



IDC School of Design
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B.Des | Design Project 1

A product to help with restlessness symptoms of ADHD/Anxiety

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Approval Sheet

This project report entitled 'A product to help with restlessness symptoms of ADHD/Anxiety' by Kathir Eshvar M E, 18U130015 is approved for partial fulfillment of the requirements for Bachelors of Design Degree

Guide

Chairperson

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External Examiner

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I declare that this written submission represents my ideas in my own words, and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated, or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been appropriately cited or from whom proper permission has not been taken when needed.

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Acknowledgments

I am extremely grateful to Prof. Purba Joshi for her invaluable guidance and constant support which made it possible for me to complete the project through the very tough semester.

I also want to thank Prof. Chakravarthy for his support and giving me access to use the Shenoy lab facilities and Prof. Sandesh and Prof. Kums for their feedback and input throughout the course of this project. I would also like to thank the users who took the time to participate in my research. Finally, I would like to thank my friends and family for their support during the trying times.

Kathir Eshvar M E

December 2021

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Abstract

Restlessness is a common symptom exhibited by those with both ADHD and Anxiety Disorders. This often results in them showing these symptoms and fidgeting in a public situation which might be misunderstood as this often happens subconsciously and is the result of wanting to keep moving. And when they can't do it worsens their anxiety or makes them frustrated.

While people have found ways around this and have different things they use to fidget. This project aims to understand the problem space and design a product that might fit the user's needs better. I conducted user research and drew upon my own experiences to get a deeper understanding and used that to arrive at a design brief, which I used to work on ideation and conceptualization and come up with the final product.

Introduction

What is ADHD?

ADHD or Attention Deficit Hyperactivity Disorder is a behavioral and neurodevelopmental disorder characterized by inattention, hyperactivity, and impulsivity, which are pervasive, impairing, and otherwise age inappropriate.[1]

What are Anxiety Disorders?

Anxiety disorders are a cluster of mental disorders characterized by significant and uncontrollable feelings of anxiety and fear such that a person's social, occupational, and personal function are significantly impaired.[2]

Restlessness is a common symptom for both of these disorders. When people feel restless they have an urge to move or keep moving and feel on edge. This often reflects

as fidgeting. And is something that shows their symptoms and draws attention which is something they often want to avoid, especially those with anxiety disorders.

Through my research I will be attempting to get a deeper understanding of the problem space and understand the problems and shortcomings with existing products and work towards designing a product that satisfies the brief that I come up with based on my research.

Motivation

As someone who struggled and struggles a lot with these specific issues, this is a topic I feel strongly about and wanted to work on for quite some time. I related a lot with this topic and felt a personal connection which served as my main motivation during the course of the project.

Literature Review

A trial-by-trial analysis reveals more intense physical activity is associated with better cognitive control performance in attention-deficit/hyperactivity disorder

This study had a set of participants who were diagnosed with ADHD and those who were typically developing (TD). It had the participants wear an actometer to measure their rate of activity in association with cognitive control. The findings of the study suggested that cognitive control functioning in ADHD may be enhanced by more intense activity. One possible mechanism that explains the relationship between physical activity and cognitive functioning is that children with ADHD use movement to self-regulate alertness. An optimal level of arousal is required for peak cognitive performance (Yerkes & Dodson, 1908). This study also supported Rapport et al.'s (2009) model that hyperactivity serves a “purposeful function” to compensate for underarousal and acts to improve cognitive performance.

A trial-by-trial analysis reveals more intense physical activity is associated with better cognitive control performance in attention-deficit/hyperactivity disorder

T. A. Hartanto, C. E. Krafft, A. M. Iosif & J. B. Schweitzer ✉

Pages 618-626 | Received 27 Oct 2014, Accepted 19 Apr 2015, Published online: 10 Jun 2015

Download citation

<https://doi.org/10.1080/09297049.2015.1044511>

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Using Stress Balls to Focus the Attention of Sixth-Grade Learners

This was a pilot study that investigated the effects of letting students use stress balls during the direct instruction period and independent work periods, and they were videotaped and observed. They found that frequency of distraction incidents decreased during both the cases reduced.

