RECOLLECTIONS OF FIFTY YEARS

OF

PATENT PRACTICE

My connection with the patent business, which today is carried on under the firm style of Whittemore, Hulbert & Belknap, extends back to May 31st of the year 1887. This was not, however, the beginning of the business, which was established in 1865, the year of my birth. The originator was Colonel Thomas S. Sprague, who I understand came to Detroit from the East and shortly thereafter opened a patent law office. I also understand that he was an officer in the Civil War, but whether or not he attained the rank of Colonel at that time, I do not know. He was later associated with his son, Harry Sprague, in conducting a soliciting business and also had a law partner, a Mr. Hunt. This business was carried on for approximately twenty-two years, or up to the date of the death of Colonel Sprague. I never met Colonel Sprague and know nothing of him except through hearsay. My former senior partner, Mr. James Whittemore, was of the opinion, based on information received from the son, that the Colonel was a good deal of a charlatan and depended upon his associates for any work of quality. I cannot share this opinion for

it seems to me that it would be impossible for him to have remained at the head of the firm, doing a fairly large business with prominent concerns in Detroit and coming in contact with shrewd business men, without having some considerable ability. He was not, as far as I know, a mechanical engineer and probably had only a limited knowledge of mechanics. There is also a rumor that he was admitted to the practice of law in a somewhat irregular way, but even at that date there were large business concerns in Detroit, especially those engaged in the manufacture of stoves, and the patent business of many of these was attended to by Colonel Sprague. In the absence of evidence to the contrary, I should prefer to think of the founder of this business as worthy of the position.

My own entrance into the business came about through rather peculiar circumstances, but before taking this up I will give something of my own personal history. I was born February 23, 1865 in the town of Ripon, in Wisconsin, where my parents had been living for a few years. Prior to this time, my father's family had been living on Mackinac Island, Michigan, which in those days was not as it is at the present, merely a summer resort with its inhabitants living, as the saying goes "on fish and strangers", but was quite an active business community. The fort on the island was a military post and at that time payments were being made by the United States Government to members of certain Indian tribes,

in compensation for relinquishing their rights to land. The money thus received was quickly spent and, consequently, there was quite a market for merchandise. Also, the principal Avenue of trade to the East from Chicago and points West, was by way of Lakes Michigan and Huron with Mackinac Island located at the connecting point.

My father went to Mackinac Island in the year of 1849 and remained there until the outbreak of the Civil War in 1860. He first conducted a mercantile business and later engaged in fisheries, having several fishing vessels in use and a large number of fishermen in his employ. White fish caught in pond nets were salted to preserve them, and then were marketed in Detroit and at points south. However, with the outbreak of the Civil War the market vanished and my father lost all that he had made. He endeavored to start a mercantile business in the town of Ripon, but later went to Erie, Pennsylvania to accept a clerical position in which he remained until the close of his business life. The family stayed on at Ripon for several years, and when I was four years old we moved to Erie. Here I received common school education with three years of high school. My interest was in science, particularly physics and chemistry, and at one time I thought of taking up chemistry as a life work. However, at that time there were no business openings for chemists for it was long before the days of chemical engineering. Not having the means for immediately taking an engineering course, I, at the age of 17, entered an

apprenticeship in a machine shop, The Stearns Manufacturing Company of Erie, Pennsylvania, makers of saw mill machinery, including steam engines. After approximately three years in the shop I completed my apprenticeship with six months of training in drafting. About this time, there was one of the periodic depressions and I soon found myself without a job. I tried various expedients, such an agency for a sewing machine treadle and other devices, but without great success. Finally, in the year 1886 I spent a few months at Mackinac Island with an uncle then living there, who was conducting a small retail mercantile business. On the way back from Mackinac I stopped off at Detroit, endeavoring to secure a situation along the line for which I was trained.

Detroit was at that time a city of approximately 200,000 and had a good deal of the character of a large village. The horse cars were about the only means of transportation, but I found that I could frequently make as good time, if not better, on foot. My father while in business on Mackinac Island had established certain relationships in Detroit, among them with Edward Cantor later a Detroit banker and A. P. Baldwin, who was at one time Governor of the State. Letters of Introduction to these men and favorable letters from them were my credentials for securing a job. Even at that, I spent over three days walking the streets from place to place before finally landing a situation with the Frontier Iron Works, builders of marine engines, located at the foot of Chene street. It was at the time when triple-expansion

steam engines were replacing the older simple compound engines, and the Frontier Iron Works had secured an order for such a replacement. The work had to be completed during the few winter months in which the boat was tied up at Detroit and, consequently, time was at a premium. I secured a position as Assistant Draftsman and was engaged particularly in making detail drawings of the structure designed by the Engineer Draftsman. After about two months this work was completed and as the Company had no other work immediately in view, I was again without a job.

The following events show how a comparatively trivial occurrence may completely change a career. On losing my job at the Frontier Company, the superintendent there told me that he was engaged in another private business, and wanted some drawings made of a machine that he and his brother were having built. As this would only take a matter of a week or so to complete, I again made the rounds of manufacturing concerns in Detroit, and also called on a number of designing engineers, among them being a marine engineer located at the foot of Woodward Avenue, whose name I have now forgotten. He said that he might have use for a draftsman in a course of a few days so I left my name and address in care of the Frontier Iron Works. A few days later, late one Saturday afternoon, while still working on the job for the superintendent, there was a telephone call (at that time there was only a single telephone for a whole manufacturing establishment)

and I was taken by surprise to hear the party asking for Mr. Hulbert. The message was that the firm of Thomas S. Sprague and Son, patent attorneys, were in need of a draftsman to do some work for a client in another city, and asked whether I cared to take the job. I later learned that Mr. Adolph Barthel, who was connected with the firm, had inquired of one, J. P. Meyers, a map publisher, as to where to get a draftsman to go to Lansing to prepare drawings of a device to be patented. Mr. J. P. Meyers inquired among his friends and called up the engineer on Woodward, who found my card and gave my name and address to him. That same afternoon I went to the office of Thomas S. Sprague & Son, at that time located on Congress Street, the south side on a part of the site of the present Buhl Building. The office was in the basement and upon entering it I first met Mr. Harry Sprague. He referred me to Mr. Barthel who explained that one James F. McElroy superintendent of the blind asylum at Lansing, Michigan, had invented a steam car heating apparatus, which he wished to patent and wanted drawings made for that purpose. I might explain in this connection that the winter of 1886-1887 was one in which there were a number of very bad railway accidents and in each case the loss of lives was largely due to fire starting from the coal buring stoves then used in cars. This started many men throughout the country in the designing of some safer heating equipment, and among them was Mr. McElroy. One feature of his design was a combination heater which included a coal

stove for use in heating railway cars when on a side track, and a steam heater for use on the road. The steam from the locomotive carried through train pipes and couplers between cars was introduced into a commingler where it heated water for use in a hot water car heating system. On the other hand, when the car was detached from the train a fire could be built in the stove which would heat the water in the same system. Subsequently, when Mr. McElroy's application was filed, it was involved in an interference with some forty or fifty other applicants located all the way from Maine to California.

