

Top 100 Famous Inventions and Greatest Ideas of All Time:

In No Particular Order...

Many ideas and inventions are groundbreaking. They have the potential to completely change the way we perceive the world and carry out our daily duties. Some inventions are so ahead of their time that they set the path for future generations to build on. Brilliant people build gadgets, vehicles, and just about anything else you can think of.

Throughout history, human civilizations have witnessed engineering marvels from time to time that help improve the quality of life, and in some cases, are overwhelmingly destructive. Here are the top 100 most famous inventions and ideas of all time you should know about.

FIRE

Although fire wasn't technically invented, the ability to control fire was both fundamental and crucial for human civilization. Ancient humans who walked the Earth around two million years ago discovered and used fire for their benefit, but it wasn't until 125,000 years ago that fire was fully utilized to the point where it was considered a tool.

Apart from giving us warmth in the cold and light in the dark, fire led us to develop skills like cooking. The ability to prepare healthier food and cleaner drinking water helped ensure not only human survival, but also higher intelligence due to proper nutrient intake.

WHEEL

Many people think that the wheel is the greatest invention of all time. Around 3500 B.C.E., the Mesopotamians invented the wheel, but mainly for pottery-making. It took about three centuries before the first wheel was attached to a chariot and it could only get better after that.

In our modern life, we take the wheel as a ubiquitous piece of engineering that we rarely pay attention to. Before this invention came to surface, humans were limited in terms of transportation and haulage. That being said, the wheel was only one part of another life-changing invention: the wheel-and-axle. In other words, the idea of attaching a wheel to a non-moving platform in a proper configuration so the two could work together.

NAIL

Just like a building, human civilization would crumble without nails. Before these metal fasteners came to be, wooden structures were built by attaching each piece to another one-by-one through exhausting geometrical work. Nails have been used since around 3400 B.C.E. by the

people of Ancient Egypt. They were fully developed in Ancient Rome when people learned how to cast and shape metals.

Screws, on the other hand, were used for the first time in Ancient Greece around 2nd century B.C.E. You may find it hard to believe, but until the early 1800s, most nails were made from hand-wrought iron. Blacksmiths had to hammer the iron and make an arrow-like shape out of it. One of the first nail-making machines appeared in the 1790s.

OPTICAL LENSES

The development of optical lenses was pioneered by the Mesopotamians and Egyptians. Nowadays, optical lenses are used in various tools, like telescopes and microscopes. Magnifying lenses led humans to better understand far-away objects like stars and other planets, as well as microscopic organisms.

The use of optical lenses as aids for the weak-sighted started in the 13th century, and about four centuries later, the microscope and telescope became available. Magnifying lenses expanded our knowledge of various fields of study including biology, astronomy, archeology, chemistry, and physics.

COMPASS

Magnetic compasses have lost their place as the prominent navigational equipment to global positioning systems and satellites, but their importance in history — especially in the field of land and sea exploration — will always be remembered. A lodestone, a naturally magnetized mineral, was used to make early compasses in China around 300–200 B.C.E.

Before these compasses, navigational systems mainly relied on astronomical signs. The compass was the single object that brought us to the Age of Discovery. It played an important role in the development of European countries in their efforts to gain wealth and power that eventually led to the Industrial Revolution.

PAPER CURRENCY

Before money, trade was the commercial exchange of goods and services. Money took various forms throughout history including precious metals, coins, foods, vegetables, livestock, and basically anything else useful as tradable bartering assets. Again, China was the first to make use of paper money in the 9th century, and Europe followed suit in the late 1600s.

Despite having no intrinsic value and initially being used as legal-binding notes issued by banks as a promise of future payments, paper money soon became the most common bartering asset to purchase goods and services. Paper money started a new era of trade that transformed the face of economics at a global scale.

GUNPOWDER

Gunpowder was invented in China and made available around the same time as paper money. Gunpowder has always been a major factor in military and warfare. It took part in deciding the course of history through wars.

PRINTING PRESS

Thanks to Johannes Gutenberg, the spread of knowledge and historical records reached an unprecedented pace. In 1439, he revolutionized note-making, turning it from a hand-written form to a printed one. He devised the equipment that would allow ink to be transferred to pieces of paper repeatedly, making the entire process of writing much quicker than it had ever been before.

Prior to the Internet, no single innovation contributed more to educating the world. Gutenberg built his equipment based on existing presses with the use of a mold to increase production speed and capacity of lead-alloy type pieces. Not only was the assembly effective, but it also made books much more affordable for the lower classes. By 1600, the Gutenberg presses printed more than 200 million books.

ELECTRICITY

It would be unfair to credit the invention of electricity to one person, as the idea developed over the course of thousands of years. Thales of Miletus was the first to research the phenomenon, but Benjamin Franklin is generally regarded as an American Renaissance man who helped us get a better understanding of electricity.

It is certainly impossible to overestimate the importance of electricity in human civilization. Other inventions such as the light bulb, battery, computers, toasters, and even coffee machines are the extensions of electricity's potentials. We have arrived at a point where we can safely say that we can't live without electricity.

STEAM ENGINE

In 1781, James Watt patented a steam engine capable of continuous rotary motion that he invented somewhere between 1763 and 1775. Soon enough, his engine became the driving force in the mining industry, factories, ships, trains, and the Industrial Revolution as a whole.

Throughout the 1800s, the steam engine played a major part in the exponential growth and advancement in manufacturing, agriculture, and transportation. James Watt's steam engine design continued to be modernized by others over time. The latest major evolution of it was the steam turbine, which powers most of the electricity in the United States using various heat sources.

STEEL

The unaware will think that steel is a naturally occurring metal, but it isn't. Steel is an alloy comprised of mostly iron and a very small percentage of carbon. The utilization of various metals such as iron and bronze started earlier than 4,000 years ago, but steel took a prominent role in human civilization during the Industrial Revolution.

Mass production of steel began in the 1850s using the "Bessemer Process," a technique used to create steel by using molten pig iron. Since then, steel has been used in the construction of everything from bridges and houses to engines and skyscrapers.