Another interesting finding was that - socially, peer interaction was improved especially for students who were kinesthetic or ADHD. Which could mean that it helped people with ADHD in terms of impulse control in social situation which is one of the biggest challenges they face. Performance during independent practice (writing scores) went up as well. And one of the students even commented that “I didn’t talk as much and the work seemed easy”

Using Stress Balls to Focus the Attention of Sixth-Grade Learners

Stalvey, Sheryl; Brasell, Heather

Journal of At-Risk Issues, v12 n2 p7-16 Sum 2006

 Peer reviewed
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ERIC Number: EJ853381

Record Type: Journal

Takeaways

I wanted to affirm that fidgeting was beneficial and served to improve their functioning and both of these papers show results that suggest that fidgeting helps a lot with attention and focus.

To some extent it helped with social interactions as well. And showed how it could improve their quality of life in a productivity setting.

Primary Research

Due to the nature of the topic it was a little difficult to find users who were willing to talk about their issues comfortably. I was able to conduct 5 user interviews initially wherein I got valuable insights. These were semi structured interviews over Discord voice calls and Google meets. It had three adult college students and two 30+ year old office workers. And I collected all the relevant insights which I clustered to get the major insights which I used to form the design brief



Clustering of the relevant Insights



Major Insights

- Be discreet to use
- Fit in a pocket and be portable
- Have some variation in the ways you can use it
- Be useable “mindlessly” without having to pay attention
- Have some kind of satisfying feedback to the user
- Could be one or two handed or both

Design Brief

- Be discreet to use
- Fit in a pocket and be portable
- Have some variation in the ways you can use it - a modular design
- Fit in a pocket and be portable
- Have some variation in the ways you can use it - a modular design
- Be useable “mindlessly” without having to pay attention, but should not be too simple have some part which can be focussed on
- Have some kind of satisfying feedback to the user
- Could be one or two handed or both

Ideation

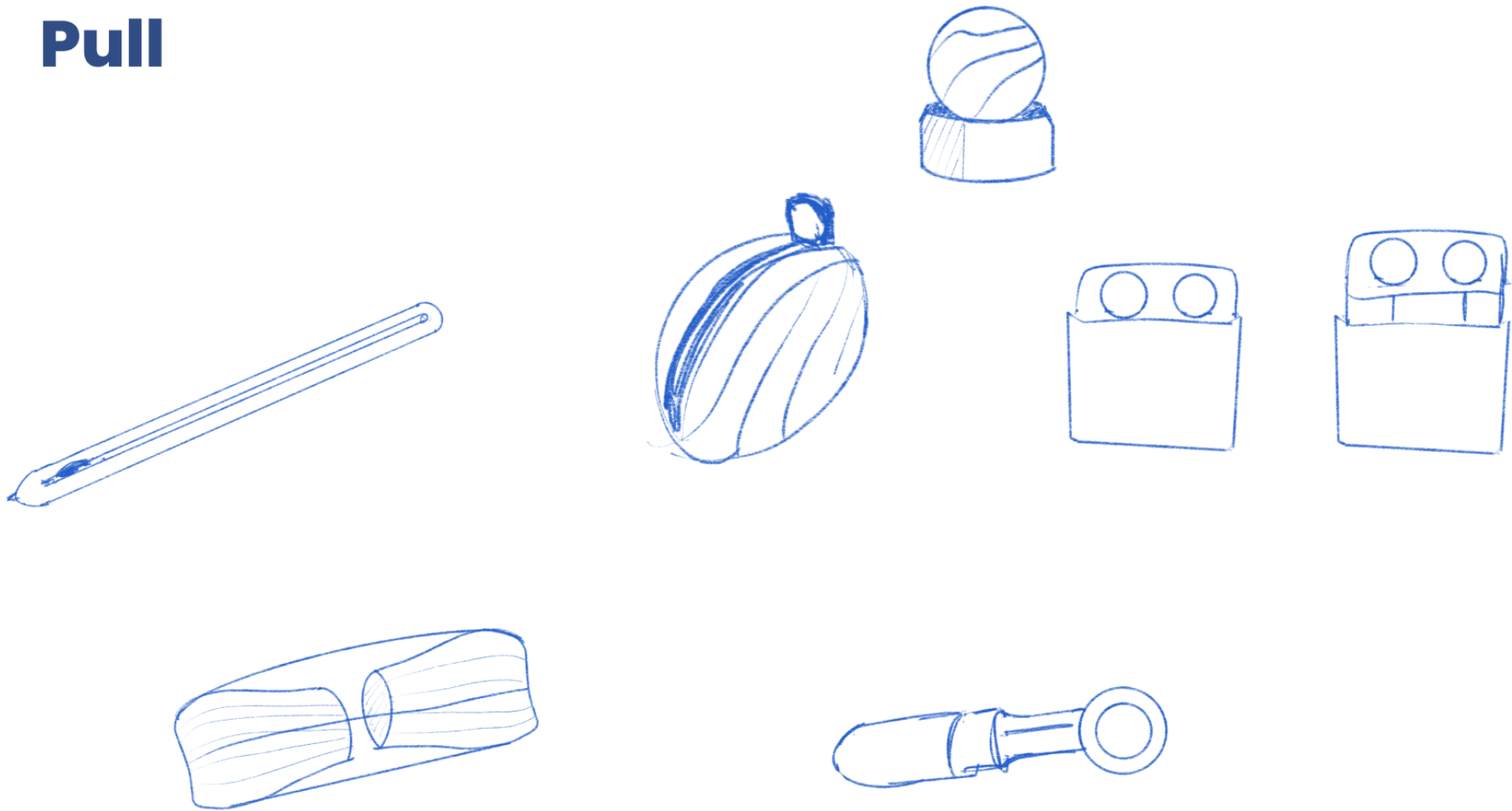
After finalising on the design brief I moved on to ideation in which I began with listing all the different ways in which you can fidget as the starting point and began to ideate specifically just for it, with a single, small action in mind