I accepted the job and was told to take the early train for Lansing on Monday morning. Having only a dollar or so in money, it was necessary for me to call on the superintendent of the Frontier Company at his residence, but I found that he too was rather short of change. Finally, he and his brother together scraped up enough for my fare and I accordingly started for Lansing at the time specified. This job took about a month's time and upon its completion Mr. McElroy said he had another invention and wanted me to make the drawings. However, I returned to Detroit for the week-end-and while there was called back to my home in Erie, Pennsylvania due to the serious illness of my mother. While in Erie I received a letter from Mr. Barthel stating that he was in need of a draftsman and having seen a sample of my work, thought that perhaps I might care to take the situation. I accepted his offer and returned to Detroit on May 31, 1887, to enter his employ.

During the interval between my first meeting with Mr. Barthel and this day in May, a number of things had occurred. In the first place, Colonel Sprague had died. His son who was of the sporting type paying comparatively little attention to business, had used up most of the bank account, and then found that he had also used certain money for fees that had not been paid to the Government. To get out of this situation he offered to sell the business to Mr. Barthel who accepted his offer; also, wisely getting a confirmation from the other heirs of Colonel Sprague. Adolph Barthel was born in Germany and educated in German military schools. During the Franco-Prussian war he served in an engineering corps of the Prussian army, and later together with a brother came to America. They first tried the lumber business, but after losing all the money which they had, looked about for some other work. The brother who was the father of Otto Barthel now engaged in the patent business, was the first to enter the employ of Thomas S. Sprague & Son. At a later time this brother went back to Europe leaving his family in Detroit, and Adolph Barthel took his position. By reason of his engineering training and general knowledge of science, Adolph Barthel was well equipped for the business of a solicitor of patents, though he had never received any legal training. As a consequence, at the time of Colonel Sprague's death, Barthel was doing most of the important business of the firm in the soliciting line. However, in spite of

his engineering training, Mr. Barthel was totally lacking in business ability and was afraid to tackle this business by himself. He also had no confidence in Harry Sprague, so he wrote to his brother-in-law, James Whittemore, then living in Chicago, offering him a partnership. Mr. James Whittemore after a few years in high school, had taken up stenography and later went to Chicago with the firm of Fairbanks, Morse & Company, sales agents for the Fairbanks scale . He had remarkable business ability and at the time of this offer of partnership was occupying the position of Assistant to the Manager. He had absolutely no training in patent work, but was confident that he could acquire this, and in the meantime would look after the business. His father, Joseph P. Whittemore, had been engaged in common law and chancery practice for many years, originally in the East and later in Detroit. James Whittemore once told me the story about his father when he first came to Detroit and asked for admission to the bar. It was then the custom for the Judge of the Court to appoint a committee of lawyers to ascertain whether the applicant was fitted for admission. It was known by the committee appointed, that Mr. Whittemore had been a prominent lawyer in the East and, therefore, they propounded the following question: "Mr. Whittemore, what is the proper number of bottles of champagne for three people?" His reply was prompt: "Three bottles." Their answer was equally as prompt: "You are admitted."

James Whittemore came to Detroit about the first of July 1887, one month later than my own connection with the business. He first used his ability as stenographer-typist in preparing cases from Mr. Barthel's dictation, but also kept the books and in general attended to the necessary other business. It was before the days of the touch system and Mr. Whittemore used only two fingers in typing, but, nevertheless, acquired a speed that was as great and even greater than attained by most typists of today, if, not with as great accuracy. He at once undertook the study of law and also took care of the business of clients other than that requiring a special training. Among other things, James F. McElroy whose drawings I had first made, was anxious to organize a Company for the manufacture of his apparatus. Through appointments with certain railway men, the business was organized in our office, which later became the Consolidated Car Heating Company of Albany, New York. Barthel and Whittemore secured stock in the Company for their professional services in its organization, and at a later time Mr. Whittemore was manager of the Company for a few months or a year. In the meantime he was rapidly learning the patent practice and soon took his place with Mr. Barthel in preparing applications for patents. As neither Barthel nor Whittemore were lawyers, they made arrangements with one, Mr. George Lothrop of Detroit, to take care of any matters in litigation for them.

It may be wondered why Mr. Barthel upon acquiring the business of Thomas S. Sprague & Son, which had been in operation for a period of twenty-two years, found it necessary to completely reorganize this business. The reason for this was that upon the death of Colonel Sprague, his law partner Mr. Hunt together with the stenographer by the name of Sculley, and the draftsman John Schumann, decided to go into business for themselves and to advertise as "Hunt and Sculley" successors to Sprague and Hunt. This left Mr. Barthel, who was not himself a typist, without any help, other than that of Harry Sprague, who was not very reliable. Barthel was a draftsman, but had no time to attend to this part of the business and, therefore, offered me the situation.

The making of Patent Office drawings was not an easy matter for me as my training had been in mechanical work made to accurate dimensions, but with little attention to the picture side. Barthel had considerable ability along this line, but was extremely erratic. He frequently made partial sketches, leaving it up to the draftsman to complete them, with very little data to work from. One of my first jobs was to make a perspective drawing of a complex agricultural machine,having only a photograph to work from with many lines imperfectly shown. I soon became convinced that it was necessary to make a thorough study of perspective drawing,and devised a system of my own. This included the use of perspective paper somewhat similar

to the ordinary cross section paper used by draftsmen, but with perspective lines rather than lines at right angles to each other. I worked many nights in the development of this system and the perspective paper to be used in connection therewith, only to find at the completion of my work that I no longer needed the system or the paper. In other words, I found that I could see on a blank sheet of paper all of the necessary lines and from that time to the present I have had no difficulty in representing any mechanism in perspective.

Before qualifying, as just described, the firm was in need of more help in the drafting line, and as the competing concern of Hunt and Sculley had been short-lived, John Schumann was hired as a second draftsman. He remained with the firm for a year or more, and then went into business for himself in patent drafting and in the architectural line.

Adolph Barthel was by blood a mixture of German and French. As a consequence, he had a most peculiar dialect. I remember his telephoning to James F. McElroy at Lansing and having some difficulty in obtaining the connection, repeating many times: "I want ze azylum for ze blind in Lanzing, Michigan." He also had the habit of substituting the term "ding" for any word which he could not at the time remember. He would come out in a great hurry and ask: "Where is ding?" If we asked for further explanation he would say: "I want ding specification of ding", which was not very enlightening. He was a most kind hearted

man, but had periodic fits of temper, to the disturbance of the whole office routine. However, I obtained from him my first understanding of patent practice, as well as a great deal of other valuable information. It had always been my expectation to take a University course in engineering, but he persuaded me that there was much better opportunity for advancement in a professional career in his employ than there might be after a number of years in further school work. I have never regretted the decision to stay with him.

