



Elderly Parkinson's Tea Maker - Joe Vainikka



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The Problem

How might we eliminate caretaker involvement in the tea making process of elderly people with Parkinson's in an assisted living environment?

According to NCIB, green tea is known to increase brain derived neurptropic factor, which helps to slow the progression of Parkinson's. HBEA research implies that the tea making process is too involved of a process for someone suffering from Parkinson's to perform alone.

The brief requires an improvement to the tea brewing experience. This project challenges the limits of a traditional drink maker and caters to a user group often forgotten.



What is Parkinson's Disease?

Parkinson's disease is a brain disorder that causes unintended or uncontrollable movements, such as shaking, stiffness, and difficulty with balance and coordination. Symptoms usually begin gradually and worsen over time. As the disease progresses, people may have difficulty walking and talking.



How do you make proper tea?

People with Parkinson's are often left to settle in life. Inflicted with such a life altering disease, one forgets the simple pleasures in life and just tries getting by. Being treated with a warm comforting drink is a pleasure in life not just a privileged for the healthy; but something be enjoyed by anyone.



Boil water.

Different types of tea require different water temperature to brew.



Warm up teapot.

Take some of the boiled water and fill half the teapot and give it a few swirls then throw out the water.



Add tea to pot.

Measure and add either loose or bagged tea to pot.



Add water to pot.

Add recommended temperature water to teapot.

5.



Cover teapot and steep.

Set the timer on your phone to steep it to the correct amount of time.

6.



Strain solids.

Strain tea solids and pour hot tea into tea cups.

Enjoy!





User Persona

Arya

Age 87
Assisted Living
Early Stage Parkinson's

Symptoms:

Some involuntary movement, tremors through the shoulders and head. Regular exercise is difficult, balance is becoming worse.

Lifestyle:

Lives alone with periodic visits from caretaker.
Minimal family involvement.

Drinking Habits:

Likes drinking sugary drinks and thinks that they improve her symptoms.

Moderate tremors make it hard to hold things. As a result she doesn't like to drink out of traditional cups or straws.



Notable Quotes

"My condition significantly reduces my range of motion and independence."

"Being able to prepare my own drinks makes me feel like less of a burden."

Pain-points

Forgets how long tea has been steeping.

Interface of coffee machines is too **complex**.

Lifting up a full teapot is getting difficult



User Persona

William

Age 78
Assisted Living
Late Stage Parkinson's

Symptoms:

More involuntary movement, tremors through the shoulders and head. Hard to get by without medical health aide.

Lifestyle:

Lives with children in mother-in-law suite, frequent visits from caretaker

Drinking Habits:

Finds that green tea extends the span of time his medication is effective.
Makes his tea the easy way, which turns the tea sour.



Notable Quotes

"One thing I learned is that Parkinson's is incompatible with expensive clay teapots - they get dropped."

"I can't find any tea cups that work for me."

Pain-points

Tremors make pouring drinks a **challenge**.

Range of motion is reducing with progression.

Can't use any nice dishes because they're too **fragile**.

Tea and Coffee Making Appliances							
Brand							
Price	\$76	\$168	\$101	\$54	\$25	\$98	\$120
Brew Method	Steep	Vacuum	Steep	Steep	Pourover	Drip	Drip
Complexity	2	5	2	3	1	5	3
Operation	Automated	Manual	Manual	Automated	Manual	Manual	Manual
Durability	2	1	2	4	3	1	2
Weight	1	1	1	3	3	2	2

Tech Research



HOY Lazy
gFu Drip

\$76

Drip

4

anual

1

2



Nesco TM-1

\$82

Drip

2

Automated

2

3



KitchenAid Swift

\$89

Steep

4

Automated

3

5



TEAVANA
Steeper

\$75

Steep

3

Manual

1

2



Biaxial Maps

Mobility Required



Strength Required

Cognitive Required



Strength Required



Insights

Touchpoints:

Handle size and weight affects how easily it can be used. Mugs, carafes need optimized handles along with buttons and controls need to be minimal and easy to operate.

