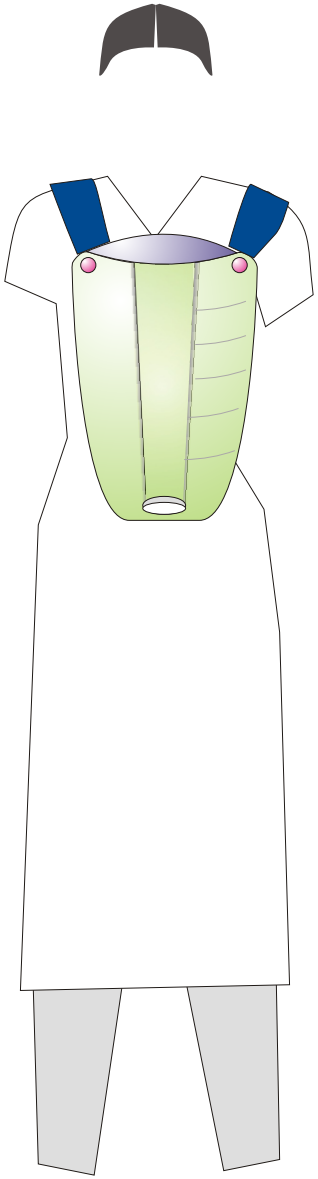


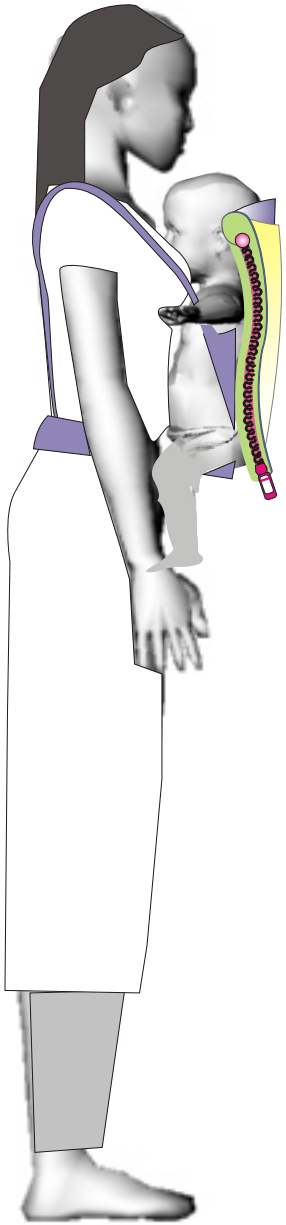
Opening the frame

Cradle position

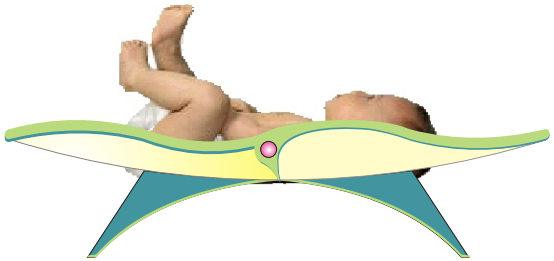
The conceptual frame

Concept 3





