

Next To Edison — Who Has the Greatest Number of United States Patents?

By Marjorie Van de Water

EDISON, O'Connor, Thomson, Ellis, Fessenden—so reads the honor roll of American inventors. The five inventive geniuses, leading the list, hold among them a total of more than 3,500 United States patents.

One of these men, John F. O'Connor, a Chicago inventor of railway devices, has been securing an average of more than two patents a month for over a quarter of a century.

Dr. Elihu Thomson, Carleton Ellis, and Dr. Reginald Fessenden, each of these names stands for over five hundred inventions added to those on file in the Patent Office.

Thomas A. Edison, the most prolific American inventor, has been granted more than a thousand U. S. patents, and these cover such a wide field as to give almost a cross-section of modern mechanical and electrical progress.

Some of his patents are now famous throughout the entire world. The incandescent lamp means Edison's lamp to many thousands who may be reading these words by light from an electric lamp. Others of his patents are for inventions which have never been exploited, which are probably forgotten by everyone except the few who may come across them in their various places in the Patent Office files. How many people connect this famous inventor with the field of aviation? Yet in 1910, when the art of designing aircraft was still in long clothes, Thomas A. Edison of Llewellyn Park, was granted Patent No. 970,616 for a "flying machine." The drawings show an object strange enough to our eyes accustomed to craft like the Graf Zeppelin or the giant Dornier. It was designed to be propelled by a series of box kites which were to revolve about a central hub.

In the same year, Edison also received a patent for an automobile. He also has a British patent for a tooth-ache remedy.

John F. O'Connor also holds a very large number of patents. But unlike

Edison, he has achieved no world-wide fame. Indeed his name is practically unknown outside the small circle of engineers and officials who have done business with him.

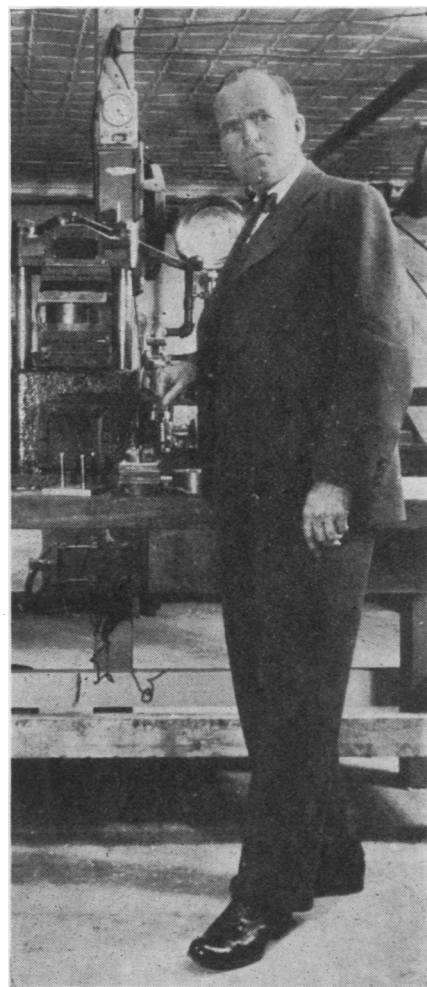
He is now employed as consulting engineer by the W. H. Miner Company of Chicago, and he has been getting patents steadily and regularly ever since the first year of this century. There is now never a time when he does not have at least a hundred patents pending action in the Patent Office.

Perhaps the reason why Mr. O'Connor has received no public acclaim for his achievements is because he deliberately avoids publicity. It is seldom that a man so successful remains so retiring. And yet the story of his career is as romantic as Horatio Alger's imaginative stories of success.

Mr. O'Connor came to this country as a young boy from Ireland, and attended the public schools here. Like many another ambitious youth he later worked in the daytime and studied correspondence courses at night. He started work when a lad of 15 years in the arduous but educational position of "boy." Gradually he climbed the ladder, passing the rungs of machinist's helper in a paper factory, then foreman machinist. Then machinist in a railroad shop; then inspector of new locomotives; then foreman of shops. From 1900 to 1904 he worked for a railway supply company as mechanical engineer. In 1904, he took his present position as consulting engineer for the W. H. Miner Company.

