365 奇趣英语乐园 16

Inventions and Discoveries

了不起的发明和发现

〔印〕爱思得图书国际企业
Xact Studio International 编绘

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了不起的发明和发现

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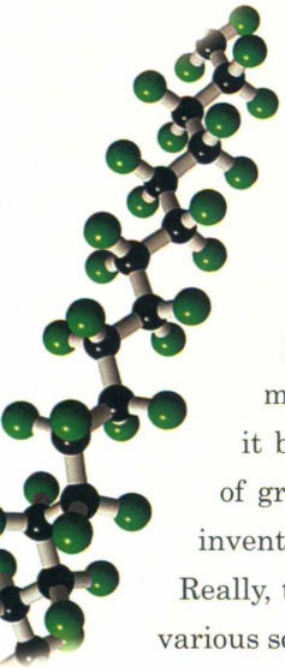
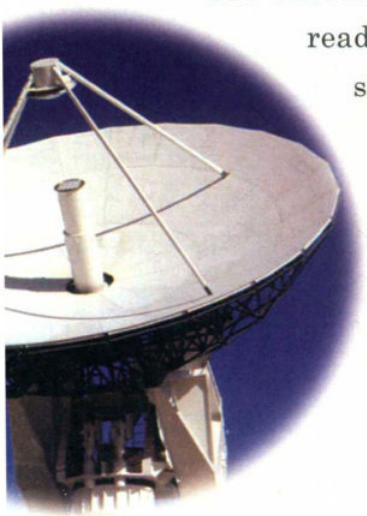
INTRODUCTION



The present age is an era of great marvels. We are scientifically so advanced and developed that the whole world seems to be a global village. Different types of inventions and discoveries have made almost everything possible. The Hubble can capacitate human beings to see the beginning of the time itself. In the modern era, we can pinpoint our location through satellite navigation systems and may have volumes of encyclopedias on a microchip. How did it become possible? It became possible due to the contributions of great scientists and discoverers who sacrificed all their life in inventing and discovering different things for the sake of humanity. Really, the inventions and discoveries, outcomes of untiring efforts of various scientists and discoverers, have made life easy and comfortable. Some of the inventions have become a part and parcel of our daily lives and without them, we can't think of a civilized life. In this book of ours, *365 Inventions and Discoveries*, we have made a sincere effort to share some of the important inventions and discoveries with our readers. The highly illustrative and informative presentation of the book will not only enhance readers' knowledge, but also motivate them to create something noble and necessary. The book contains vital information on 365 distinct inventions and discoveries to complete the readers' journey through different useful inventions and discoveries in just one year. We earnestly hope that the book will prove very useful for our readers. Constructive suggestions from our curious readers are gratefully acknowledged.



