

PATENTS AND MEDICINE

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During the nineteenth century medicine came out of its dark age. Today, it is hard for us to imagine medical practice that could not correctly diagnose most diseases and whose main therapeutic devices were bleeding and induced vomiting, diarrhea, and skin blisters, used to treat nearly all illnesses. The most common medicines were arsenic, strychnine, mercury, and opium compounds. Surgery was in an even worse state; when it was attempted at all, it was a heroic event resulting in excruciating pain, and if the operation was survived, death often occurred from post-operative infection. Surgery was performed as a last desperate resort, and as a necessity in trauma cases.

Speed and strength of character were the surgeon's main attributes—a leg could be amputated in a couple minutes.

By the end of the century, accurate diagnosis and specific therapeutics became hallmarks of modern medicine. The discovery of anaesthesia (1846), antiseptic and asepsis technique (1867), bacteriology and the germ theory of disease (1882), and the X-ray (1895) propelled medicine into the twentieth century. Surgery became the symbol of medical achievement, as internal cavities (head, chest, abdomen) were invaded miraculously by skillful knives. The abdomen became the playground of the surgeon, and millions of lives were saved from diseases and tumors that were once thought impossible to treat. In 1894 the world saw its first specific therapeutic agent—diphtheria antitoxin. Soon scores more joined the list.

Dr. Crawford Long
about to amputate a leg, 1858.
Dr. Long was the first to use
ether for surgery in 1842.
Here we seem him operating
in the style of the times—
concerns for sterility
were not in vogue until the
1880s. A good surgeon
could amputate a leg in a
couple minutes. Courtesy
Stanley B. Burns, M.D., and
The Burns Archive.



In the tradition of European physicians, applying for patents for medical inventions was frowned upon; it was expected that knowledge about life and its preservation would be freely shared. The entrepreneurial spirit of the industrial revolution soon permeated medical practice, however, and physicians and others with good ideas obtained patents for products for the emerging field of scientifically based medicine.

The discovery of general anaesthesia was America's greatest gift to medicine and perhaps one of the greatest discoveries of all time. It freed man from his fear of pain, and, with its concept of a peaceful sleep, helped change his view of death. It allowed surgery to advance, although post-operative infection still killed many patients. Anaesthesia was not patented. Dentist William Morton, who successfully demonstrated its potential at Massachusetts General Hospital on October 16, 1846, tried to secure a patent, but his attempt met with failure because others involved in the discovery raised a great furor. In the long fight for recognition for the discovery of anaesthesia, three of the claimants ultimately went insane. The now acknowledged discoverer, dentist Horace Wells, committed suicide in jail. Morton died at 49 in Central Park, and Charles Jackson died in McLean Asylum, Summerville, New Jersey. Wells, however, did not plan to patent his discovery. Dr Crawford Long of Georgia is now recognized as the first to have used anaesthesia—as early as 1842. The village physician, however, did not report its use until well after Morton's demonstration.

Medical men were generalists throughout most of the nineteenth century. Many helped advance other fields: dentist Alexander S. Wolcott received on May 8, 1840 the first U.S. patent for photography, for his development of a camera that takes a picture with a concave mirror instead of a lens. This patent model is still on display at the Smithsonian Institution. The New York physician John W. Draper teamed with telegraph inventor Samuel Morse to take some of the United States' first daguerreotypes and to develop the daguerreian photograph as a scientific tool.

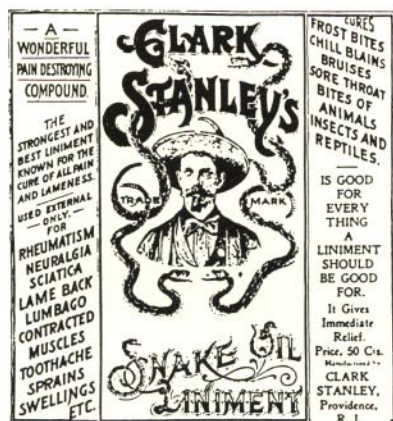
One of the biggest stimuli for invention always has been war. The Civil War, America's bloodiest conflict with 625,000 dead and almost 200,000 amputees, stimulated the field of prosthesis development and other medical patented achievements. The magnitude of the problem is indicated by the fact that almost half of the state budget of Mississippi in 1866 went to pay for prosthesis.

After the war the rise of scientific, laboratory based diagnostic and treatment centers encouraged the outpouring of thousands of medical inventions and patents. The emergence of sub-specialties, such as ophthalmology, otolaryngology, and urology, required new tools to peer inside the body and to treat specific diagnostic entities.



Operation under ether, Massachusetts General Hospital, 1846. Josiah Hawes, photographer. Harvard's chief surgeon, John Collins Warren, is about to operate. Courtesy Stanley B. Burns, M.D., and The Burns Archive.

Because of the very real fear of death with surgical intervention of any sort in pre-antiseptic days, a host of devices was invented and patented to alleviate pain and suffering, and, most importantly, to avoid surgery. Trusses for hernias, pessaries for uterine prolapse, devices for fistulas, and numerous other contraptions were marketed. Today, hernia repair is one of the most commonly performed operations, with few complications. Throughout most of the nineteenth century, however, hernia repair in males usually resulted in castration, as the hernia sac often contained the testes.



The most familiar of all medical associations with the word “patent” is “patent medicine.” This is a misnomer, for while the words sound impressive, the medicines were not only not patented, but they were the exact opposite of patents: they were secret remedies. A patent spells out for all concerned the exact details of the device or substance patented, and explains that it is new and useful. The term “patent medicine” originated in England. For centuries the king granted “patents of royal favor” to various trade peoples, who supplied the king’s products. Amongst them was the medicine maker. Thus to have a “patent medicine” meant a medicine fit for a king’s use. Our early English colonists esteemed the medicines which bore the token of royal favor, and used the term “patent medicine” for the various remedies they made.

Patent medicines were made-up concoctions—usually alcohol or opium with any number of strange, exotic, or even plain ingredients. Some were just folk or Indian remedies, but most were purposely prepared addictive elixirs. Until the end of the nineteenth century, they were better in many cases than physicians’ nostrums. The sad story of patent medicine is that because of the lack of any government regulation as to the claims to a drug’s effectiveness or its contents, thousands of people took patent medication instead of seeking adequate medical care, until their disease states were well advanced. Addiction to these medications became a national scandal; in fact, the number one opium addict at the end of the nineteenth century was the middle class woman “who had her daily tonic.” The second largest class of addicts were the Civil War wounded and diseased veterans. The enactment of the Pure Food and Drug Act of 1906 ultimately put an end to the dangerous nostrums.

Today, medical patents continue to advance the healing art, as the modern emphasis on genetics allows the patenting of new and developed protein and life forms for the healing of man. It is now acknowledged that Man’s ultimate conquest of disease will come only through genetic engineering.