After the early days of the partnership, Barthel and Whittemore, other employees were added. The first lady typist, but not stenographer, was by the name of Smith. She was the daughter of Peter Smith, of grocery fame, and the sister of Elmer Smith (who later erected the building at the corner of Griswold and State, if I recall correctly). The next employee was a boy named Ed Brady, who was a stenographer and typist, and there was also an office girl by the name of Hamilton. Later, Mr. Whittemore engaged a Miss O'Doherty, who had a number of years of experience with another patent attorney, Wells W. Laggett, son of an early Commissioner of Patents. She had acquired considerable detailed knowledge of the business and was stenographer, typist, bookkeeper and general office manager, sometimes extending this to the attempted management of the members of the firm. She remained during the whole period of the

partnership of Barthel and Whittemore, and with Mr. Whittemore for a number of years subsequent to the dissolution of this partnership. During this period, we had other draftsmen, one, George Gregg, who was a Canadian and a man of considerable intellectual ability. He remained for a year or two and then accepted a position with the Consolidated Car Heating Company of Albany, New York. This position had been offered to me, but I preferred to stay with the patent firm.

About this time, Miss Hobby, a sister of Mr. L. J. Whittemore's mother, came into the office to acquire experience in drafting. She had no mechanical training, but acquired the ability to make ink drawings from penciled sketches and to copy blueprint drawings. In those days we did not have the convenience of photo-stating, so that all reductions in size had to be made by proportional dividers. For a number of years after Gregg left the firm, I prepared all of the sketches and Miss Hobby did a considerable part of the ink drawing work.

James Whittemore found that reading law by himself was not a very expeditious way of acquiring the necessary legal training to be admitted to practice and to take care of that part of the firm's business. Along about the year of 1891 a number of young men in Detroit who were in regular business and deciding to acquire a knowledge of law, conceived the plan of

hiring a tutor who could instruct them along this line. They secured the services of Mr. Meachin who had been a law instructor and was the author of a number of law books. This was the start of what later became the Detroit College of Law. Later Mr. Meachin had an offer of a professorship in the University of Michigan, and other Detroit lawyers undertook the work of carrying on this law school in Detroit. James Whittemore graduated in 1893; soon after was admitted to the bar, and almost immediately started in patent litigation. In this he was helped by George H. Lothrop, who was quite an eminent patent lawyer.

I began the study of patent practice almost immediately after entering the employ of Barthel and Whittemore. "Robinson on Patents" was first published about that time and I carefully read the first volume which deals particularly with the analysis of invention. However, I did not begin the study of general law until the year 1893, when I entered the Detroit College of Law. By this time, this college was quite completely organized, but the law course was only for two years. Between 1893 and 1895 practically all of my time outside of office hours, was taken up with this law work. We had lectures and quizes three nights of the week, and after each one the professor was likely to say: "You may read sixty pages for the next lesson, and also, I would like you to look up a number of cases". Classes were not

held during the months of July and August, but we were told to fill that time in by reading "Blackstone".

At the time I entered the employ of Barthel and Whittemore, L. J. Whittemore was attending a prep school in the East and subsequently entered the University of Michigan to take a course in electrical engineering. After leaving college he was for a year or so employed in electrical work in Chicago, but came to Detroit in 1893. He was for a time in the office of his father, who had a general law practice, but entered the Detroit College of Law at the same time I did. During the two years of this course he was in the employ of Barthel and Whittemore, acquiring a knowledge of patent practice, and after graduation formed a partnership with a Mr. Toulman of Dayton, Ohio, opening a branch office in Cleveland.

I was married in June 1894 in the midst of my law work, but my wife proved to be a great help in reading "Blackstone" to me. L. Gaylord Hulbert was born in September 1895. This was after the completion of my law course and my admission to the bar.

1896 was the year of the great political contest between the advocates of the Gold Standard and the free Silverites. Party lines were as much mixed up then as in 1932 and 1936. President Cleveland a Democrat, was a strong advocate of the gold standard, but William Jennings Bryan captured the democratic convention and became the nominee for President on a platform of free silver. Many Republicans

also joined the free silver party, while even a greater number of Democrats voted for the Republican nominee, William McKinley. During this campaign there were many hot arguments during business hours, but I believe all connected with the firm of Thomas S. Sprague & Son voted for McKinley. Business was quite slack during the campaign months and at one time it seemed questionable whether the business of Thomas S. Sprague & Son could be continued. However, with the close of the campaign there was a revival of business which also affected us. The following year was the beginning of the Spanish American War.

As previously stated, Adolph Barthel was the uncle of Otto Barthel. Otto came into the office, I believe in 1892 or 1893, first acting as office boy and later doing some work in drafting. He never did much in the line of specification writing during the time he was with the firm of Barthel and Whittemore.

Most of the business at this time, was done on Woodward Avenue, while Griswold Street was then as it is now, to some extent, the banking street. Our office was in the basement of the Seitz building, which ajoined the old Buhl building. The present Buhl building occupies the site of both of these earlier structures.

In 1898 a fire occurred in the building which was next to the Seitz building, with the result that our offices were flooded with fully three feet of water. We

then secured offices on the second floor of the Wayne County Bank Building occuping the site of the present parking lot on Congress between the Penobscot and the Ford buildings. However, that was long before the time of the Ford and Penobscot buildings and there were only a few low structures on that portion of Congress street; one in the middle of the block, north side, was occupied by the Detroit Journal, and on the corner of Congress and Shelby was St. Paul's Episcopal Church. The Wayne County Bank building was originally a four story structure, but after a fire in one of the upper stories, it was repaired and two additional stories were added. We had the front offices on the second floor, which we continued to occupy until 1915.

Shortly after moving to the Wayne County Bank building, Barthel and Whittemore decided to dissolve partnership. They were still using the firm style of Thomas S. Sprague & Son. Barthel sold his interest in this to Mr. Whittemore, and he returned to the old office in the basement of the Seitz building, conducting a patent soliciting business (Adolph Barthel was not a lawyer) under the name of Barthel and Barthel. Mr. Barthel offered me a partnership, but I preferred to stay with Mr. Whittemore as an employee. At that time, L. J. Whittemore returned from Cleveland, and also entered the employ of his brother.

James Whittemore was a great business man and had the faculty of selling himself to business men. One incident will show how a trivial event resulted in the obtaining of an important business connection. Libbey of the Libbey Glass Company of Toledo, Ohio, had been doing some patent business with a New York firm in relation to inventions of his employee, Michael J. Owen. One day while in Detroit he wanted to look up a patent and stopped in at our office, then in the Seitz building, asking permission to examine an official gazette. Mr. Whittemore gave him the gazette but did not let the matter rest there, and inquired about the patent that he was looking up. This gave Libbey a chance to state that he had a very important patent relating to a machine for automatically forming lamp chimneys. Whittemore read the claims of the patent and at once began to pick out flaws in them. He said, "I find this element in the claims, is it absolutely necessary that you should have that?" Libbey became interested and before leaving, had given an order for Mr. Whittemore to make an examination and write a report. This resulted in the transfer of the business to our firm, and the reissue of the patent on the lamp chimney machine to correct certain defects in the claims. Later, Owens invented the first automatic bottle

blowing machine which was the start of the Owens Bottle Machine Company, now known as the Owens-Illinois Glass Company. We not only did all of the patent work for this concern, but Mr. Whittemore by acquiring stock while it was low in value, and to a considerable extent paid for by services rendered, later acquired an independent fortune.