Accessibility:

Weight, how accessible every part is, easy to read and operate interface. Mobility and strength.

Features:

Timers, programmable timers, audio and tactile feedback.

Materials:

Components need to be durable enough to stand up to any dropping/rough use due to tremors but still affordable.

Product Opportunity Statements

How might we design a tea maker that **eliminates need for caregiver involvement** in the process?

How might we design an **all-in-one** tea maker for elderly with Parkinson's with a **simple interface**?

How might we **eliminate the danger** of elderly with Parkinson's **handling hot drinks** during the tea making process?





inviting






sculptural



natural





			
Name	OXO Pop Container	YRHH Teapot Spout	Samsung Washing Machine
Features	Airtight button locking closure	Straining Teapot Spout	Song to No End of Cycle
Part	Push button seal	Coil Strainer	Speaker
Dimensions	2" Button	Fits to spout	2" Diameter
Materials	ABS Plastic w/ Silicone Seal	Aluminum	Plastic Housing, Screws, place

Specification Benchmarking



Amazon Kindle

Paper-like screen

E-Ink Display

4" x 6"

Plastic



Camelbak Waterbottle

No-Leak Drink Straw

Silicone Straw Tip

.5" x 2" x 1"

Silicone



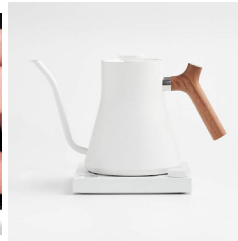
Formlabs Washtank

1 Button + Screen Interface

Interface

1" Knob
1" x 2" Screen

Plastic LCD Screen



Fellow Teapot

Ergonomic Handle

Stagg Handle

4oz

Plastic/Wood



Mitrichef Hot Water Urn

Auto-Shutoff Water dispenser

Heating Element

5" Diameter

Stainless Steel



Attwood Gimbal Drink Holder

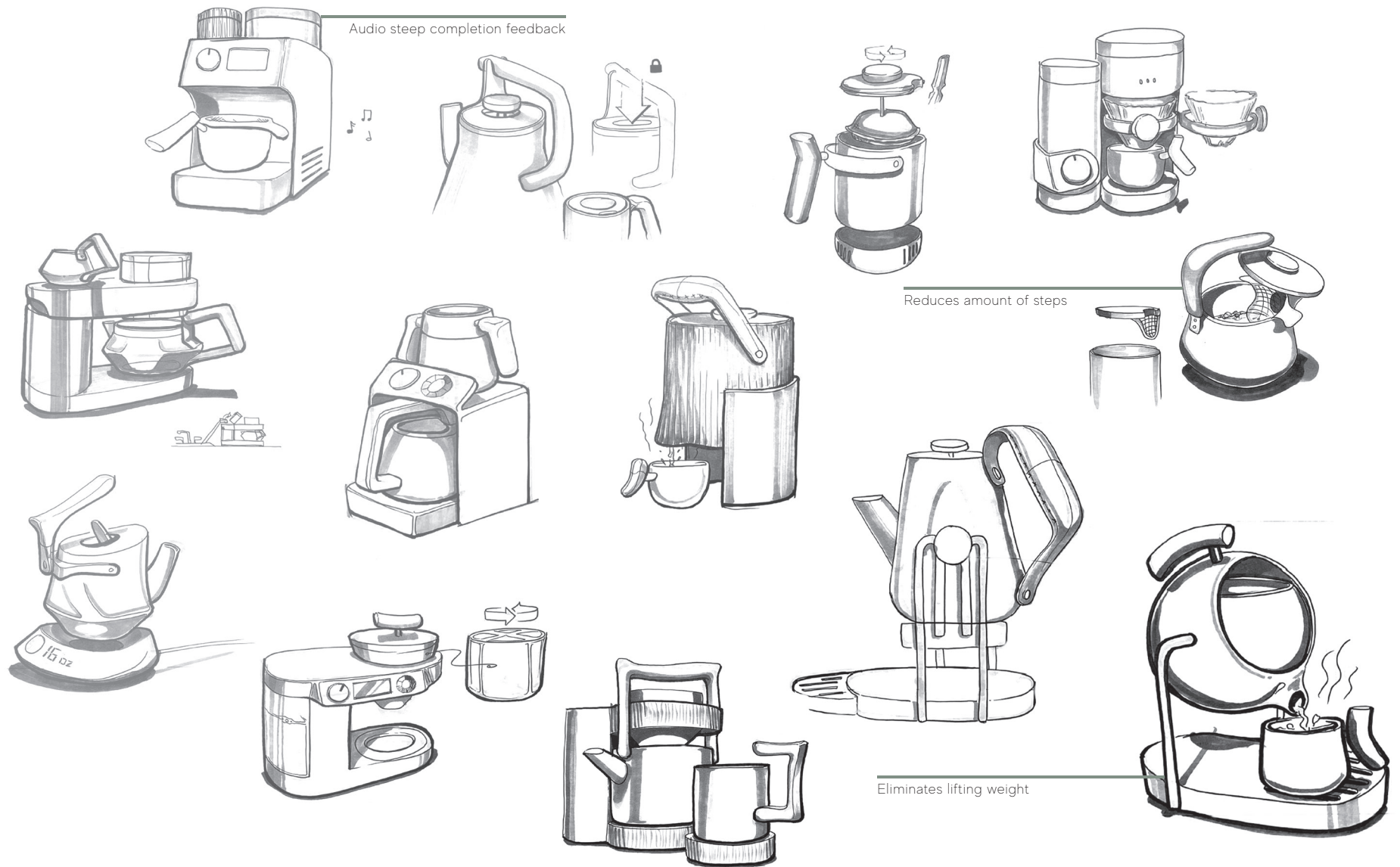
Stabilizes Drink Cup

Gimbal

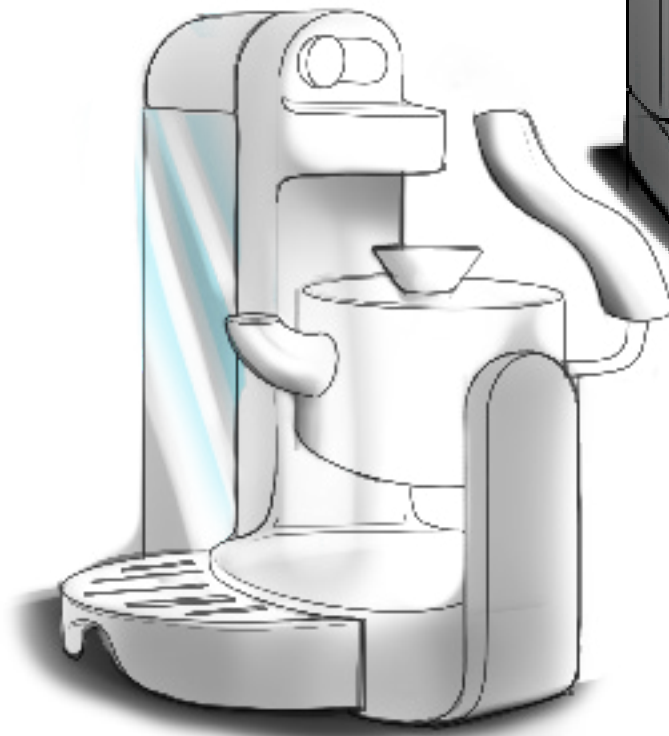
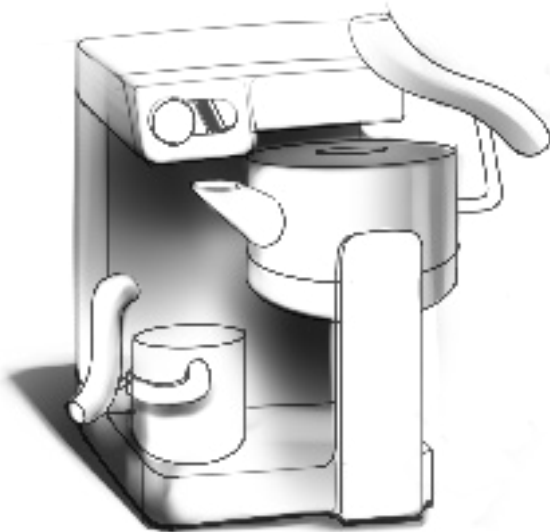
4" x 4 3/8"