ANTIBIOTICS

Joseph Lister and Louis Pasteur were the first to start the war against bacteria, but it was Alexander Fleming who propelled the medical world to take a giant leap ahead in the same battle thanks to his discovery – albeit accidental – of the bacteria-inhibiting mold we now call penicillin in 1928. Penicillin proved to be a major step forward in the world of antibiotics and was used widely throughout the 20th century.

Although Fleming eventually abandoned his works on penicillin in the 1940s, his findings were further researched at the Radcliffe Infirmary in Oxford by Howard Florey and Ernst Boris Chain, funded by the U.S. and British governments. Penicillin finally entered mass-production after the Pearl Harbor bombing. In fact, by 1944, we had enough penicillin to treat all the wounded Allied Forces in World War II. Death by bacterial infection dropped to only 1% in WWII from 20% in the previous war. Penicillin has found to be effective at fighting all kinds of infection such as influenza, tuberculosis, and some sexually transmitted diseases.

PAPER

Another invention out of China is paper. Since 100 B.C.E., people all around the world have been using it to keep historical records and pass on knowledge to the next generation.

AUTOMOBILE

The steam engine cleared the path for the industrial revolution, and the automobile came out of it. While automobiles are not the first means of land transportation, the way that it's propelled by the engine makes travelling much quicker. An automobile is also a combination of many inventions; some people may even say that it's like a small home filled with a collection of innovations including wheels, internal combustion, radio, air conditioning, batteries, and in some cases, a refrigerator.

The 1885 Motorwagen was broadly considered the first automobile, and automobiles are being developed as we speak. The automobile, at least in its early days, was mainly a luxury item

designed for the wealthy; the poor simply walked on. Henry Ford with his revolutionary assembly line made cars more affordable for the lower classes.

HINDU-ARABIC NUMERAL SYSTEM

The counting system comprised of 10 numbers (0, 1, 2, 3, 4, 5, 6, 7, 8, and 9) along with their positional numerical values (123 refers to one hundred plus twenty plus three) is now used as the foundation in most (if not all) quantitative sciences including mathematics and economy. Development started in India before being adopted by the Arabs, the Europeans, and then it was used worldwide.

PLOW

It's hard to figure out a single individual who came up with the idea of plowing equipment, and it's equally difficult to say that the plow didn't change the course of human history. Early humans were essentially farmers and hunter/gatherers who devoted their lives to find food and ensure survival. Their modern counterparts have found new ways to sustain life and their needs have also improved from just eating to demanding comfort as well as luxuries.

Plowing, at least for our ancestors and farmers, removed the necessity to live a nomadic life. The seemingly simple idea of plowing allowed our ancestors to have a steadier way of life, collect and store foods, and develop civilizations in the area they resided. Because plowing continued to improve, they managed to harvest more foods than they needed, leading to the thought of trading.

REFRIGERATORS

Up until the early 20th century, people harvested ice and snow during the winter to keep their homes at a comfortable temperature during hot summer days to come. Ice-making machines were available but mainly used in large factories and breweries. Home refrigerators became typical household appliances in the 1920s following the development of environmentally-safe chemicals used to refrigerate.

The ability to keep food at a cold temperature revolutionized the food industry and eating habits; refrigerated trucks also made sure that all food would be delivered in desirable condition. It is certainly convenient to have easy access to fresh meats, vegetables, and fruits every single day even if there isn't a farm nearby where you live.

REMOTE COMMUNICATION

It doesn't seem right to merge the inventions of the telegraph, the radio, and telephone into a single item, but they all were based on the same idea of having remote communication. Ever

since Samuel Morse came up with his electric telegraph in 1836, communication technology has come a long way to get to where it is now.

Transmitting signals through electromagnetic waves was a brilliant concept that Nikola Tesla and Guglielmo Marconi developed and popularized in the early 20th century. From simple signals (or commands like using a remote control), transmission of sounds and images became possible. The invention of television brought hours of entertainment still used today to every home with live broadcast.

Fast forward several decades and the Internet came along — now you can have a video call with great audio and image clarity. The possibility to communicate with someone else millions of miles away allows for easy, quick information delivery whether it's in the field of scientific research, international politics, trades, or even war strategy.

CONTRACEPTIVES

Contraceptives benefit human civilization in a simple way but have profound effects. With fewer mouths to feed, every family has achieved a higher standard of living and can provide for each child they have more sufficiently. In many countries where contraceptives are used (as well as easily available), the average number of offspring per woman has drastically reduced. Birth control has slowly yet steadily helped prevent unnecessary and potentially dangerous rapid population growth on a global scale.

Certain types of contraceptives, such as condoms, are effective at preventing sexually transmitted diseases as well. People have used various forms of contraceptives including those made of only natural substances. Condoms have been used since the 18th century, while the contraceptive pill came into use in the 1930s; the brainchild of Russell Marker. Birth control remains an interesting field of study and new methods are always being developed.

THE GREGORIAN CALENDAR

Created by Pope Gregory XIII in 1582, the Gregorian calendar is the most widely used civil calendar today. It was intended as a revision to the Julian calendar. It jumped ahead 10 days in an effort to synchronize world time with the four seasons.

ARCHIMEDES' SCREW, THIRD CENTURY B.C.E.

A rotating corkscrew designed to bring clean water from the source to a relatively far location was one of the world's first effective water pumps made by Archimedes. Today, the idea still lingers on in many irrigation systems and wastewater treatment facilities around the world.

PASTEURIZATION

It may sound obvious, but back in the 1800s, nobody really understood that germs or microorganisms had the power to invade living hosts such as humans or animals. We soon came to understand that microorganisms were living organisms existing anywhere including in the air humans breathe. Both were the works of Louis Pasteur based on the theories proposed by many others. One of the first most practical implementations of the theory was the pasteurization method to sterilize bacteria in wine, milk, and beer.

ALPHABETIZATION, FIRST MILLENNIUM B.C.E.

