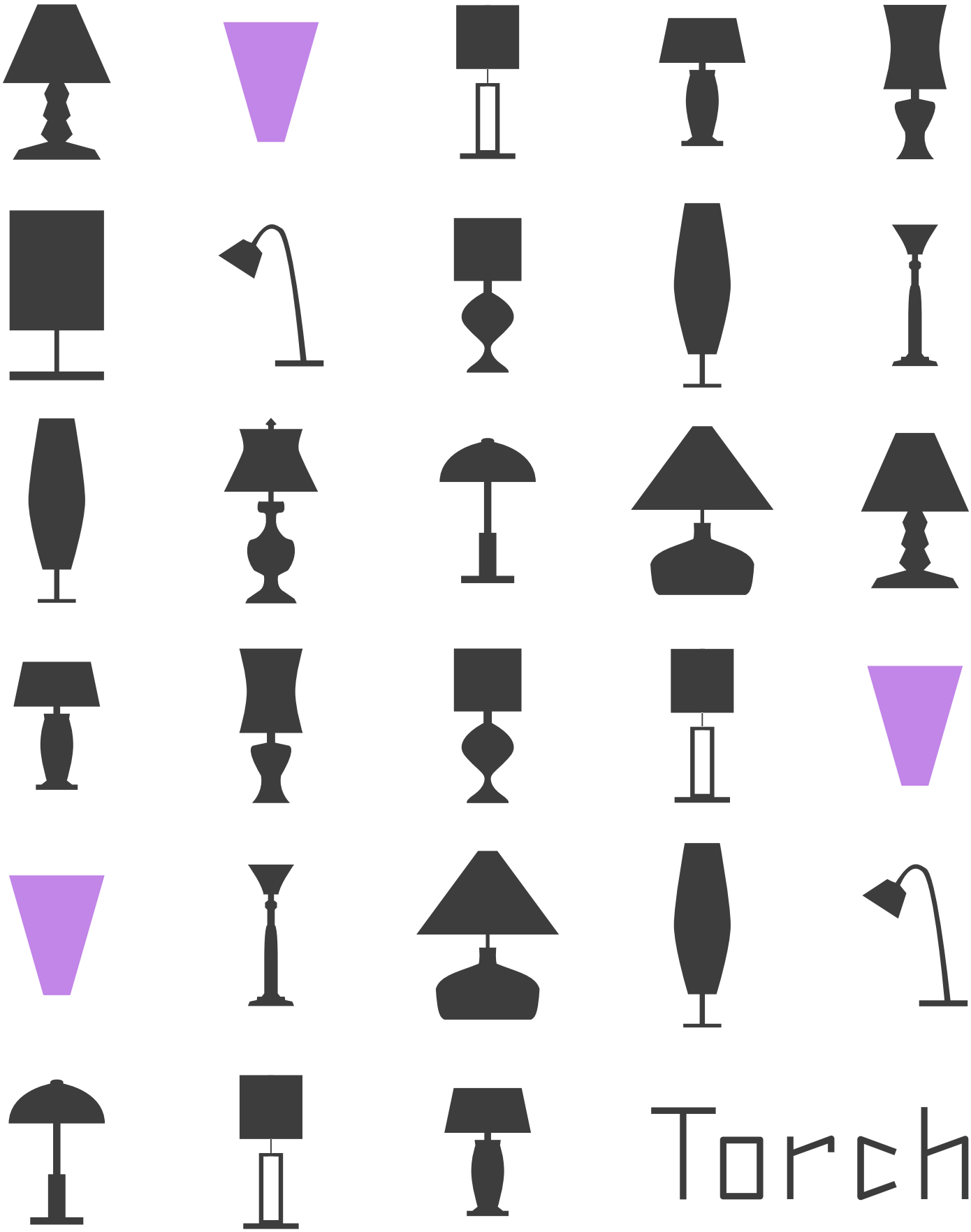

Torch

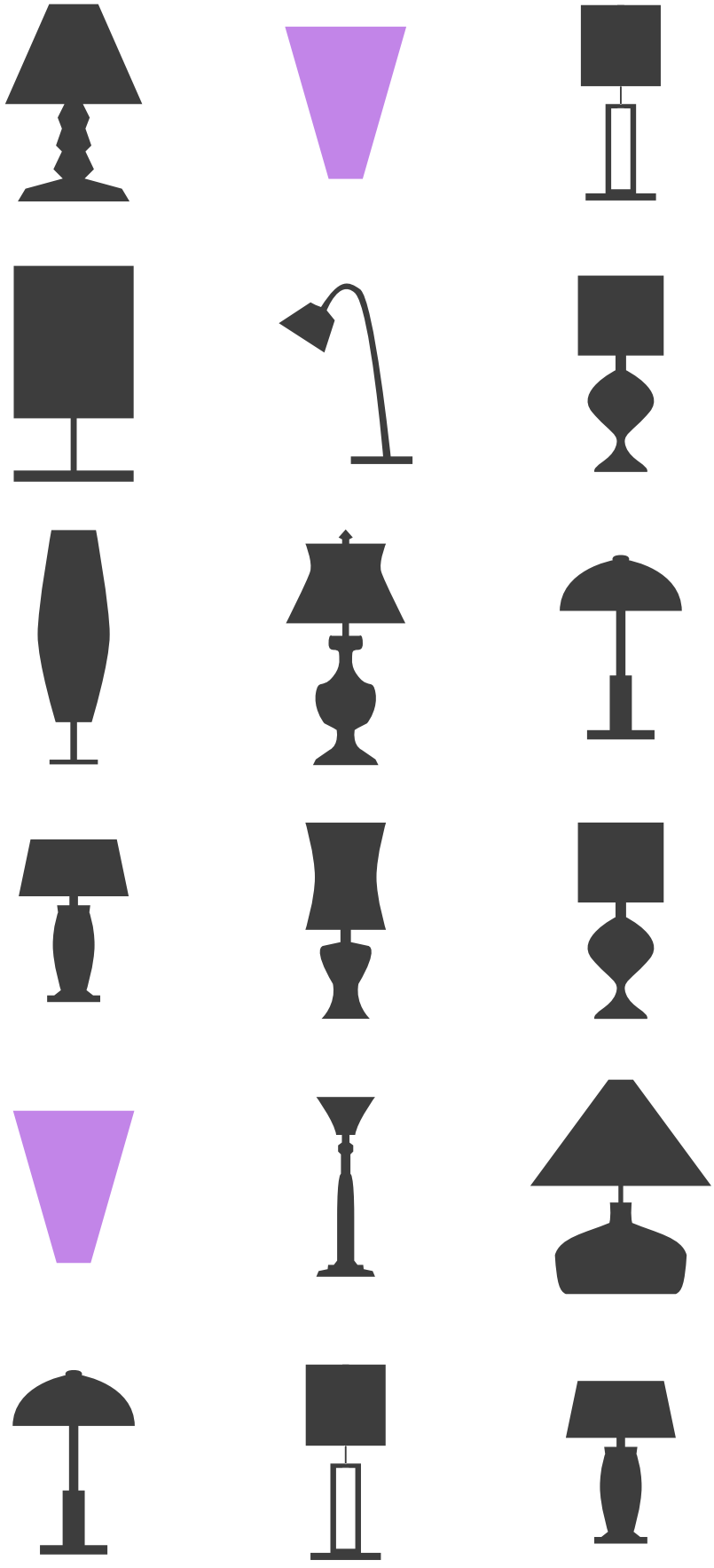
Torch

Industrial design

Package design

Type design

by Lucas Czarnecki



Contents

Begin

I bought a desk lamp a while ago. It's exactly how you would imagine a desk lamp: a big ugly base, a rod sticking up, and a yellowish light somewhat obscured by an unfashionable lampshade.

Why is that how a lamp looks? Is there any other way to do it? Sure, some have moved away from traditional lampshades. Some have beautified the bases and rods. Some have developed white and multicolor lights. But is that all the freedom we're allowed? Why, in the year 2014, do lamps use the same balancing mechanism and overall aesthetic as candlesticks? Why do they take up so much room on our desks? Is that the best we can do, or have we been just following tradition?

Most people don't look at pedestrian objects as opportunities for innovation. Nail clippers, fruit peelers, water bottles, thermostats, smoke detectors, and lamps have been largely ignored since they were invented. Nest helped bring two of these technologies to the modern era; Nike and Camelbak have made great strides in the water bottle field; but where's the rest of our innovation?

Torch is my ode to creation and creativity. It is my humble attempt to build a new kind of desk lamp.

I began by listing everything I want the lamp to be and how I wanted to accomplish that. Dieter Rams's Ten Commandments guided the process:

Good design is innovative. This requires that I abandon yesterday and take a new approach.

Good design makes a product useful. I shall use a white light, with multiple brightness levels.

Good design is aesthetic. The lamp must be one standalone piece, made of no more than two colors, and have a striking shape.

Good design makes a product understandable. It cannot have more than one button and one plug. Ideally, no plug would be required.

Good design is unobtrusive. This requires that the lamp have a small base, leaving room on its owner's desk. It also needs to run on batteries—rechargeable batteries.

Good design is honest. I plan not to over-measure, over-calculate, or artificially color anything. I hope this results in a hand-made quality.

Good design is long lasting. 10,000 hour light life-span and a long battery life.

Good design is thorough down to the last detail. I need to take my time with every cut and each solder. I also need to make the unboxing experience match the quality of the lamp.

Good design is environmentally friendly. I hope to create the lamp out of only a few pieces; ideally no more than two square feet of plastic.

Good design is as little design as possible.


GLORIFY
REPENT
UNDO/REDO
FIN*
END
POETIC
TYPECON:2014
CAPITOLIZED
30th July—3rd August 2014
Washington, D.C. USA
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Lamp

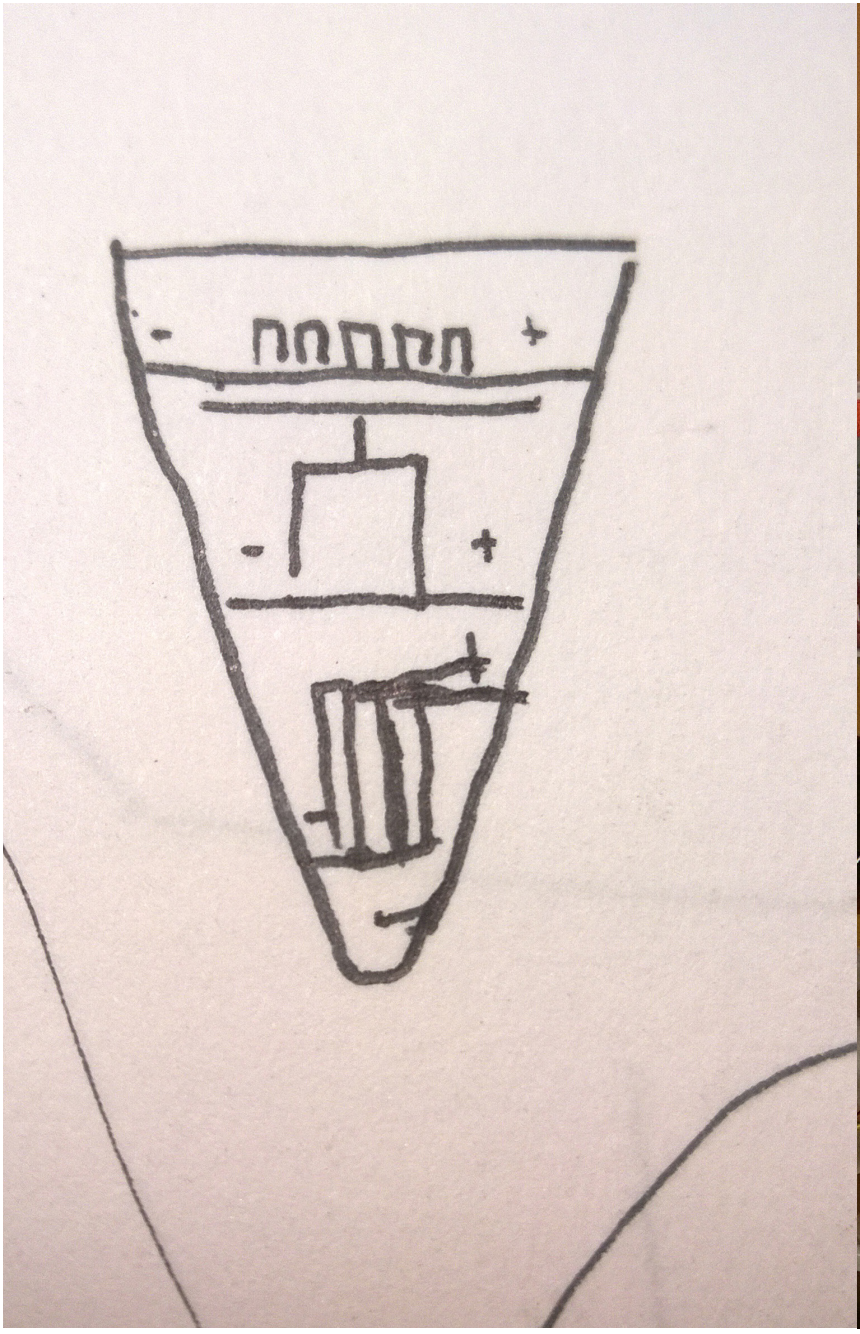
The most difficult aspect of creating a lamp with a small base is balance. Lamps have honking bases because they have no ability to move and stand evenly weighted. My first idea—one which I pursued with time and money throughout the first two major prototypes—was to use a motorized, battery-powered gyroscope.