- Roll
- Rotate
- Switch
- Snap
- Twist
- Flip
- Wind Up
- Slide
- Pull
- Push
- Squeeze
- Count

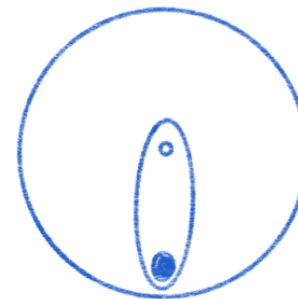
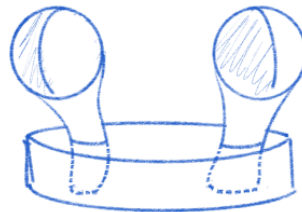
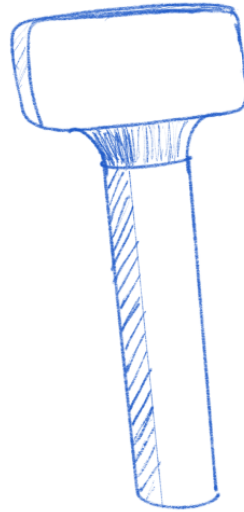
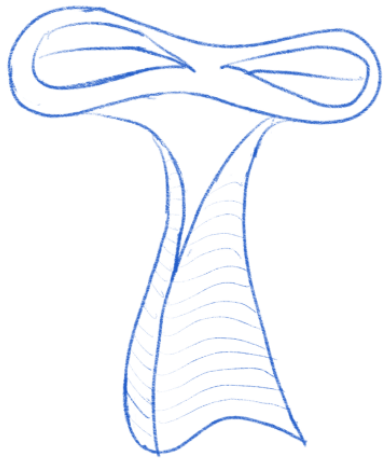
And as I began ideating I realised a lot of these had similar actions and reduced it even further to just be

- Pull
- Wind Up
- Push
- Snap
- Roll

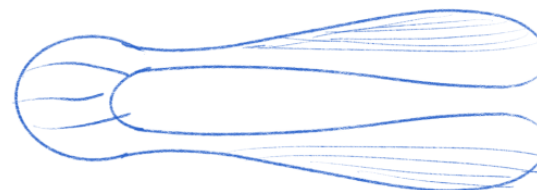
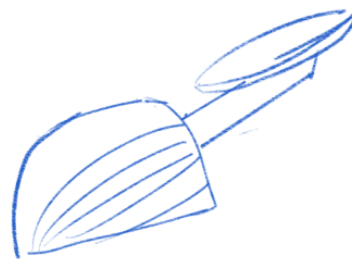
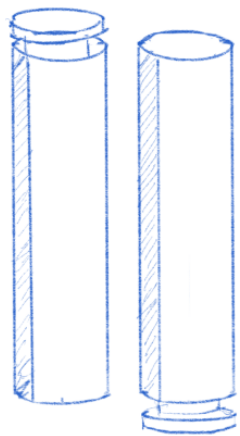
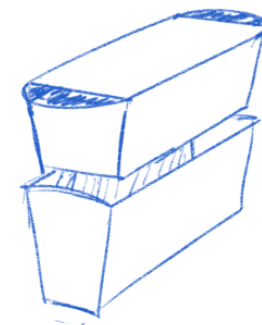
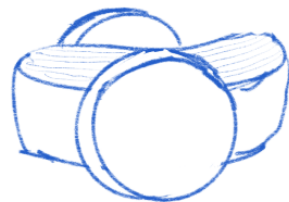
Pull