The alphabet was developed over the course of hundreds of years by many people in many places including ancient Egyptians, ancient Greeks, ancient Romans, ancient Hebrews, and even ancient Chinese. Alphabetization came to surface around the first millennium B.C.E. Yes, it took a thousand years for the world to make a universal alphabetical order that kids in today's elementary schools can memorize easily. Alphabetization has made everything much more searchable.

CLOCK

The obelisks, constructed by ancient Egyptians around 3,500 B.C.E., were among the earliest models of shadow clock. The sundial also came from Egypt about two thousand years after. Both were great representations of the time-keeping instruments we use now.

AIRPLANE

Just like the invention of the automobile, airplanes combine multiple brilliant ideas including wheels and steam turbines into a single sturdy vehicle. Beyond the engineering magnificence, the airplane transformed our view into something larger, wider, and broader. It has changed the way we travel and manner of warfare.

DOMESTICATION OF HORSE

About 6,000 years ago when horses were on the brink of extinction, people of the steppes of Ukraine found ways to domesticate the animals. After that and to some extent, horses played major parts in the repopulation of Europe. Their significance also touched many aspects of civilization including trades and communication. Warfare also changed thanks to horses as the animals provided their assistance in increasing the level of exploration (as well as violence) to an astounding level. All in all, horses helped spread the seeds of the greatest cities in Europe and Asia.

NEOLITHIC REVOLUTION

Wide-scale human culture transition does not happen often, but it did occur at least once during the Neolithic Revolution in which people abandoned their previous nomadic lifestyle as hunters/gatherers and moved into the steadier lifestyle with farming. They found methods to grow crops in more systematic ways, allowing them to collect foods repeatedly from the same location.

SCIENTIFIC METHOD

Asking the right questions and providing evidence gathered from experiments has brought us to a better understanding of the world, everything in it, and some things beyond it. The scientific method requires everyone to propose theories and ideas that make sense. If you have to question others' ideas, you need to also give undeniable evidence to prove that your theories are better or more accurate. This is how science works, and everybody can contribute.

HAY

In Rome and Greece, hay was not even a thought. Only those civilizations who live in warmer regions of the world could keep their horses well-fed thanks to grazing. During winter when grass was scarce, horses would die, and you couldn't develop any form of urban civilization without horses to help you travel, trade, communicate, and distribute goods.

At some point during the time we now call the Dark Ages, somebody invented hay so that anybody could store grass for the difficult times in winter. By a stretch, hay was an important invention in the development of many great cities such as Paris, London, Vienna, New York, and Moscow.

SOAP

Northern Scotland came up with the first indoor toilet in 3000 B.C.E. The ancient Mesopotamians, around the same time, started to realize the importance of hygiene to maintain good health and came up with the idea of cleansing soap made of animal fat and wood ash.

THE RADIO

Long-distance radio transmission is an important piece of technology for modern life. The communication system was the result of continuous development by many different people, but the first workable radio apparatus was the brainchild of a single Italian, Guglielmo Marconi. He devised this wireless telegraphy system in 1895.

THE SAILBOAT – ANCIENT MESOPOTAMIA, 6000 B.C.E.

The Ubaid culture of ancient Mesopotamians (occupying present-day Iraq) was the first to use sailboats as a means of transportation around 6000 B.C.E. They traveled on the water to cross the Tigris and Euphrates rivers, around which the culture was born and developed.

HYDRAULIC ENGINEERING

In the late 19th century, hydraulic engineering solved a prominent problem: how to bring fresh water into homes and send away sewage from settlements. Although sophisticated waterworks had been in existence earlier in ancient Rome, hydraulic engineering brought massive improvement in wastewater treatment and sanitation in general. Infectious diseases caused by contaminated water were greatly minimized so countries like the United States and Britain could develop better.

LANGUAGE

There is no single clear point when and how language started to develop. Human's ability to invent and use many forms of language — verbal, written, body language, codes, symbols — is arguably the most powerful force behind civilization. It's a system we use to communicate ideas, feelings, emotions, war strategies, and intentions. Without understandable language, people would not be able to cooperate and negotiate their terms; simply put, we probably wouldn't survive this long without language.

RELIGION

Up to this day, we have no consensus of what constitutes a religion. What we do know is that it may be comprised of worldviews, ethics, organizations, prophecies, life after death, supernaturalism, spiritual beings, and cultural systems. There are more than 4,000 religions in the world today; based on that, people of different beliefs must be worshipping thousands of gods. The impact of religions on human civilization is wide-ranging from marriage rules to constitution of a country.

UNIVERSAL TURING MACHINE

The Turing machine worked by using mathematical formulas that were then used to build the Bombe, an Enigma code-breaker. Alan Turing invented the Universal Turing Machine with the capability of doing different kinds of computation depending on the program or input. The weakness was that it could only compute one program at a time. Regardless of its limitations, the Universal Turing Machine can be considered the forerunner of modern computers.

ATOMIC BOMB

Compared to any other technological developments and inventions in the last 2000 years, the atomic bomb had the greatest effects on human history. In just a matter of seconds, a single atomic bomb eliminated around 200,000 people in Hiroshima. The ability to destroy the planet is now within the realm of possibility as superpower countries arm themselves with more weapons than they would ever need. To some extent, atomic and nuclear weapons now take part in keeping the world safe as countries have to think many times before they start wars.

CALCULUS

Instead of seeing things with the “infinitely large” point of view, calculus takes the opposite direction. Thanks to calculus, the world now understands two things very well: differential equation and optimization. Calculus allows us to have better methods to model change and it also gives us the chance to discover the best (as well as the worst) possible solution to an existing problem.

ANESTHESIA

Imagine you (or someone else) undergoing a surgical procedure without having anesthesia administered beforehand. Anesthetic drugs, in simple words, put your body and mind to sleep or make certain parts of the body numb enough that you don't feel anything when it's treated. Anesthetic frees you from the threat of agony, and it also helps the scientific world understand the mechanism of human consciousness.

