

1: Inventors and Inventions of Scientific Instruments: www.enganchecubano.com

As you read through these 25 inventions that changed our way of life, think about how different things would be without them. And if you can think of anything else, add it to the comments!

Innovation Meaning Invention refers to the occurrence of an idea for a product or process that has never been made before. Innovation implies the implementation of idea for product or process for the very first time. Creation of a new product. Adding value to something already existing. Concept An original idea and its working in theory. Practical implementation of new idea. Skills required Set of marketing, technical and strategic skills. Occurs when New idea strikes a scientist. A need is felt for a product or improvement in existing product. Concerned with Combination of various products and process. Spread across the organization. In finer terms, it is a novel scientific idea conceived through research and experimentation that turns into a tangible object. It can be a new process of producing a product or may be an improvement upon a product or a new product. Inventions can be patented, as it provides security to the inventor, for intellectual property rights, and also identifies it as an actual invention. Further, different countries have different rules for obtaining the patent and the process is also costly. To be patented, the invention must be novel, have value and non-obvious. In the purest sense, innovation can be described as a change that adds value to the products or services; that fulfills the needs of the customers. It is when something new and effective is introduced to the market, that fulfills the needs of the customers by delivering better products and services. All the process that help in the generation of the new idea and translating it into the products demanded by the customers are covered under innovation.

Key Differences Between Invention and Innovation The significant differences between invention and innovation are classified below: The occurrence of an idea for a product or process that has never been made before is called the invention. The implementation of the idea for product or process for the very first time is called innovation. The invention is related to the creation of new product. On the other hand, innovation means adding value or making a change in the existing product. The invention is coming up with a fresh idea and how it works in theory. As opposed to innovation, is all about practical implementation of the new idea. The invention requires scientific skills. Unlike innovation, which requires a broad set of marketing, technical and strategic skills. The invention occurs when a new idea strikes a scientist. Conversely, innovation arises when a need realized for a new product or improvisation in the existing product. The invention is concerned with a single product or process. As against this, innovation focuses on the combination of various products and services. While the invention is limited to research and development department of the organization. Innovation is spread all over the organization.

Conclusion So, it can be said that innovation is not the same thing as invention, as these are two different concepts. Both the activities requires huge capital investment in the research process. Further, the invention is when something new or novel to the world is discovered, while innovation is about introducing an effective way of using, producing or distributing something. One important difference between invention and innovation is, an idea when proved workable, it is called as the invention. On the other hand, an innovation is when the idea not only be proved workable but also requires to be economically feasible and fulfill a specific need.

2: Most Famous Inventions - List of Famous Invention in History

There are endless famous (and not so famous) inventions worthy of curiosity and wonder. Of course, the lists below are by no means complete, but do provide a 'greatest hits' list of inventions, both past and present, that have captured the imaginations and propelled us forward.

Most scholars now believe that isolated civilizations first arose independently at several locations; initially in Mesopotamia around Tigris and Euphrates rivers and, a little later, in Egypt and the eastern Mediterranean. All these early civilisations had to invent or discover everything for themselves because unlike later civilisations such as the Greeks in the west or the Chinese in the east, they had no one to learn from. Therefore, the Egyptians had to invent mathematics, geometry, surveying, metallurgy, astronomy, accounting, writing, paper, medicine, the ramp, the lever, the plough, mills for grinding grain and all the paraphernalia that goes with large organised societies. So how do we define Egyptian inventions today? It is very difficult to determine because three thousand years is a long time for discoveries to be made and lost or appropriated by others. For example the Greeks sometimes take the credit for inventing mathematics but they learned their math from the Egyptians then later developed and improved upon what the Egyptian achieved. The Egyptians as well as the Mesopotamians independently discovered that by mixing a small quantity of tin ore with copper ores they could make bronze which is harder and more durable. This set off a chain of connected innovations that could not have happened without the primary discovery. In fact it is the first monumental stone building designed and constructed that we know of. Writing Along with the Mesopotamians, the Egyptians were the first people to develop their language into a codified form of writing. All early forms of writing were pictograms – pictures. All writing systems developed in this way but their original forms become lost as the pictures are refined into abstract forms. What is interesting about the Egyptians is that although their writing changed to the abstract form of Hieratic they deliberately preserved the hieroglyphic pictures in their original forms. Papyrus Sheets Papyrus sheets are the earliest paper-like material – all other civilisations used stone, clay tablets, animal hide, wood materials or wax as a writing surface. Papyrus was, for over years, the most important writing material in the ancient world. It was exported all around the Mediterranean and was widely used in the Roman Empire as well as the Byzantine Empire. Its use continued in Europe until the seventh century AD, when an embargo on exporting it forced the Europeans to use parchment. Black Ink The Egyptians mixed vegetable gum, soot and bee wax to make black ink. They replaced soot with other materials such as ochre to make various colours. The Ox-drawn Plough Using the power of oxen to pull the plough revolutionised agriculture and modified versions of this Egyptian invention are still used by farmers in developing countries around the world. The Sickle The sickle is a curved blade used for cutting and harvesting grain, such as wheat and barley. Shadoof The Shadoof is a long balancing pole with a weight on one end and a bucket on the other. The bucket is filled with water and easily raised then emptied onto higher ground. The Calendar The Egyptians devised the solar calendar by recording the yearly reappearance of Sirius the Dog Star in the eastern sky. It was a fixed point which coincided with the yearly flooding of the Nile. Their calendar had days and 12 months with 30 days in each month and an additional five festival days at the end of the year. However, they did not account for the additional fraction of a day and their calendar gradually became incorrect. Eventually Ptolemy III added one day to the days every four years. Clocks In order to tell the time Egyptians invented two types of clock. Obelisks were used as sun clocks by noting how its shadow moved around its surface throughout the day. From the use of obelisks they identified the longest and shortest days of the year. An inscription in the tomb of the court official Amenemhet dating to the 16th century BC shows a water clock made from a stone vessel with a tiny hole at the bottom which allowed water to drip at a constant rate. The passage of hours could be measured from marks spaced at different levels. The priest at Karnak temple used a similar instrument at night to determine the correct hour to perform religious rites. The Police During the Old and Middle Kingdoms order was kept by local officials with their own private police forces. They were armed with staffs and used dogs. Neither rich nor poor citizens were above the law and punishments ranged from confiscation of property, beating and mutilation including the cutting off of ears and

noses to death without a proper burial. The Egyptians believed that a proper burial was essential for entering the afterlife, so the threat of this last punishment was a real deterrent, and most crime was of a petty nature.

