

## Industrial Design Masterpieces

Everything is designed, one way or another. Some objects are designed well, while others are not; some are designed pretentiously, others unassumingly; some are designed to optimize materials and techniques, while others are wasteful; some are approachable and understandable, others instead rely on their unattainability.

Design takes them all in — from chandeliers to pencils, from airplanes to computer screens, from the interior of a theater to the register at a department store's checkout.

While some objects naturally attract our attention because of their extraordinary character and desirability — an eccentric and expensive pair of sneakers, for instance, or a gleaming sports car — many others are so apparently ordinary as to go unnoticed as brilliant creations.

Every day we use dozens of them, from elastic bands to Band Aids, erasers, and mascara wands. If they work well, chances are we won't pay them much attention. However, in spite of their modest price and demure presence, some of these things are true masterpieces of the art of design — and deserve our unconditional admiration.

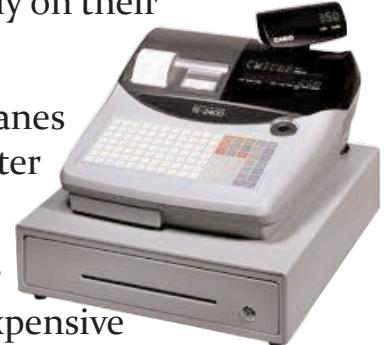
When an object is well designed, to the trained eye it seems to glow from the inside, proud of how well it performs the function it was intended for and of how effortless it makes everything seem.

What makes a good design? **IN SOME WAYS, DESIGN IS A WAY TO GIVE PROBLEMS A NEW FORM, SO PEOPLE CAN SOLVE THEM ON THEIR OWN.** Design has a tremendous impact on everybody's life.

What follows are examples of industrial design masterpieces. Although they might seem quite common, they share many more remarkable traits. Many of them are **USEFUL** . . . so useful that they have become **NECESSARY**. (And even

when they are not immediately functional, they have added so much delight to the history of our material culture that they deserve a prominent space in our world.) The objects are all **AFFORDABLE** — and almost all of them are **INGENIOUS AND INNOVATIVE** by proposing a new solution. Last, but not least, all these characteristics make them **BEAUTIFUL**.

Here we go:



## ADHESIVE BANDAGE (1920)

Josephine always needed her husband's help to apply bandages to the cuts and burns she frequently sustained while cooking.



So her husband, **EARLE DICKSON**, a cotton buyer for Johnson & Johnson, used gauze, fabric, and double-sided surgical tape to fabricate a bandage she could apply by herself. He told his employers about the idea, and the Band-Aid was born.

## BATTERY (1800)



An Italian anatomist named **LIGI GALVANI** noticed that touching certain metals to a dissected frog caused the frog's leg to twitch in 1780. He concluded that the response was the result of "animal electricity". But a few years later, his countryman physicist **ALESSANDRO VOLTA** realized that the creature wasn't the important factor: Any moist connection between those metals caused an electric current. And in 1800, he made the first battery — from layers of zinc, silver, or copper, and moist cardboard or felt.

## BEVERAGE CAN WITH NON-REMOVABLE PULL-TAB OPENER/ STAY-ON TAB (1975)

Before **DANIEL CUDZIK** invented the stay-on metal tab, these parts of metal cans were ripped off and thrown away — littering sidewalks, streets, and beaches. Every can manufactured today features this tab.



## BLOW-DRYER (1920)

Using a vacuum cleaner as inspiration, two Wisconsin companies simultaneously decided to turn the airflow around, add a heating element, and create what were to become the earliest hand-held blow-dryers.

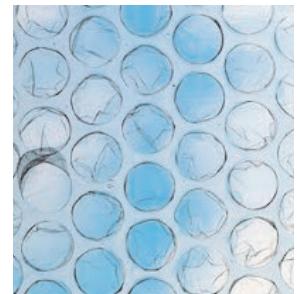
## BOTTLE CAP (1892)

Throughout the 19th century, carbonated beverages were sealed with cork, but still lost their fizz. Enter the crown bottle cap, introduced by inventor **WILLIAM PAINTER**. The crimped edge locks onto the bottle's mouth, and a compressible cork disk on the underside of the cap prevents air and bubbles from leaking out.



