

One Handed Pan Holder

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Project Brief

The aim of this project is design a product for one handed people that is either an alternative to existing products that need the use of two hands or aids in completing difficult tasks in the kitchen. The focus is on functionality for a specific user persona and use case.

Research

Ethnography

To understand how people with limited use of both hands cook and navigate in the kitchen, I made an omelette only using one hand.



Frame 1: I struggled to open the jar of oil because the cap was screwed on too tight. After struggling for a bit, I used both hands to loosen the cap.



Frame 2: Cracking the egg with one hand was difficult. Many egg shells fell into the pan and I had to take them out so they wouldn't cook with the egg.



Frame 3: Flipping the egg and taking it out of the pan and onto my plate was also hard to do without being able to hold onto the pan handle for stabilization.

Through cooking something as simple as an egg, I learned that kitchens aren't accessibility friendly and that only being able to use one hand makes cooking much harder. I struggled with opening the jar of oil, cracking the egg (I would use a fork or spatula, instead of cracking it against the pan), pouring salt (I would usually sprinkle some into the palm of my hand, so I wouldn't drop too much salt into the pan), and flipping and taking out the egg (I would usually grab onto the handle to easily flip/take out the egg).

Market Research: Folding Pot Stabilizer

I did some research to see if there were products that already existed that could solve some of the problems I ran into while cooking an egg with one hand. The Folding Pot Stabilizer is great for one handed cooks as it holds onto the pot handle while you stir, flip, mix the contents in the pan. Manufactured by MaxiAids and sold for \$27.96, it is constructed of aluminum and has rubber suction cups for stability. It can be folded up when not in use and can be easily stored.



Product Evaluations

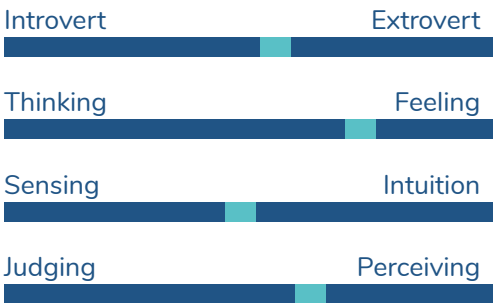
	Folding Pot Stabilizer	Etac Deluxe One-Handed Paring Board	Spork with Built Up Handle	COOK-WAY Universal Under Counter/Cabinet One-hand Jar Opener	EZ Squeeze Can Opener
Design	High	High	High	High	High
Affordability	\$\$	\$\$\$	\$	\$	\$
Convenience	High	High	High	High	High
Size	7.5" Diameter	12" x 11"	9"	6.3" x 6.3" x 1"	8.2" x 4.6" x 1.8"
Weight	6 lbs	0.22 lbs	3.31 lbs	0.4 lbs	0.4 lbs
Flexibility	Can be used with many different pot sizes	Vise can be used to cut, slice or dice food or be used to stabilize things	Comes in 3 different versions, standard, left hand, or right hand	Can be used with many different jar sizes	Can only be used to open cans

User Persona

Jane Doe

Age: 60
Occupation: Retired teacher
Location: Indiana
Status: Widowed

Personality



Summary

Jane is a retired middle school teacher who lives alone in her condo. She has three adult children who have moved away to different states and her husband passed away a few years ago. Her home is decorated with photos of her family, paintings and interesting furniture and sculptures that she has acquired throughout her life. She spends most of her time cooking, reading, and knitting and sewing clothes for her grandchildren. She's recently developed arthritis and has decreased grip strength in her hands. She occasionally loses feeling in her fingers and cannot rotate her wrist. She really enjoys trying out new recipes and will often make them in small servings, but due to her arthritis she has a hard time gripping onto even small pots and pans.

Use Case

Jane wants a product that will make holding things a little easier, specifically something that will make grabbing onto pots and pans less painful.