During the period between 1900 and 1904 he took out about ten U. S. patents, mostly relating to railway devices. Since he joined the Miner Company he has been granted over eight hundred.

One of the most important of these patents is for a device which indicates with extreme accuracy the reaction developed upon impact of two bodies at high speed. It was designed for



Carleton Ellis in his Laboratory

use in measuring the strain endured by that very important part of a railway car, the draft gear.

The function of the draft gear is to receive the shock, from the coupler, of the impact when two railway cars crash together as a train comes to a sudden stop, and to dissipate this shock without harm to the railway car. The blows which this small part must endure vary from a few thousand pounds to 500,000 pounds or even more, and the time within which this blow must be absorbed and transmitted to the under frame of the car is infinitesimal, requiring generally less than a tenth of a second. It is obvious that comparison of various types of gears and selection of the best type for withstanding this peculiar type of strain, is of the utmost importance to railway safety and comfort.

Previous to the invention of Mr. O'Connor's device, the only methods available for testing the degree to which a draft gear can stand up under strain were by hammer blows or by the application of slow pressure. These methods could not determine

whether the gear was capable of absorbing extreme shocks in the very short time in which the gear is required to do its work when in actual use. Mr. O'Connor's invention is a simple, accurate, automatically operated mechanism for registering the entire action of the gear from the beginning of the blow until the gear has recovered and returned to normal position, although all this action occurs in much less than one second.

Next in the race for the greatest number of patents is another famous inventor, Dr. Elihu Thomson, who has more than seven hundred on file in the U. S. Patent Office. Dr. Thomson, like Mr. Edison, has the whole world for his field, but he also specializes in electricity. One of his important inventions is the method of electric welding that bears his name. Others are the watt-hour meter, the present transformer system, the first three-phase winding of dynamo-electric machinery and the centrifugal cream separator. Another is the method of making fused quartz which will make possible a huge quartz mirror sixteen feet, eight inches in diameter for the largest telescope in the world. And yet he has also invented a music sheet-guiding device for a mechanical piano.

In 1895, the Commissioner of Patents listed an honor roll of inventors having at that time more than one hundred patents. Only twenty-five names appeared on the list, and Elihu Thomson was one of the number. He had at that time 444 patents. He now heads a research laboratory of

the General Electric Company which bears his name, and is guiding other promising inventors in his own footsteps.

A chemist is fourth on the list of prolific patentees. That is Carleton Ellis. His original field was paints and varnishes, but he has been a pioneer in the field of plastics. He has also written on the "Vital Factors of Foods," and "Ultra Violet Light." And one of his patents is for a paint remover.

Next comes Dr. Reginald Fessenden who received a medal last year for the devices he has invented for safety at sea. His patents cover instruments for measuring the depth of the sea by means of echoes from the bottom, and also an iceberg detector, wireless telephone, a wireless compass, a submarine oscillator, and a wave meter. Altogether they total over 500, many of them obtained in the 1800's.

Reuben B. Benjamin has also made electricity the field for his inventive genius. He is president of an electric manufacturing company and has himself taken out many of the patents manufactured by it. Over 300 have been granted to him.

It is somewhat strange that in this list, the next man holding a large number of U. S. patents is not an American at all. He is Arthur T. Dawson of England, who has over 300 U. S. patents. They are all related to guns, for he is connected with the world famous Vickers firm.

Dr. Elmer A. Sperry is another inventor who appeared on the honor

roll in 1895. He then had 132 patents; he now has over 300. He is, of course, best known for his gyroscope, which has made possible, among other applications, automatic pilots for airplanes.

One more man has over 300 patents, and that is Ethan I. Dodds, of Pittsburgh. His inventions have to do with boilers.