My Lord, let whatsoever has been stolen be given back to me. It describes 48 surgical cases of injuries of the head, neck, shoulders, breast and chest. It includes a list of instruments used during surgeries with instructions for the suturing of wounds using a needle and thread. This list includes lint, swabs, bandage, adhesive plaster, surgical stitches and cauterization. It is also the earliest document to make a study of the brain. The Cairo Museum has a collection of surgical instruments which include scalpels, scissors, copper needles, forceps, spoons, lancets, hooks, probes and pincers.

Wigs During the hot summers many Egyptians shaved their heads to keep them clean and prevent pests such as lice. Although priests remained bald as part of their purification rituals, those that could afford it had wigs made in various styles and set with perfumed beeswax.

Cosmetic Makeup The Egyptian invented eye makeup as far back as B. They combined soot with a lead mineral called galena to create a black ointment known as kohl. They also made green eye makeup by combining malachite with galena to tint the ointment. Both men and women wore eye makeup; believing it could cure eye diseases and keep them from falling victim to the evil eye.

Toothpaste At the dental conference in Vienna, dentists sampled a replication of ancient Egyptian toothpaste. Its ingredients included powdered ox hooves, ashes, burnt eggshells and pumice. There seems to have been no syphilis or rickets. There are more than Hieroglyphic illustrations including Egyptian word examples and over hieroglyphs from the Gardiner list. Egyptian Hieroglyphics includes detailed information on the history of Egyptian writing and mathematics, the use of the different types of symbols, how to write your name, how to recognize kings names and the story of the scribe with a video showing how papyrus is made.

3: Invention - Wikipedia

12 scientists and their brilliant inventions. one of Archimedes' greatest inventions is the Discoverer of how our bodies make millions of different.

Jules Henri Giffard Airships are lighter-than-air flying crafts that propel through the air with thrust mechanisms, such as propellers and rudders. The first passenger airship was built in and designed by Jules Henri Giffard. Mass-production steel Country: Henry Bessemer While steel has always been a valuable metal produced in forges of blacksmiths for thousands of years, it first became an inexpensive mass-produced material when Henry Bessemer invented an industrial process to easily produce it. Combustion engine Country: His design was the first to be able to be manufactured en masse. Vacuum cleaner Country: Daniel Hess A vacuum cleaner is a home appliance which uses an air pump to remove dirt and dust from flat surfaces, where these contaminants tend to gather. In , Daniel Hess invented a vacuum cleaner which he called a carpet sweeper. Rapid fire firearm Country: Gatling Richard Gatling invented the first rapid-fire firearm, known as the Gatling gun. It was first used by the Union in the American Civil War. Ironically, Gatling wanted to show how futile war is. He wanted to reduce army sizes and reduce deaths caused by disease and combat. Alfred Nobel Dynamite was first invented by Alfred Nobel in It was more manageable and powerful than black powder. Dynamite is based on nitroglycerin. It is used for many industrial purposes, including quarrying, demolition, construction, and mining. Alexander Graham Bell The telephone allows at least two users to communicate from far away as though they were next to each other. It was first invented by Alexander Graham Bell in Today it is an indispensable small appliance. Incandescent light bulb Country: Thomas Alva Edison An incandescent light bulb produces light by the use of a filament wire that is heated electrically until it glows. The first incandescent light bulb was made by Humphry Davy by passing current through a thin strip of platinum. It was not practical, however, and many modifications had to be made before the incandescent light bulb could become commercially viable. Inventions of the 20th Century Television c. Many inventors The television allows for the transmission of moving images. It is primarily used as a source for news and entertainment. It could be said that the invention of the television came about with the hard work and research of multiple scientists and innovators, therefore credit cannot be given to one individual. Gas-powered Automobile Country: Karl Benz While it should be said that the invention of the gas-powered automobile should be credited to multiple inventors working independently, Karl Benz built the first production-ready automobile. Motion Picture Camera Country: Louis Le Prince A motion picture camera is used to record a series of photographs on film strips. The recording can later be replayed as a movie. The first patented motion picture camera was designed by Louis Le Prince in Guglielmo Marconi Guglielmo Marconi was the first to design a fully effective radio transmission. Information such as sound would be carried by radiated waves. In , he built a wireless system that was able to transmit signals at distances of 1. Modern air conditioning Country: Willis Carrier Although the concept of basic air conditioning is not new in recent history, the invention of the modern air conditioning system was invented by Willis Haviland Carrier in Airplanes engine-powered Country: They were the first to invent controls for aircraft that made powered, fixed-wing flying possible. It would later be the foundation for modern radars. Electric washing machine Country: Fisher The first washing machine based on a motor was made by Alva J. Fisher while he was at the Hurley Washing Machine Company. The electric motor of his machine allowed for faster and heavier wash loads than in earlier washing machines. First Electric Traffic Light Country: Lester Wire Prior to electricity, the concept of a traffic signal was based on semaphore arms and gas lights for night driving. On October 4, , Lester Wire invented the electric traffic light. It had red and green lights and a buzzer to warn of color shifts. Brassiere bra Country: Mary Phelps Jacob In Western society, women wear bras for physical purposes, such as restricting the movement of breasts during strenuous activities, and for social purposes, such as concealment and modesty, or to improve perceived size and shape. In , Mary Phelps Jacob received the U. Band Aid Country: The design helped her cover her wounds by herself. After that, Dickson developed a successful career with the company. Quartz Clock Country: Horton Warren Marrison and J. Horton built the first quartz clock in Using quartz

crystal oscillators improved the accuracy of time measurement as well as decreased the cost of production of clocks and watches based on quartz. Alexander Fleming While the concept of antibiotics was studied the century before, in 1928, Alexander Fleming, a bacteriologist, observed antibiosis against bacteria by a fungus: *Penicillium notatum*.