Ideation

Sketching

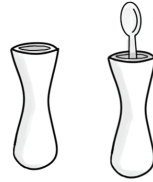
Plate holder & stabilizer for the sink



non spill attachment



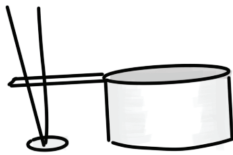
Grip attachment for utensils



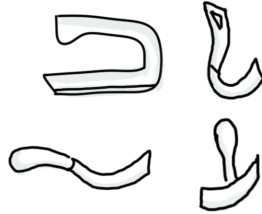
pop tag attachment for easy grip



pot stabilizer



knife with easier grip



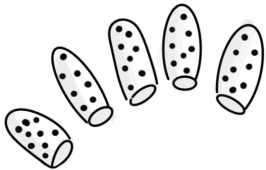
sponge glove for easy cleaning



Cleaning brush



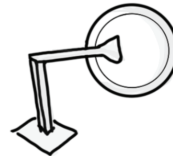
finger grips



Jar Opener



Dish holder



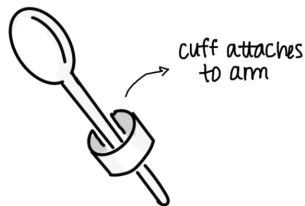
Jar opener / grip support



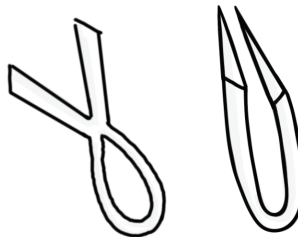
fork & knife



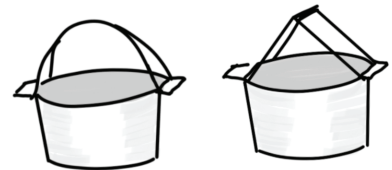
wrist lock



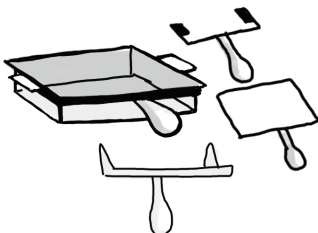
Easy grip scissors



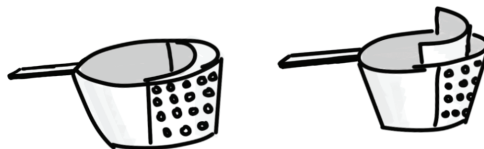
Pot attachments



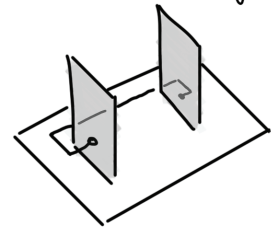
Pan holder



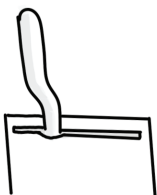
Pot & Strainer



Vise for cutting



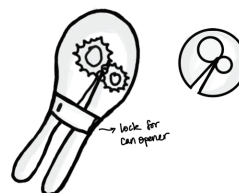
ziplock opener



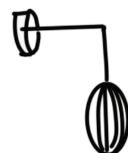
One handed dough roller / rolling pin



One handed can opener



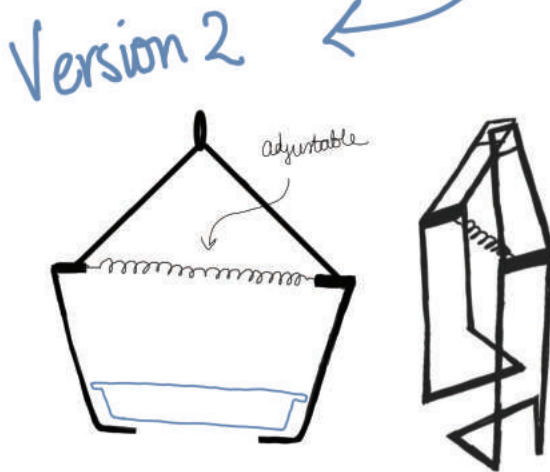
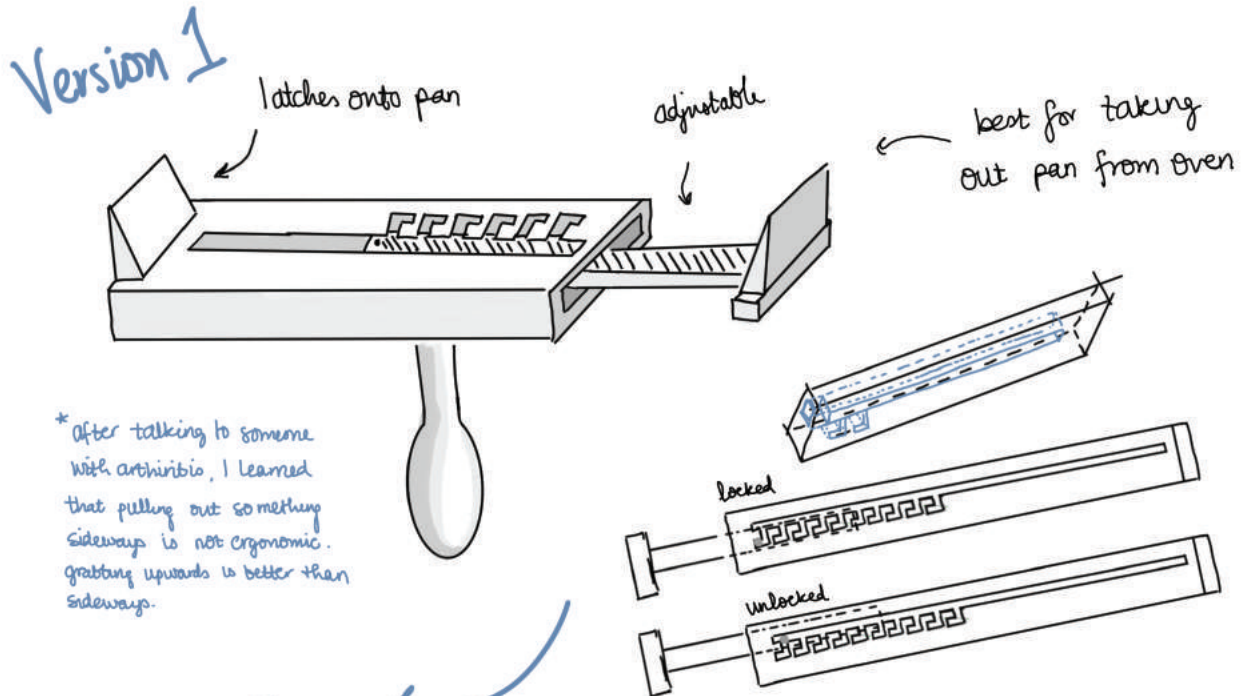
Whisk with arm attachment