The thought was: gyroscopes stand on a point and resist change in angular momentum. In other words, they're hard to tip over; that's how tops stay upright.

Opposite: The final lamp.

First Prototype

I planned for the lamp to have a base the size of a quarter, with the batteries dispersed evenly beneath the gyroscope, which would, in turn, lie below the lights.



Left: My earliest Torch sketch.

Right: The materials used to create the first prototype.

I built the first prototype out of a toy traffic cone, a desktop computer fan, CDs, and some other small materials.

It took four hours of tinkering before it worked. When it finally stood on its own, between its glowing blue light and soft hum, it was the most beautiful thing I had ever seen.

The first lamp standing on its own.

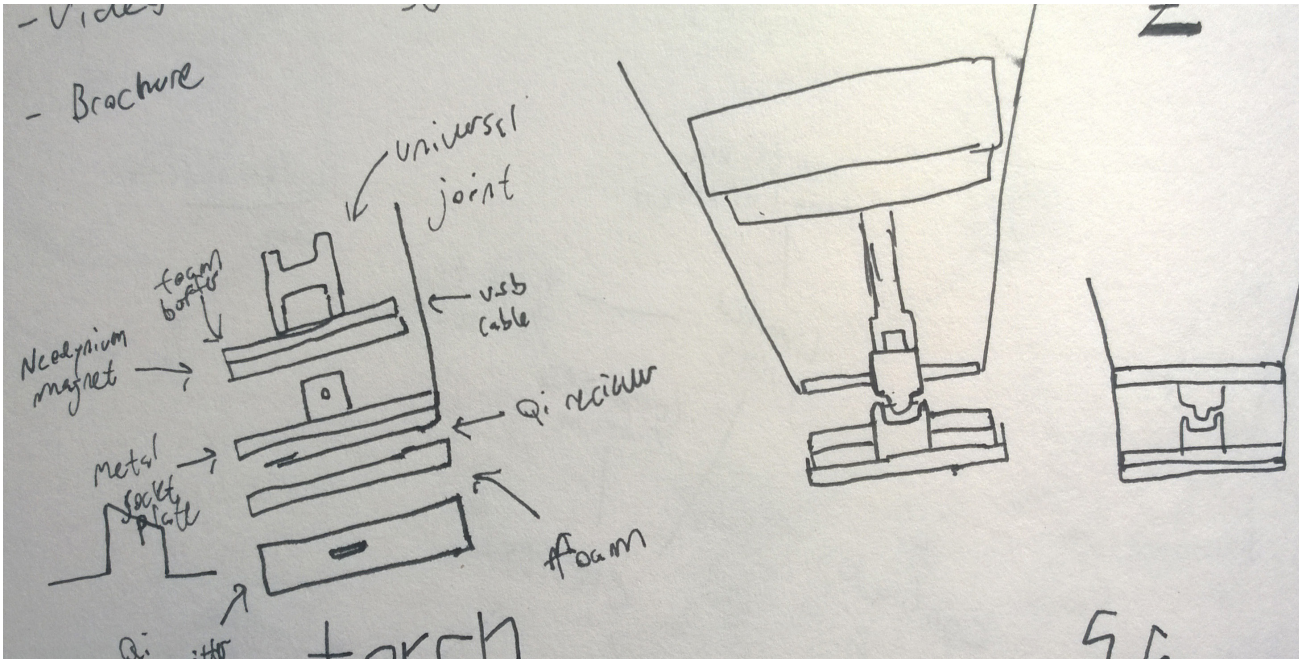
It was, unfortunately, too unstable. It ran for an hour before the gyroscope's procession toppled it over. At first, I attributed this problem to the poor construction quality and weak gyroscope.

Second Prototype

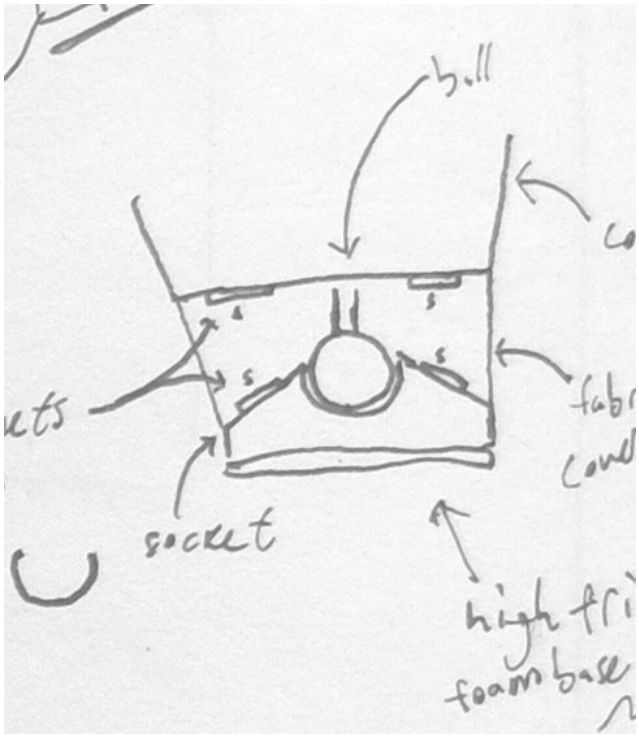
I continued with the gyroscope idea here. I planned to use some sort of pivot at the base of the lamp, allowing some freedom of movement so that the gyroscope could self-correct.

Below and opposite top: Revised sketches for the second version.

Opposite bottom: Materials for the new prototype.

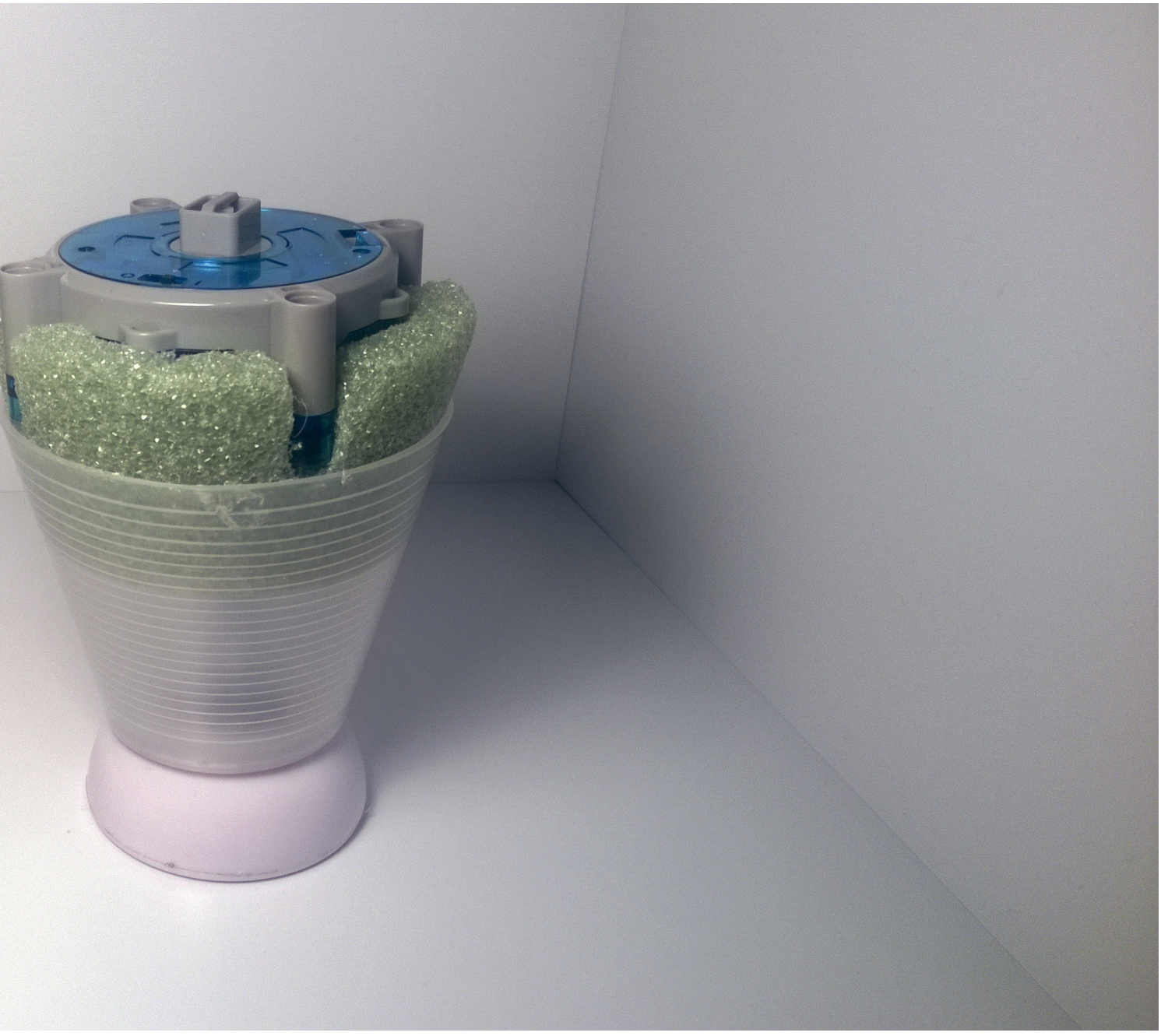


Using a universal joint to allow slight movement, an inverted plastic lamp shade from the dollar store, some foam, two magnets, and a gyroscope from a children's science kit, I constructed the next model.



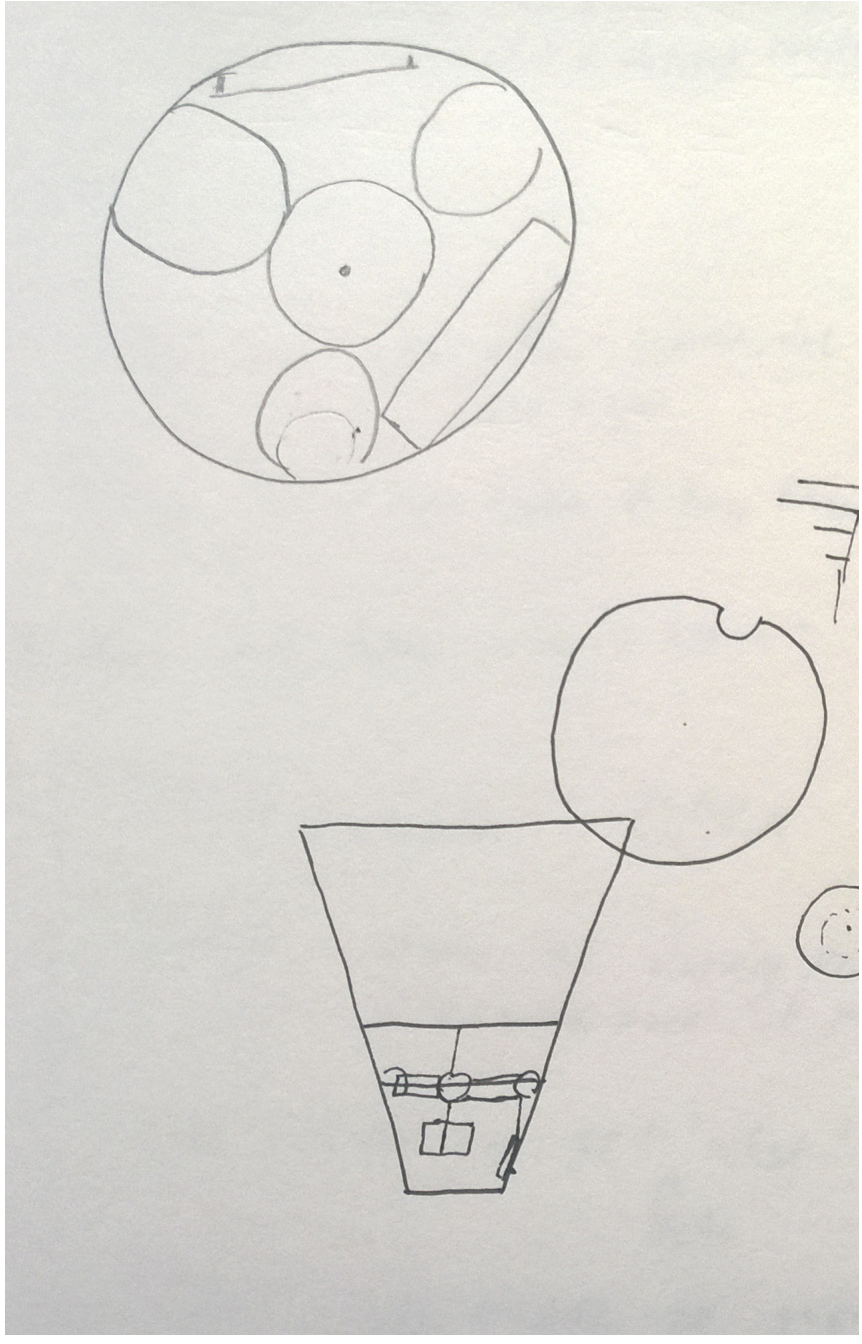
I spent months trying to get this version to stand on its own, combining and recombining my materials to lower the center of gravity, make the axis more exact, and adding resistance to change. I even purchased a second gyroscope of the same make, thinking I could have them spin in opposite directions or stand perpendicular to each other. Nothing though, could stop the procession from tipping the lamp.