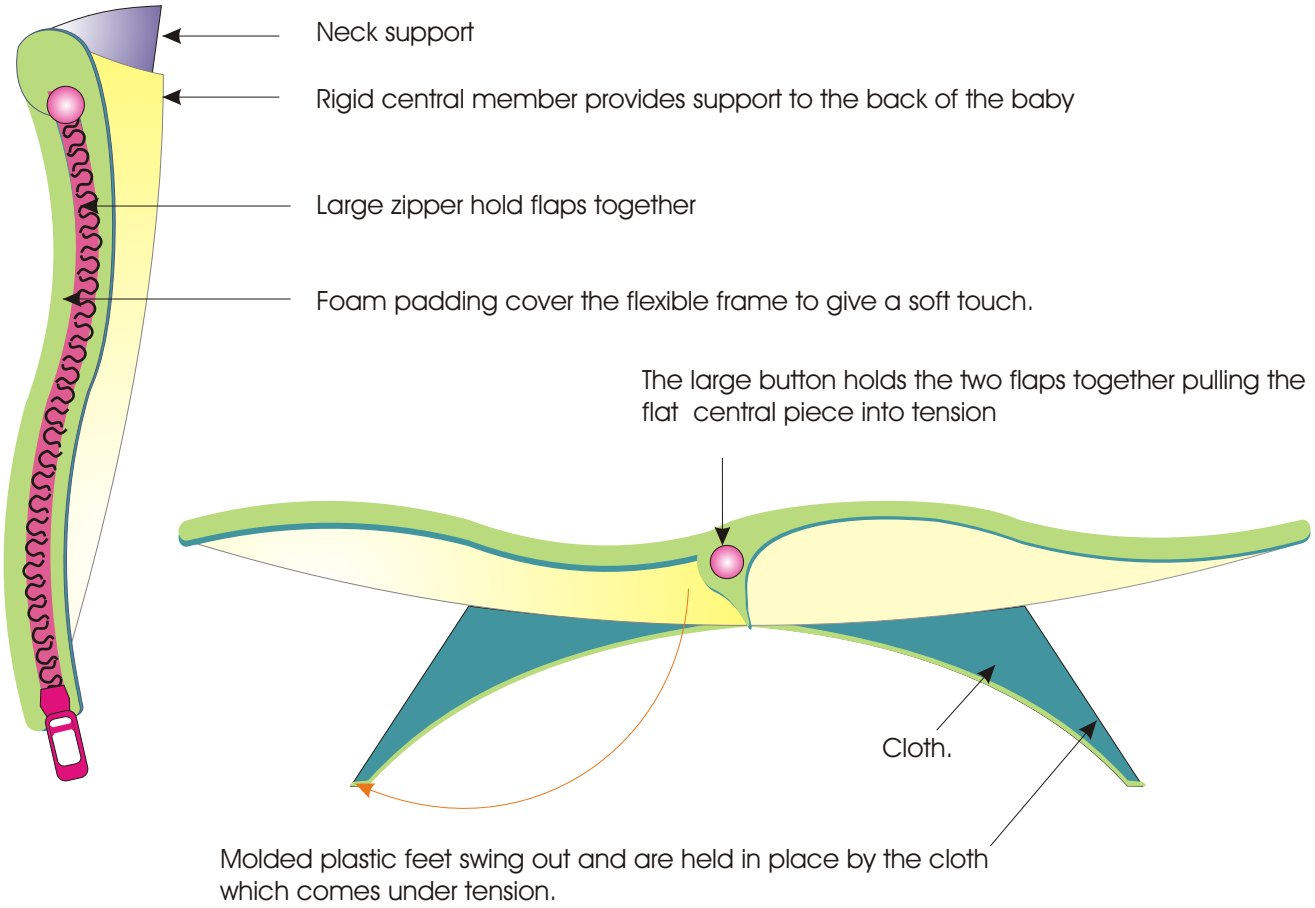
The inspiration for this form was a leaf. The properties of a leaf such as its flexibility, and the smoothness of its curves has been used in the design.