COPERNICAN THEORY

Published for the first time in 1543 by Copernicus, it was basically both revolutionary and blasphemous at the same time. It was revolutionary because it defied common sense: anybody could see (not observe) that the sun revolved around the earth and it moved from east to west. It was blasphemy because it contradicted the church.

While there are some inaccuracies in Copernican theory, it did set the movement of modern astronomical observation. It would take a person of great courage to propose an idea that defied common beliefs and religious orders back then.

THEORY OF EVOLUTION

In many cases, the study of physics is much more complex than any other branch of knowledge, except perhaps when it comes to Darwin's theory of evolution. At least until now, Darwin's ideas of evolution offer the best explanation of our origins and the rest of living organisms in the planet; who our ancestors are, what animals are direct descendants of dinosaurs, why and what lives where, and so on. The search for the true first origin of life continues, but from all discoveries so far, nothing contradicts the theory of evolution.

THE CONCEPT OF INFORMATION AS A COMMODITY

Somewhere in history, it came across people's minds that information was a commodity — one they could sell or trade for fortunes. Nowadays, the Internet arguably represents the most crowded marketplace for buying and selling information. Every advertisement that pops-up on your computer screen was not sent by random. It has been carefully selected to match your preferences, browsing history, age, sex, nationality, occupation, and online interactions. One of the biggest problems is that you're not the one who collects the rewards for giving away those data.

ERASER

As an idea or concept, the eraser is marvelous. It comes in all sorts of shapes such as the delete button, white tape, black tape, and the more literal rubber-eraser. This simple thing allows you to make revisions, correct inaccurate measurements, make constitutional amendments, change identities, modify a structure, or alter an existing order. The ability to go back and correct previous mistakes builds the foundation of scientific methods, improve regulations, develop cultures, and even rewrite history.

DOUBLE-ENTRY ACCOUNTING

The basic foundation of double-entry accounting is that the sum of all debits must be equal to the sum of all credits; very simple in theory but complicated in real-life. First introduced in 1494 by Luca Pacioli, a Franciscan monk, this system of accounting has been the core methodology of bookkeeping used worldwide. It is used in all accounting systems from those applied in families to calculate income and expenses to complex financial reports of the world's largest corporations.

GATLING GUN

Developed in 1861 by Richard Gatling based on his seed planter, the Gatling Gun was the first weapon of mass destruction. Union forces employed the gun during the civil war, but the hand-cranked version soon became obsolete and was replaced with an electric motor.

With that development, the gun could fire at an impressive rate of 3,000 rounds per minute. This is the forerunner of a modern automatic rapid-fire assault rifle, which always up to this day sparks a debate whether the Second Amendment to the United States Constitution needs another amendment.

THE MIRROR

Prior to the mass production and widespread use of mirrors, people could only see their reflections on calm water or very shiny metallic surfaces. Of course, what they saw could not do justice to their actual reflections, mainly due to an uneven surface or poor lighting.

The mirror, which came about during the Renaissance, changed that. A single mirror can show exactly how you look in front of others, which in turn forces us to develop manners of eating, grooming, shaving, and behaving. Thanks to the mirror, you don't have to ask how you look when wearing a jacket or raincoat, and you can practice table manners on your own if need be. Psychologically, a mirror is the embodiment of self-consciousness and retrospection because you can see yourself as if you have the eyes of others.

CONCRETE

Concrete-like structures began to appear for the first time in northern Jordan and southern Syria regions around 6500 B.C.E. Comprised of rough composite mixed with fluid cement, concrete is the most widely used man-made material. The mix hardens over time and makes a very sturdy, strong foundation of a structure. When it's still wet, however, the material is very easy to manipulate into different shapes.

ATM

John-Shepherd Barron is credited with the invention of the first fully-functional ATM (Automated Teller Machine). The first ATM was installed on June 27, 1967, for Barclays Bank in Enfield Town, London. The maximum withdrawal allowed was £10. Today, the machine is always just around the corner in any modern town.

THE ELECTRIC MOTOR

The steam engine might have started the Industrial Revolution, but the electric motor has helped households all around the world do their chores in a more time-efficient way. It isn't necessarily about one particular type of electrical appliance, but the general idea of using electricity to propel a mechanism as seen in kitchen appliances and power tools.

In modern times, some mass transportation vehicles — for example, the train — are also powered by electric motors. Electric cars existed but were considered too weak and cumbersome. Now, they are being reintroduced by big automobile companies such as BMW and Tesla.

GLOBAL POSITIONING SYSTEM (GPS)

The precursor of the GPS was called TRANSIT and developed in the 1960s to guide nuclear submarines. The modern version of GPS (originally Navstar GPS) was a project by the U.S. Department of Defense but was intended for use only by the U.S. military.

In 2000, President Clinton granted the use of GPS for non-military purposes, and now everybody can utilize the navigational system for various purposes like finding the best spot for fishing to tracking the movement of whales. However, there are some limitations to the public GPS — the most accurate Global Positioning System is still owned by the U.S. government.

PROZAC

Prozac was invented in 1972 and entered the medical application in 1986. It's currently sitting on the WHO's list of essential medicines. It's an FDA-approved antidepressant that works by inhibiting serotonin in the brain. Prozac helps patients cope with clinical depression — about 4.5 million Americans are taking Prozac today. The medicine took part in shaping our ideas around human emotions our ability to control them with chemicals.

INDUSTRIAL ROBOT

The first industrial robot was the Unimate, invented by George Devol and installed in a General Motors assembly line at Ewing Township, New Jersey. People (or companies) in the United States were not too excited about it, unlike their counterparts in Japan. After licensing the design in 1968, the Japanese went on to eventually dominate the global market for programmable industrial robots.

LED

In 1962, Nick Holonyak was a consultant for General Electric when he invented the LED. It started as a simple, inexpensive yet effective method to help us understand how well computers could interpret input or information. It had a humble beginning as a simple visible spectrum of red light and has since been used to create the biggest 24-million LED pixel billboard that covers an entire city block in New York Times Square.