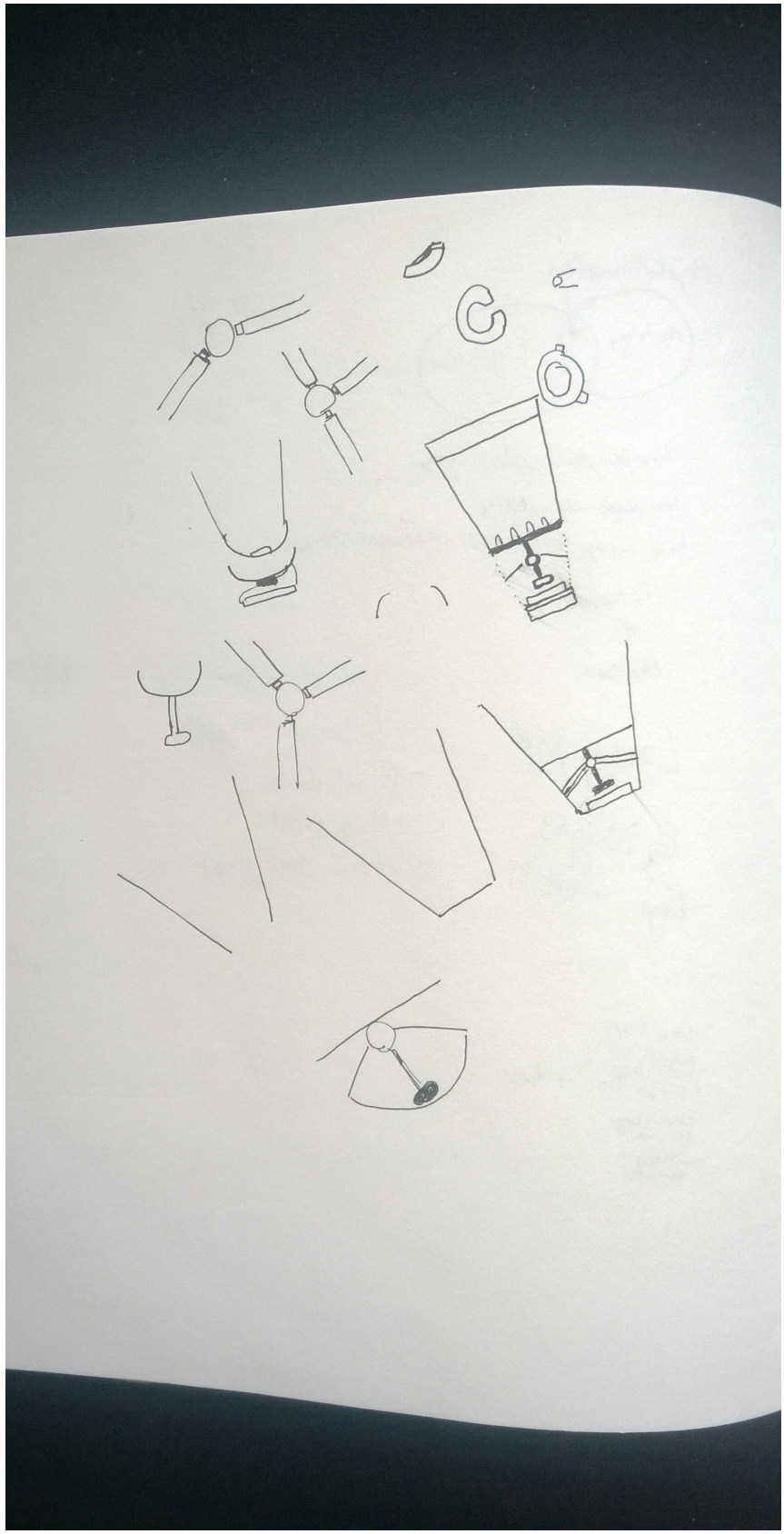
The second prototype,
which never worked.



Third Prototype

After abandoning the gyroscope idea, I began working to counterbalance the top portion—which houses the lights—with a small, dense weight in the base.



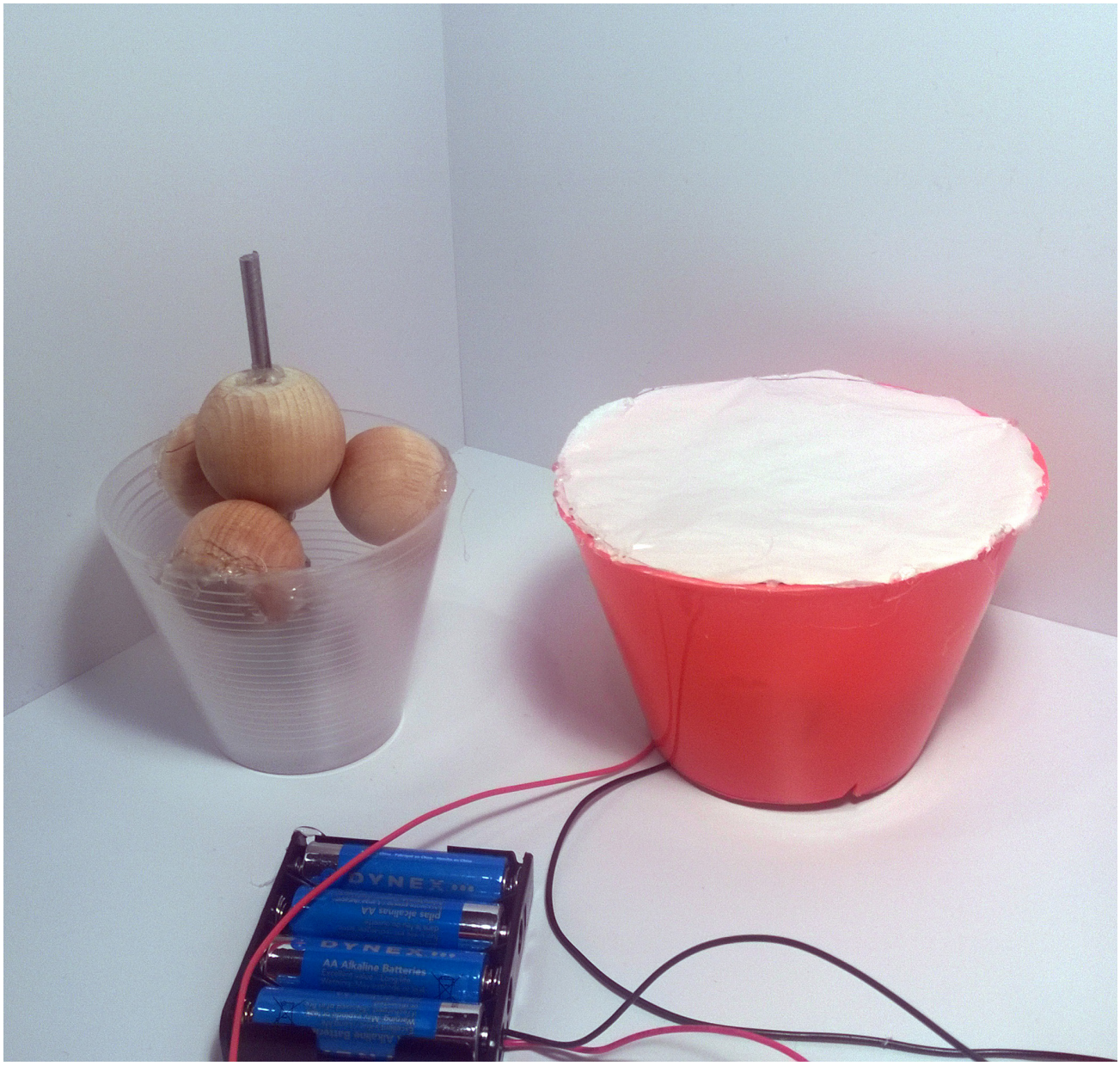


Opposite and right: Drawings depicting the new counter-balance approach.

I used a metal rod, washers, wooden balls, the plastic lamp shade, a multicolor LED, a toy traffic cone, and the battery pack to build this version.

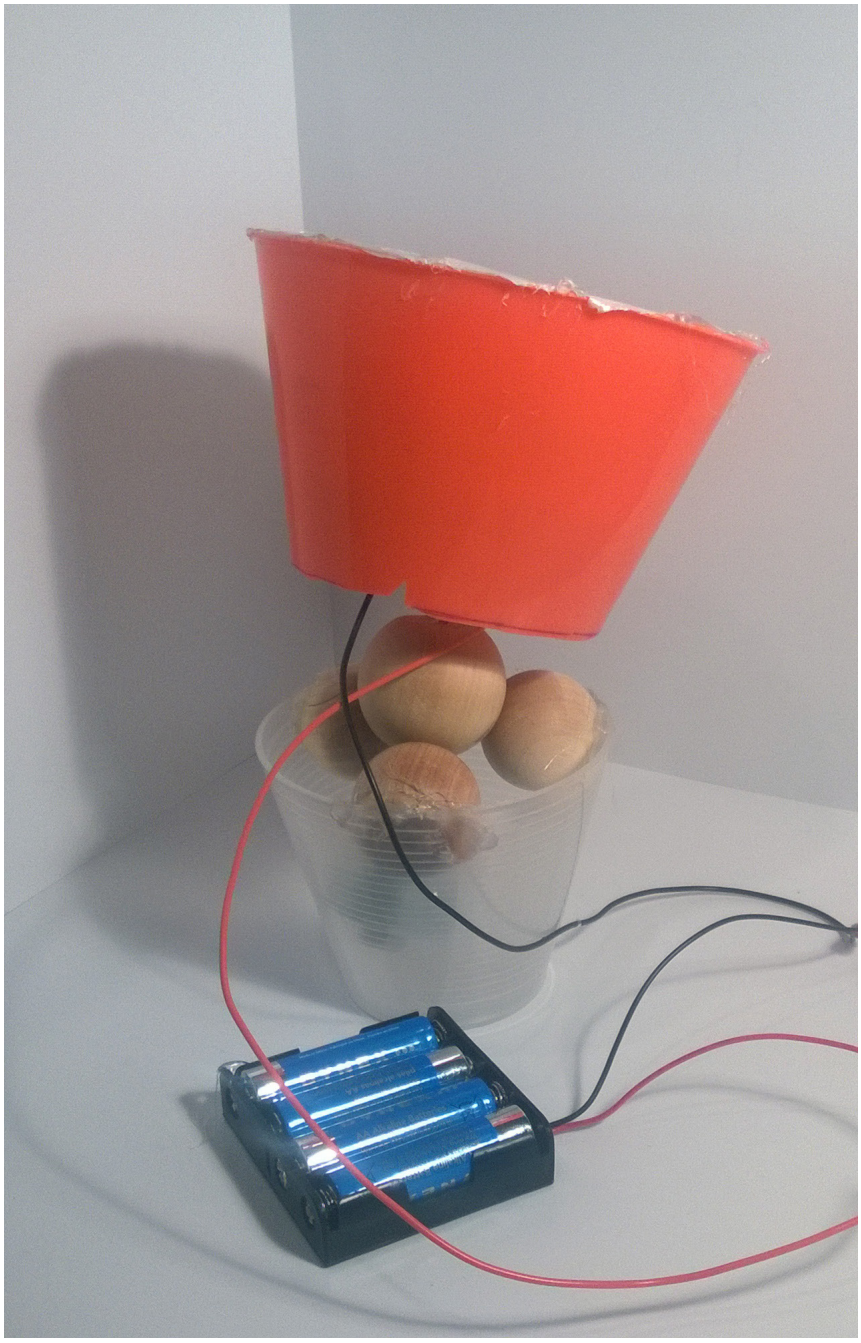
Halfway through constructing the base.

The two halves of the third prototype.



To make this version work, I sacrificed some size on the base to make room for the counterbalance.

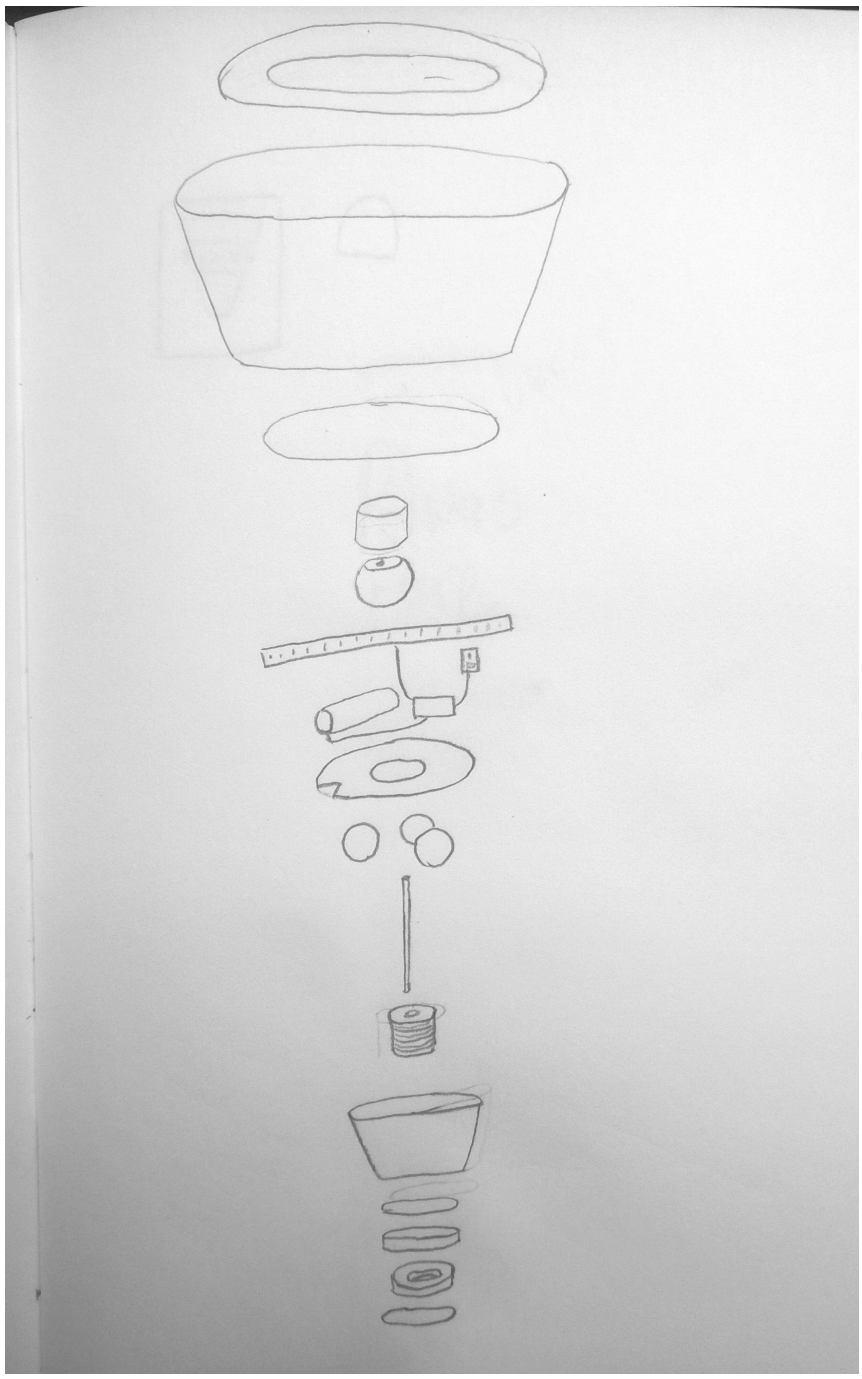
One feature of this counterbalance mechanism is that the user can angle the light without worrying about it falling over; using gyroscopes, this was impossible.