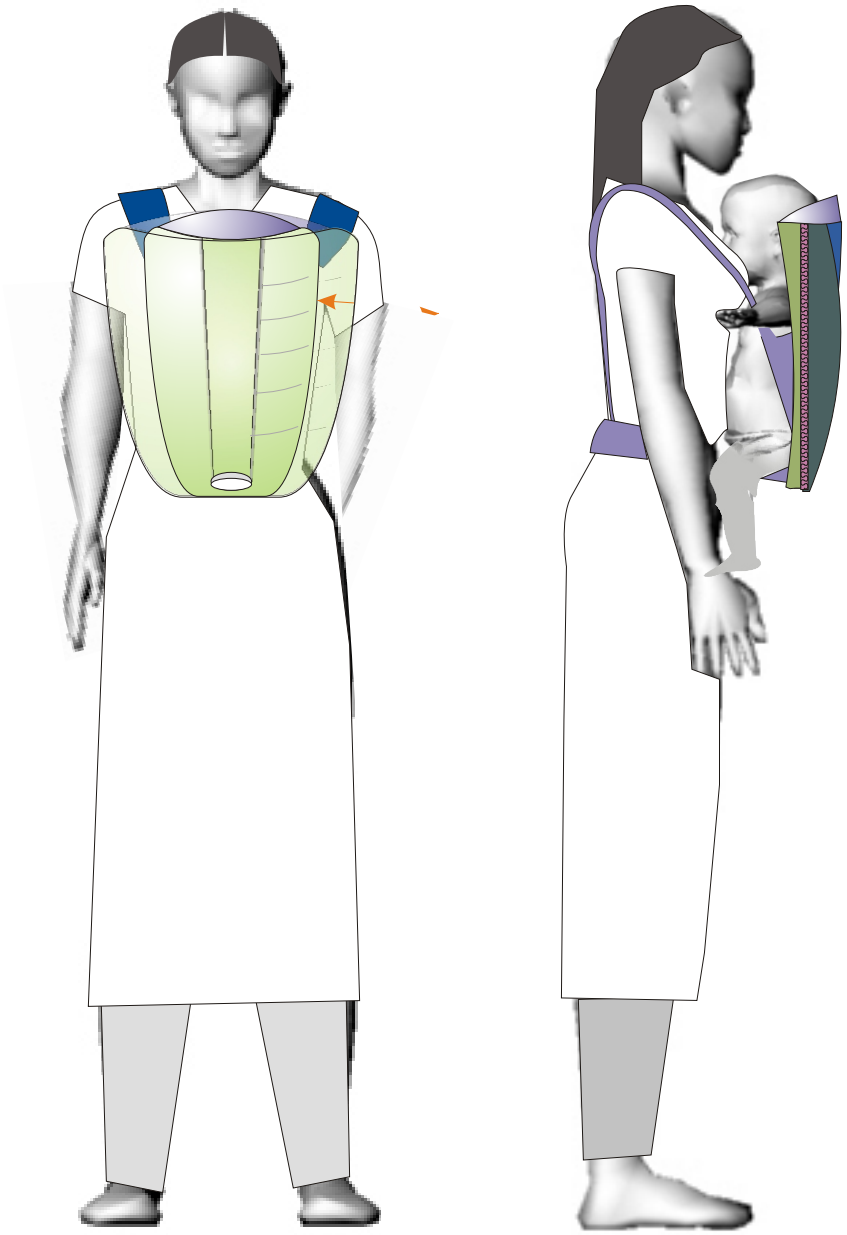
Concept 3
option 1

Cradle position

concept 3


Neck support
Rigid central member provides support to the back of the baby
Large zipper hold flaps together
Foam padding cover the flexible frame to give a soft touch.
The large button holds the two flaps together pulling the flat central piece into tension
Cloth.
Molded plastic feet swing out and are held in place by the cloth which comes under tension.

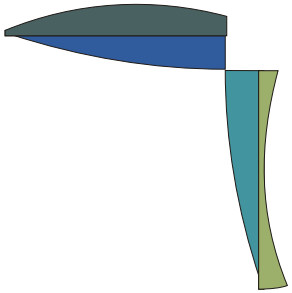
concept 3



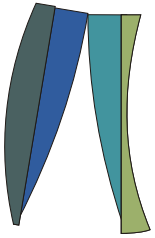
concept 3

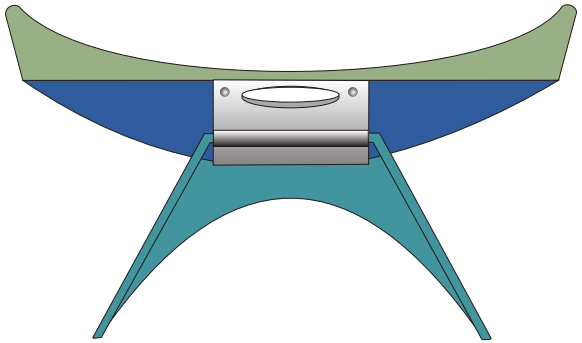
Step 1

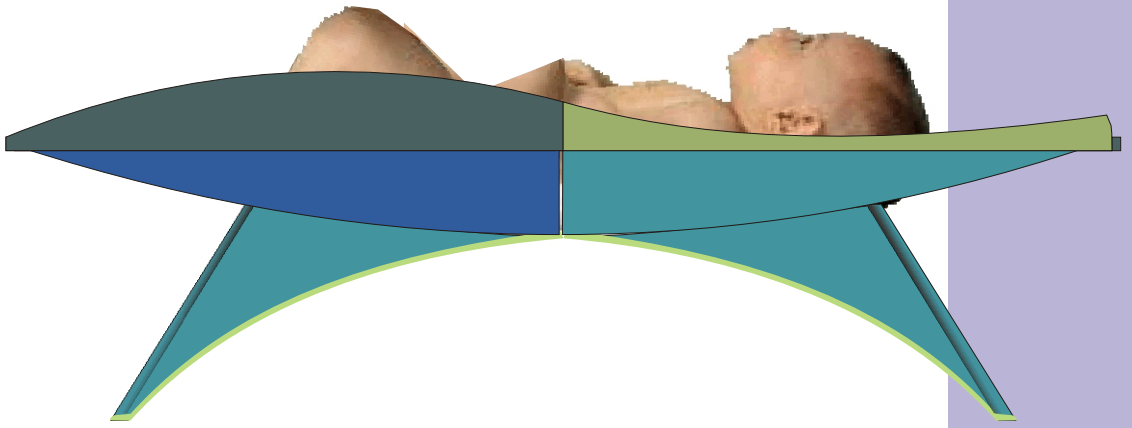
Step 1



Step 3







Step 4

Side elevations

concept 3

thank you