Richter magnitude scale Country: Charles Francis Richter, Beno Gutenberg Based on a base logarithmic scale, the Richter magnitude scale measures the amount of energy that is released in an earthquake. It was developed in 1935 by Charles Francis Richter.

Modern computer Country: Konrad Zuse In 1938, Konrad Zuse invented a series of computers of which the Z3 iteration was considered the earliest predecessor of the modern computer. The Z3 is regarded as the first functional, programmable, fully automatic computer.

Nuclear reactor Country: Enrico Fermi A nuclear reactor is a device that is able to initiate as well as control a sustainable nuclear chain reaction in order to produce energy. The first nuclear reactor was manufactured by Enrico Fermi and his team at the University of Chicago.

Hemodialysis is a medical process which extracts waste fluids and products from the human system when the kidneys cannot function properly.

Microwave oven Country: Percy LeBaron Spencer The microwave oven is a cooking apparatus used to heat food by polarizing its molecules with electromagnetic radiation, known as dielectric heating. Percy Spencer invented the first microwave oven in 1945.

Automotive airbag Country: John Hetrick An airbag is a modern vehicle safety mechanism. It is an inflatable fabric bag designed to fill instantaneously during car collisions. American John Hetrick was the first to patent his design of the airbag on August 18, 1949.

Implant of artificial organs Country: The dog survived for 90 minutes. Schawlow invented separately The invention of the laser was done by two parties: They devised a global network of computers that could communicate with one another. This design eventually led to the creation of the Internet as we know it.

Gurdon John Gurdon discovered that nuclei from separate cells could grow a whole organism when they are transplanted into eggs with their original nuclei removed. This concept was used for a project to clone a sheep named Dolly.

Electronic mail e-mail Country: Genetic fingerprinting Country: Alec Jeffreys Genetic fingerprinting, first reported by Alec Jeffreys of England, is a process in forensic science used to identify individuals according to their fingerprints. This process is part of DNA profiling, which assigns a set of identifiers to each individual based on their DNA makeup.

World Wide Web Country: Sir Tim Berners-Lee In 1989, Tim Berners-Lee wrote about a software and database project he created which was designed to enable information sharing among international researchers. It became the platform for the World Wide Web, which allows users to browse and interact with various information.

Blood bank s Country: Charles Richard Drew Charles Richard Drew, an African-American medical researcher, surgeon, and physician, developed the foundation of blood transfusion and storage which led to the establishment of the American Red Cross Blood Bank.

4: Ancient Egyptian Inventions

The Top 50 Inventions of the Past 50 Years. In the past half-century, scientific and technological advances have transformed our world. PM convened a panel of 25 experts to identify innovations.

Blaise Pascal France Earliest commercial machine invented by William Burroughs U. Louis, Missouri in Manufactured in Chicago, Illinois. Orville Wright and Wilbur Wright , U. Kitty Hawk, North Carolina. Airship non-rigid , Henri Giffard France Steam-powered propeller flew over Paris Airship rigid , Graf Ferdinand von Zeppelin Germany Julius Robert Oppenheimer U. Juan de la Cierva Spain Automobile steam , c. Nicolas Cugnot France Oldest surviving is Italian Bordino in Turin. Automobile gasoline , Karl Benz Germany Earliest model by Father Ferdinand Verbiest d. Earliest internal combustion automobile built by Jean Joseph Etienne Lenior France. Patented in January 29, First powered handcartwith internal combustion engine was by Siegfried Marcus Austria c. Jacques Montgolfier and Joseph Montgolfier France Tethered flight, Paris October 15 ; manned free flight, Paris. First practical models by Ladislao and George Biro Hungary in Bicycle Tyres pneumatic , John Boyd Dunlop Scotland First motor car pneumatic tyres adapted by Andre and Edouard Michelin France , see rubber tyres. Benjamin Franklin U. His earliest experiments began c. Robert Wilhelm von Bunsen Germany Michael Faraday England had previously designed an adjustable burner. Electric installed, Boston Massachusetts February Cannon iron , c. Earliest English illustration dated Gottlieb Daimler Germany Carburettor spray; Charles E. Built in Dayton, Ohio. Taken over by National Cash Register Co. Machine production not before Alexander Parkes England Invented in Birmingham, England; developed and trade marked by I. Leonardo da Vinci Drawings made in Milan Italy were discovered in Spain in Karl Wilhelm Scheele Sweden. John Harrison England Introduced his decimal classification in Clock mechanical , Earliest escapement years before Europe. Clock pendulum , Christian Huygens Netherlands Whinfield , J. First available , marketed in U. Dental Plate rubber , Rudolf Diesel Germany Lower pressure oil engine patent by Stuart Akroyd, First used on aircraft Dunlop Rubber Co. Volta Italian Electric Blanket; Electric Cooking Utensil, Electric Flat Iron, Electric Generation Static , Otto von Guericke Germany. Thomas Alva Edison U. First practical demonstration at Menlo Park, New Jersey. Electric Motor DC , Zenobe Gramme Belgium Electric Motor AC , William Sturgeon England b. Earliest elevator at Yonkers, N. Film musical , Lee de Forest U. New York demonstration March Film talking , Ferdinand Frederick Henri Moissan France. William Murdock Scotland , Glass stained , c. Glass blowing, Syria, c. Sir George Cayley England Near Brompton Hall, Yorkshire, England. Passenger possibly John Appleby. Gyroscope devised by Foucault France. Earliest drawing of principle, Le Mans Museum, France, c. First serviceable machine by Igor Sikorsky U. Sir William Ramsay Great Britain. Earliest air-cushion vehicle patent was in by J. Cowes, England, May 30, Introduced into Britain c. Sir Frank Whittle England b. First tested run in First flight August 27, by Heinkel He. First demonstration by Theodore Maiman U. Earliest screw cutting lathe by Henry Maudsly England Laws of Gravitation and Motion, Richard Trevithick England Penydarren, Wales, 9 Miles February Loom power , Edmund Cartwright England Rice and Edward W. Earliest world map by Eratosthenes c.