At the beginning of the partnership of Barthel and Whittemore, the usual cost of obtaining a patent was $60.00. This included the first Government fee of $15.00, the final fee of $20.00, and the attorneys' fee of $25.00 which included one sheet of drawings and also all amendments up to the allowance or final rejection. Preliminary examinations were $5.00. We had a Washington Associate by the name of Robertson, who was the father of the Robertson, later Commissioner of Patents. It had been the practice of Thomas S. Sprague & Son (the original firm) to turn amendment work largely to the Associate who charged a fee of $5.00, this being also deducted from the $25.00. The Detroit office did not follow the prosecution to any great extent, excepting in important cases. Also, no copies of amendments were ever placed in the Detroit files. James Whittemore was not satisfied with this arrangement and took the matter up with Robertson, who was conservative and replied that that was the way business always had been done, and practically refused to change. As a consequence, James Whittemore made arrangements with Levi S. Bacon of Washington to take care of our associate business and with the understanding that copies of all amendments were

to be sent to Detroit for our files. This was a much more satisfactory arrangement and as Bacon was a man of considerable ability the patents obtained were of a rather higher character than the average of those taken out by the old firm.

In 1906 James Whittemore formed a partnership with L. J. Whittemore and myself. At this time we had in our employ a draftsman, George Graves; a man giving attention to amendments, Cameron Watterman; a bookkeeper Harry Smith, who originally came in as office boy and later took up stenography; another stenographer, a lady whose name I do not recollect, and an office boy, James Berry. Cameron Watterman was a Yale graduate in law and was also quite interested in engineering. However, he never seemed to quite get the idea of patent work, and shortly after the establishment of the partnership he left to enter into a manufacturing business. George Graves also did not develop as a patent solicitor, although he was a very good draftsman. Early in 1907 he decided to open an office as an architect in which profession he had been previously trained. This necessitated getting another draftsman and after some preliminary trials, we finally hired William Ford, who was then a boy of sixteen or seventeen, who had been trained in the Y. M. C. A. school of drafting. A month or so later, about the first of July 1907, I received an application for a situation by William J. Belkmap. With characteristic directness

he said: "I am a graduate of the University of Michigan Law Department and want to get started either in admiralty law or patent practice. Have you any situation for me?" As Cameron Watermann had left I was in need of some one to do amendment work, but told Mr. Belknap that his law training would be of very little immediate use in patent soliciting. He was willing to come in at a small salary and for several months I had him in the corner of my office,(we had no extra offices then) going over pending patent cases and preparing amendments under my supervision. For several years following, he was employed chiefly in amendment work.

Later, in 1910 I believe, we were in need of further help and W. J. Belknap suggested his brother Charles B. Belknap, who had graduated from the University of Michigan in the same class as W. J., but had obtained a position in a manufacturing concern. However, he was anxious to get into patent law and was willing to enter our employ in much the same was as his brother had entered. He remained with us for two years, then went to Chicago with his older brother, who had trained in patent work with the firm of Field, Towl & Graves, but later had gone into business for himself. While we were looking for some one to take C. B. Belknap's place, an application was made by George E. Moore, who had graduated from the University of Michigan in engineering. He heard of the opening through a cousin of my wife, to whom he was engaged and later married. A year or so later C. B. Belknap left his brother's

office and came back with our firm. Here he stayed until entering service in the World War, and after the close of the war returned to our firm.

James Whittemore's first wife, a sister of the wife of Adolph Barthel, became something of an invalid which required a change in climate. She and her husband, James Whittemore, went to California where she remained from that time on; Mr. Whittemore spending part of the time in California and part in Detroit. Finally, as it became apparent that his wife could not return to Michigan he decided to sell his interest in the business to L. J. Whittemore, W. J. Belknap and myself. However, we retained his name as head of the firm up to the time when a change in the Michigan law rendered it illegal (as we supposed) to continue this practice.

"ETHICS AND IDEALS"

In recording this history, it is difficult for me to separate my recollections of the development of the business from those of a more personal character. Also, this business of itself cannot be considered as distinct from other lines of development which form our whole industrial progress. We like to speak of our American institutions as being of a more or less unique character, and also contrast the whole development of our Western civilization with that of the East. Industrial invention is to a very great extent confined to the West and our patent system is only a development of the English common law. What is the fundamental cause of our scientific and industrial development? Dampier Wheatam in his history of science attributes its fundamental impulse to Christian theology. There was little chance for the development of science in a world of magic or under the domination of antagonistic beings. Christianity in Europe was the unifying force and the belief in a supreme being and an unalterable purpose led to the expectation of predetermined results from certain lines of action. This in time led to the belief in natural law, which is the basic concept of science.

There is also a characteristic of Western

civilization under Christian philosophy, which differs greatly from that of the East. The western mind accepts progress as a possibility and to a certain measure under individual control. The Eastern mind is more fatalistic. Our patent system is, as above stated, a development of the English Common Law, but it is also an embodiment of certain sociological ideals; the fundamental one of which is individual freedom. Thus, the English Courts were opposed to all monopolies which would give an unfair advantage to one individual or individuals of a certain class over others. There was not always this opposition to monopolies and in the earlier periods of English history they were quite prevalent, reaching the culmination in the reign of Queel Elizabeth. It was the habit of this Monarch to grant monopolies to any of her favorites, such for instance as monopolies in the right to manufacture salt, a product on which the entire population was dependent; also, the manufacture of playing cards and various other products largely used. There was some justification for this practice for it was the boast of the Queen that she raised no money for herself by direct taxation, but secured it as royalties on these monopolies. However, the English Courts finally decreed that even the Monarch had no such right and from that time forward all monopolies would be illegal, excepting in the case of an individual who should bring some new trade within the realm. This exception was the basis for a patent system, the first patent Statute being enacted in the reign of James I.

The ethical principle involved is that no individual has the right to take from others by way of monopoly that which they already possess, but that where an individual contributes something new he is not depriving others of anything possessed by them, but rather is doing a service which entitles him to a reward such as the exclusive right to his invention for a limited term of years. In brief, a patent is a contract between the inventor and the general public in which the public receives a benefit in consideration for which it grants to the inventor a monopoly in that which he has invented for a limited term of years. This basic principle should never be lost sight of and any attempt to extend the monopoly to the inventor without a corresponding benefit to the public is basically illegal.

My own fundamental ideals are expressed in a brief address which I gave at the Trumbull Avenue Presbyterian Church in a service at the close of the World War, and in honor of those of its members who had taken an active part in their country's service. A committee had prepared for the church a Roll of Honor of all who had been in service, and a memorial tablet for those who had lost their lives.

In the name of the officers and members of this Church, I received from the committee in charge, this Roll of Honor, and this Memorial Tablet; the one giving the names of all who entered their country's service; and the other those who lost their lives in this service.