UNMANNED AERIAL VEHICLES (Drone)

Similar to GPS, Unmanned Aerial Vehicles (UAV) which are more commonly known as drones began as a military project, although it is difficult to pinpoint when development began. One of the earliest attempts at making a powered UAV was Archibald Low's Aerial Target in 1916. A year after that, Nikola Tesla described a fleet of unmanned aerial combat vehicles.

In the United States, a classified UAV project codenamed "Red Wagon" started in 1960. Eventually, in 1973, the U.S. military confirmed the use of drones in Vietnam. The first

mass-produced UAV in the United States was the OQ-2 Radioplane and the development continues today. Some say drones are tools for surveillance, others think of them as innovative vehicles for delivering goods; the vast majority of people would tell you that drones are lethal weapons hiding in the sky. Drones are good examples that an innovation can be either useful or dangerous depending on how we decide to use it.

DIGITAL MUSIC

The first digital recording and playback system was invented by James Russell in 1970, who was then a scientist with the Pacific Northwest National Laboratory. With his method, sounds were represented by a pattern or string of 0s and 1s etched on a photosensitive platter. A laser read the binary arrangements to produce music. A set of converters were necessary: analog-to-digital for recording and digital-to-analog for playback. Unfortunately, Russell did not manage to convince the music industry to use his invention. CD manufacturers including Time Warner had to pay \$30 million for patent infringement 20 years later as a settlement to Optical Recording Co., James Russell's former employer.

ELECTRONIC IGNITION SYSTEM

Early ignition systems were available only for race engines such as the BRM and Coventry Climax engines in 1962. Pontiac became the first manufacturer to offer electronic ignition on road legal cars, as it was available as an option on some 1963 models. Electronic ignition systems did not become standard until the Fiat Dino in 1968.

Other automakers soon followed suit. For example, Jaguar in 1971 and Chrysler in 1973. Ford and GM introduced it as a standard feature in 1975. It's safe to say that the ignition system started the modernization movement from mechanical-control to electronic-control in the automobile industry. Today, most cars offer a lot of electric-controlled functions such as traction, steering, brakes, transmissions, and even airbag deployment.

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MRI (Magnetic Resonance Imaging)

Although all people including doctors, scientists, patients, and laymen agree that the MRI is a brilliant invention, we still don't know for sure who invented it. On one hand, many people believe it to be Raymond Damadian, as he set the course for the machine to be utilized as medical equipment when he used it to tell healthy tissues from cancerous ones in 1973.

On the other hand, Peter Mansfield and Peter Lauterbur received Nobel Prizes for their influential discoveries on the same machine.

DNA FINGERPRINTING

In 1984, molecular biologist Alec Jeffreys devised a method to analyze DNA sequences in humans which involves more or less three billion units. He did that by comparing only the part of the sequence that demonstrated the greatest variation among people.

One of the first important implementations of DNA fingerprinting was in a forensic investigation, particularly a case in Narborough, Leicestershire. Without the method, the police would have incriminated the wrong person in the rape-murder case of Lynda Mann and Dawn Ashworth.

Thanks to Jeffreys, Richard Buckland (the prime suspect) was exonerated and the real rapist-murderer was sent to prison. Until DNA fingerprinting was commercialized in 1987, Alec Jeffreys' laboratory was the only place in the world capable carrying out the procedure.

GENETIC SEQUENCING

The development of genetic sequencing was a race from the get-go. In 1998, an American biochemist, geneticist, biotechnologist, and a businessman named Craig Venter announced that he would be able to sequence the entire human genome in just three years for \$300 million.

It doesn't sound surprising until you realize that such a timeframe and budget were lacking compared to the government-funded Human Genome Project. In the end, the race ended up in a tie — both projects published a complete report of successful attempts in 2001. Mr. Venter fulfilled his promise to complete the project in just three years.

CRESCENT WRENCH

Founded by Karl Peterson in Jamestown, New York in 1907, the Crescent Tool Company had only one product: a type of wrench that could replace a bunch of different-sized wrenches. The tool could handle clutch adjustments and fix brakes on early automobiles.

Despite its practicality, the crescent wrench didn't enjoy widespread popularity until 1927 when Charles Lindbergh, the man who made the first solo successful transatlantic flight, suggested that he only carried two hand tools: pliers and a crescent wrench.

In the early 1800s, the world saw the first mechanical typing machine that was used with carbon paper — both were the inventions of an Italian named Pellegrino Turri. The development of the modern typewriter started there, and the equipment was finally standardized in 1910.

This means that all typewriters, regardless of manufacturer, followed mostly the same design with only minor variations allowed. An important milestone in the development occurred in 1874

when a typewriter with a QWERTY keyboard layout became available as the Remington Standard 2.

The idea behind the layout was impressive. Christopher L. Sholes, the man who created it, figured out a method to prevent jamming by putting the most frequently used letters farther from each other — not the keys themselves, but the actual type bars inside the machine. It has become the standard layout in modern computer keyboards and most (if not all) typing devices.

MATCH

The idea of controlling fire for human purposes was remarkable, as was the invention of the match. One of the earliest methods to produce fire was by focusing sunlight through a lens onto timber. It would only work on sunny days, which wasn't too helpful since you needed fire the most during the night.

Striking flint and steel together to create a spark was another common method. The chemical match was invented in 1669, but a non-poisonous match did not come about until 1910. Before this, the number of chemical substances (such as sulfur and phosphorous) required to produce a single spark was more than enough to kill a person.

BICYCLE

Penny-farthing, also referred to as a high-wheeler, was the first to be called a bicycle. It was introduced in 1869 and was popular for at least two decades. The invention of “modern bicycles” equipped with chain-driven gear trains rendered the penny-farthing obsolete.

The rover safety bicycle was arguably the first popular bicycle form factor, although there had been earlier models featuring the same chain-driven mechanism. The bicycle was important for transportation, but its most significant role in history was during the start of women's emancipation in western culture. It is believed that the bicycle had a major part in helping women earn the rights to vote.