Molded ABS Plastic

Ideation Sketching



Iteration



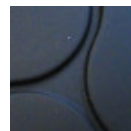


Product Specs



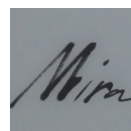
Watertank:

Ribbed plastic mimics a sophisticated fluted glass



Handle:

Soft-touch, rubberized plastic handle for ergonomic grip.



Controls:

Inviting subdued e-ink screen for controls and interface.



Drip tray:

Aluminum drip tray is removable for easy cleaning.



Design Language

Form:

Geometric, minimalist, traditional teapot.

Details:

Tactile interface, accessible features.

Color:

Neutral base colors; metallic/wood accents.
Warm color accessories.

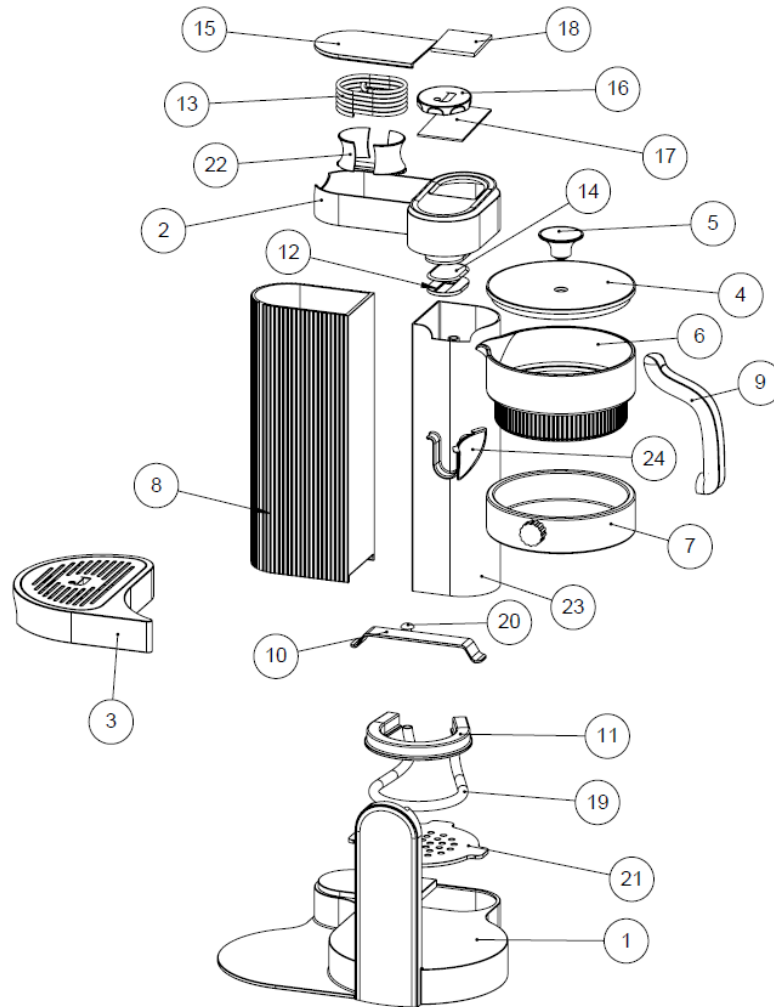
Texture:

Ribbed glass, sophisticated textures for grip.