5: Cotton Gin - www.enganchecubano.com

The inventions made during the Industrial Revolution had perhaps the biggest impact on the world in all of history. With these inventions the way things were made, and the types of thing that could be mass produced, changed forever.

This type of production greatly reduced the amount of time taken to put each car together 93 minutes for a Model T from its parts, reducing production costs. Assembly lines are now used in most manufacturing processes. Leo Hendrik Baekeland November 14, - February 23, was a Belgian-born American chemist who invented Velox photographic paper and Bakelite , an inexpensive, nonflammable, versatile, and very popular plastic. For more information on Baekeland, [click here](#). BAKELITE Bakelite also called catalin is a plastic, a dense synthetic polymer a phenolic resin that was used to make jewelry, game pieces, engine parts, radio boxes, switches, and many, many other objects. Bakelite was the first industrial thermoset plastic a material that does not change its shape after being mixed and heated. Bakelite plastic is made from carbolic acid phenol and formaldehyde, which are mixed, heated, and then either molded or extruded into the desired shape. The Nobel Prize winning German chemist Adolf von Baeyer had experimented with this material in , but did not complete its development or see its potential. Bakelite replaced the very flammable celluloid plastic that had been so popular. The bracelet above is made of "butterscotch" bakelite. It measures the weight of the column of air that extends from the instrument to the top of the atmosphere. There are two types of barometers commonly used today, mercury and aneroid meaning "fluidless". Earlier water barometers also known as "storm glasses" date from the 17th century. The mercury barometer was invented by the Italian physicist Evangelista Torricelli - , a pupil of Galileo, in Torricelli inverted a glass tube filled with mercury into another container of mercury; the mercury in the tube "weighs" the air in the atmosphere above the tube. The aneroid barometer using a spring balance instead of a liquid was invented by the French scientist Lucien Vidie in . Each battery has two electrodes, an anode the positive end and a cathode the negative end. An electrical circuit runs between these two electrodes, going through a chemical called an electrolyte which can be either liquid or solid. This unit consisting of two electrodes is called a cell often called a voltaic cell or pile. Batteries are used to power many devices and make the spark that starts a gasoline engine. Alessandro Volta was an Italian physicist invented the first chemical battery in . Storage batteries are lead-based batteries that can be recharged. In , the French physicist Gaston Plante invented a battery made from two lead plates joined by a wire and immersed in a sulfuric acid electrolyte; this was the first storage battery. The dry cell is a an improved voltaic cell with a cylindrical zinc shell the zinc acts as both the cathode and the container that is lined with an ammonium chloride the electrolyte saturated material and not a liquid. The dry cell battery was developed in the ss by Georges Leclanche of France, who used an electrolyte in the form of a paste. Edison batteries also called alkaline batteries are an improved type of storage battery developed by Thomas Edison. These batteries have an alkaline electrolyte, and not an acid. For more information on the battery, [click here](#). Bunsen was a German chemist and teacher. He invented the Bunsen burner for his research in isolating chemical substances - it has a high-intensity, non-luminous flame that does not interfere with the colored flame emitted by chemicals being tested. For more information on Bunsen, [click here](#). A second mirror reflects the light through a gap in the primary mirror, allowing the eyepiece or camera to be mounted at the back end of the tube. The Cassegrain reflecting telescope was developed in by the French sculptor Sieur Guillaume Cassegrain. A correcting plate a lens was added in by the Estonian astronomer and lens-maker Bernard Schmidt , creating the Schmidt-Cassegrain telescope which minimized the spherical aberration of the Cassegrain telescope. It was invented in by Jacques Edwin Brandenberger, a Swiss chemist. He had originally intended cellophane to be bonded onto fabric to make a waterproof textile, but the new cloth was brittle and not useful. Cellophane proved very useful all alone as a packaging material. Chemists at the Dupont company who later bought the rights to cellophane made cellophane waterproof in . He also ventured to the far north of Sweden with an expedition in order to measure the length of a degree along a meridian, close to the pole, later comparing it with similar measurements made in the Southern Hemisphere. This confirmed that that the shape of the earth is an ellipsoid which is flattened at the poles. He also cataloged stars. With his assistant Olof Hiorter, Celsius