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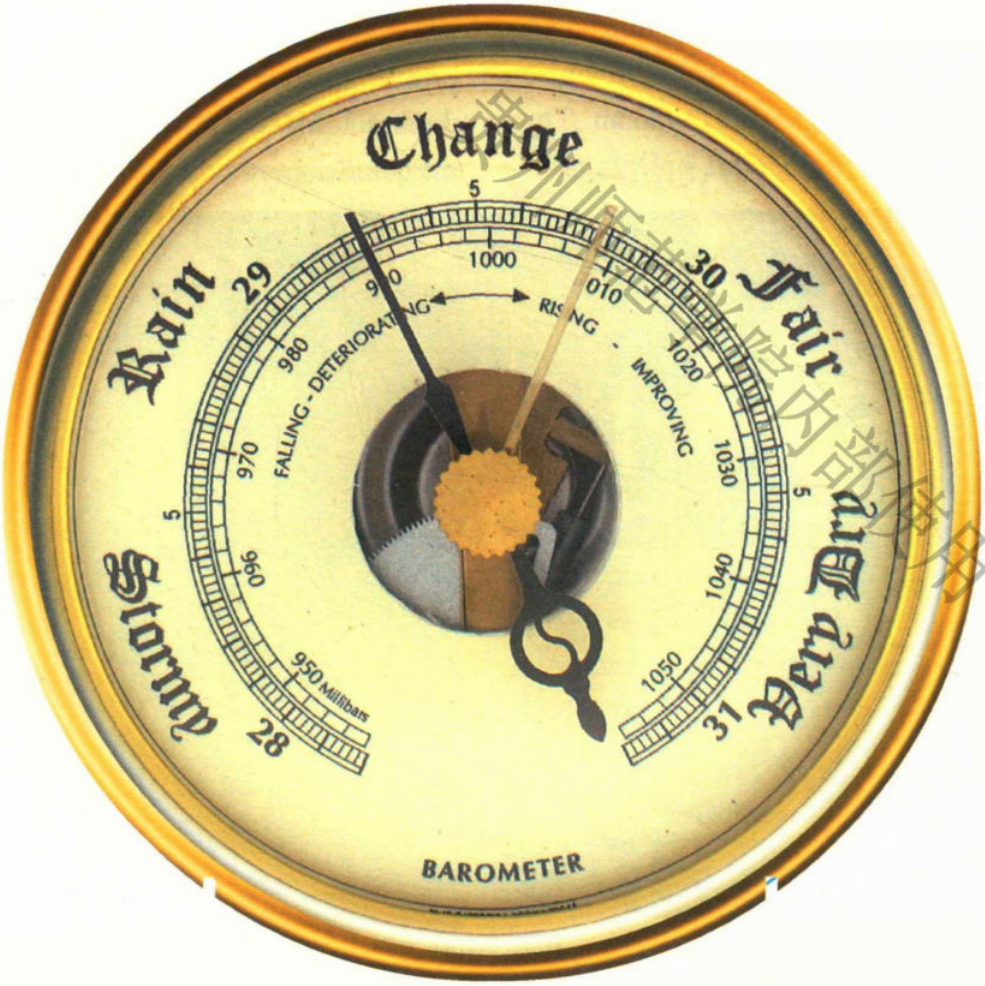
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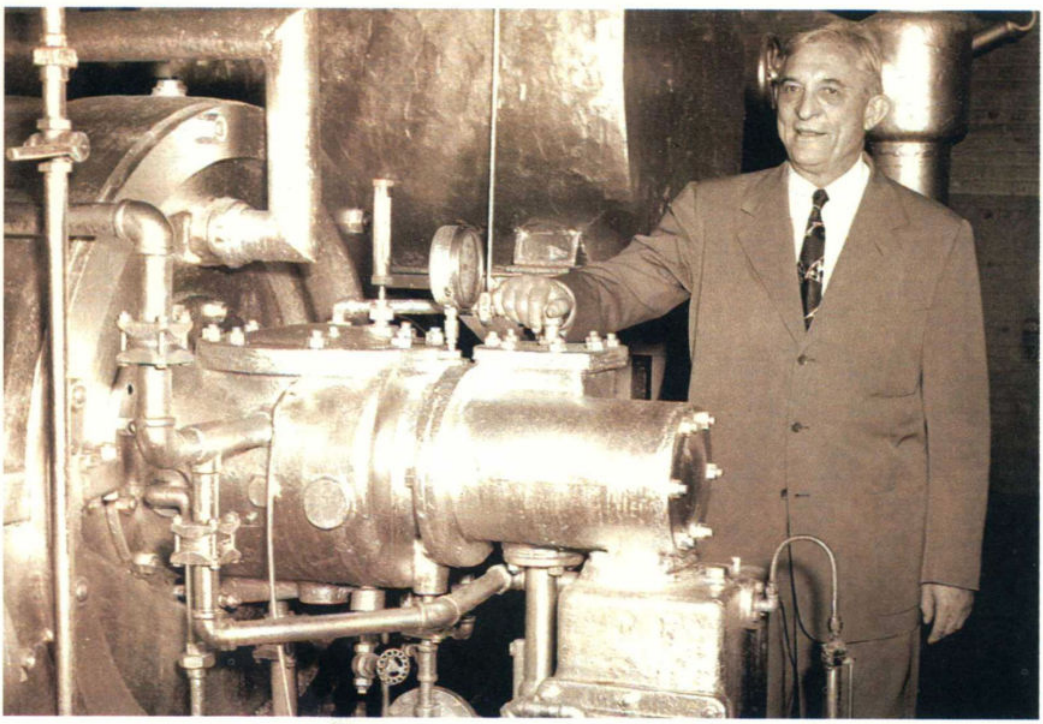
BAROMETER

1 JANUARY

Air Conditioner

Willis Carrier, an American engineer, was the first to make a close ancestor to the modern air conditioner units. The machine, at that time was called "Apparatus for Treating Air". It was built for the Sackett-Wilhelms Lithographing and Publishing Co. in Brooklyn, New York. Chilled coils were used in the machine to cool air and lower humidity to 55%, although the apparatus made with enough precision which the humidity level required was adjustable. Just after their invention air conditioners began to bloom. They first hit the industrial buildings—— printing plants, pharmaceutical manufacturers, textile mills and hospitals. In due course, their presence in homes was approved too. The first air-conditioned home was that of Charles Gates, son of gambler John "Bet a Million" Gates, in Minneapolis in 1914. However, during the first wave of their installation, air conditioner units were large, expensive, and dangerous due to the toxic ammonia used as a coolant. In 1922, the ammonia was replaced with the benign coolant dielene and a central compressor was added to reduce the size of the unit. Within a short span of time almost every office building, institution, railroad car and department store was outfitted with air conditioners.