Personality:

Warm, inviting, cozy and comfortable.

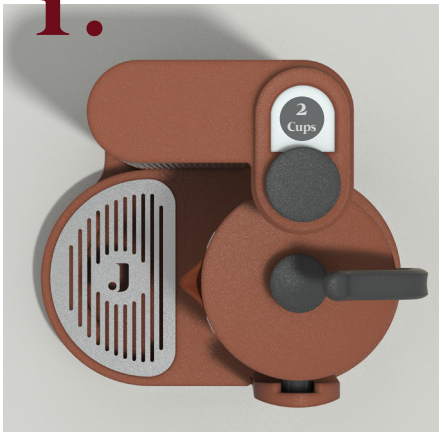
Bill of Materials



ITEM NO.	PART NUMBER	MATERIAL/PROCESS	QTY.
1	Base_r4	Injection Molded ABS Plastic	1
2	Controls_r4	Injection Molded ABS Plastic	1
3	Driptray_r4	Injection Molded ABS Plastic & Waterjet Aluminum	1
4	Lid_r4	Injection Molded ABS Plastic	1
5	LidHandle_r4	Silicone Overmold on ABS Substrate	1
6	TeapotRes_r4	Molded Ceramic	1
7	TeapotSwing_r4	Injection Molded ABS Plastic	1
8	Watertank_r4	Injection Molded PP Plastic	1
9	Handle_r4	Silicone Overmold on Aluminum Shaft	1
10	Bracket_r4	Bent Sheet Metal	1
11	Coil_r4	Machined Stainless Steel	1
12	DispenserBottom_r4	Injection Molded ABS Plastic	1
13	Hose_r4	Sourced Silicone Tubing	1
14	DispenserTop_r4	Injection Molded ABS Plastic	1
15	HoseLid_r4	Injection Molded ABS Plastic	1
16	Knob_r4	Silicone Overmold on ABS Substrate	1
17	PCB_r4	PCBA	1
18	Screen_r4	E-Ink Screen	1
19	Tube_r4	Sourced Silicone Tubing	1
20	Valve_r4	Injection Molded PP Plastic	1
21	VentPlate_r4	Waterjet Aluminum	1
22	Wrap_r4	Injection Molded ABS Plastic	1
23	BackHousing_r4	Injection Molded ABS Plastic	1
24	Strainer_r4	Waterjet Aluminum	1

Storyboard

1.



Select brew cup amount.

Turn and press down on knob to choose what brew size wanted.

2.



Add loose tea or tea bag.

Add amount of tea the screen prompts user based on brew amount.

3.



Wait for tea to steep.