discovered the magnetic basis for auroras. His microscope consisted of two tubes that slid within one another, and had a lens at each end. The microscope was focused by sliding the tubes. The lens in the eyepiece was bi-convex bulging outwards on both sides, and the lens of the far end the objective lens was plano-convex flat on one side and bulging outwards on the other side. This advanced microscope had a 3 to 9 times power of magnification. For more information on da Vinci, click here. He experimented with electricity and invented an electric battery. When he connected wires from his battery to two pieces of carbon, electricity arced between the carbon pieces, producing an intense, hot, and short-lived light. This is called an electric arc. Davy discovered the elements boron, sodium, aluminum whose name he later changed to aluminium, and potassium. His work includes improving the incandescent electric light bulb and inventing the phonograph, the phonograph record, the carbon telephone transmitter, and the motion-picture projector. Edison experimented with thousands of different light bulb filaments to find just the right materials to glow well, be long-lasting, and be inexpensive. In 1879, Edison discovered that a carbon filament in an oxygen-free bulb glowed but did not burn up for quite a while. This incandescent bulb revolutionized the world. For more information on Edison, click here. She is named on 45 patents for drugs and her work has saved the lives of thousands of people. This room-sized computer was built by the physicist John William Mauchly Aug. April 9, - June 3, at the University of Pennsylvania. They completed the machine in November, Philo Taylor Farnsworth was an American inventor. Farnsworth invented many major major components of the television, including power, focusing systems, synchronizing the signal, contrast, controls, and scanning. He also invented the radar systems, cold cathode ray tube, the first baby incubator and the first electronic microscope. Farnsworth held over patents. A gyroscope is essentially a spinning wheel set in a movable frame. When the wheel spins, it retains its spatial orientation, and it resists external forces applied to it. Gyroscopes are used in navigation instruments for ships, planes, and rockets. Foucault was the first person to demonstrate how a pendulum could track the rotation of the Earth the Foucault pendulum in 1851. He also showed that light travels more slowly in water than in air and improved the mirrors of reflecting telescopes. Franklin experimented extensively with electricity. In 1752, his experiments with a kite in a thunderstorm never do this, many people have died trying it! Franklin started the first circulating library in the colonies in 1731. He also invented bifocal glasses and the Franklin stove. The idea of daylight savings time was first proposed by Benjamin Franklin in 1784. For more information on Franklin, click here. Galileo found that the speed at which bodies fall does not depend on their weight and did extensive experimentation with pendulums. In 1609, Galileo invented the thermometer. Galileo discovered the rings of Saturn, was the first person to see the four major moons of Jupiter, observed the phases of Venus, studied sunspots, and discovered many other important phenomena. For more information on Galileo, click here. At that time, Geiger was an assistant to the British physicist Ernest Rutherford. In 1928, the Geiger counter was improved by the German physicist E. He published a description of the reflecting telescope in "Optica Promota," which was published in 1671. He never actually made the telescope, which was to have used a parabolic and an ellipsoidal mirror. In 1919, Goddard received two U.S. patents. In 1919, Goddard wrote a scientific article, "A Method of Reaching Extreme Altitudes," describing a high-altitude rocket; it was published in a Smithsonian report. It was a liquid-fueled 11 ft. Goddard soon moved to Roswell, New Mexico, where he developed more sophisticated multi-stage rockets, rockets with fins vanes to steer them, a gyro control device to control the rocket, and supersonic rockets. In 1931, Goddard launched the first rocket with a pivotable motor on gimbals using his gyro control device. Altogether, Robert Goddard had 214 patents. For more information on Goddard, click here. Heron lived during the first century AD and is sometimes called Hero. Heron made the steam engine as a toy, and called his device "aeolipile," which means "wind ball" in Greek. The steam was supplied by a sealed pot filled with water and placed over a fire. Two tubes came up from the pot, letting the steam flow into a spherical ball of metal. The metallic sphere had two curved outlet tubes, which vented steam. As the steam went through the series of tubes, the metal sphere rotated. The aeolipile is the first known device to transform steam power into rotary motion. The Greeks never used this remarkable device for anything but a novelty. Watt later improved the steam engine.

6: Important Inventions of the Industrial Revolution

10 Greatest Technological Inventions: by Contributing Writer, Demand Media Overview. Since the age of modern man began roughly , years ago, the world has seen a progression of innovation and.

Famous Inventions A list of famous inventions that helped change the world. Many inventions are often progressive developments, with no one person fully responsible. In many cases, it is hard to pin-point the exact date and person responsible for the invention. Sometimes many people are involved, with a basic model being improved on and turned into workable models. Aluminium s Aluminium is one of the most abundant metals. But, it was only in the s that production processes were invented which enabled aluminium to be produced cheaply. Aluminium is used extensively in building and aeroplane manufacture. The first aeroplane was made of wood. By , they made a demonstration of flight around the Hudson River in New York. Aeroplane technology rapidly improved, and they were used for military means in the First World War. Antiseptics Dr Semmelweis a Hungarian physician was the first prominent doctor to make a strong link between the use of antiseptics and improving survival rates of women giving birth. His work was taken up by others, such as Joseph Lister who became a pioneer of antiseptic surgery. Archimedes Screw 3rd Century BC. Invented by Archimedes of Syracuse, this innovative design enabled water to be pulled uphill against gravity. Atomic Bomb Between this period a team of scientists developed the first atomic bomb as part of the Manhattan project. Chief of the project was Robert Oppenheimer. He filed his first patent in for a ballpoint pen in Argentina. After the war, varieties of the ballpoint pen became commercially successful. Barbed wire The first patent for barbed wire was awarded to Lucien B. Barbed wire became a very cheap way of creating an effective barrier. Initially used in agriculture to keep animals in certain areas. It became widely used for military purposes. Battery Voltaic Pile. Alessandro Volta an Italian physicist developed the first battery which gave a steady current using alternating layers of copper and zinc. Lew Urry developed the small alkaline battery in Bicycle Kirkpatrick MacMillan, a Scottish blacksmith, is said to have developed the first two wheeled pedal powered bicycle. Camera Louis Daguerre, a French innovator, spent many years developing the process of photography. In , he made the first camera which enabled a permanent photograph to be taken. In , George Eastman invented the flexible role of film which enabled photography to be much more practical. Computer Charles Babbage was considered the father of computers for his work on mechanical computation devices. But it was only in the s that the first electronic computers were produced. Clocks Christian Huygens developed the pendulum which made primitive clocks more accurate. Concrete English inventor, Joseph Aspdin developed hydraulic cement, which used a mix of limestone, clay and aggregate. Nikola Tesla developed the first AC electricity generator in Email Ray Tomlinson US developed the first electronic communication message. The email was sent between two computers on the same network. This enabled much more efficient communication. Film Frenchman Louis Lumiere developed one of the first moving film recorders, which they called Cinematographe. Guns The first gun prototypes using gunpowder to launch missiles were developed in the Tenth-Century by the Chinese. The first machine gun in by Sir Hiram Maxim. Internet The first internet protocol was established in In , the first dot-com domain was registered. Matches John Walker English developed the first friction match which could be lit by striking sandpaper. The first safety match originated in created by a Swede Gustaf Erik Pasch. He reported and developed its use in recording the business of the Chinese state. Motor car Carl Benz Germany is credited with the first patent for the modern motor car with a petrol combustion engine. Many similar designs were developed around the same time. Pasteurisation Invented by Italian Lazzaro Spallanzani in " it is a process of killing bacteria in food. Louis Pasteur developed a more modern form of pasteurisation which helped make milk and wine safer to drink. Penicillin Discovered by Alexander Fleming Scotland who found the growth of penicillin on a jar of mould left overnight. Penicillin was later mass produced by Howard Florey Aus and a team of scientists enabling it to be used during the Second World War. It enabled petrol to be used as a fuel in the internal combustion engine. Plastic Alexander Parkes England Parkes demonstrated a plastic which was made from heated cellulose and moulded into a shape. Other important developments include " Cellophane " Jacques