Left and opposite: The third iteration standing on its own—even at an angle.

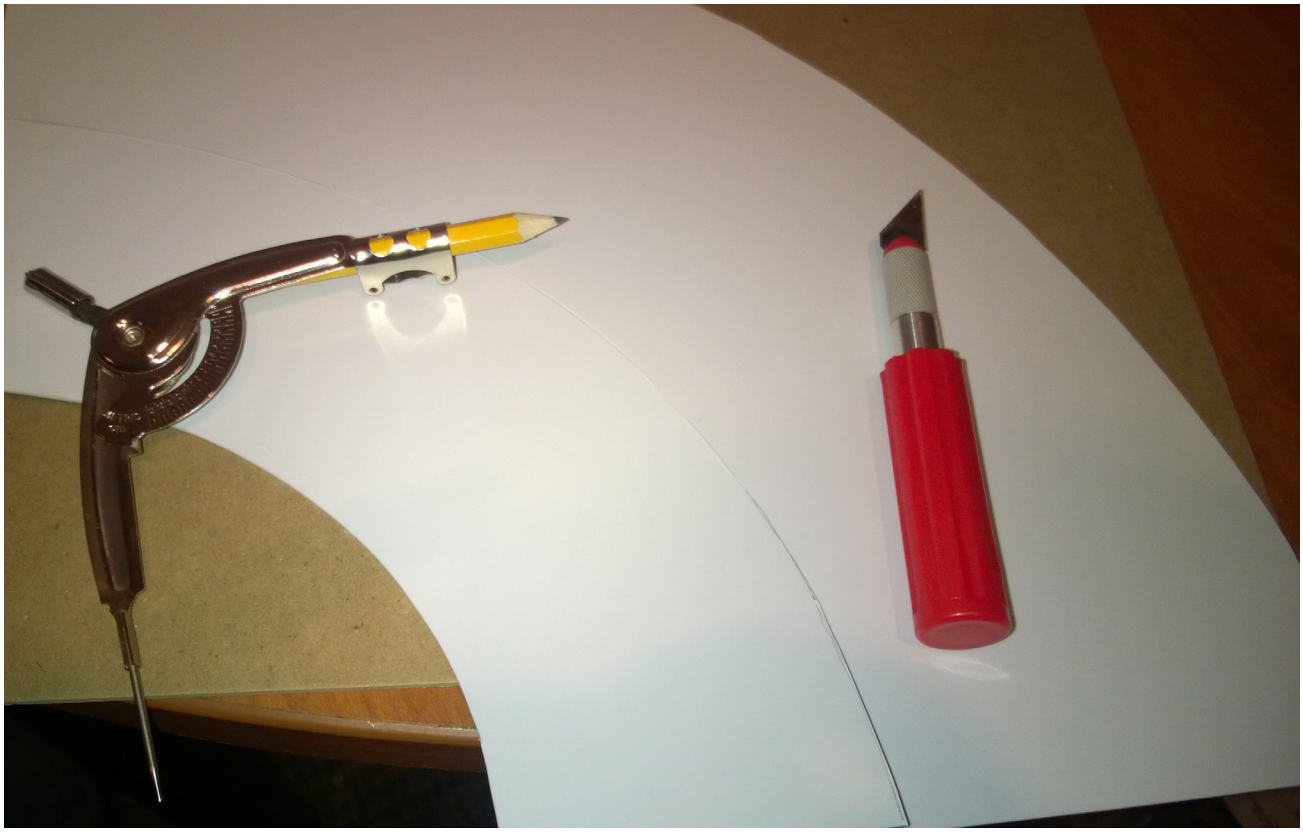
Final Version

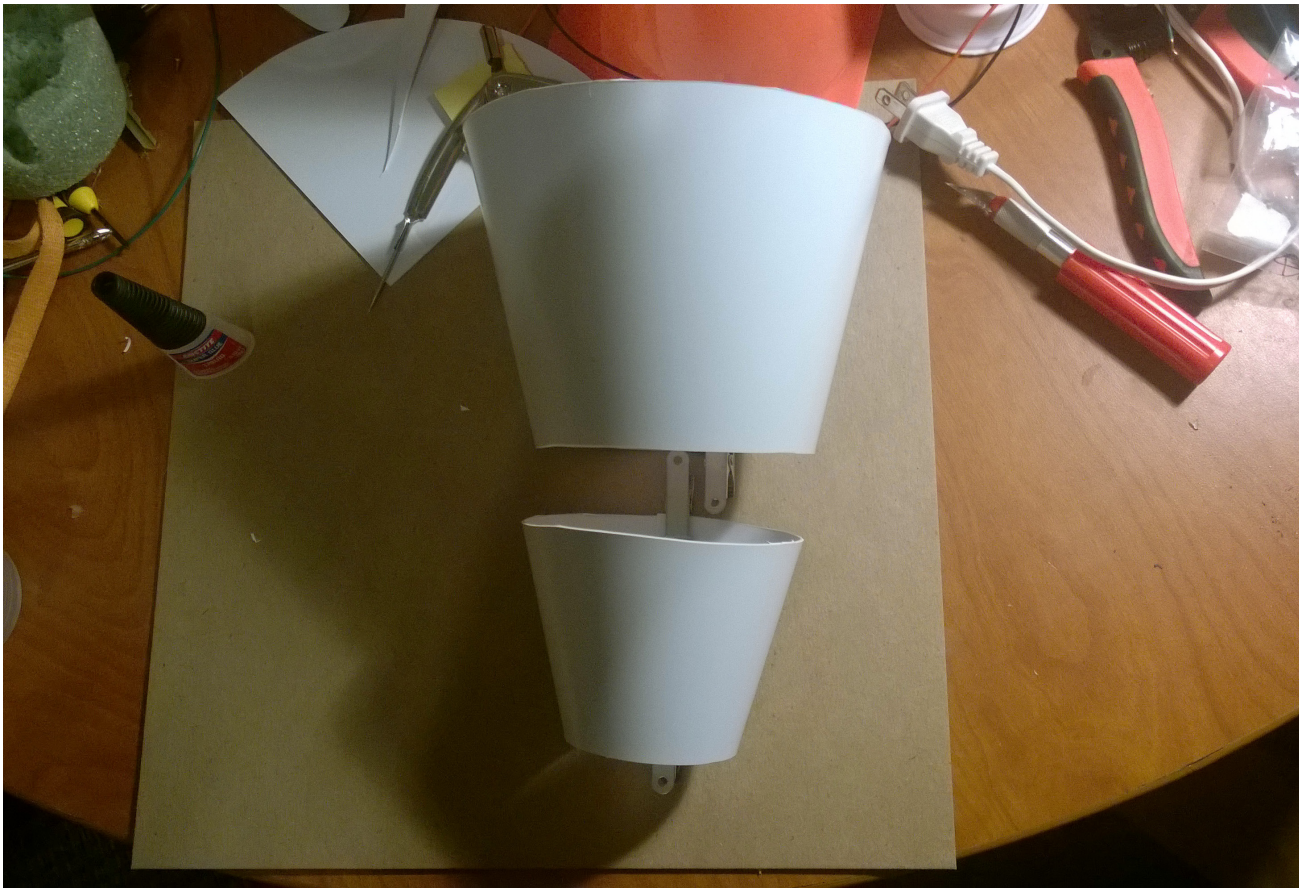
Using the shortcomings and strengths of the third lamp, I drew up designs for the most recent iteration.