No words of my own can fittingly express what we all feel, especially when we consider the names on this Memorial Tablet; but we may all remember the words of President Lincoln, which are as appropiate on this occasion as when first uttered:

> "It is for us the living, rather to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us, -- that from these honored dead we take increased devotion to that cause for which they gave their last full measure of devotion, that we here highly resolve that these dead shall not have died in vain"

and we the members of this church believing as we do that the secret of our country's greatness is in the religious life of its founders and that its basic principles and ideals are Christian, we as a church and especially those whose names are on this roll, who having been faithful in their country's service, having returned in health and strength; shall we not all be here dedicated to the even greater task before us, that of holding to these ideals and as far as possible maintaining in this country loyalty to Christ and his church. Then may we expect once more

> "that this nation, under God, shall have a new birth of freedom"

and that its spirit

> "shall not perish from the earth".

It may be questioned whether such idealism is very consistently carried out in the history of our country,

but, nevertheless, I believe that it is fundamental to our institutions of which the patent system is one. In other words, as President Lincoln stated in this same address:

> "a new nation conceived in liberty and dedicated to the proposition that all men are created equal"

The patent system is not anything contrary to this ideal. It performs its function in society and contributes to a large extent to social progress. It may sometimes appeal to the selfish instincts of men to secure a personal benefit, but society is the ultimate beneficiary. Experience of countries without a patent system in comparision with those having one, has amply demonstrated that society at large is benefited by such a system.

The history of this particular business in common with that of all other lines of endeavor where the individuals associate in some definite line of work, has a bearing on our larger social problems. There are certain ethical relations between the individuals so employed, as well as that between the firm as a unit and the clients which it serves. I know little of the character of Thomas S. Sprague, and am afraid that it might not stand very high by our present day moral standards, but I know of some instances where he contributed to the social welfare and was helpful to many who were in unfortunate circumstances. His son Harry was a libertine,

but when he was sober, had some considerable ability in the line of preparing applications for patents, according to the practice then prevailing. Adolph Barthel was a very kindly gentleman and took a genuine interest in the welfare and development of his employees. I look back to a great deal that I received from him, which advanced me in my profession. James Whittemore was a man of quite different type, but also one who believed in fair play and equitable relations with his associates. While not much of a church man, I believe that he expressed in his conduct the fundamental ideals derived from Christianity. In the subsequent history of this business, I think that I am correct in stating that there has always been the endeavor to be fair both to clients and those employed.

"SOME OF OUR CLIENTS AND THEIR INVENTIONS"

A great deal that happened in those early days has vanished from my recollection, but there are certain things that stand out distinctly as if they had occurred only yesterday. I can remember the first day which I spent in the offices of Thomas S. Sprague & Son. Mr. Barthel was out a great portion of the day and there were only Harry Sprague and myself there. About noon time Sprague suggested that I might go out to get my lunch, and also told me of a place on Woodward Avenue "Crawford's Dairy", which was located between Congress and Larned on the east side. There they served in addition to dairy dishes, stacks of cakes. My first meal which cost ten cents was of that character. Sometime during the first day a rather fleshy young man came in the office and inquired for Mr. Barthel. This proved to be William J. Lattimer for whom we later did a great deal of business. He was first interested in a cash register, the subject matter of patent 448,245 of March 17, 1891. Lattimer's father was a man of considerable means, but William also interested a number of his friends and acquaintances in the device and together they organized a Company for its manufacture. After spending some $12,000.00 for dies and getting ready to place the machine on the market, they were notified by the Dayton Cash Register Company, of infringement of

one of their patents. Upon examination, we found that their construction, as designed, was clearly an infringement, and as a result they had to abandon this and design a new machine. Colonel Lattimer, as he was later known, was quite a prolific inventor in many different lines. In addition to the cash register, he designed some vending machines. Later, he was interested in hydraulic oil distribution, but his most unique device was a machine which would enable an artist to simultaneously paint twenty or thirty duplicate pictures. Lattimer had been educated in a military school and was captain of a Detroit Military Company. At the outbreak of the Spanish American War he enlisted under General Duffield and was given the rank of Colonel. After the war he started a small manufacturing business; designed a new type of bicycle (which was a complete failure); also, promoted barrel manufacturing machines and a novel type of internal combustion engine and various other things. His last endeavor was in the line of automatic fuel burner for house heating and this I believe was assigned to the Kelvinator Company. Lattimer's birthday was on the same day and in the same month as mine, but one year later. I was sorry to hear, upon returning from my vacation in 1937, of his death.

One client of the early nineties is still doing business with us today. This is George W. Mallory, who was the original inventor of that type of device for

closing screen doors, which has since gone into very general use and is now manufactured by many different concerns.

Luther C. Snell was the inventor of a system for hydraulically handling fuel oil. His original patent was No. 514,437 of May 8, 1894, and this incidentally was the patent in the first law case of James Whittemore. This case was not carried to completion due to lack of funds on the part of the inventor.

William Henry was another client who was interested in the generation of an electric power current by a static machine. He was a man without much schooling; was originally a telegrapher, but later ran a laundry business in Saginaw and made quite a little money. He was quite a philosopher, and in fact I believe I owe to him my introduction to philosophy. However, his schemes were all theoretical and when he tried to reduce them to practice, they were failures.

James F. McElroy for whom I made the original drawings of the car heating system, was another inventor who filed a great many applications for patents through the firm of Thomas S. Sprague & Son. While the Consolidated Car Heating Company was moved to Albany, New York, we continued to do the patent business for them for quite a number of years.

An inventor, who has since made quite a name for himself, is Ransom E. Olds of Lansing, organizer of the Olds Motor Works, now a unit of the General Motors Corporation.

His first patent was on an oil burner and was filed in September 1893. His motor vehicle patent No. 594,338 was issued November 23, 1897. We continued to do business for Mr. Olds as long as he was connected with the Olds Motor Works. When he withdrew from this firm and organized the Reo Company he still wished to place his business with us, but on account of our relations with the General Motors, we could not accept it. Later, after the General Motors organized their patent department, we took the Reo business.

Another man whose name has since become prominent is David D. Buick. He was originally a member of the firm Buick and Sherwood, manufacturers of water closets and other plumbing fixtures. In the late nineties he became interested in internal combustion engines of the two-cycle type, having in his employ an engineer by the name of Richards. From this was developed an automobile and a Company under his name by William Durant. This later was combined with the Olds Motor Works and the Cadillac Motor Car Company in the organization of General Motors.

Orville Morris was quite an original character. He was employed in the manufacture of purifiers and other apparatus used in flour mills. He was also the inventor of the so-called cyclone dust collector, which is now quite universally used in most manufacturing establishments for separating sawdust shavings and other material from air

currents used in conveying to the point of deposit. I once asked him how he happened to conceive this invention. He replied that during the winter months he was in the habit of crossing a field containing a large number of stumps of trees, some of which were hollow. He noticed the behavior of the snow when blown about in the hollow stumps and from that got the idea of the conical shape of his dust collector. This patent on the dust collector was later involved in litigation and a defense was based on the theory that the separation was purely a gravity action and had nothing to do with the conical shape of the separating chamber. The expert for the defense, Jesse Smith, was a man of considerable ability and it is rather surprising that he should take this stand. The result of the trial was amusing for after the defense had put forth its case that the heavy material went to the bottom and the light dust to the top purely from gravity action, the plaintiff then turned his machine upside down and operated it in Court, so that the heavy material went to the top and the light material to the bottom. This case had its tragic side, for the attorney for the defense, Rodney Mason, a patent attorney of considerable ability, was so chagrined by his defeat that he died that night.