E. The printing press played a key role in the Protestant Reformation as pamphlets and books were mass produced for the first time, helping to spread new ideas more quickly. Marconi Italy sent and received the first radio waves in Railways The first railways originated in England, and they played a key role in the industrial revolution helping with the transfer of goods and people. For the first time, people could travel across the country in less than a day. George Stephenson built the first inter-city railway between Liverpool and Manchester in Refrigerators -William Cullen Scotland Cullen displayed the first successful refrigeration at the University of Glasgow. Fridges use rapid cooling of gases as the main source of their artificial cooling effect. In Oliver Evans US invented the first refrigerator machine. Stamps Rowland Hill proposed the first stamp as a way to offer cheap postal delivery. His proposals led to a universal postage system and the introduction of the first stamp The Penny Black. Steam Engines Thomas Savery developed the first crude pressure-cooker style steam engine. Thomas Newcomen significantly developed this with an atmospheric steam engine pumping steam into a cylinder James Watt improved this with a condenser that could cool while the cylinder was hot. The Telegraph enabled long-distance communication, including transatlantic signals. US Both inventors have a claim for inventing the telephone enabling the ability to speak to someone at a significant distance. Television Many people contributed to the development of the TV. Logie made use of a Nipkow disc and a Cathode Ray Tube. Thermometer 17th Century Galileo Galilei Italy claimed the invention of a thermoscope which showed changes in temperature as liquid expanded and contracted. Many other scientists contributed to the development of the thermometer. This helped to revolutionise transport especially for the bicycle and motor car. The pneumatic tyre had an inner tube of air to help give a more comfortable ride than the solid tyres. Water Wheel BC The water wheel was one of the first human inventions to capture mechanical energy and was used to help grind corn. In modern times, the water wheel was improved to drive an hydraulic turbine. The wheel 4th millennium BC The wheel is perhaps the oldest invention, and no-one is exactly certain when it was invented, but it emerged in different regions independently. It enabled quicker transportation by chariots and pack drawn animal carriages.

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The telephone is an instrument that converts voice and sound signals into electrical impulses for transmission by wire to a different location, where another telephone receives the electrical impulses and turns them back into recognizable sounds. In , Alexander Graham Bell built the first.

Concrete Even though the first use of this incredible architectural innovation predates even the earliest years of Roman civilization, the arch truly became an essential structure in the general architecture paradigm once the Romans made necessary changes in its construct to fit it within their designing schemes. It was the Romans who first found out a way to set an arch on top of two tall pedestals such that it would span over a walkway and in many cases, even highways. These arches went on to become a pivotal engineering construct that laid the foundation for many of the subsequent structural highlights of ancient Rome. Many bridges were built upon these arches, and so were the aqueducts, sewers, amphitheaters and the colossal Colosseum. The merits of Roman arches were utilized later in the middle ages when some of the most magnificent cathedrals in the history were built. In fact, it was the only known method for roofing a building without the use of support beams.

Grid based cities Again, the Romans were not the first to start grid based establishments and cities, the earliest of basic grid planning dates as far back as Mahjong Daro and Harappa. But it was the Romans who embraced this concept, added a new dimension to it and implemented it on such a large scale that grid based settlements became famous. A basic Roman grid was characterized by a rectangle or a square in a nearly perfect orthogonal layout of streets. The two main streets, *cardo* and *decumanus*, would cross each other at a right angle in the center of grid. This grid was an ideal structure to organize the different components of city such as housings, theaters and stores into particular blocks. Rather than making it a monotonous array of blocks, Romans incorporated various items such as open theaters, public baths, markets and other recreational facilities within a city grid. The Romans then went on to standardize this pattern of settlement by building colonial cities and military camps throughout their huge empire, from Britain to North Africa, in Italy and also in all of the Eastern Mediterranean region.

Sewers and sanitation The ancient Roman Empire in many ways boasted the highest level of sewage and sanitary management in the contemporary ages. They had established a number of public baths, latrines and an interlinked sewage line binding them all together in a complex yet an efficient feat of engineering. Rome and other major cities had an extensive network of sewers and drains that ran along the sides of streets. The abundance of water in the Roman aqueducts along with runoff water from local streams was regularly used to flush these drains and sewers. The flush would then dump all the waste into the nearest river usually the Tiber , which does not sound the best of sanitary solution, but was far better than leaving the sewage lying around in the streets. The ancient Romans also excelled in the use of covered gutter and sewer lines to which a majority of houses in the city was connected. Without a doubt, their sewage and sanitation system made the ancient Romans a forerunner for newer practices in sanitation throughout the world.

Roman roads and highways played a pivotal role in the rise of the Roman state, expanding all across the Roman Republic and then the Roman Empire. In a period of about years, they built about 55, miles of paved highways around the Mediterranean basin and across Europe – a feat that ensured a fast and efficient movement of goods, soldiers and information across the entire empire. Roman roads usually followed a straight route across the countryside, making the travel efficient and quite fast. These expertly engineered routes were as easy to navigate. The Romans were one of the first to use road signs and mile markers. They also made sure the majority of highways were well protected and patrolled.