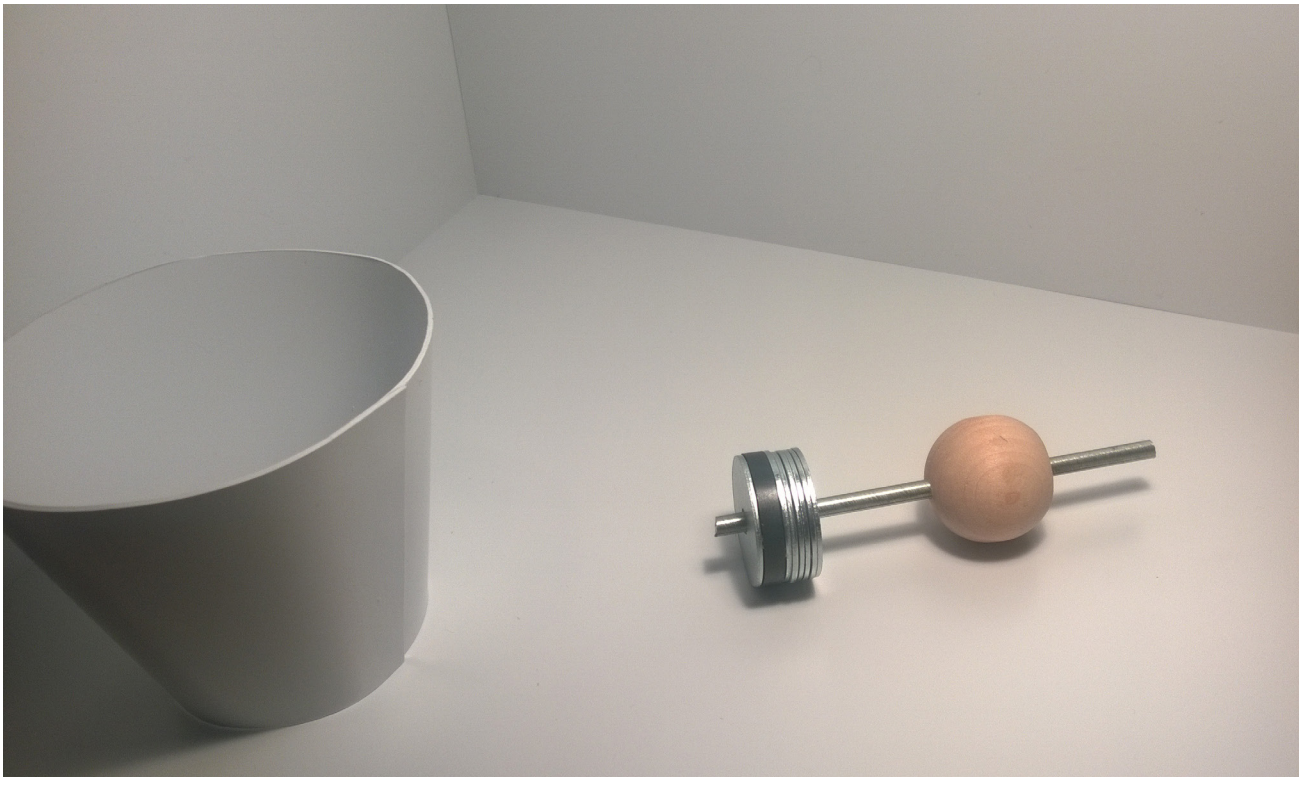


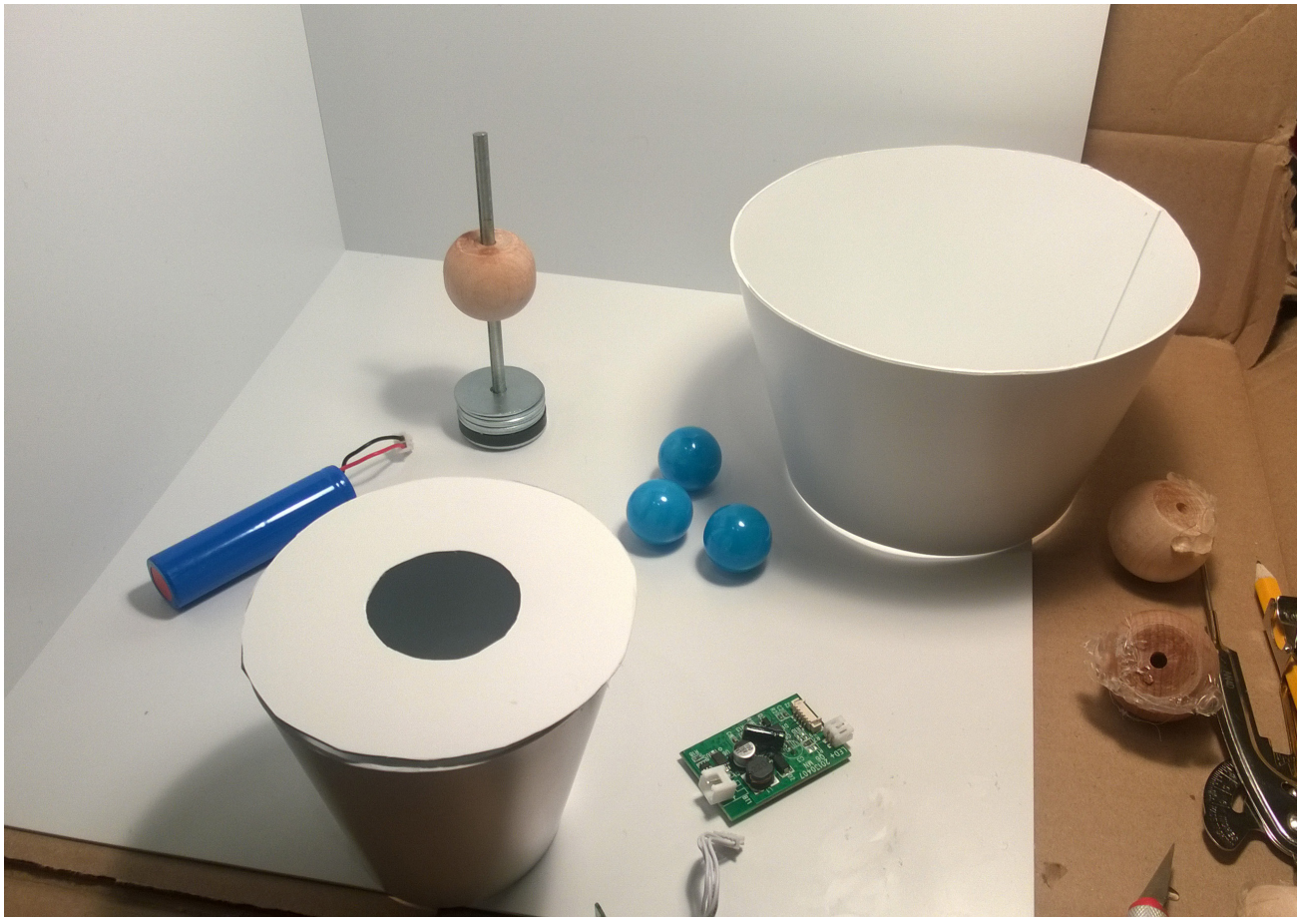
A detailed sketch of the final lamp design.

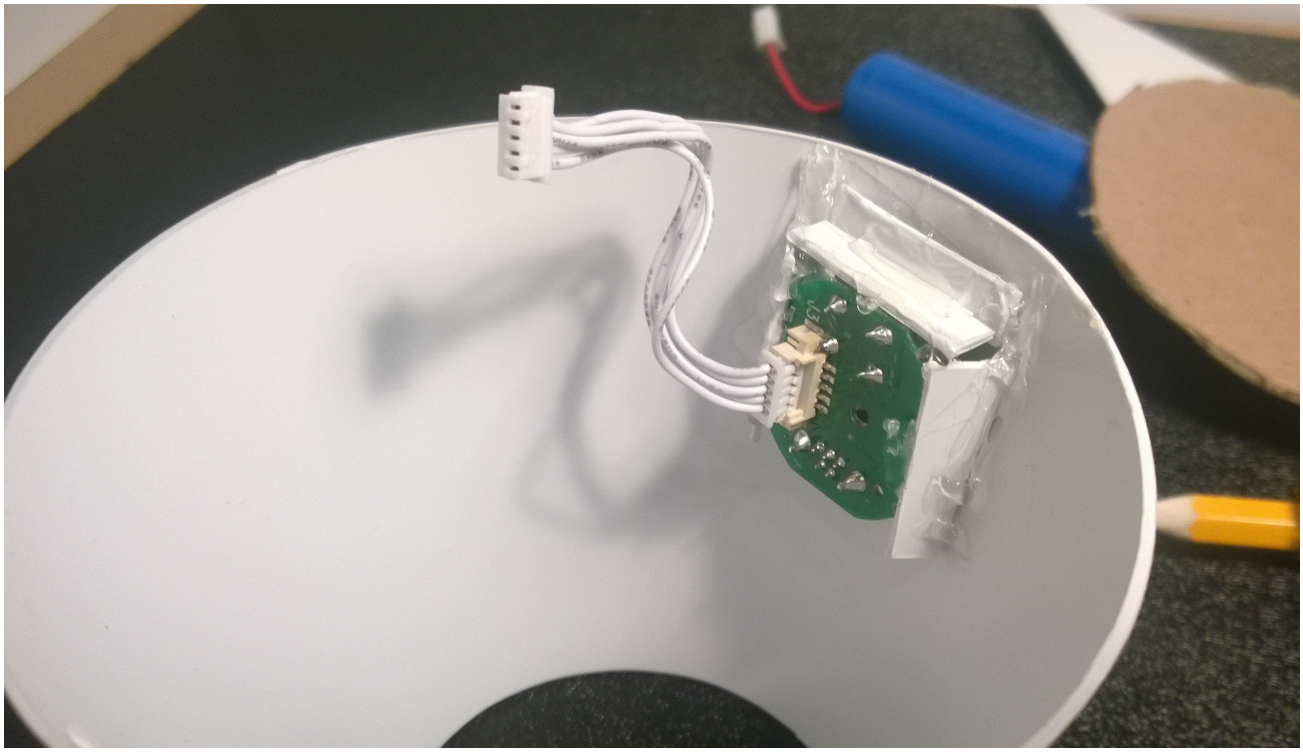
Below and next spread:
Various stages during the construction process.







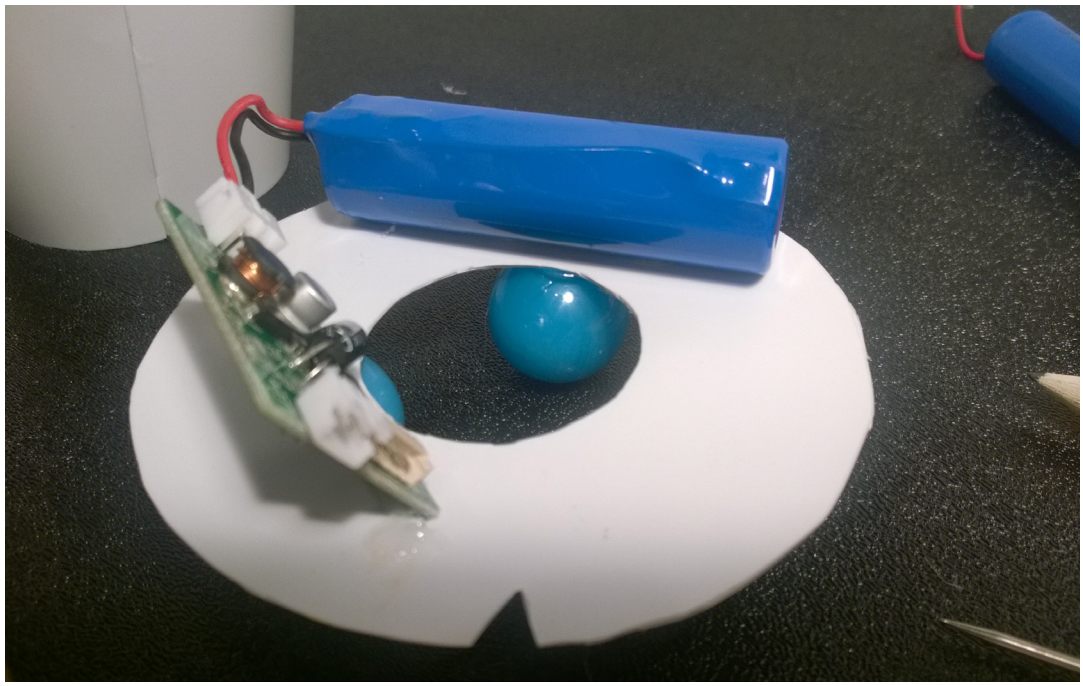




The final lamp is built out of one square foot of white plastic, one square foot of clear plastic, some tin foil, some paper, two marbles, two wooden balls, a wooden rod, some washers, and some electronics.

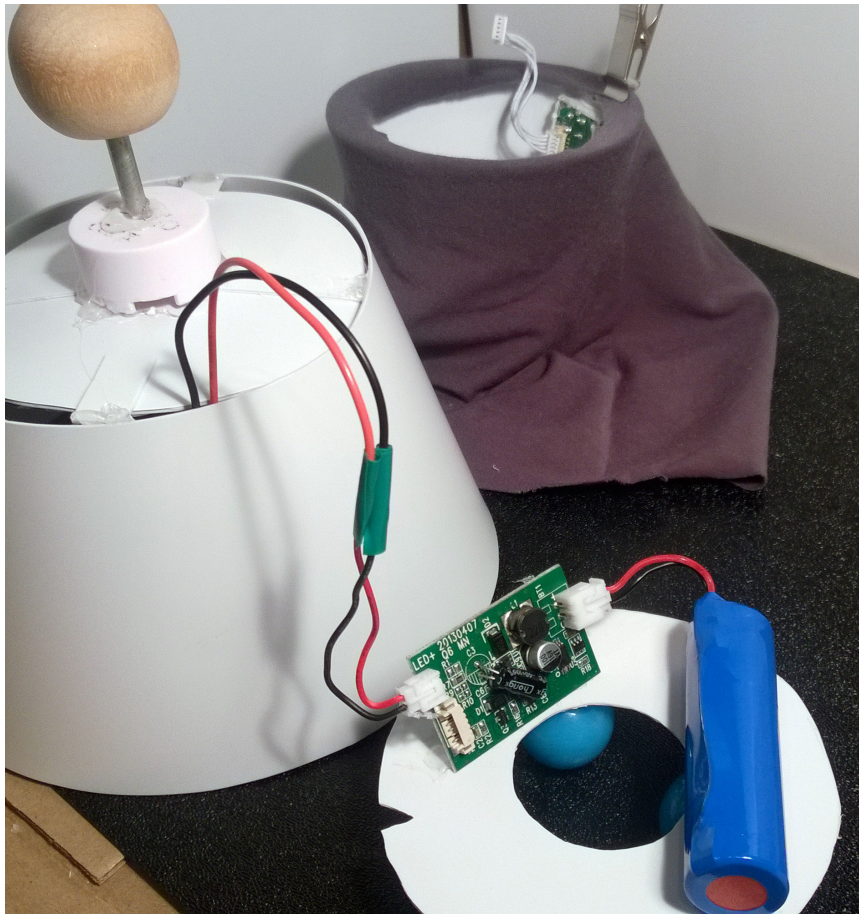
Opposite top: The top of the base, supporting the fulcrum and electronics.

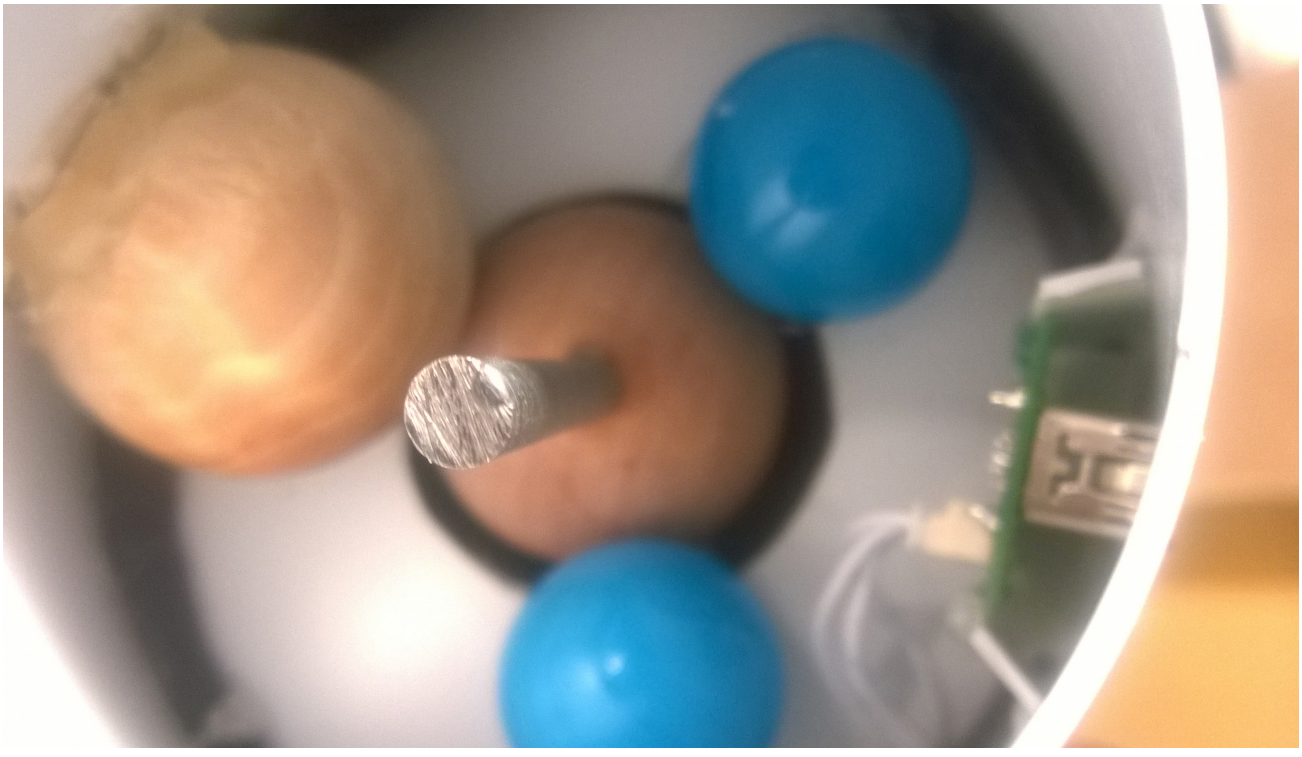
Right/bottom: The base, which houses the button and mini USB port.