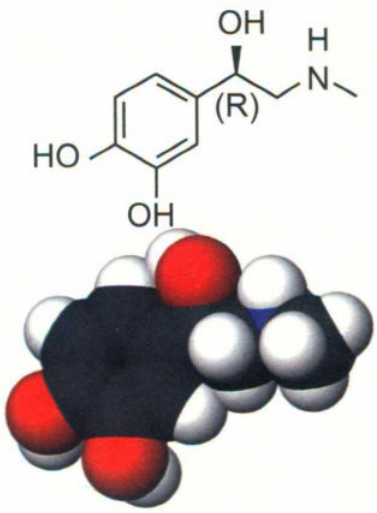


Willis Carrier

2 JANUARY

Adrenaline

Adrenaline is a Catecholamine. It is related to the family of biogenic amines. It forms colourless to white crystalls. It is sensitive to light and air, and forms dark products during the process of decomposition. L–adrenaline has some important biological functions. It belongs, like the chemically related noradrenaline, to the family of adrenal medulla hormones. The storage and mobilization of glycogen and fatty acids are much influenced by this hormone. It also influences corresponding metabolic path. The hormone has a big influence on the storage and mobilization of glycogene and fatty acids and the corresponding metabolic pathways.



(R)–(–)–L–Epinephrine or (R)–(–)–L–Adrenaline

Aerosol

3 JANUARY

A gaseous suspension of fine liquid or solid particles may be said as an aerosol. The concept of aerosal cans came into existence with the introductions of self-presurized carbonated beverages in France as early as 1790. In 1837, Perpigna invented a soda siphon incorporating a valve. Metal spray cans were being tested as early as 1862. They were constructed from heavy steel and were much too bulky to be commercially successful. In 1899, inventors Helbling and Pertsch patented aerosols pressurized using methyl and ethyl chloride.

4 JANUARY

Braille

The Braille is a system which is used by blind people to read and write. This system was devised by Louis Braille of France in year 1800. Each character of Braille, also called a cell, is composed of six dots. The dots are arranged in a rectangle which has two columns each with three dots. The Braille system was developed on the basis of a communication method which was introduced by Charles Barbier in response to the demand of Napoleon for code which could be used by his soldiers to communicate secretly. The Braille Institute was founded in 1919 as the Universal Braille Press to provide services to the blind.

Boyle's Law

Robert Boyle

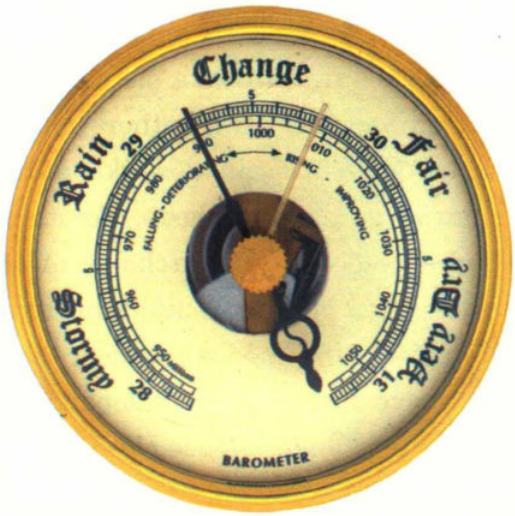
5 JANUARY

The earth's atmosphere is composed of several gases and other components. Gases exhibit certain properties including pressure, temperature, volume and mass. Careful, scientific observations have determined that these are related to one another. In the mid–1600s, Robert Boyle stated his law regarding the properties of gases. Boyle's law describes the inversely proportional relationship between the pressure and volume of a gas, if the temperature is kept constant within a closed system.

6 JANUARY

Barometer

The barometer is a device which is used to measure air pressure. In the early 17th century, many Italian scientists were working on the principal of a vacuum and air pressure. However, it was a young scientist by the name of Evangelista Torricelli who first detailed his experiments with barometer. Nowadays mercury barometers are in use. A standard mercury barometer consists of a glass tube about 76 cm in height. The tube is closed at one end. It is filled with mercury, and inverted with the open end immersed in a cistern of mercury. With the cistern surface exposed to atmospheric pressure, the height of the mercury column varies with that pressure.