## BUBBLE WRAP AIR CELLULAR CUSHIONING (1960)

Bubble wrap is manufactured in a five-part process by laminating together two sheets of polyethylene, one of them formed by suction into bubbles. Each year, Office Depot sells enough bubble wrap to go around the earth twice — and 80% of the world's population is aware of this product.



## CONTACT LENSES (1948)

In 1508, **LEONARDO DA VINCI** sketched an idea for the contact lens, but it wasn't until almost 400 years later that a pair was made by a German physiologist. These early lenses, however, covered most of the eye and were uncomfortable to wear. Finally, in 1948, Californian optician, **KEVIN TUOHY**, created hard plastic lenses that covered only the corneas.

## ELECTRIC COFFEEMAKER (1972)

**VINCENT MOROTTA, SR.** was fond of good coffee and frustrated that he could not create a restaurant-quality cup at home. (Percolators, widely used at the time, often led to bitter brews.) So he hired engineers to design a machine that could heat water and send it through the grinds into a carafe, while controlling the brewing time and temperature. The result, dubbed Mr. Coffee, hit the market — and within three years, 38,000 were being shipped every day in the United States, and it has remained the top-selling brand of automatic-drip coffeemakers here ever since.



## JAVA JACKET COFFEE CUP SLEEVE (1993)

After **JAY SORENSEN** (realtor) dropped a cup of coffee in his lap because it was so hot, he designed a simple sleeve of cardboard to fit around a standard coffee cup. The insulating sleeve is made from waffle-textured recycled cardboard.

## JELLY BELLY JELLY BEANS (1976)

Before this invention, jelly beans had flavor only in their outer shells, with a chewy sugar syrup inside. Jelly Belly beans are flavored both in the center and in the shell, standard now, but a really unique concept in the '70s. It takes seven days to make a Jelly Belly jelly bean.





### LIGHT BULB (1879)

The first bulbs used carbon rods to conduct electricity. But these were short-burning, expensive, and too bright for indoors. Then, in 1879, **THOMAS EDISON** used carbonized bamboo (a predecessor of tungsten) for the filament, resulting in bulbs that were cheaper, more muted, and longer-lasting.



### PAPER CLIP (1867)

American **SAMUEL B. FAY** patented a clip, but his design still snagged. Then, in the 1890s, the double-oval design, first produced by the British company **GEM MANUFACTURING**, took over as the desktop staple that still keeps our papers in place.



### POST-IT NOTE (1980)

In 1969, St. Paul Minnesota-based scientist **SPENCER SILVER** invented a removable, reusable low-tack adhesive. But the company he worked for (3M) could not find an application for it. Five years later, his colleague **ART FRY** was singing in his church choir when he realized that the adhesive could be used to make a perfect bookmark for his hymnal. In 1980, 3M introduced the first Post-It Note nationally. The number sold in the last 10 years alone would circle the world more than 550 times.

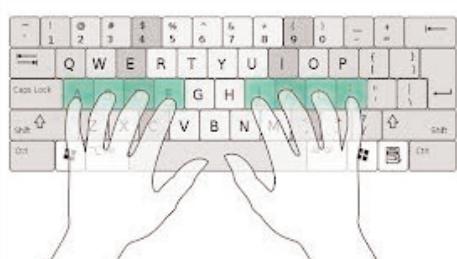


### Q-TIPS (1923)

**LEO GERSTENZANG** conceived the ready-to-use cotton stick when observing his wife applying wads of cotton to toothpicks to clean their baby's ears. When developing the product, safety was the main concern. He replaced the original wooden stick with a white cardboard-like material.

### QWERTY KEYBOARD (1867)

Why are keyboard letters arranged in such a weird configuration? To make sense of their placement, think back to the first typewriter. When American inventor **CHRISTOPHER SHOLES** and his team were developing the machine, the most frequently used keys kept jamming together. After much arranging and rearranging, they finally placed the letters in their current pattern, referred to as "qwerty", for the letter-key sequence at the top left.



## RUBIK'S CUBE PUZZLE (1974)

What once started out as a professor's study in geometry has become one of the most iconic designs in recent memory. There is one correct answer and 43 quintillion wrong ones. (No one has solved the puzzle in fewer than 52 moves!)