Views of the structure and electronics.

Opposite: The completed lamp.





It's rechargeable via mini USB and features a five-stage white LED, controlled by a single front-facing button.

You can angle the lamp, move it, bump it, or otherwise do something that might cause a lamp to fall over—and it won't.

Fitting in with the technology found on a modern desk, Torch shines with a bright white.

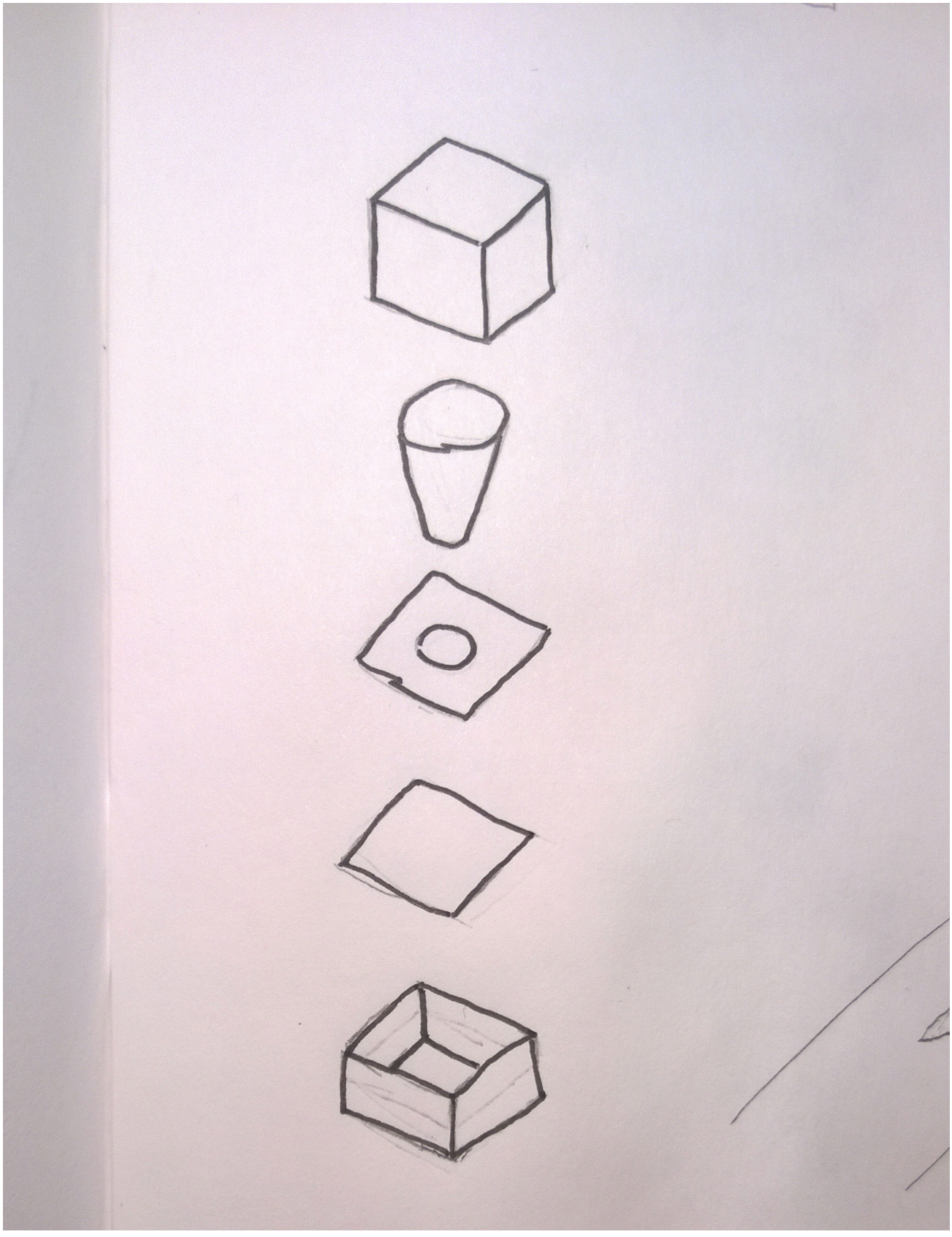
Opposite: The final lamp.

Packaging

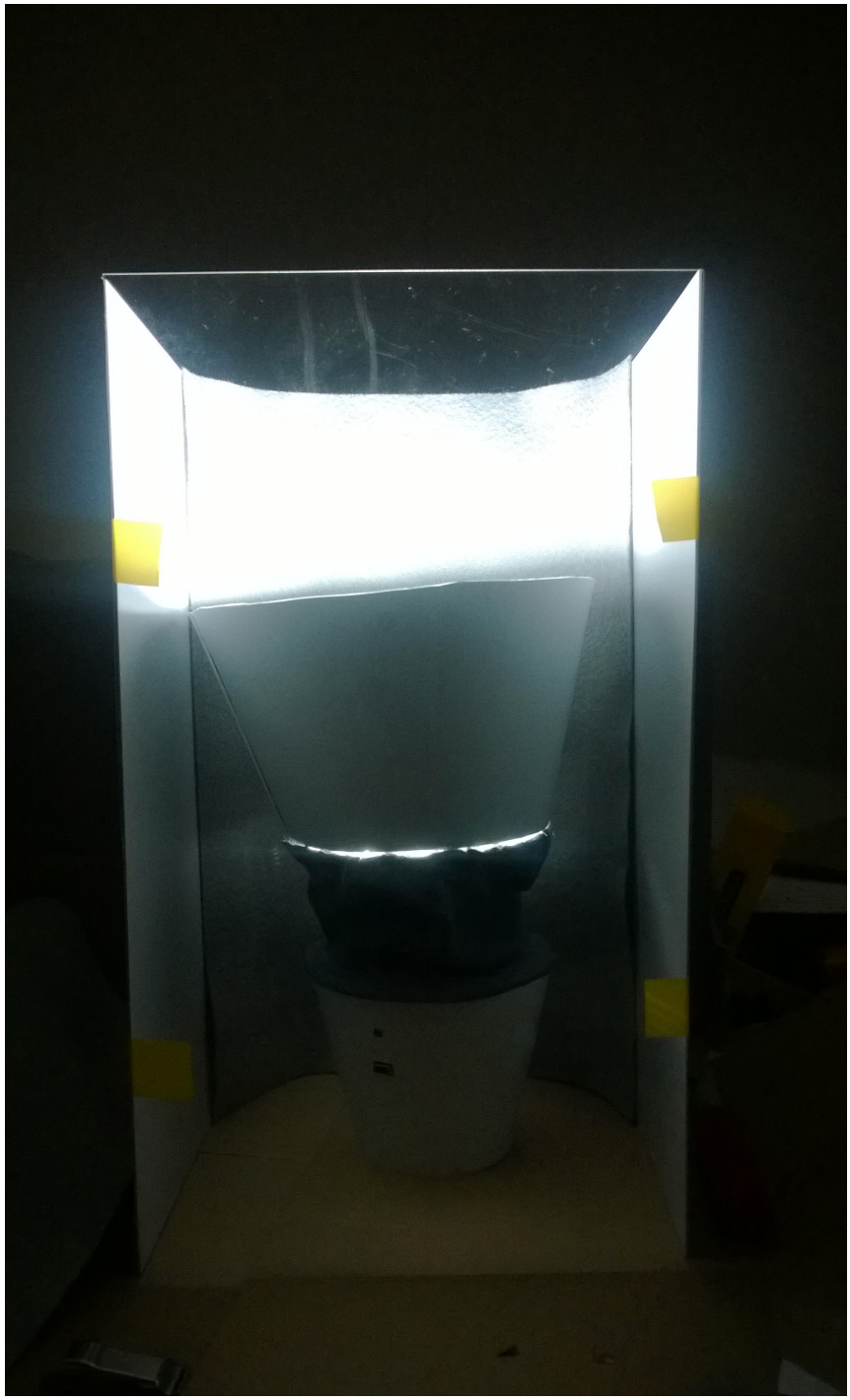
I always pay attention to the unboxng experience of any new purchase. A first impression is just as vital in product interaction as it is in human interaction; it's the details which make memories.

With this in mind, I needed to produce packaging that would delight the user. This means: attractively displaying the lamp, constructing a strong box, prominently featuring the logotype, producing an easy opening experience, and reducing waste.

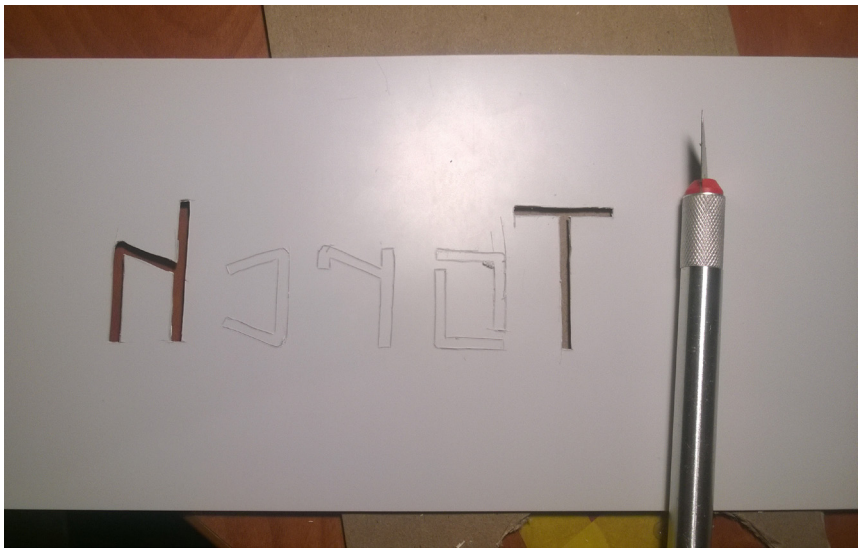
Opposite: An early sketch of the package design.



To display the lamp, I decided on clear plastic for the front and top of the box. I considered making this clear section a mere window, but decided that a full front would look better.



Midway through constructing the box.



I added white plastic panels, matching the sides of the box, to the front and top, increasing their structural integrity.

One of this plastic panels features a cutout of the title, Torch, set in my Torch Diecut typeface. This produces a brilliant reading experience without obscuring the product. Also, when the lamp is removed from the box, the black back makes the text extremely legible.

Top: Cutting “Torch” out of the front panel.

Bottom: The finished box, empty.

The first unboxing experience that ever really blew me away was the Zune HD. I, far behind the times, bought my first Zune HD in the summer of 2013, many years after they had been discontinued. I use it every day, and keep the box to remind myself of that experience.

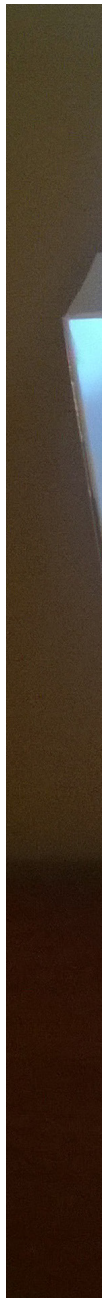
The Zune HD packaging by Microsoft. 2009

I also drew inspiration from the unboxing of the recently released Microsoft Band. The packaging of both devices features a sliding outer shell, revealing the product—or, in the case of the Band—a clamshell box with the product.

The Microsoft Band packaging by Microsoft. 2014

I wanted to replicate this sliding experience with Torch. I produced a base which not only holds the lamp firmly in place but also provides room for the charging cable and any other literature I might include. I built this base to easily slide into the clear, white, and black box.

The base of the packaging with the Torch.



The best way, I thought, to reduce waste, was to create a box as striking as the lamp; in this way, owners would be included not to throw the box away at all. The box doubles as a display case for when the user decides to stop using the lamp.

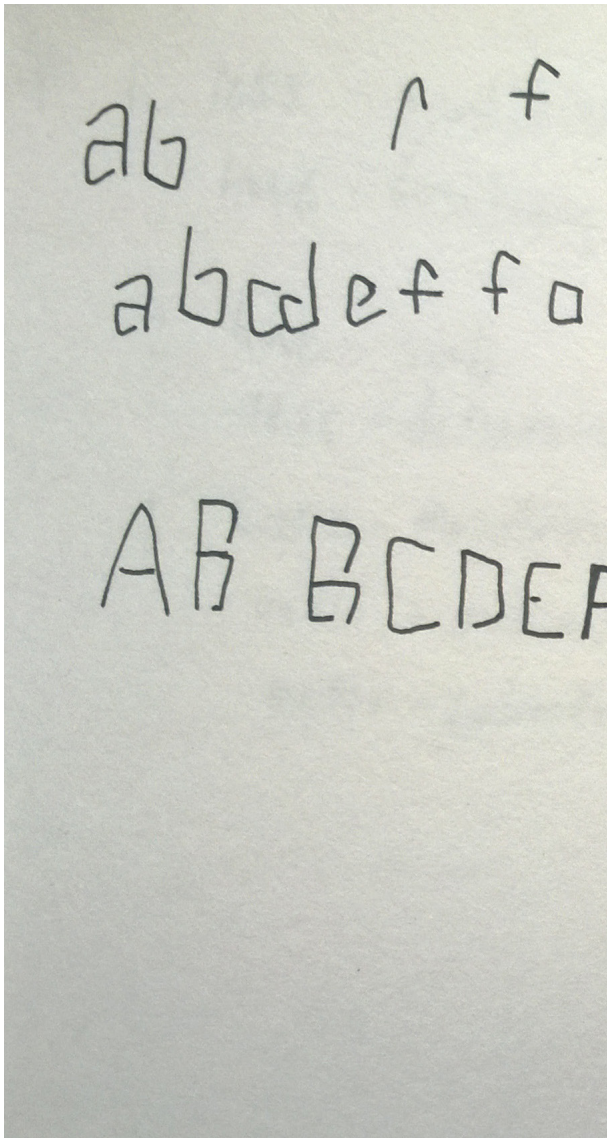
The completed packaging with the Torch.