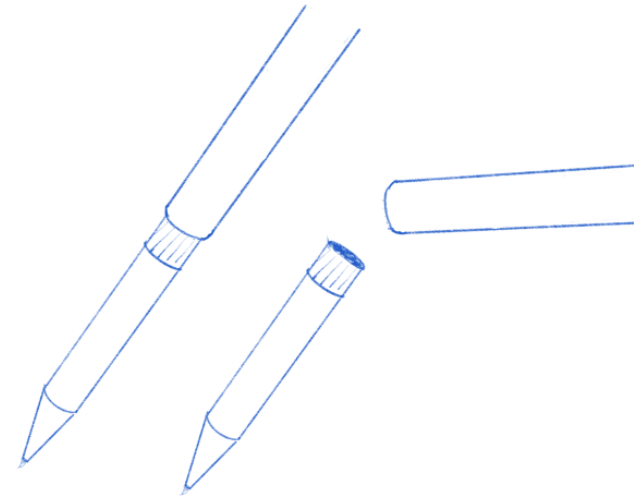
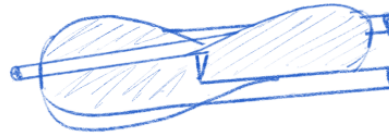
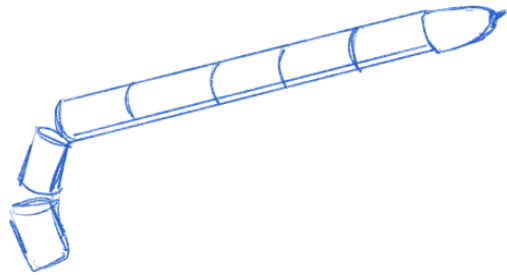
Wind Up



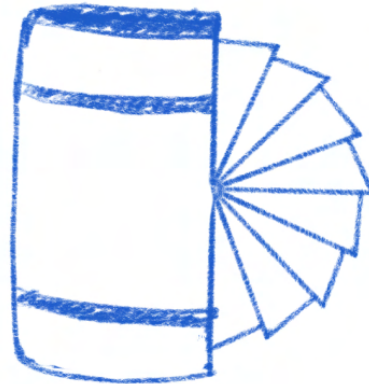
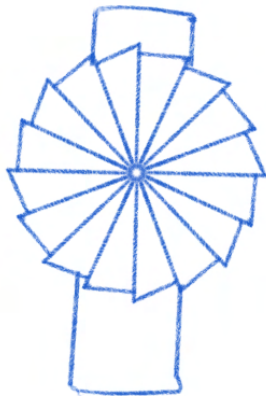
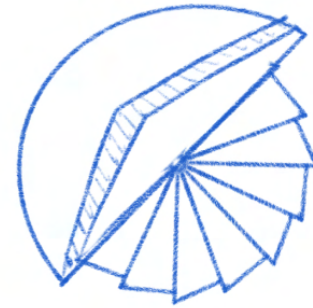
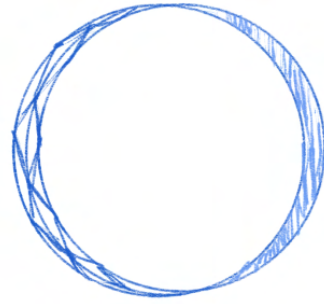
Push



Snap

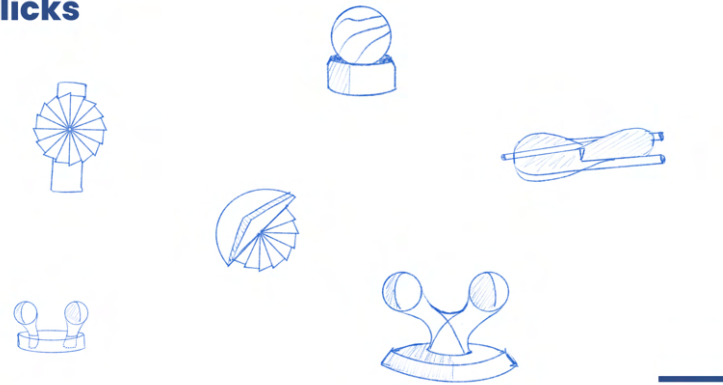


Roll



From this I realised the main feeling of satisfaction the user recieved was from 3 main feelings which are clicks, snaps and friction. Into which I grouped them further.