Aluminum Manufacture

Charles Martin Hall

7 JANUARY

The process to manufacture pure aluminium was devised by Charles Martin Hall in 1885. Aluminum is the most abundant metal in the earth's crust. It is never found in free state in nature. All of the earth's aluminum has combined with other elements to form compounds. Two of the most common compounds are alum, such as potassium aluminum sulfate and aluminum oxide. About 8.2% of the earth's crust is composed of aluminum.

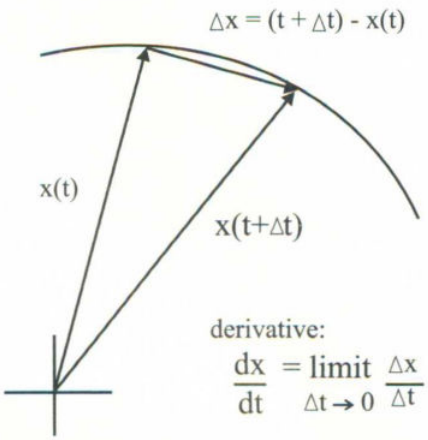
8 JANUARY

Bacteria are Single Cells

Bacteria form a very large group of unicellular microorganisms. They cannot be seen with the naked eye. Their single cells have neither a membrane–bounded nucleus nor other membrane–bounded organelles like mitochondria and chloroplasts. Another group of microbes, the archaea, meet these criteria but are so different from the bacteria in other ways that they must have had a long, independent evolutionary history since close to the dawn of life. Bacteria were formerly regarded as plants and constituted the class Schizomycetes. However, they are now classified as prokaryotes.

Calculus

Issac Newton and Gottfried Leibniz are credited with discovery of calculus. They independently unearthed its foundations. Calculus is the branch of unearthed Mathematics which deals with the study of limits, derivatives, integrals and infinite series. Although



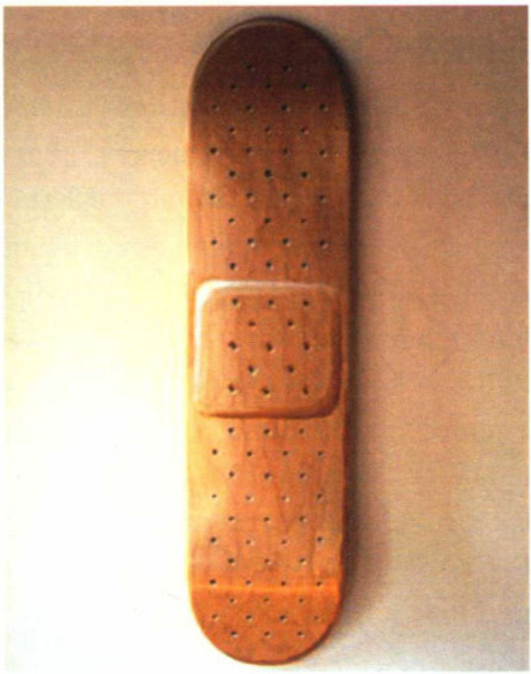
9 JANUARY

they both were instrumental in its creation, they thought of the fundamental concepts in very different ways. On one side Newton considered variables changing with time. On the other side Leibniz thought of the variables as ranging over sequences of infinitely close values. He introduced dx and dy as differences between successive values of these sequences. Leibniz knew that dy/dx gives the tangent. However, he did not use it as a defining property. On the other hand, Newton used quantities x' and y', which were finite velocities, to compute the tangent.

10 JANUARY

Band-aid

Band–aid is the trademark name for bandages manufactured by Johnson & Johnson company. It was invented by Earle Dickson in 1920. He was an employee at Johnson Compamy. He developed the bandage for his wife Josephine, who frequently cut and burned herself while cooking. The prototype product allowed his wife to dress her wounds without assistance. Such bandages are better known as an 'Adhesive Plaster', 'Sticking Plaster' or simply 'Plaster'. The first bandages were produced by hand.



Chocolate Chip Cookies

11 JANUARY

It was Ruth Wakefield who is credited with the invention of Chocolate Chip Cookies. Legend tells us that Ruth Wakefield invented chocolate chip cookies by mistake. She was a dietitian and lectured on food. Ruth Wakefield prepared the recipes for the meals served to the guests at the Inn and gained local notoriety for her deserts. One of her favorite recipes was for Butter Drop Do cookies. The recipe called for the use of baker's chocolate and one day Ruth substituted a semi–sweet chocolate bar cut up into bits.