Typeface

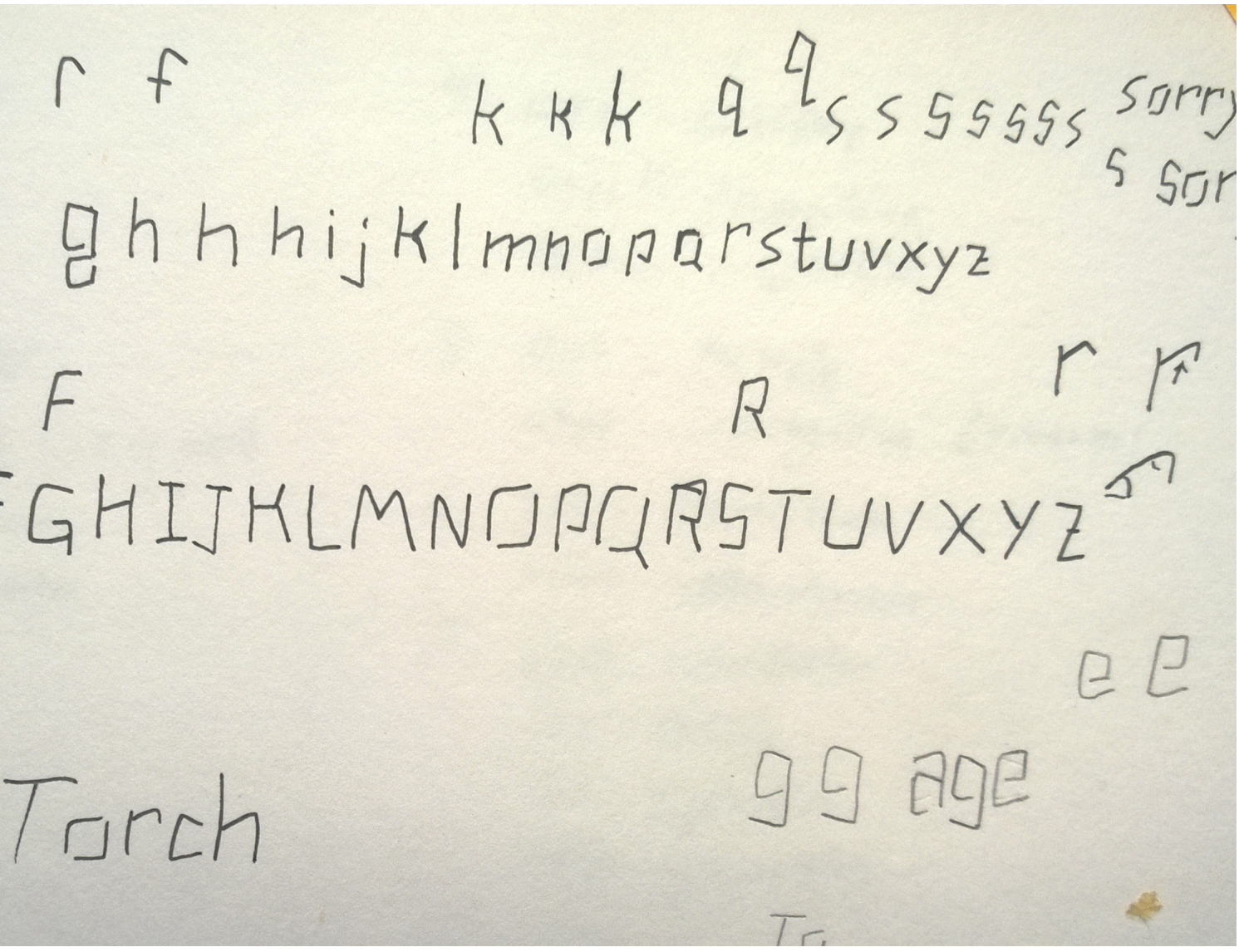
I used to work in advertising, so anytime I have the chance to design a logotype, I get a bit excited. And while Torch—the lamp—needed only a logotype, Torch—the project—needed a full typeface.

This has been my first foray into type design, and it shows. There's much to learn and much to improve, but everyone starts somewhere.

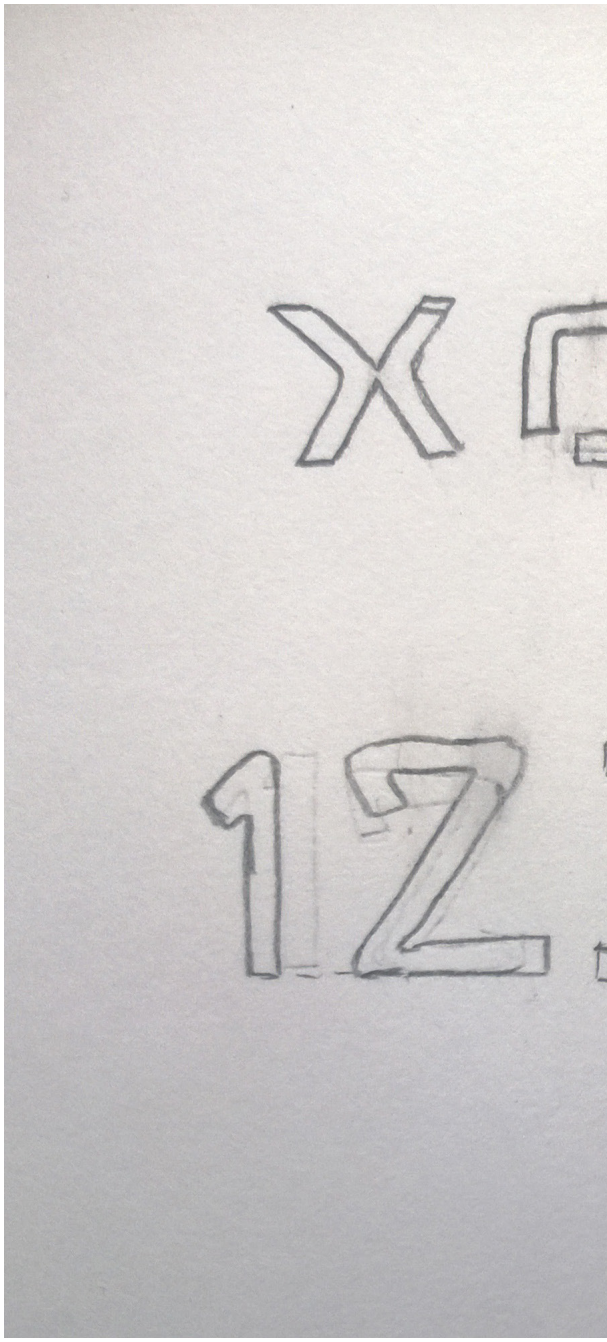
I wanted to design a display face; this means that the typeface looks decent when set in a very large point size, but starts to look worse as it gets smaller. As you may have gathered from the cover of this booklet, the images of packaging, or the headers throughout, the typeface—also named Torch—works well in some places, but not in others.



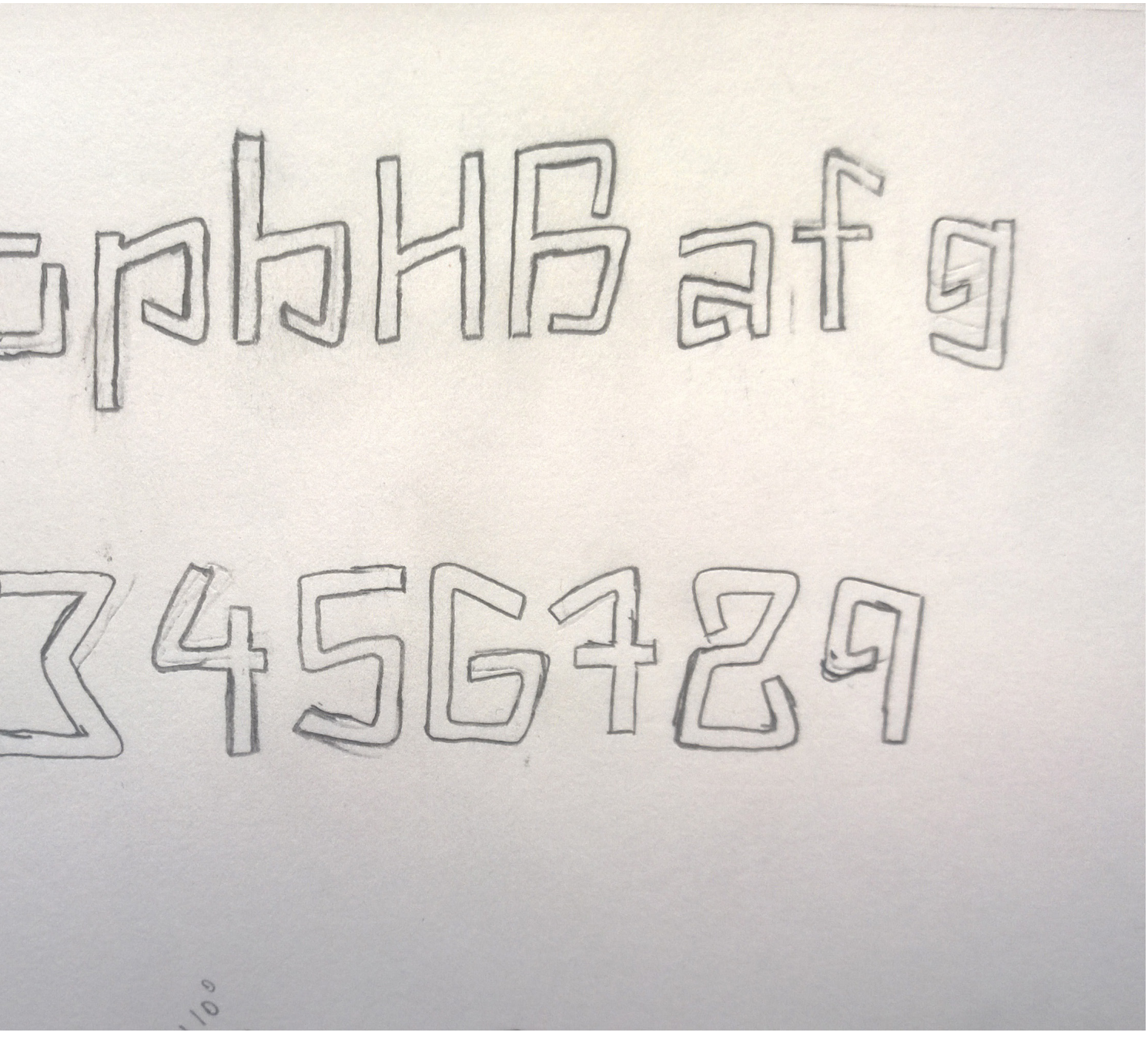
Early sketches of the Torch face, with iterations of k, q, e, f, s, and g.



I designed it to feature consistently strong 70, 90, and 110 degree angles.

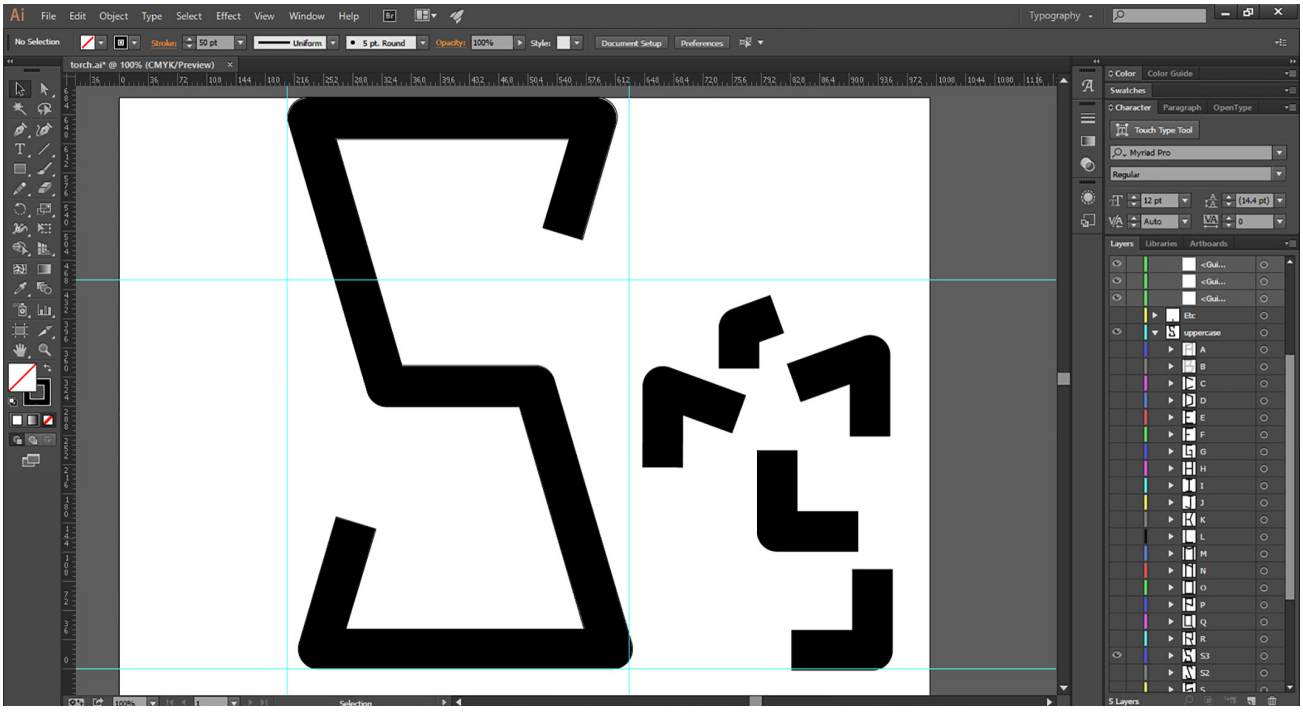


Detailed letter and number sketches.