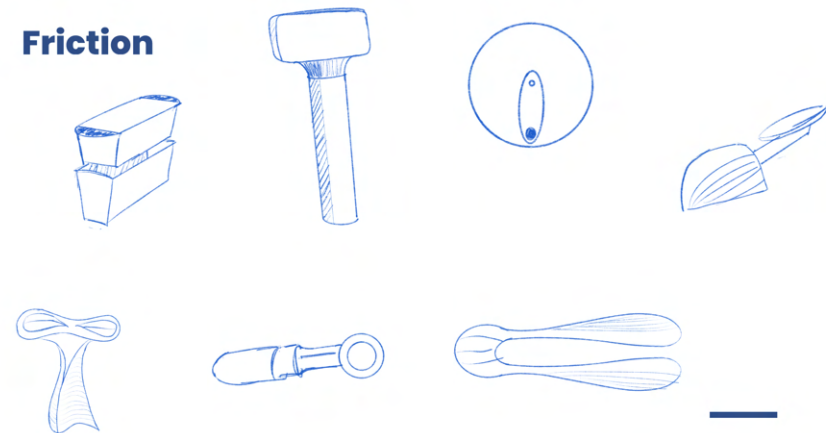
Clicks



Snaps

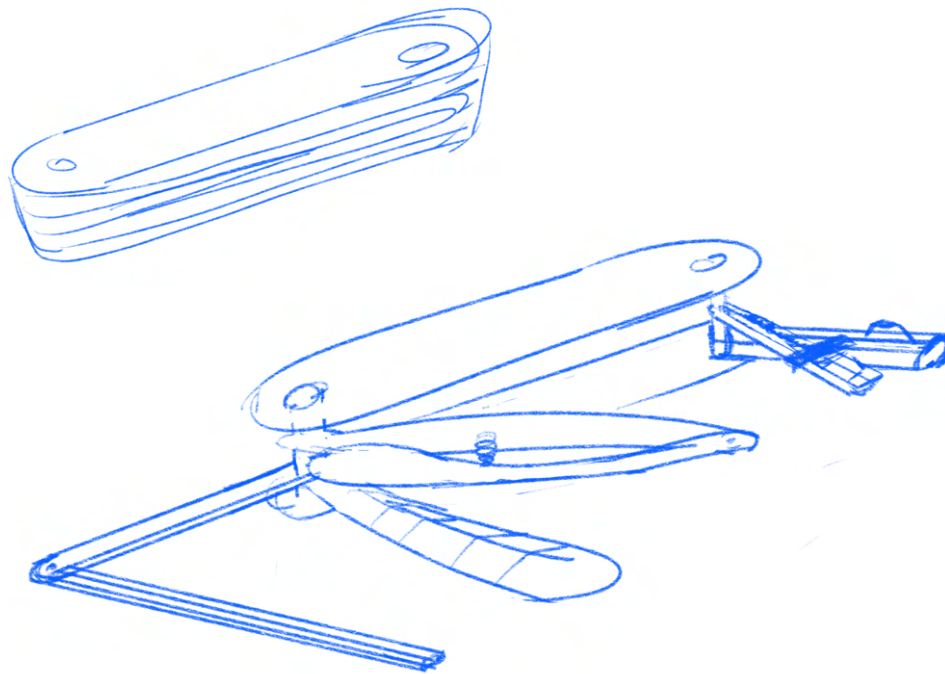


Friction



Concepts

For my conceptualisation I began to try and think of ways to combine more than one idea or have modularity while still being pocketable and I came up with 3 rough concepts