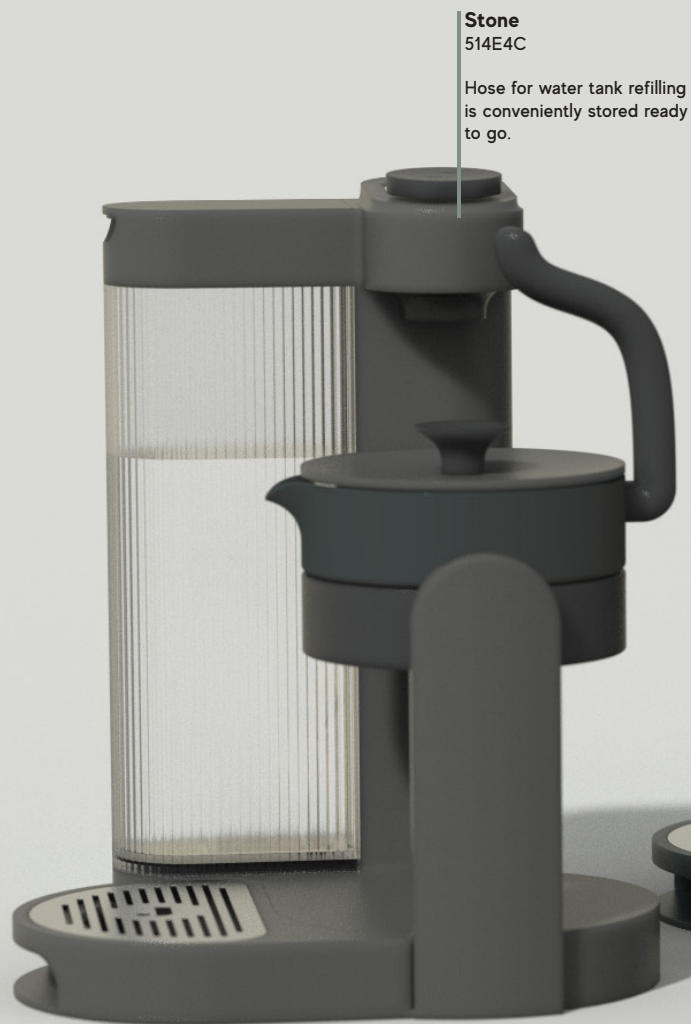
Teapot chimes when tea is done steeping.

4.



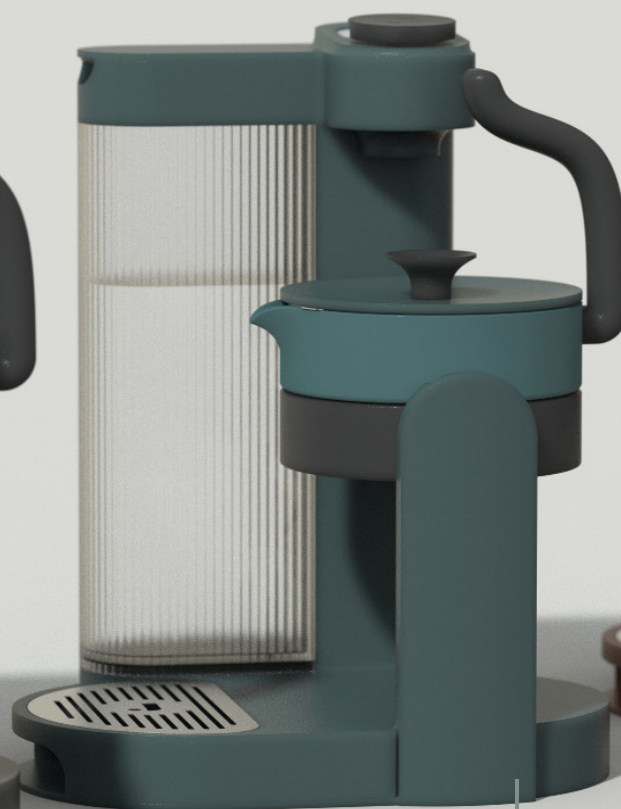
Pour into cup.

Simply turn handle to pour into cup in a safe manner!