Thomas Murphy was the inventor of the original Murphy furnace which is one of the first of the smokeless type. We took out a great many patents for him and continued to do his business as long as he lived. After

his death the business went to another patent concern, so that we have since been doing business for the competing firm, the Detroit Stoker Company.

James Hinde was the organizer of the Hinde & Dauch Paper Company which at the start was through the purchase of a bankrupt paper mill. He made many inventions in the line of packages formed of corrugated straw paper board, among which was the corrugated wrapper for electric light bulbs which I will dusciss more in detail under "Interesting Cases".

A gentleman by the name of Alphons DeMann who was originally from Belgium filed a number of applications for patents on fireproof or fire-resisting wooden structures in which the structural members were covered with asbestos. He secured the contract for applying his invention to a livery stable that was built on Congress Street adjacent to the Seitz building, but separated therefrom by a single lot. This did not prove to be a good demonstration of the merit of his invention for in a subsequent fire the building was completely destroyed, and also resulted in the flooding of our offices with water. Later DeMann became interested in the construction of reenforced concrete and was one of the pioneers in this line, but I do not know that he ever made much of a financial success.

Benjamin Brisco was engaged in a small sheet metal business located on Cass Avenue. Among his inventions was a cylindrical oil can for use in the filling of kerosene

lamps by a rotation about the axis of the cylinder. Later the Brisco Manufacturing Company was organized to manufacture automobile radiators and had a great deal of the business of the early motor car companies. Still later, Benjamin Brisco organized the United States Motors, which was a competitor of General Motors and was composed of the combination of a number of different motor vehicle manufacturing concerns. Originally, these companies were not licensed under the Selden patent, and Brisco had a bet with James Whittemore that the patent would never be sustained. When it was sustained in the District Court, Brisco sent on to Whittemore a silk hat in payment of his debt and at once got busy to buy up the Selden patent. However, when the case was carried up to the Court of Appeals, the decision was that the patent was valid, but not infringed. In other words, instead of dominating the entire motor vehicle industry, it was relegated to the covering of an obselete construction.

In this connection it might be of interest to mention another one of our early clients, Henry Ford. I remember distinctly when he first came into our office in the basement of the Seitz building and discussed some of his inventions with James Whittemore. While he was thus engaged, our office manager and bookkeeper, Miss O'Doherty, came back to me with the remark, "I don't see why Mr. Whittemore wants to do business with that man,

he will never get any money." Henry Ford's first venture was with a concern located in a building on Cass Avenue, later used as a part of the Cadillac Plant. He had succeeded in interesting certain men with money in a car which he had built by hand. For about a year or so he, together with a couple of workmen were engaged in endeavoring to construct a commercial car, but without success. I frequently visited the establishment during this experimental time and remember distinctly one of the unsuccessful experiments. After working about a week in getting the car together, adding a part here and there and cutting off other parts, it was finally ready for trial. The chassis had mounted thereon the body of a delivery car and the steering mechanism was of the lever type. I remember Henry Ford getting in the seat, starting the motor and driving around the room, dodging the posts and incidentally a black cat that happened to be in the way. At the end of a short time something went wrong and he got out to look things over. He had a very serious expression on his face, but after a few minutes turned to his workmen and said: "Come on, boys, we'll have to try it over again." Ford's financial backers had enough of the enterprise at the end of the first year and discharged him and closed out the business. One man who had the most money in the enterprise was rather bitter toward Mr. Ford and later on when he happened to see Ford on the street,

pointed him out to his companion saying, "See that crazy fool." However, years later a certain manufacturing concern, the Lincoln Motors, in which this same gentleman had a very large financial interest, was obliged to sell out to the crazy fool for eight million dollars, all of which went to the payment of debts with nothing for the stockholders. One other incident in connection with Ford's business with us was an interference case in which Mr. L. J. Whittemore was taking Ford's deposition and asked the question: "When did you complete the invention?" Ford's reply was: "It is not completed yet." We were obliged to turn down Mr. Ford's business when he brought in the design of a motor car, which proved to be almost the same as one on which we had filed an application, a week or so earlier, for a client by the name of Charles King. We sent Mr. Ford over to the firm of Barthel and Barthel, and from that time have not had any of his business.

Dr. Inches who was a former police commissioner for Detroit, has told me this story about Henry Ford. It was a time when the city of Detroit was anxious to dispose of bonds and someone suggested approaching Henry Ford. The man assigned to the job had an interview with Mr. Ford and soon found out that Henry Ford did not understand what a bond was. After making explanation, Ford consented to purchase some and when asked what amount, he said: "Put me down for a million." This response almost took away the breath of the agent, but

a moment later Ford said: "Wait a minute, I'll give you a check."

If I were to attempt to list the names of all of our inventor clients in these early days with a brief description of each, this alone would make quite a volume. I can only mention a few that stand out distinctly in my memory.

There was Cirus Roberts, who was an old man when I first saw him and who was engaged in the manufacture of railway hand cars. He at first always wanted to do business with Mr. Barthel and paid little attention to Mr. Whittemore. However, later he seemed to change his attitude and at one time asked me an embarrassing question about my employees: "Which of those fellows writes the best claims?" After his death we continued to do work for his sons who carried on the same business, and also for one of their employees, James Donovan. He invented a car wheel formed from a single sheet metal blank pressed to form the flanged tread and a series of radial spokes, a forerunner of the present automobile wheels.

A railway man by the name of Susemihl took out quite a number of patents and I remember one on a roller bearing for railway car axles in which the rollers were spaced from each other by supplemental rollers running on race members and so proportioned

that all surfaces would be in rolling contact. We made a preliminary examination for him and found practically the identical construction in a patent taken out in 1840.

I must not forget Dr. John Krehbiel who first was interested in a method and machine for making gelatin capsules, and I believe that his patents were later acquired by Parke, Davis & Company. He was not, however, confined to any one line of invention, but was later interested in the designing of a railway sleeping car, which construction was actually made and placed in service. There was Stephen O. Johnson at the head of the Penberthy Injector Company for whom we took out a number of patents, as well as many for his employees. He occassionally became interested in other enterprises, one of which was a uni-cycle or one-wheel velocipede invented by one of his men, John Desmond, and on which we obtained patent 524,019 of August 7, 1894. Another enterprise was a lawn mower invented by Simon P. Graham, patent 519,860, in which the cutter was driven by a shaft at right angles to and the longitudinal center of its axis, and which had a crank that dodged overlapping blades as they successively came in registration therewith.

Charles Munz, the father of Elmer Munz of the Munz Spralawn Company, was a wood worker in an organ factory, but invented an extension table in which the leaves were folded. As a result of this invention he became quite wealthy, for the table was manufactured and sold in large quantities.