Concept 1: Swiss Army Pocket Knife

Pros: Pocketable,
Many Options

Cons: No modularity, limited use
cases, Not Discreet enough

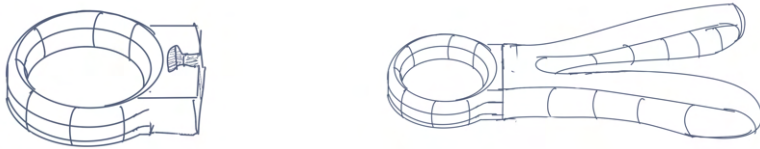
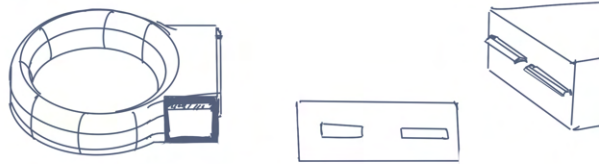


Concept 2: Screw 2 on to each other



Pros: Modular, Can have new ways of interactions

Cons: Limited options, Opposing like pull and push cannot function



Concept 3: Modular Keychain Spinner

Pros: Completely Modular, Is discreet,
has many ways of use

Cons: Might be more expensive due to
number of parts

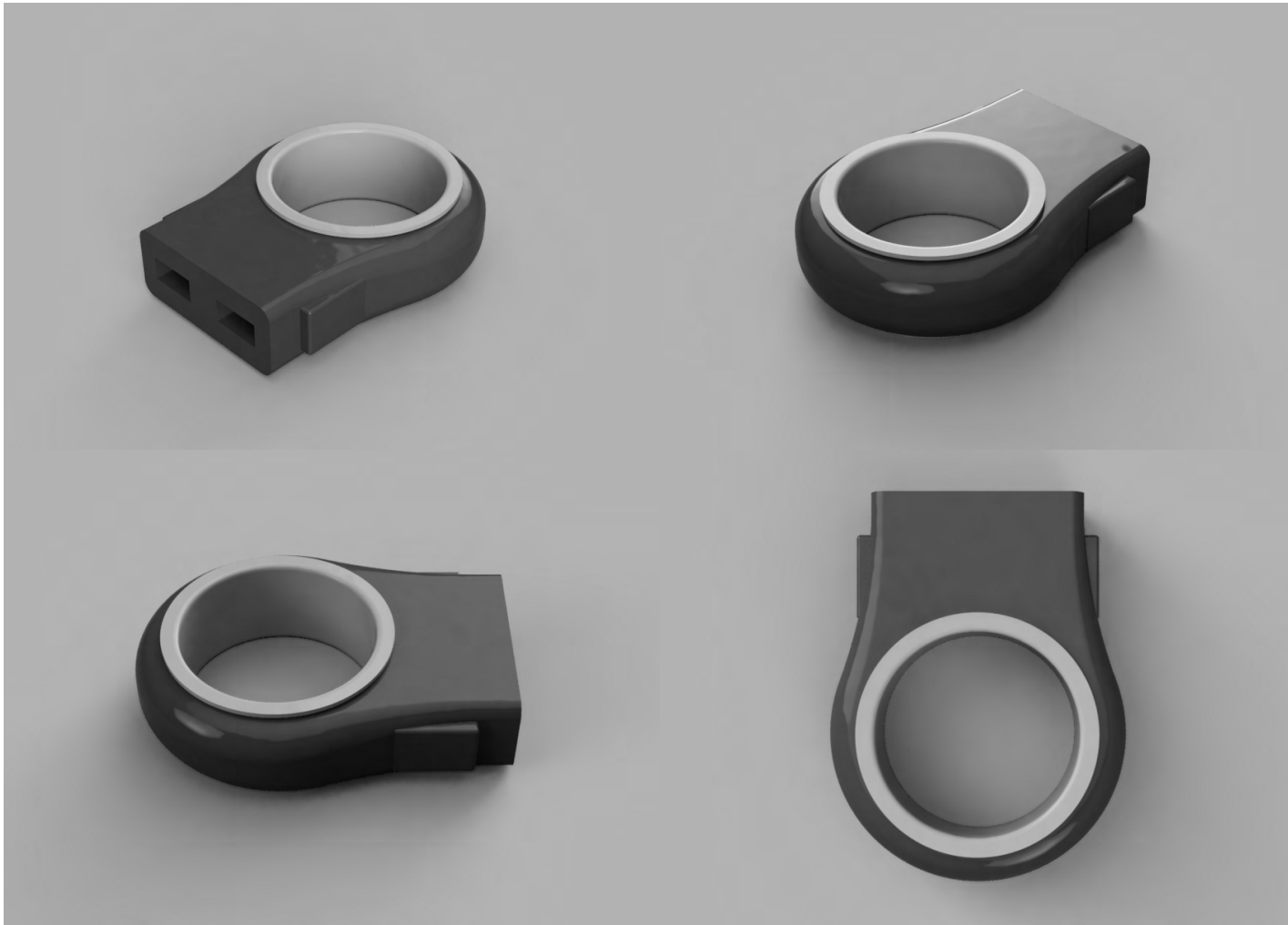
Analysing the Pros and Cons I chose Concept 3