LIGHT BULB

Thomas Edison is the man usually accredited to the invention of the light bulb. However, he wasn't the only person who contributed to the development of the technology. What Edison did to stay ahead of his competitors was develop an inexpensive practical light bulb. Even after he filed the patent for his invention in 1879, several other figures helped perfect the design, particularly concerning the filament materials. Edison figured out that carbonized bamboo was an ideal filament because it could burn for more than 1,200 hours.

Lewis Howard Latimer and Willis R. Whitney invented more efficient methods to produce the carbon filament and a treatment to prevent the burning filament from darkening the inside of the glass bulb, respectively. The longest running light bulb was installed in a fire department building in Livermore, California. The light bulb was turned on for the first time sometime between 1901 and 1905 and has been continuously running since then.

PHONOGRAPH

The phonograph was another idea put forth by Edison. The first public demonstration of the phonograph occurred in 1877 for the Scientific American magazine. To the astonishment of all who present at the event, Edison cranked his machine and it gave a greeting. The machine played, “Good morning. How do you do? How do you like the phonograph?”

It wasn't just an early model of an answering machine, but a revolutionary piece of engineering that enabled music to be played in the home. It brought music to a much wider audience and promoted jazz with an unprecedented level of aggressiveness.

HYPODERMIC SYRINGE

It's believed that ancient Romans and Greeks realized the potential of injections as a medicinal delivery system based on observing snakebites. However, the earliest confirmed experiment using hypodermic needles didn't happen until 1656 by Christopher Wren, when he injected opium into dogs. Just four years later, experiments on humans took place by J.D. Major of Kiel and J.S. Elsholtz of Berlin — it didn't go well.

For nearly two centuries, hypodermic needles fell out of favor. It all changed thanks to Dr. Francis Rynd, who performed the first successful injection in 1844, and Dr. Alexander Wood introduced the all-glass syringe for measuring dosage in 1851.

Believe it or not, it took the world a century to realize the possibility of cross-contamination from using the same needle multiple times. The development of a fully-disposable plastic syringe was conducted by Colin Murdoch, a New Zealand pharmacist, in 1956.

WRISTWATCH

Alberto Santos-Dumont, the man who made the first heavier-than-air flight in Europe had a small yet crucial role in the invention of the first men's wristwatch created by his friend, Louis Cartier. In 1901, Santos-Dumont complained to Cartier about how difficult it was to check the time while keeping his hands in control during a flight. Five years later, Santos-Dumont was in possession of the first men's wristwatch with a leather strap and buckle, made by Louis Cartier.

However, it wasn't the first wristwatch. Patek Philippe took credit for that when he made it for the Countess Koscowicz of Hungary in 1868.

FIRE EXTINGUISHER

The earliest model of the fire extinguisher was more dangerous to the operator than the fire itself. It was comprised of a cask that contained liquid and a gunpowder chamber made of pewter. The whole apparatus was set off by igniting the fuse.

Once activated, the gunpowder generated an explosion needed to scatter the liquid retardant. It was invented in 1723 by Ambrose Godfrey and patented in England. The fire extinguisher was the subject of development throughout history. Today, the most common models include air-pressurized water, carbon dioxide, and dry chemicals. Each works best when used to put out fire on specific types of flammable materials.

PUSH LAWNMOWER

A British engineer, Edwin Budding, devised a new apparatus for cutting grass based on a carpet cutter in 1830. It was 19-inches wide and the frame was constructed from wrought iron. It would take a decade to develop a lawnmower meant to be operated by animals, and 60 years for the world to see the first steam-engine version.

In the United States, turf grass is one of the most common vegetation's grown and it actually takes a very large portion of land in the entire country. After World War II, the rise of suburbia created massive demands for lawnmowers. Prior to 1946 alone, there were around 140,000 lawnmower units sold in the U.S. Currently, more than five million units are sold every year.

CAR JACK

You would assume that a hydraulic car jack was invented by someone named Jack, but it was not. Richard Dudgeon was granted the first patent for the portable hydraulic jack in 1851, which was proven superior to the alternative at that time, the screw jack.

He was just 32 years old when he came up and actualized the idea. The hydraulic jack was most commonly used in railroad repair shops and shipyards back then, but now it has become a staple in every automobile shop all around the world.

OUTBOARD MOTOR

The inboard motor has been around since the early 1800s, yet no one came up with the idea of attaching it externally to a boat until Ole Evinrude came up with his two-stroke boat motor. His motor was not the first "outboard" type but it was the first to be adopted widely.

Earlier models were made by Gustave Trouvé in 1870 (electric), American Motors Co. in 1896 (petrol-powered), and Waterman in 1905 (gasoline). The main reason why Evinrude's design became so popular was its two-cylinder configuration. This allowed the motor to be reliable, cost-efficient, and lightweight — all characteristics you would expect from an outboard motor.

Ole Evinrude, or the people who invented the outboard motor before her, didn't create a new type of vehicle. The motor simply allowed a combination of existing technologies in a simple enough configuration that anyone could enjoy driving on water.

DERINGER

Not only is copyright infringement a terrifying ghost that haunts Rolex watches and Gucci handbags, it's also a nightmare for the original Philadelphia Deringer made by Henry Deringer in 1852. The Deringer was the precursor of the stealth firearm and it became an alternative generic term for a pocket pistol.

The problem for the inventor was that the fakes were more popular. One of the most common counterfeiting methods was to add an additional "R" to the brand; from DERINGER into DERRINGER.

On April 1865, a man named John Wilkes Booth assassinated President Abraham Lincoln with the original Deringer. Today, you can still see Booth's Deringer in Ford's Theater Museum, directly underneath the theater where the assassination took place more than 150 years ago.

TAPE MEASURE

Credit for the invention of the modern spring-loaded tape measure goes to Alvin Fellows. He invented it in 1868 — his method was to encase the tool in a plastic container and attach it with a spring clip. Despite its superiority to the more common wooden ruler, the tape measure didn't start to outsell its inferior counterpart until the 1940s. Spring-loaded tape measures have a timeless design. It's effective, inexpensive, practical, and easy to use.