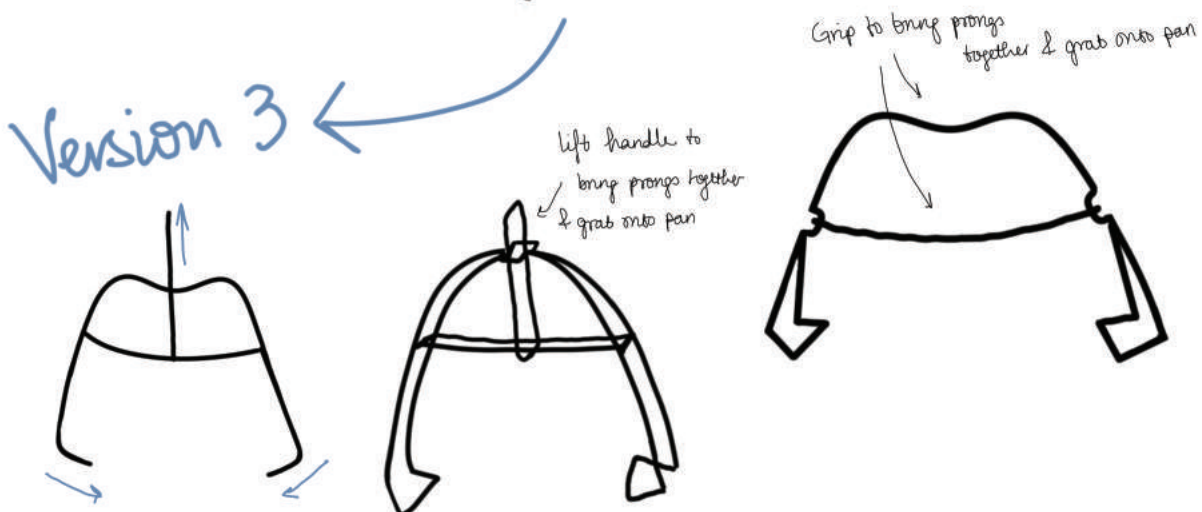
Design Development

Concept Development

I decided to build a product that helps people carry pots and pan with one hand. It started with a product that will allow people to take out and easily carry a pan from an oven. It's now a product that can clamp onto pots and pans.



* after building this prototype, I learned that this design isn't functional.



Prototyping Process

I built the prototypes out of 14 guage galvanized steel. I have never worked with metal before, so I created many prototypes to learn the best way to manipulate metal. Below are the different variations I created.



The first few prototypes I made was to understand the mechanics and figure out how it would work.



I didn't want to use any adhesive and create the product just by manipulating the wire so I decided.