Erastus E. Winkley has nearly 300, most of them dealing with shoe machinery, for he is connected with the United Shoe Machinery Company. But he also has a patent on an equilibrator for a flying machine and one for an appliance used in playing golf.

Another foreigner having patents on guns is Eugene Schneider, of Paris.

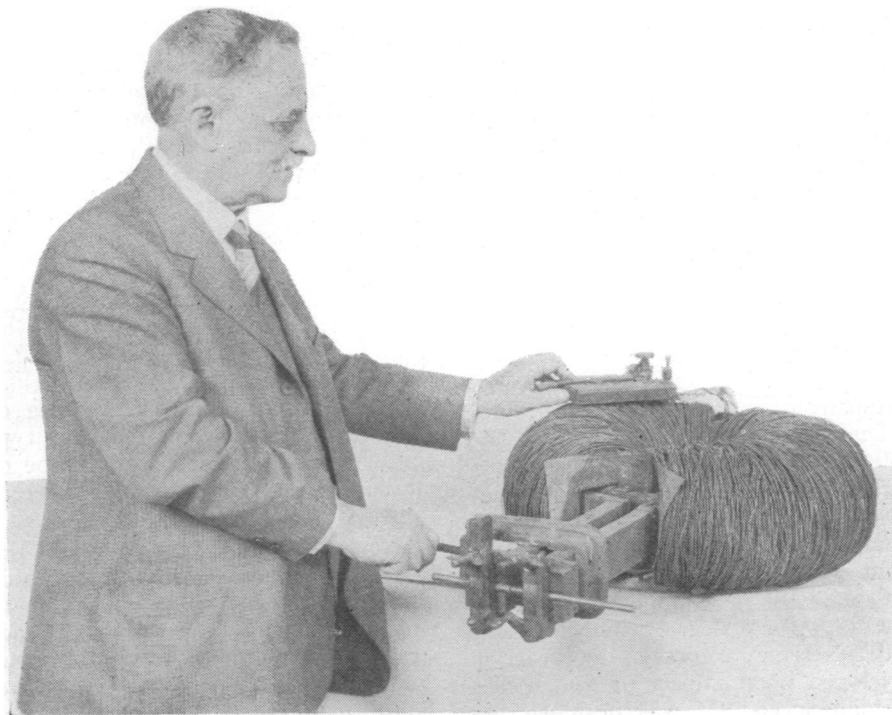
And there is still another inventor having over two hundred patents. C. Francis Jenkins of Washington is another world famous inventor, and he has gained his prominence especially in the fields of photography and electricity. Probably most interesting are his patents on television and motion pictures.

It is somewhat remarkable that no women appear in the lists of outstanding inventors. One woman, Miss Beulah Louise Henry, who has gained a great deal of publicity as a "Lady Edison" is credited with fewer than fifty inventions. This number is large for a woman inventor, but very small compared with the male inventors mentioned and many others, the listing of whom would be impossible in a short article.

Less than two per cent. of the patents issued by the U. S. Patent Office have been issued to women. And this proportion has remained practically constant over all the years of this century. It would seem that the field of invention along patentable lines is still a man's field, almost untouched as yet by women.

Nor is the inventive ability particularly common among men. The patents issued annually by the United States Patent Office number only one for every 2,400 of the population. Yet it is more common now than formerly.

If you should invent some new mechanism or process during the coming year, and should obtain a patent on it, the number of your patent would be a figure with seven places, since 1886, when (*Turn to page 318*)



Dr. Elihu Thomson
with one of his inventions.

Honor Roll of Patentees—Continued

the patent office started to number serially the patents granted, over one million, seven hundred thousand patents have been issued. Within five years, the number will probably have passed the two million mark. Two million patents in a single century!

This record becomes even more striking when we realize that the majority of these records of the nation's inventive ability have been issued during this century—in fact, during the last two decades. The first patent granted in 1910 bore the number 945,010. Yet the latest number is over 1,746,229. Almost a million patents have therefore been issued in the last 20 years. At the beginning of this century inventors were taking out about twenty thousand patents a year; now nearly fifty thousand are granted annually.