Aqueducts Back in the times of the Roman Empire and Republic, the Romans enjoyed quite a many facilities. Many of these would not have been possible had they not mastered the technique of building aqueducts to tap water from rivers, springs and other reservoirs. The first of Roman aqueducts were built around BC and thereon took off as an engineering marvel that used the downhill flow of water into the city centers. The entire aqueduct network relied on various factors and the use of gravity to maintain a continuous flow – whose overall engineering concept was far more remarkable for its time. Once the water would reach the bigger cities like Rome, large reservoirs would hold it up. Then the connected public baths, fountains, toilets and private

villas would tap in the network and access the water. Being one of the most visible symbols of the ancient water system, the aqueduct stands as a true testament of ancient Roman engineering and innovation. See Also, 10 Ancient Rome Facts 5. Roman numerals As the name already suggests, the Roman numerals originated in ancient Rome. Constituting into one of the popular number systems that is still used for various purposes today, the first usage of these numbers dates back to somewhere between and BC. Back then, much of the existing numbers and counting systems could not keep up with ever increasing calculation requirements. The Roman numerals were developed to serve the exact purpose of delivering a standard counting method that could be efficiently used in communications and trade. Though the Roman numbers also came with their flaws such as absence of the number zero and inability to calculate fractions, among many others. However, these numbers were able to survive even after the fall of the ancient Roman Empire. Their use in movies titles, cornerstones and many other popular and cultural references today shows the long lasting legacy of this ancient numeral notation. Surgery tools and techniques The ancient Romans invented a number of surgical tools and techniques that pioneered subsequent developments in the field of medicine and surgery. The Roman medical scenario was heavily influenced by the surgical advances achieved by the ancient Greeks. Medical practitioners in ancient Rome not only utilized all available tools to their best, but also developed as many new tools themselves and efficiently devised the use of cesarean section. But they made the biggest of leaps in battlefield related surgery by making medical preparedness and remedy in battle a prime concern. During the reign of Augustus, the military medical corps was established to assist injured soldiers in battles. The Romans also mastered medical innovations to curb immediate blood loss in battles, thus saving thousands of lives. They also invented tools like bronze scalpels, obstetrical hooks, bone drills and forceps, and also the rather frighteningly named vaginal speculum. The Romans are also attributed with pioneering the earliest form of antiseptic surgery since they used to dip medical tools in hot water to disinfect them before surgery. See Also, Top 10 Ancient Weapons 3. Julian calendar Once the ancient Romans became the biggest of the civilization of the ancient western world, they also realized the complications of maintaining a standard calendar applicant throughout the empire. It did not help either when they imposed months with odd number of days only because of a prevailing superstition against even numbers. Eventually, the calendar was so far off the regular timeline that Julius Caesar implemented a new reform, making the duration of a solar year as the basis for the calendar. He also instituted the 12 months in a year. It is clear from the name itself, the calendar was named after Julius Caesar himself. Some of the Eastern Orthodox churches use it to calculate holidays even today. Even though it was a seemingly perfect innovation for its time, the Julian calendar miscalculated the solar year by about 11 and half minutes. This eventually led to the creation of the Gregorian calendar that heavily used the Julian model and was adopted in AD. Newspaper History is rife with autocrats who impulsively craved to keep public in the loop about official announcements and developments. These handwritten news sheets were published daily and then were posted by the government in the Roman Forum from the year 59 BC to somewhere around AD. The majority of content in Acta diurna usually comprised of news on political happenings, trials, military campaign, executions, major scandals and other similar subjects. The Romans also published the Acta Senatus that recorded the proceedings in the Roman senate, though this sort-of journal was kept out of public reach until Julius Caesar made it accessible to everyone as a part of popular reforms he introduced during his reign. When the first of the modern newspapers were introduced in Europe, they may have owed only a little or even nothing to earliest of efforts like Acta diurna, it stands as a pioneer in news publishing history. Concrete The ancient Romans were particularly skillful in rapidly building new structures and at the same time, they were also good at maintaining their structural integrity and built. The revolutionary concrete developed by the Romans inhibited an impeccable built and lasting formation “ playing a huge part in the architectural accession of ancient Rome. The scientists who studied its composition in detail found it to be superior to modern day concrete and the far more environment friendlier than modern counterpart. The piece of concrete they experimented on had been submerged in the Mediterranean for more than years. On further analysis of the concrete, it was found to produce a compound that significantly differed from the concrete we use today and made it an incredibly stable binder. The Romans used to combine their cement with volcanic rocks popularly known as tuff, enabling the resulting concrete to endure possible chemical decays. It

is not much of a surprise that many ancient Roman structures such as the Pantheon, the Colosseum and the Roman forum having been standing since more than two millennia. See Also, Top 10 ancient Roman foods and drinks Final Conclusion Courtesy of the inventions and innovations listed above, it is only fair to say the Romans were eventually able to step outside the gaint shadows the ancient Greeks. From the engineering marvels like aqueducts and arches to the amazingly stable concrete that stood the test of time, the ancient Romans truly succeeded in inventing and innovating their way to become one of the most prominent empires of the ancient world. Though many of their advances may have been forgotten in the light of far superior modern technological developments, their inventions encouraged subsequent societies to adopt news ways of governing, living and understanding the world.

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An invention is a unique or novel device, method, composition or www.enganchecubano.com invention process is a process within an overall engineering and product development process. It may be an improvement upon a machine or product or a new process for creating an object or a result.