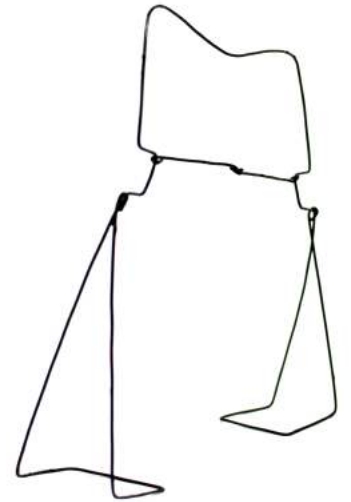
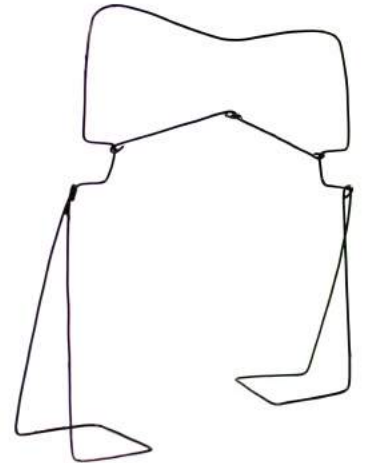
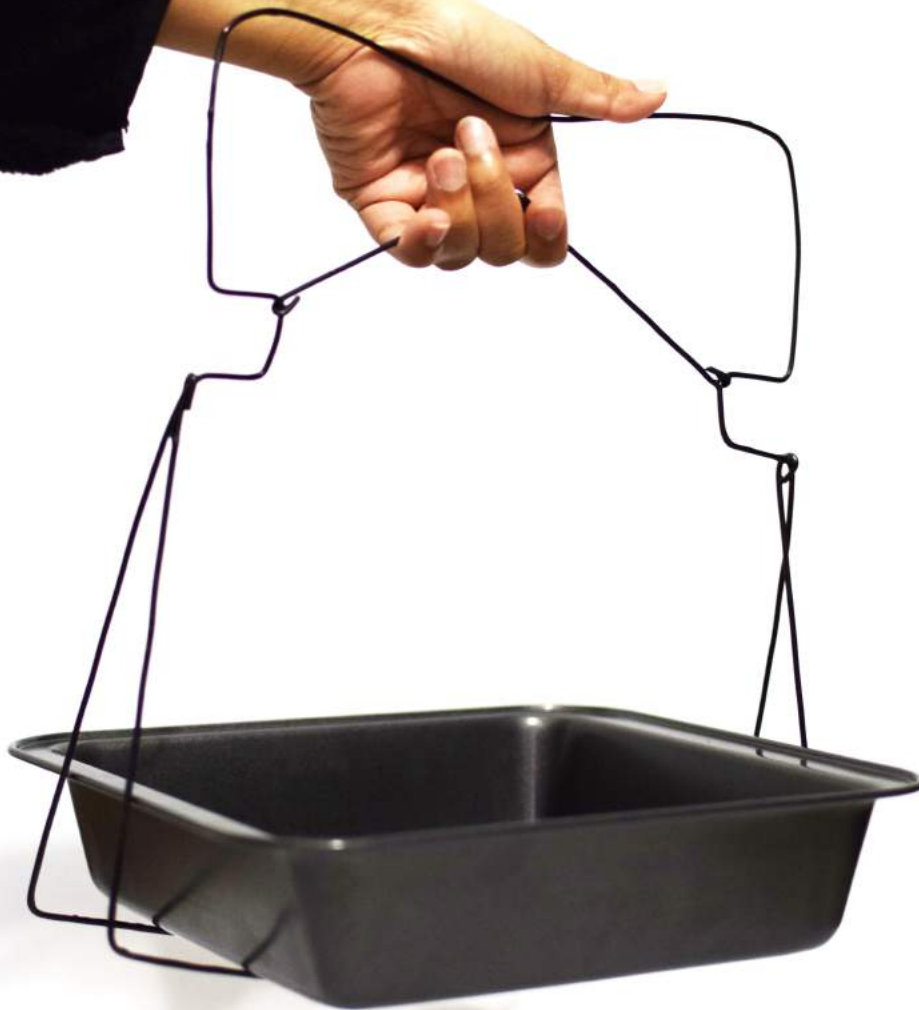
The curved top wasn't ergonomic for the hand, so I created a dip in the handle for easy grip,



I played around with different handles. This design was not as stable.

Through this project, I learned a lot about metal wire. I learned that wire can be straightened by clamping one end to the vise and using a screwdriver. Also the more you manipulate the wire the harder it gets so it's more firm. I struggled working with wire and so I made many many prototypes to try different sizes, different handles, and different prongs.

Final Design



Product Design Specifications (PDS)

Size: 9.5" x 12" x 2.5"

Material: Stainless Steel

Functional Criteria: To use grip handle to clamp onto pan. Do not leave attached to pan in oven

Brand Positioning

The packaging will be minimal. Cardboard packaging will fit around the prongs with instructions and illustrations on how to use the product.