COLEMAN LANTERN

Smart, persuasive marketing has the power to influence peoples purchasing decisions. Take the Quick-Lite lantern by W.C. Coleman for example. In 1916, when Coleman began selling the product, he marketed it as equipment to stretch the workday. However, as electrification reached more rural areas, he reworded the marketing campaign and told buyers that the lantern was an outdoor essential. And in the immediate aftermath of World War II, when Americans enjoyed camping and picnics, sales skyrocketed.

SWISS ARMY KNIFE

A Swiss Army Knife will always be an icon of outdoor utility. With short knives, a pair of scissors, screwdrivers, can openers, and foldable design, many people swear to never leave home without it. While it may not be helpful for any serious carpentry works, it surely can help you feel like MacGyver at the very least.

The original model was built in the 1880s by the Germany-based manufacturer, Wester & Co. Solingen. It had a blade, can opener, a reamer, a screwdriver, and oak handle. The idea was to provide the military with a multipurpose knife to repair rifles, open canned foods, and cut stuff as needed. Carl Elsener, a Swiss man, didn't think it was right for Swiss soldiers to use knives made in Germany, so he set out to manufacture the equipment in his home country. Afterward, he named his company Victorinox.

FLASHLIGHT

A flashlight is a pretty simple device — an electric lightbulb connected to a switch. The first U.S. patent for the flashlight was obtained by a British inventor named David Misell in 1899. Some of the early flashlights were donated to the New York City police. Because early models were inefficient and needed to take a brief “rest” to stay functional, the light only flashed multiple times instead of being continuous, hence the name.

STAPLER

Today, a ubiquitous office supply, but it was born of royalty. The first stapler was built in the 18th century in France for King Louis XV. The modern stapler we know today — with a top-opening for easy refilling — was partly made popular by the movie Office Space. A major portion of the movie's plot revolved around a red stapler made by Swingline, the first stapler to introduce the design. It was the Swingline model 646, and high demand from fans of the movie drove the company to manufacture more.

CROSSWORD PUZZLE

The December 21st edition of the New York World in 1913 published a game that incorporated many features of modern days' crossword puzzle; it was called the “word-cross” puzzle. The man credited for the publication is Arthur Wayne, a journalist from Liverpool, England. It is often cited as the first true crossword puzzle.

FIBERGLASS FISHING ROD

The fishing rod has had quite the history. Until the mid-1800s, most rods were made in England using heavy wood. All of this changed when Samuel Phillippe introduced an imported alternative in 1846 and sold the design to a New York retailer. The same model was then copied by other

Americans including Charles Orvis and Hiram Leonard, as well as Englishman William Hardy in the 1870s.

Apparently, the same model could be mass-produced in the U.S. to help reduce the price and make it more accessible. The next big thing happened in 1913 when Horton Manufacturing Company introduced all steel rods — it was heavy and unfavorable.

A major improvement took place in the 1940s with the introduction of fiberglass fishing rods by Robert Gayle and Mr. McGuire. In the decades that followed, the hostilities in Asia made importing popular material such as bamboo more difficult, so big companies such as Shakespeare and Montague needed to use new material for manufacturing their rods.

DUCT TAPE

The original duct tape was strips of plain cotton duck. Its main function was as an insulator for steel cable, although some people used it as a decorative ornament on clothing. In the 1910s, some shoes and boots were reinforced using the same material as well.

The modern version of duct tape we're all familiar with was an invention of Johnson & Johnson's Revolite Division. It was thin cotton duck coated with plastic material on one side and rubber-based adhesive on the other. To make the tape easier to work with, it was also designed to be ripped by hand.

After World War II, hardware stores began selling duct tape for household use. Whether you think of it as a material or a gadget, it continues to be the ultimate multi-tool. Even NASA astronauts made repairs with it in space.

VELCRO

A lot of people attributed the invention of Velcro to NASA, and they couldn't be further from the truth. While NASA did popularize the fabric, it was George de Mestral who patented it in 1955. At first, Velcro was subject to all sorts of ridicules, but eventually, de Mestral had the last laugh. In the 1960s, astronauts used Velcro to secure devices for easy retrieval.

Made of two thin strips of fabric, one has countless tiny loops, and another is fitted with tiny hooks. Velcro is a truly easy to use universal fastener for all people, from DIY enthusiasts to engineers.

ELECTRIC TRAFFIC LIGHT

Imagine driving on today's busy roads without traffic lights. Credit for the first electric traffic signal goes to James Hoge, although early forms (both manually-operated and electric-powered) had existed earlier in many parts of the world.

The system based on his design was first installed in Cleveland on August 5, 1914. He devised a wired traffic signal attached to a single post to be installed on each corner of an intersection. Because the lights were all wired and configurable, the police and fire departments could adjust the rhythm of lights as needed. James Hoge filed the patent in 1913 and was granted it five years later.

CHESS

One of the earliest forms of chess came about in India around the 6th century AD. Many modern aspects of chess were derived from a game called Chaturanga. The same game then got introduced in Persia, where the King was derived. The concept of "checkmate" and "check" also came from the Persians. The game has remained the same throughout history.

MICROSCOPE

For many thousands of years, humans couldn't see things smaller than a piece of sand. Everything changed when the microscope came about in 1590. We gained the ability to examine small things like food particles bacteria, and other microorganisms.

Despite its prominent usefulness in scientific research, it remains unclear who invented the microscope. The debate usually revolves around two parties: either Hans Lippershey or a father-son team, Hans and Zacharias Janssen.

STEAM IRON

Henry W. Seely filed the patent for an electric iron in 1882. It was called an electric flatiron back then. Suddenly, people had an easier way to maintain their clothes and look good in more consistent ways by keeping the wrinkles away from shirts and pants.

The problem was that the regular iron could bake in the grease and sweat attached to articles of clothing. The Hoover steam iron, introduced in 1953, was the perfect solution. It allowed us to iron faster and make the clothes look better for a longer time.