Prototyping



Final Design

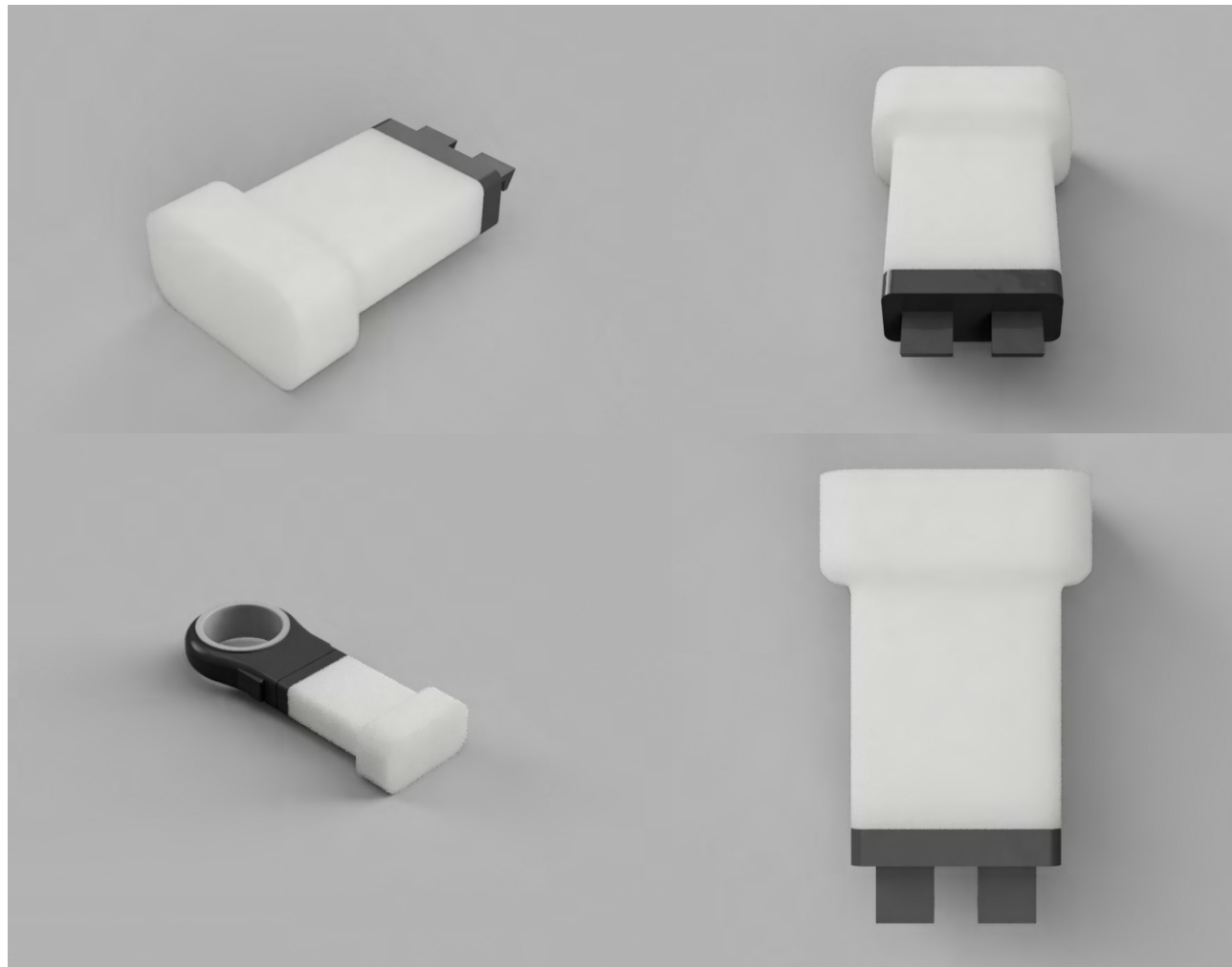
The Base



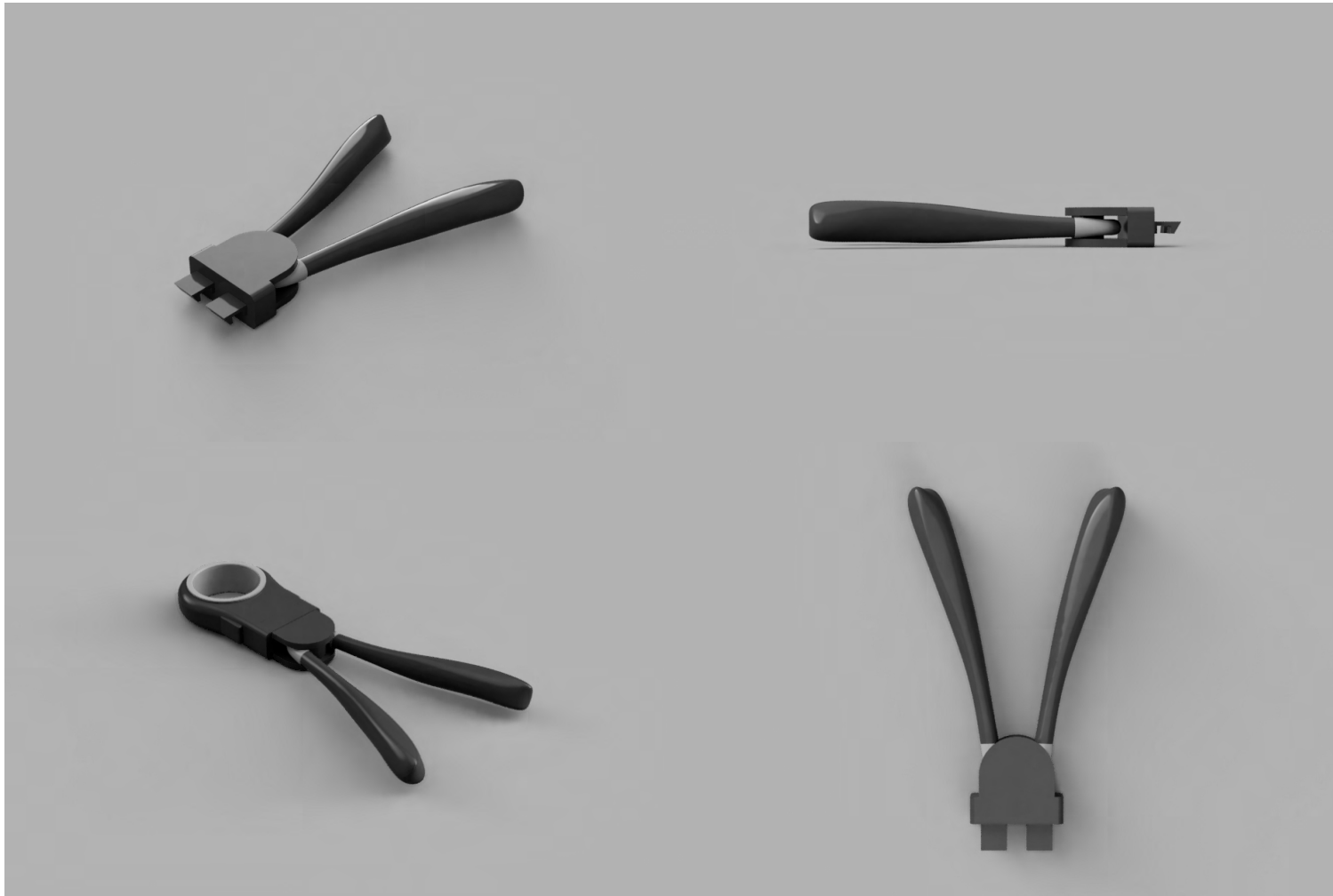
Pull



Push



Squeeze



Snap



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1. https://en.wikipedia.org/wiki/Attention_deficit_hyperactivity_disorder
2. https://en.wikipedia.org/wiki/Anxiety_disorder
3. <https://pubmed.ncbi.nlm.nih.gov/26059476/>
4. <https://eric.ed.gov/?id=EJ853381>