## SLICED BREAD (1928)

The proverbial benchmark for all best things was invented by **OTTO FREDERICK ROHWEDDER**, an optician in Davenport, Iowa, who also worked as a jeweler. He produced some successful prototypes, but it wasn't until 1928 — seven years after the invention of the pop-up toaster as we know it — that he created a machine that both sliced and bagged loaves, thus preventing the bread from becoming stale. By 1933, 80% of bread sold in the U.S. was pre-sliced.

## SLINKY (1945)

Mechanical engineer, **RICHARD JAMES**, invented the Slinky by accident, as he worked with torsion springs in his workshop in Philadelphia. One of the springs fell off a high shelf. Instead of stopping or floundering about, it kept moving, flipping from shelf to books to tabletop to floor. Realizing its potential, he spent the next two years figuring out the best wire gauge and proportions, while his wife searched for a name. The amount of wire used to make Slinkys since 1943 could wrap around the earth 126 times.



## SPANX (1998)

While getting dressed one day, **SARA BLAKELY**, a photocopier salesperson in Atlanta, decided to cut the feet off a pair of pantyhose as she could wear open-toes sandals but still enjoy the slimming effect of snug hosiery. It worked so well that she obtained a patent and spent \$5000 on a prototype for a new type of support wear. She persuaded Neiman Marcus (and eventually other stores) to carry her Spanx, which now boasts \$150+ million in annual retail sales.



### SUNSCREEN (1944)

World War II airman **BENJAMIN GREEN** created the first sunscreen in the United States to help protect soldiers from the South Pacific's intense rays. He cooked up a mixture of cocoa butter and jasmine on his wife's stove, then tested it on himself. The concoction offered minimal protection by today's standards, but it was a start. And in 1944 it became the basis for Coppertone Suntan Cream, which was the first mass-produced sunscreen product.

### SUPER BALL (1965)

**NORMAN STINGLEY**, chemical engineer, accidentally created Zectron, a synthetic material compressed to 3500 pounds of pressure per square inch that bounced uncontrollably. Wham-O loved the idea and the new toy was a sensation. Although there are many cheap knock-offs, the genuine article bounces higher than any other ball.



### TEA BAG (1920s)

This clever shortcut for tea lovers came about by accident. **THOMAS SULLIVAN**, a New York tea merchant, began sending out samples of his wares in small silk bags. Customers welcomed what they mistook for an improvement over tea balls and tea eggs, which had to be loaded with loose leaves. Several wrote to Sullivan, praising his little bags, but suggesting he use a coarser fabric which would be better for steeping. Sullivan began making tea bags in earnest, first using gauze, then paper, and eventually adding a string with a tag at the end of it — just like the bags we use today.

### VACUUM CLEANER (1907)

The first vacuum cleaner, invented by British engineer **HUBERT CECIL BOOTH**, wasn't something you'd want to haul up the stairs. A giant horse-drawn machine, it was parked outside a house while hoses snaked through the windows to suck up dust. Six years later, **JAMES MURRAY SPANGLER**, an asthmatic department store janitor in Canton, Ohio, attached an electric motor, a rotating brush, and a pillowcase to a broomstick to create the first portable model. To mass produce his invention, he joined forces with his cousin's husband, **WILLIAM HENRY HOOVER**.





### VELCRO (1955)

The idea for Velcro occurred for Swiss engineer **GEORGE DE MESTRAL** after a hike, when he found that his dog was covered with cockleburs. At home, he studied the cockleburs under a microscope and became intrigued by their hook and loop design. In 1955 he teamed up with a French fabric company to patent Velcro (a combination of the French words *velour* and *crochet*).

### ZIPPER (1913)

**GIDEON SUNDBACK**, a Swedish engineer working in the United States, invented the “Hookless Number Two”, which joined and separated two rows of spring clips (today’s teeth) via a slide mechanism, interlocking them to produce a flexible closure — and sighs of relief the world over. (The occasional zipper may get stuck, but Sundback’s design lasts to this day.)

Just a few of the millions of industrial design masterpieces . . .