Many revolutionary changes in our mode of living are represented in these million patents. Modern, twentieth century inventions enable us to travel safely by air; they make it possible for us to see by radio; they provide a magic wand for converting messy, smelly substances into delicate perfumes and aromatic flavors for our food. They change cornstalks and farm wastes into beautiful fabrics for our adornment, stout building materials for our shelter, or gas for illuminating our homes. In the dusty leaves of the patent office files may be found the thrilling and romantic story of the giant strides of civilization's progress.

Yet some of the patents are quite trivial—some applied for in a spirit of fun rather than with any serious purpose of scientific advancement. It is told of Carleton Ellis, an inventor who has applied for a very large number of patents, that he was joking with friends in his club one day when one laughingly said:

"I believe you are trying to patent everything under the sun. You will be getting a patent on a bone for a dog, next."

Mr. Ellis did not forget the joke. When he had found a suitable preparation for dog biscuit, he made it up in the shape of a bone and secured a patent on the product. And the joke paid Ellis many thousands of dollars.

An application for a patent, whether it be for an amusing rather than useful device for the prevention of snoring, for a square collar button that will not roll under the chiffonier, or

for a new design of airship that may revolutionize our methods of transportation—if the papers are submitted in the proper form and accompanied by the twenty-dollar fee, must be given due consideration by the busy examiners of the Patent Office.

Indeed the work in the Patent Office starts even before the application is submitted. In one long room of that famous old building in Washington, you may enter at any hour of the day and witness a strange spectacle of feverish activity. Row after row of tables are crowded in between files, and each table is supplied with odd-shaped racks. Each table, too, is crowded with men and women patent attorneys, leafing through files of patents which are held for convenience in wooden upright boxes. They work eagerly and swiftly with scarcely a pause except for the purpose of exchanging one file of patents for another. It is exactly as though they were all engaged in some competitive examination where speed was the principal requisite.

These are attorneys searching, for their clients, to discover whether the "invention" is really new or whether a patent has already been granted for the same idea. The layman would be surprised to know the number of times the same simple idea may be "invented" by men working entirely independently in widely separated parts of the world—perhaps living in different generations.

The patent attorney, or the patent examiner is not surprised. It is an old story to him. He will advise you, "Never apply for a patent even on what seems to you the most revolutionary, the most world-rocking of inventions until you have first had a search made in the U. S. Patent Office."

Many are the hopes that die in that long search room. Many are the inventions that are discarded there. And yet the applications actually filed in the office number nearly ninety thousand a year!

After the application makes its official entry with its attendant train of drawings, oaths, certifications, and red tape, then another search must be made, this time by the Patent Office Examiner. All the patents on record in the Office are filed according to class, the time-recording mechanisms in one class, the sound devices in another, the plastics in another, and so on. Each examiner has charge of one

particular class. When an application comes in which belongs in that class, he must search every patent filed in that class and also all available published literature on the subject to be sure that no claims are duplicated.

It is seldom possible to grant the patent on the first application. Perhaps the wording of the claim is so broad as to be unfair. An inventor might, for example, discover the idea of laminating glass in such a way as to make a shatter-proof glass. This is a patentable idea. But it would not be fair for him to word his claim in such a way as to cover the laminating of all known and unknown materials whether for the purpose of shatter-proofing or not. In this case the application is either rejected or returned to the inventor for rewording.

And a great many are rejected each year. Of the 90,000 filed, nearly half are rejected, the principal reason being for duplication of an old idea.

An examiner in time becomes familiar with the patents and inventors in his own class. Many of the patents are issued to professional inventors, men who devote their whole time to devising new machines, or new parts of old machines, or improved methods and processes for use in industry.

Science News-Letter, May 17, 1930

An investigation of the average life-span of household furnishings shows that a rug lasts nine years, a living room chair usually survives 12 years, and a dining room table 15.

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