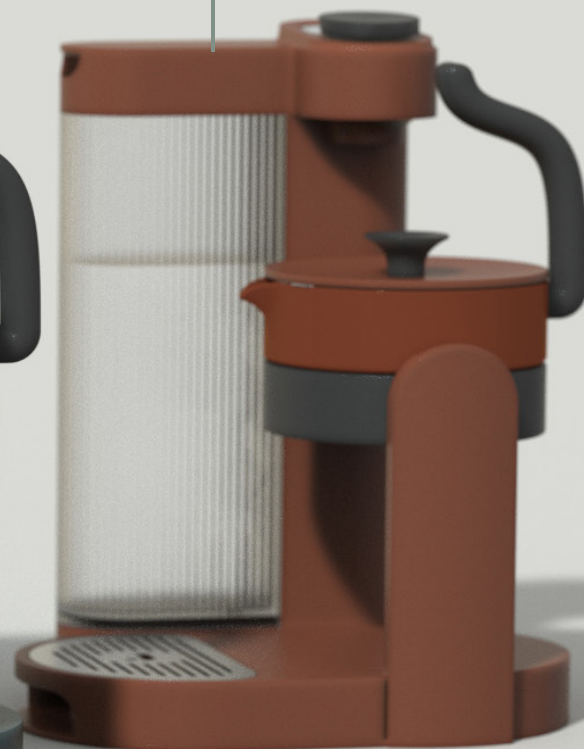
Stone
514E4C

Hose for water tank refilling
is conveniently stored ready
to go.