Three areas of invention Inventions are of three kinds: Scientific-technological inventions include railroads, aviation , vaccination , hybridization, antibiotics , astronautics, holography , the atomic bomb, computing, the Internet , and the smartphone. Sociopolitical inventions comprise new laws, institutions, and procedures that change modes of social behavior and establish new forms of human interaction and organization. Humanistic inventions encompass culture in its entirety and are as transformative and important as any in the sciences, although people tend to take them for granted. In the domain of linguistics, for example, many alphabets have been inventions, as are all neologisms Shakespeare invented about 1, words. Literary inventions include the epic, tragedy , comedy, the novel , the sonnet , the Renaissance , neoclassicism, Romanticism , Symbolism , Aestheticism, Socialist Realism , Surrealism , postmodernism , and according to Freud psychoanalysis. Among the inventions of artists and musicians are oil painting, printmaking, photography , cinema , musical tonality, atonality, jazz , rock, opera , and the symphony orchestra. Philosophers have invented logic several times , dialectics , idealism, materialism, utopia , anarchism , semiotics , phenomenology , behaviorism , positivism , pragmatism , and deconstruction. Some of these disciplines, genres, and trends may seem to have existed eternally or to have emerged spontaneously of their own accord, but most of them have had inventors. Volta is recognized as one of the most influential inventors of all time. Brainstorming also can spark new ideas for an invention. Collaborative creative processes are frequently used by engineers, designers, architects and scientists. Co-inventors are frequently named on patents. In addition, many inventors keep records of their working process - notebooks , photos, etc. The invention may become simpler, more practical, it may expand, or it may even morph into something totally different. Working on one invention can lead to others too. Inventions may also become more useful after time passes and other changes occur. For example, the parachute became more useful once powered flight was a reality. Edison was one of the most prolific inventors in history, holding 1, U. Invention is often a creative process. An open and curious mind allows an inventor to see beyond what is known. Seeing a new possibility, connection or relationship can spark an invention. Inventive thinking frequently involves combining concepts or elements from different realms that would not normally be put together. Sometimes inventors disregard the boundaries between distinctly separate territories or fields. Play Play may lead to invention. Inventors feel the need to play with things that interest them, and to explore, and this internal drive brings about novel creations. Rowling the creator of Harry Potter [13] and Frank Hornby the inventor of Meccano [14] first had their ideas while on train journeys. In contrast, the successful aerospace engineer Max Munk advocated "aimful thinking". A novel idea may come in a flashâ€”a Eureka! For example, after years of working to figure out the general theory of relativity, the solution came to Einstein suddenly in a dream "like a giant die making an indelible impress, a huge map of the universe outlined itself in one clear vision". Insight Insight can also be a vital element of invention. Such inventive insight may begin with questions, doubt or a hunch. It may begin by recognizing that something unusual or accidental may be useful or that it could open a new avenue for exploration. For example, the odd metallic color of plastic made by accidentally adding a thousand times too much catalyst led scientists to explore its metal-like properties, inventing electrically conductive plastic and light emitting plastic-â€”an invention that won the Nobel Prize in and has led to innovative lighting, display screens, wallpaper and much more see conductive polymer , and organic light-emitting diode or OLED. Many of their experimental designs panned out in failure. Invention is often an exploratory process with an uncertain or unknown outcome. There are failures as well as successes. Inspiration can start the process, but no matter how complete the initial idea, inventions typically must be developed. Improvement Inventors may, for example, try to improve something by making it more effective, healthier, faster, more efficient, easier to use, serve more purposes, longer lasting, cheaper, more ecologically friendly, or aesthetically different, lighter weight, more ergonomic , structurally

different, with new light or color properties, etc. Implementing Inventions Western Arabic numerals - an example of non-material inventions. Railway station in Bratislava , Slovakia In economic theory , inventions are one of the chief examples of " positive externalities ", a beneficial side-effect that falls on those outside a transaction or activity. One of the central concepts of economics is that externalities should be internalizedâ€”unless some of the benefits of this positive externality can be captured by the parties, the parties are under-rewarded for their inventions, and systematic under-rewarding leads to under-investment in activities that lead to inventions. The patent system captures those positive externalities for the inventor or other patent owner so that the economy as a whole invests an optimum amount of resources in the invention process. Innovation In the social sciences, an innovation is something that is new, better and has been adopted and proven to create positive value. This is a key distinction from an invention which may not create positive value but furthers progress in a given area of development. The theory for adoption of an innovation, called diffusion of innovations , considers the likelihood that an innovation is adopted and the taxonomy of persons likely to adopt it or spur its adoption. This theory was first put forth by Everett Rogers. These purposes might differ significantly and may change over time. An invention or its development may serve purposes never envisioned by its inventors. Plastic is a good example. Please help improve this section by adding citations to reliable sources. Unsourced material may be challenged and removed.

9: Inventions - New Innovations and Inventions

Top Inventions and Discoveries by Scientists - A to Z List, article posted by Gaurav Akrani on Kalyan City Life blog.

Inventions of the Industrial Revolution written by: Many of the inventions made during this time make our every day life possible. Below is a list of some of the most important. These changes had a tremendous and long lasting impact on the economies of the world and the lives of the average person. There were hundreds of inventions during this time period. Below are a few of the most important. Spinning Jenny James Hargreaves developed the spinning jenny in 1764. This machine allowed workers to spin more wool at one time greatly increasing productivity. This invention was necessary for the industrialization of the textile industry. Steam Engine James Watt created the first truly reliable steam engine in 1769. Other, less efficient models had been developed in the 1700s. This invention made locomotives and many of the textile machines possible. Power Loom Edmund Cartwright invented the power loom in 1784. It dramatically changed the way cloth was woven by making it much easier. It would take almost another fifty years and several alterations by other inventors before it would become commonly used. Cotton Gin Eli Whitney patented the cotton gin short for cotton engine in 1793. Prior to the invention of the cotton gin, cotton seeds had to be removed from the cotton fiber by hand. This invention made cotton a much more profitable crop for farmers. With this invention, many more farmers turned to cotton as their main crop, greatly increasing the amount of cotton plantations in the South. These expanding farms needed cheap labor, which also resulted in an increased use of African slaves. Morse created the telegraph in 1844. This invention changed the face of communication. Instant communication became possible between the east and west coasts and allowed people to know what was happening almost as it happened. This would revolutionize media and personal communication. Sewing Machine Elias Howe created the sewing machine in 1846. This forever changed the way clothes were made and allowed the mass production of clothing. Before this it was most common for women to make all of the clothes for their families. Only the very wealthy could afford to have a tailor or seamstress make custom clothing of the latest fashion. It was later improved upon and patented by Isaac Singer in 1851. Internal Combustion Engine Jean Lenoir invented the internal combustion engine in 1859. Eventually this engine was used in mass transportation. Telephone Alexander Graham Bell created the telephone in 1876. The telephone further improved communications and eventually led to the various communications devices used today. Phonograph Thomas Edison created the phonograph in 1877. Prior to the creation of the phonograph the only option for entertainment was for live musicians or actors to perform. This allowed people to listen to music anywhere. Airplane Brothers Orville and Wilbur Wright created the first airplane in 1903. The ability to fly had long been a dream of the human race. Within a few decades planes had changed the face of personal and business travel and had dramatically altered warfare.

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