PETROL (Gasoline)

In 1859, petroleum was not a desirable natural by-product of oil. Edwin Drake, the driller of the first productive oil well in the United States, discarded petroleum (referred to as gas or gasoline in the country) because he was unaware of its potential uses. Drake refined the oil mostly to

produce kerosene, a hot-selling commodity. Without petroleum, the Industrial Revolution wouldn't have been possible.

RAILWAY

George Stephenson, with his "Rocket" locomotive, made headlines during the 1820s when commercial train networks were still in their infancy. He was a real pioneer and was appointed as the engineer for Stockton and Darlington railway in 1825. It took only four years before the first public roadway was opened. Both Rocket and the opening of the railway became powerful forces to drive the development of the industry. The next major improvement in the business would have to wait until the diesel engine came about in the 1890s.

X-RAY

Wilhelm Conrad Rontgen took all the credit for the discovery of the x-ray in 1895. He experimented with cathode rays and figured out that not only did they travel through glass, but also human flesh. It must have been wonderful to come across something of unknown nature, hence an x-ray. The first practical implementation of the technology was during the Balkan war to find broken bones and bullets inside patients.

INTERNET

The Internet doesn't belong to anybody, not even Google, but it is for everybody to use. While the Internet is an invention, the whole system was the result of many people's contributions. The precursor of the Internet, known as ARPANET, was a project by the U.S. Department of Defense in the 1960s. Vint Cerf and Robert E. Kahn later developed the Internet protocol suite (TCP/IP) that became the standard Internet networking protocol until today. The rise of technology, email, and instant inexpensive overseas communication suddenly changed the way we live, conduct business, learn, and spread knowledge.

CAMERA

Paper, writing, and the printing press have all allowed us to study history and preserve knowledge, but things would have been very different without photographs. One thing that a camera does best is stop time and make an event more easily remembered by future generations. The first permanent photograph was captured in 1826 by Joseph Nicéphore Niépce using a camera designed by Charles and Vincent Chevalier. Figuratively speaking, the camera has witnessed its own evolutionary stages from the obscura to DSLR.

REFRIGERATOR

Ice and snow were more than just natural phenomena in the past — they were useful natural elements to help preserve foods and medicines. The General Electric's Monitor Top Refrigerator

on 1927 marked the widespread of refrigerator for household use, although earlier models had existed before it.

TIN CAN

Before the refrigerator, people simply used tin cans to preserve food. Peter Durand took credit for the invention of the tin can. He was granted the patent in 1810 by King George III of England. However, he did not pursue the development of his invention but sold the patent to two Englishmen, Bryan Donkin and John Hall, for £1,000 (more than £72,000 of today's money). The tin can made it to mass production and remains as the container of choice for many companies to package their food and beverage products.

TOOTHBRUSH

The chew stick was the earliest known form of a toothbrush. It was made of simple twigs with frayed ends and was used by many to somehow try to get rid of anything dirty from their teeth. In 1770, a man named William Addis of England was imprisoned for causing a riot. In prison, he saved a piece of bone from his meal, drilled some small holes, and attached bristles to the bone. Addis practically invented the basic form factor of the modern toothbrush. After released from jail, he became a wealthy man from selling toothbrushes.

CORKSCREW

Nobody is sure who invented the corkscrew, but it's most likely an Englishman because of the beer and cider tradition in the country. That being said, Samuell Henshall was granted the first patent for the tool in 1795. Between the worm and the shank, he inserted a simple disk known as the Henshall Button to prevent the worm from going too deep into the cork.

FLUSH TOILET

Sir John Harrington was an amateur and not very successful poet. He was, however, the godson of Queen Elizabeth I. From 1584 to 1591, Sir Harrington had to live as an exile as a form of punishment because he circulated a wanton tale among the ladies. During his exile, he built a house and installed a lavatory with a flushing attachment. In 1592, he was finally forgiven and the Queen visited his house in 1592. Harrington proudly showed the lavatory to the Queen and apparently, she had the need to try it. She was impressed and ordered one.

MOVING ASSEMBLY LINE

Henry Ford's moving assembly line served multiple purposes: increasing the production capacity of the Ford Model T and meeting consumers' demands. Another important purpose was to absorb less skilled workers without sacrificing build quality. Because each person was only assigned to perform a repetitive task, it wouldn't be too difficult to find workers. Ford's

assembly line was not the first and was based on meat processing factories in Chicago. Almost all big factories today use the same production system.

BEER

The invention of beer is estimated to have taken place around 10,000 B.C.E. in present-day Iraq by the ancient Mesopotamians. By 2000 B.C.E. the Sumerians were able to brew eight different types of beers with distinctive strength from strong to good dark; the recipes soon spread elsewhere. Ancient Egyptians also had a taste for suds.

KEVLAR

Stephanie Kwolek was the first to synthesize Kevlar at the DuPont laboratories in Wilmington, Delaware. The Kevlar was (weight for weight) five times stronger than steel yet lighter than fiberglass. It is also heat resistant and can decompose without melting at more than 400-degrees Celsius. Common applications are in extreme sports equipment, a bulletproof vest, and aircraft construction.

PERIODIC TABLE

The periodic table that we know today was influenced by the same thing presented by Dmitri Mendeleev in 1869 at the Russian Chemical Society. It wasn't the first periodic table, but the first to gain worldwide acceptance from the scientific community. The main difference between the old-school and modern version of the periodic table is the order of the elements. The older method used atomic numbers while the new one relies on atomic weight. Interestingly, this doesn't change anything, but it remains an important distinction to remember.

WORLD WIDE WEB

It would be blasphemy to list the greatest ideas of all time without including the World Wide Web. It's a way of accessing data. Tim Berners-Lee may not be the father of the Internet, because the moniker goes to the two people who invented the Internet protocol suite. However, Berners-Lee is the one who made the Internet more easily accessible by all. The first website in the world was hosted on Berners-Lee's computer.

And that's that! I know, this was a long list, but you've made it through. I hope you've taken some inspiration from this article, as the most influential ideas and inventions were sometimes made by mistake, while others took years of perseverance. If you're looking for help designing your very own product, Cad Crowd can help. Contact us for a free quote on our design and manufacturing services.