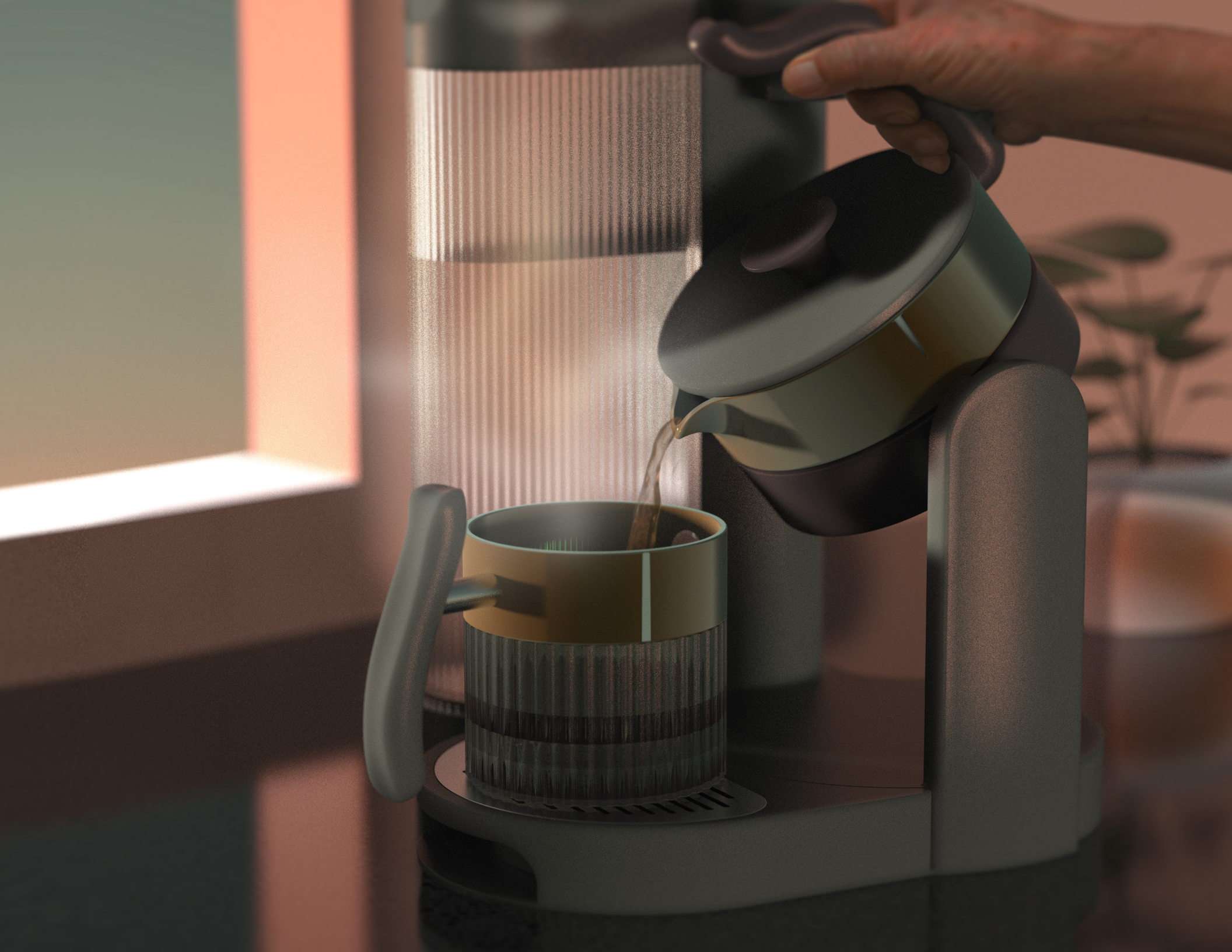
Emerald
435152

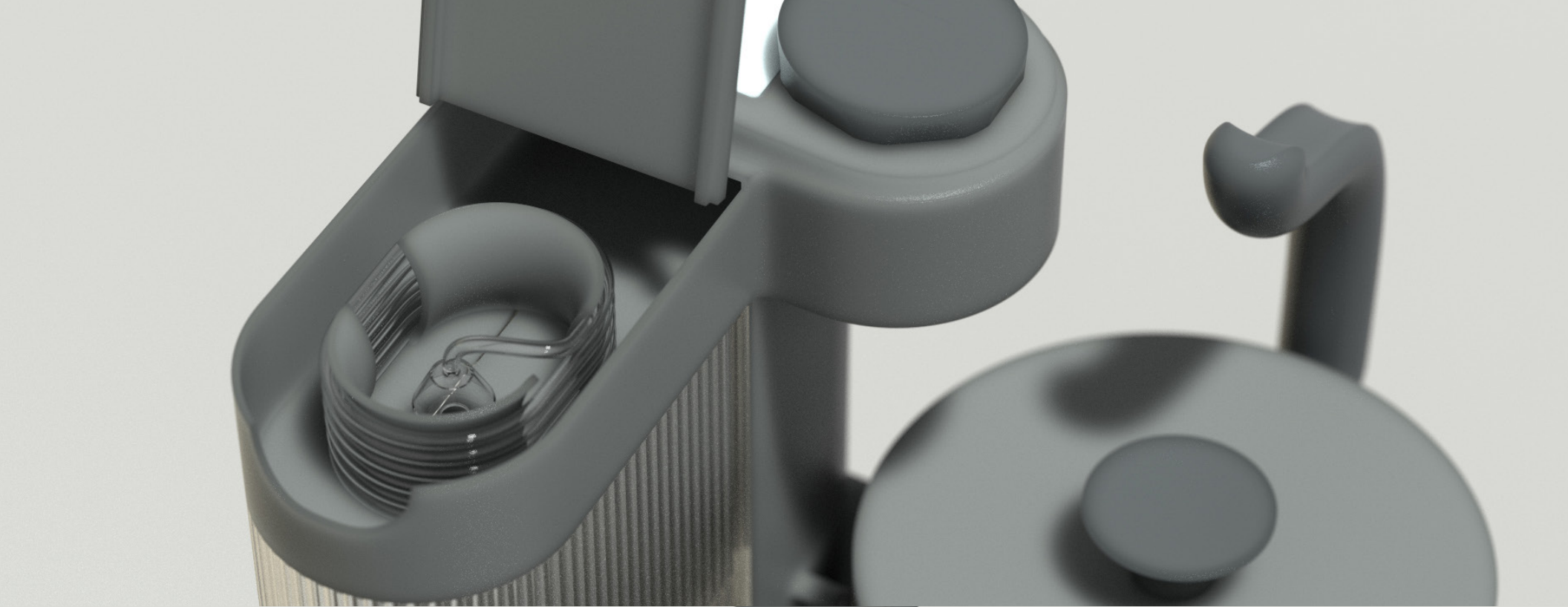
Removable drip tray for easy
cleaning



Terracotta
803C28

Simple user interface on an
inviting e-ink display.





 Jovial
Tea Co.