Judson C. Perry was a methodist minister who was much interested in mechanical devices and invented potato diggers, soil pulverizers, and various other devices of that kind. Charles Puddefoot was the inventor of a corkscrew and method of manufacturing the same. If necessity is the mother of invention, I am not quite certain as to what led to the design of the corkscrew, but as to the method of its manufacture, that was a re-invention by Puddefoot of a very old method. He accidentally discovered that a plate having a series of parallel ribs projecting therefrom, if rolled over a plastic member would cut a screw thread. He first demonstrated this with dough and then proceeded to manufacture the device for a steel corkscrew. Unfortunately, the same thing had been done many years before, so that we could only get very limited protection.

A name later well known in the automotive industry was that of Jessiah Dallas Dort. He in partnership with William Durant were first engaged in a horse carriage and road cart business, but later both separately entered the manufacture of automobiles.

Walter F. Stimpson first came in our office as a boy or young man just off the farm and had an improvement in a harvester. Later he invented a computing scale which resulted in the organization of the Stimpson Computing Scale Company. He had various ups and downs, making quite a large amount of money then

losing it. He also went into the manufacture of coffee mills and other articles for grocers use.

James Downey invented a gas furnace for use by dentists in making porcelain enamel inlays. He became associated with John and Robert Kerr and later this concern developed into the Detroit Dental Manufacturing Company.

Charles B. King was as far as I know the first man in Detroit to construct a motor vehicle. He was a trained mechanical engineer and in his first machine used a gasoline motor with a leather belt variable speed transmission. He was at one time connected with the Olds Motor Works and later with the Northern Manufacturing Company, makers of automobiles, and about the year 1903 filed an application, through us, for a patent on a propeller drive for automobiles in which the universal in the propeller shaft was concentric with the universal in the torque tube. This application was the cause of our losing the business of Henry Ford, for he came in later with a very similar construction and we were obliged to turn him down. King might have had an interference with Ford, but at the time he had lost interest in his invention and had gone to Europe to study art. Later he cam back and was very anxious to re-establish his case in which, unfortunately for him, his rights had lapsed.

Howard E. Coffin first came into our office when he was an assistant engineer for the Olds Motor Works, working under N. T. Harrington, who was the chief engineer. W. J. Belknap has told me of his work out in Ann Arbor. While going through college he had a postman's job and had constructed for his own use a motor vehicle in which he delivered the mail. W. J. also says his wife who was then a little girl used to ride around with Coffin, but never knew when the machine was stopped on a hill whether or not it would remain stationary. Coffin after leaving the Olds Motor Works was connected with Thomas of Buffalo, and with him organized the Thomas Detroit Company for the manufacture of automobiles. Chalmers later purchased the Thomas interest and had associated with him Howard Thomas, Roy Chapan, Charles Hastings and a number of others. The Hudson Motor Car Company was organized in our office by R. G. Jackson whose wife I believe was related to J. L. Hudson. This was a subsidiary of the Chalmers Company and later on the junior members in the Chalmers Company exchanged their small holdings of stock therein for a major interest in the Hudson Company; Roy Chapan becoming president and Coffin, chief engineer.

Peter Gender was at the head of the Gendrin Iron Wheel Company of Toledo, manufacturers of children's

velocipedes, baby carriages, etc. Later they went into the manufacture of bicycles. Although all of the old members of this concern are now dead, we are still doing business with their successors.

John Kelsey first took out a patent on an umbrella handle and organized the concern of Kelsey-Herbert for its manufacture. Later he became interested in a spring wheel, and as he was well acquainted with Henry Ford he took it around to see if he could interest him in the invention. Ford said: "Why don't you make a real wheel John?" Kelsey took the hint and organized the Kelsey Company, now the Kelsey-Hayes Wheel Company. There is a rather amusing incident of a later time when Kelsey was called to New York for the purpose of effecting an organization having several millions of capital. He left Detroit hastily without taking any change of clothing, and as the weather was rather sultry he felt quite uncomfortable. While he was waiting at the hotel to see the New York parties, he decided to wash his underclothing, but in the midst of the operation he was called to the door to meet the other men. One of the Detroit bankers, who was a member of the group said: "What are you doing John?" "Why," he said, "I'm washing my underclothes."

Elijah McCoy was a colored gentleman who had some Irish blood in his veins. He was originally a locomotive engineer and invented some important improvements in locomotive

lubricators. He had very little education but was quite a fluent talker, using words that neither he nor anybody else knew exactly what he meant by them. At the annual conventions of the Railway Engineers, he was always invited to talk and furnished a great deal of amusement for his listeners. However, he did make some important inventions. He also had little trouble in getting in contact with men who were in high standing in railway circles. I remember one man who was exploiting some of McCoy's inventions saying to me: "That coon certainly has a pull, he went right out and talked to men that I could never have gotten in touch with." Probably his Irish blood was the cause of quite a sense of humor which he was not averse to using, even against himself. He told me one time: "There is one advantage that the colored man has over the white man. A white man may be so poor that he is just down and out, but a colored man no matter how poor he is, can never be without one cent (scent)."

Alexander Ward was an uncle of the Frederick Ward, now chief engineer for the Gear Grinding Machine Company. I first met him while I was with the Frontier Iron Works and later we prosecuted quite a large number of patent applications for him. These were in different lines, including barrel making machinery. I also remember an indicator device for sunken vessels which included a buoyant casing secured to the deck of the vessel by glue and containing a reel of rope or twine. The vessel in

sinking would carry this down with it and hold it in place until all the loose wreckage had drifted away. However, in the course of an hour or so the water would loosen the glue and the casing would float to the surface and display a signal, while maintaining its attachment to the sunken vessel through the rope or twine.

An interesting incident that occurred while I was at the Frontier Iron Works was a reunion between Ward and a sister whom he had not seen since childhood. It seemed that their parents had died and the children were separated. Alexander Ward became a mechanic and was interested in this and in mechanical inventions. His sister received an education; married a United States senator and became a writer of fiction. She first got tract of her brother through the publishing of a United States patent, giving his name, and upon looking him up found that he was the brother long lost.

Among our list of clients, was the firm of Caille Brothers, who were first interested in cash carriers. Later they undertook the manufacture of slot machines and finally outboard marine motors. Mr. L. J. Whittemore and I, each have a different recollection of the following incident, each believing that he was the party concerned. Probably, we were both present and whichever one was responsible, the story remains the same. Arthur Caille brought into our office one of the slot machines on the mechanism of which we could obtain a patent,

although it was designed as a gambling machine. When the cover of the case was taken off it disclosed a large cast iron wheel which could be spun, and controlled the indication and also the prize to be won. We noted certain humps on the wheel which Caille explained were for the purpose of rendering it not too easy for the wheel to stop on the winning numbers. During his explanation he became rather facetious and pointing to the cast iron wheel said: "That's a nickel wheel" The response was: "Yes, nickel steal."