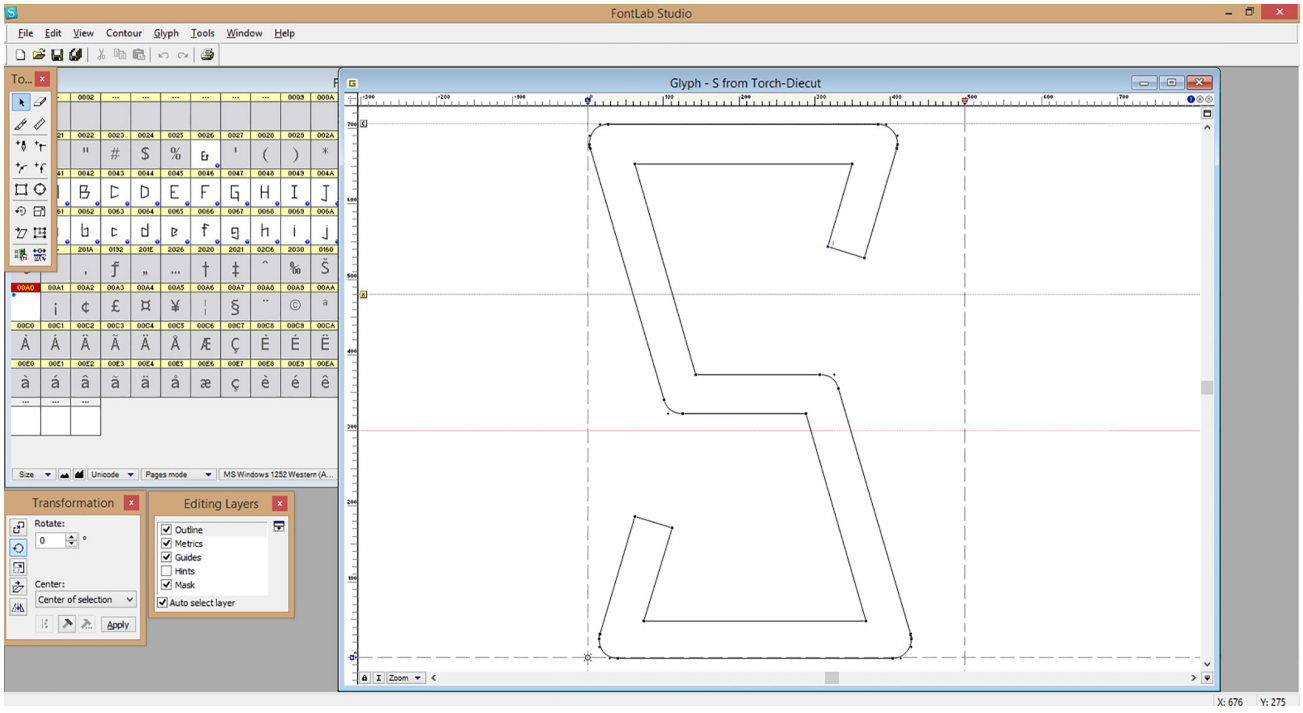
These angles, along with a uniform stroke weight, made digitizing the typeface very easy. I was able to create a modular system of several key elements, which I recombined to structure each letterform.

Capital s and the modular segments in Adobe Illustrator.

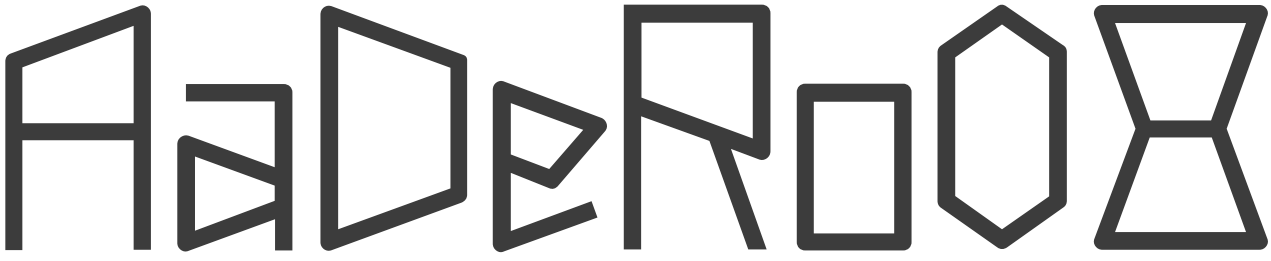


I outlined and finished each glyph by hand, though, hoping to maintain the human element throughout the design.

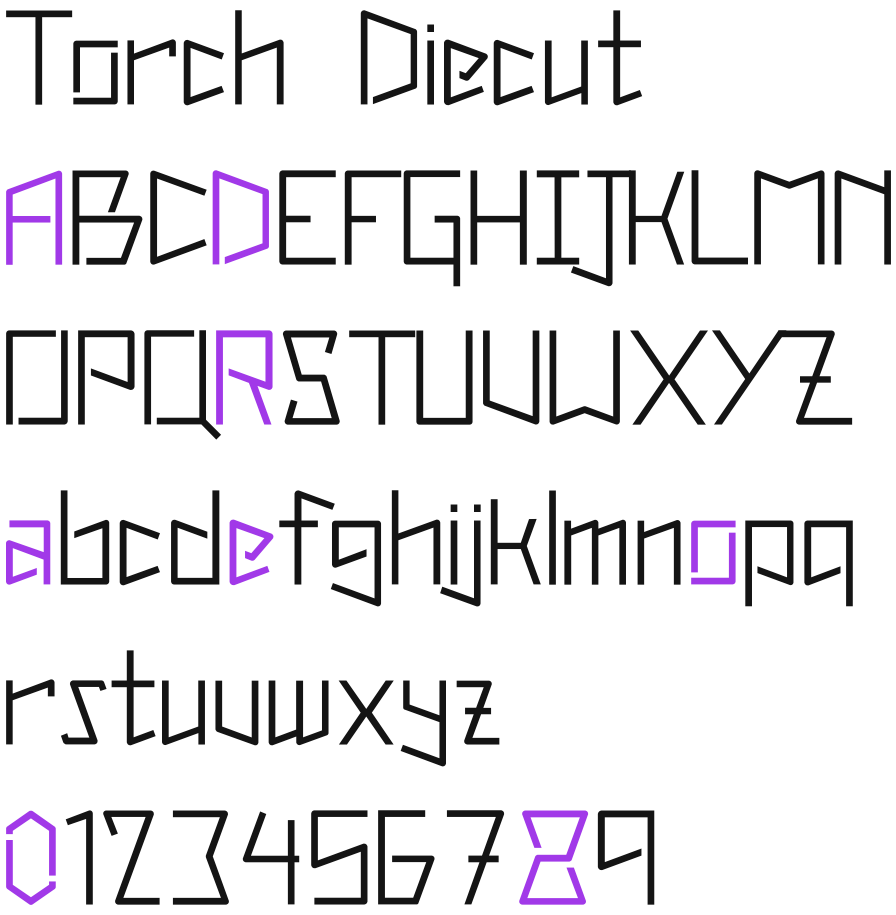
The outline of capital s in FontLab Studio 5.

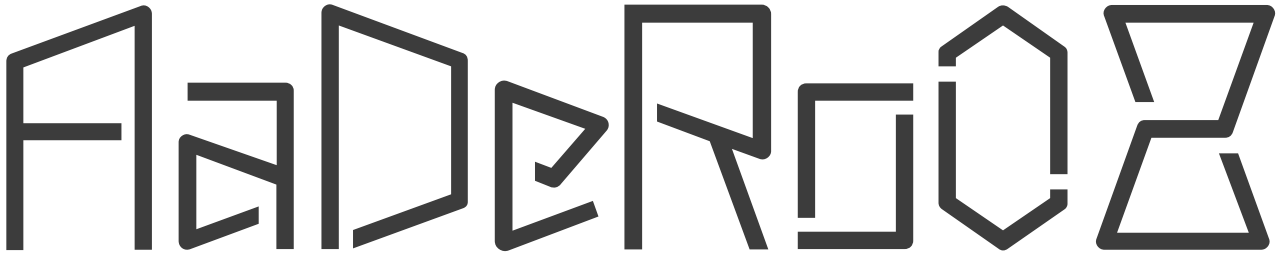


While designing the typeface, I realized that I would use it in two main places: cut out of plastic on the packaging and printed on paper or on a screen. These two use-cases demand two different approaches to one key anatomical feature of letters—the counters. A counter is an empty portion inside a letter: you can



see them in A, a, e, o, d, g, and so on. If I were to cut these shapes out of plastic completely, the counters would fall out. This led to the two styles of the typeface: diecut and print. I have chosen several glyphs which accentuate the differences between the two styles—these can be found below each alphabet.





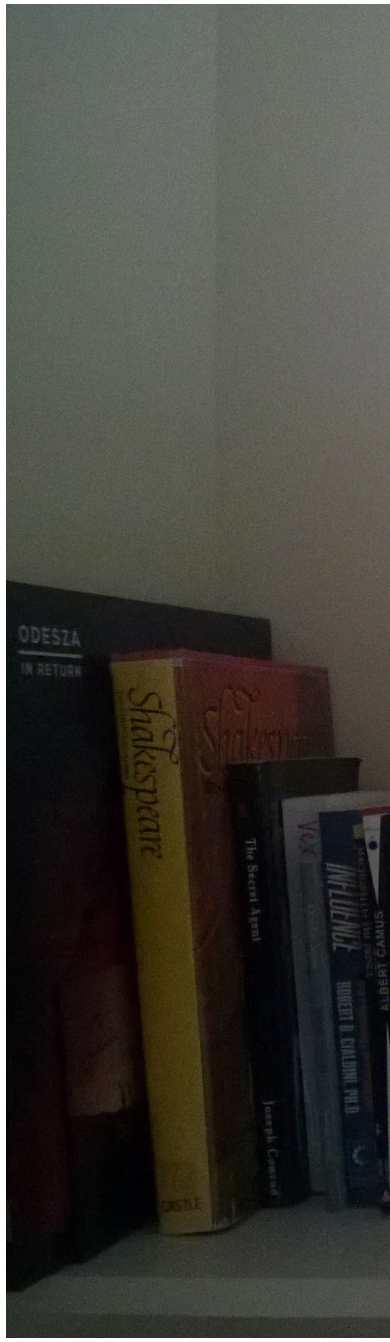
End

It took hundreds of dollars and many hours to complete Torch.

It's not really complete, though. I want to add Qi Wireless charging, smoother tilting, a smaller base, and higher quality construction.

I also want to build the typeface out to include a nicer-looking sans-serif version with curved strokes and higher stroke contrast.

For now, I want to see Torch for what it is and how well it matches my vision.



Torch on my bookshelf.

Good design is innovative.

Good design makes a product useful.

Good design is aesthetic.

Good design makes a product understandable.

Good design is unobtrusive.

Good design is honest.

Good design is long lasting.

Good design is thorough down to the last detail.

Good design is environmentally friendly.

Good design is as little design as possible.

Opposite: Torch on my nightstand.

For more information, contact me at:

me@lucasczarnecki.com

Typefaces used:

Torch DieCut

Torch Print

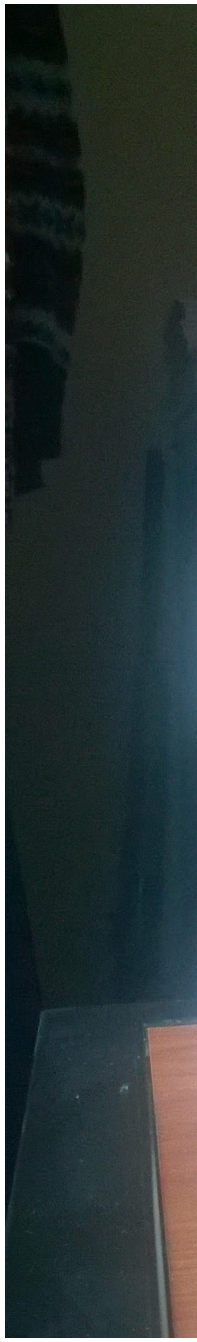
Akzidenz-Grotesk BQ Medium

Special thanks to:

George Sampson for inspiration.

Luis “Alex” Hille for help with the lamp.

Paul “PJ” Czarnecki for help with packaging.



Thanks

Torch with packaging.