"INVENTIONS"

It is quite a common practice for patent attorneys to take out patents on inventions of their own, which perhaps have been suggested by familiarity with certain arts. Adolph Barthel used to boast that he had never taken out a patent. James Whittemore filed a number of patents in his own name, but which he always assigned to his clients. In my own experience while I had many ideas which probably would have been patentable I only filed applications on a few of these. The first was on a method and apparatus for delivering molten glass in measured quantities. This was suggested to me by observations made in preparing myself to expert a case for the Ball Glass Company of Indiana. Our principal client in the glass line was Libbey and his associates connected with the Toledo Glass Company, Libbey Glass Company and other manufacturing concerns. However, in this particular case we were representing Ball Brothers, manufacturers of Mason fruit jars, as well as other glassware. Glass manufacture at that time depended largely upon the skill of the operator. Unlike the metal arts, molten glass could not be poured into molds for it was necessary for the operator first to gather a quantity of glass upon a punty rod and then gauge by his eye the quantity required to fill a mold and to sever this from the mass on the rod by a pair of shears. The Ball factory had semi-automatic machines in which the molds were mounted

in a revoluble carrier and were intermittently advanced so that in one position they would register with a pair of automatically operated shears. The operator gathered the glass on the punty then manipulated it so as to drop just the right quantity between the blades of the shears which would sever it and drop it into a mold. This mold then registered with a plunger for pressing the glass into all portions of the mold cavity and after completing the cycle the molded article was dumped out. The machines which I observed were making liners for the covers of fruit jars which were in the form of round disks. With these the last step in the operation was to turn the mold so that the liner would drop out on its edge into a trough down which it would run into a ——— where it was received by a box and carried until completely annealed. At the close of the day I was invited by George Ball to have dinner at his house and during our conversation I suggested: "Why would it not be possible to make these machines of yours entirely automatic?" He was much interested and asked me to suggest a plan. That night returning to Detroit on a late train I sketched out an apparatus which I thought would work. This was an ejector mounted on the side of the glass tank and kept at a temperature at least as high as the molten glass, by electric heaters. In operation, a measured quantity of glass would be withdrawn from the tank into the ejector and then dropped into the mold. I at once filed an application for patent and sent a copy to Ball.

I also showed it to James Whittemore who submitted it to Libbey. This was at the time when the Owens bottle machine was still in the experimental stages and a device such as mine might be competitive therewith. Therefore, in view of the fact that Libbey was our original client and was somewhat interested in the device, I closed a contract with him by which he was to furnish certain money for experimental work and I was to give him an option for the purchase of the invention, if successful. The sequence of this episode was about ten years experimental work carried on in time outside of my regular hours at the office. This was not altogether in connection with the glass machine, but also with electrical furnaces which were developed as an incident to the other problem. During the year 1909 I built an experimental apparatus at the plant of the Libbey Glass Works making use of their facilities. The result of the test was not satisfactory, although it was closer to the mark than Michael J. Owens' original bottle blowing machine, which in his first experiment froze up. I had no difficulty with freezing for the electric heat maintained the temperature, but some of the mechanical parts failed. Libbey did not exercise his option but at a later date I sold my patent to the Owens Bottle Machine Company. Incidentally, it was the first gob feeder for glass which later became a very important method in the glass industry and not very useful function which my patent performed was to prevent the obtaining of any very generic

claims in the later applications. The patent was No. 1,118,204 of November 24, 1914, issuing over ten years later than the filing date. I also obtained patent No. 1,155,358 of October 5, 1915, on process of manufacturing highly refractory material, and patent No. 1,319,002 of October 14, 1919 upon electric heater. Aside from these I have never had issued to me any patents in the United States, although one other invention which was passed to allowance, I did not issue.

The experimental work carried on during this ten years period, while not resulting in anything of financial benefit to myself, had the effect of giving me a better insight to the inventor's attitude and some of the difficulties in the way of reducing inventions to practice.

"A FEW INTERESTING CASES"

The Hinde Patent

About 1901 or 1902 I filed an application for patent for James Hinde of the Hinde & Dauch Paper Company. This was on a corrugated paper wrapper for holding electric light bulbs. The claims were promptly rejected on a prior patent showing a bottle wrapper which of itself was indistinguishable from the one used by Hinde. In each there was an open ended paper tube corrugated longitudinally to render it elastic so that when placed around a bottle it would form a cushioned protecting wall. There was one distinction in Hinde's structure. Electric lamp bulbs were at that time made with tips, which if broken would destroy the lamp. Consequently, it was necessary to hold the bulb within the wrapper so as to protect this tip and this was accomplished by making the tubes smaller with respect to the diameter of the bulb. Thus, when the bulb was placed in the wrapper the corrugations were stretched out in the center making an oppositely tapering resilient structure which held the bulb from longitudinal movement. After the rejection of the claims I took the matter up with James Whittemore, who could not see that there was anything patentable in the structure. I then wrote to our Washington Associate, Bacon, who reached the same conclusion. I then filed an appeal and went to Washington to argue it in person (many of our appeals at that time were argued by the

Washington Associate). At the argument I succeeded in convincing the Board that there was patentable subject matter, but they affirmed the Examiner's rejection of the claims on the ground that they were directed solely to the wrapper which of itself could not be distinguished from the bottle wrapper. I immediately filed a substitute case describing the structure as a wrapper for bulbular articles and in the claims defining the combination of the bulbular content and the longitudinally corrugated wrapper so proportioned as to assume the double tapered form. These claims were again rejected by the Primary Examiner and I took the second appeal to the Board with the result that the Examiner's decision was reversed. This patent was never placed in litigation, but it was respected by the trade so that our client had a monopoly during the life of the patent.

Latta & Thompson Patent 1,058,989

One of our early clients was the Hutchins Car Roofing Company, manufacturers of roofs for railway freight cars. Originally railway freight cars were made of wood and the roofs were composed of carlines or cross beams and a covering formed of matched or tongue-and-groove boards. With some constructions the weatherproofing was accomplished by using two courses of boards with the joints between the boards staggered so that those in the lower course would be covered by the boards in the upper course. This was not very satisfactory and other weatherproofing means was used.

waterproofing material to be placed either on top of the wooden structure or between the courses of boards where two courses were used. There was also another type of weatherproofing where metal sheets were placed beneath the roofing boards to catch the drip and to conduct it outward to the eaves. This was known as the inside type of car roof, whereas cars in which the weatherproofing material was placed on top were known as outside roofs.

Great difficulty was experienced in keeping car roofs weatherproofed, due to the distortion or weaving of the roofs during transit. Also, where metal sheets were used for weatherproofing either inside or outside the board structure, these would not flex or distort in the same way as the wood, so that it was quite usual to provide a slight clearance for independent movement. Nevertheless, the entire roof structure was as rigid as it was possible to construct with the materials then used.

Latta and Thompson conceived of a change of car roof design in which metal sheets formed the sole covering for sustaining roof loads and for also forming the weatherproofing means. Inasmuch, however, as the car body could not be held rigid, these roof sheets were attached to the body only at the eaves, permitting them to move independently of the carlines and purlines of the roof frame. The weatherproofing was completed by seam caps that embraced upstanding flanges on the roofing sheets and were held down thereon while still permitting the independent movement of the sheets. The application for patent on this structure was filed in the year 1907 and was pending in the Patent Office for seven years. The Primary Examiner

took the position that inasmuch as it was old to provide clearance for weatherproofing roofing sheets so they could move to some extent independently of the wooden structure, that there was no invention in the Latta & Thompson construction. Against this contention it was argued that all prior roofs were designed to be as rigid as possible, but that the Latta and Thompson roof was designedly flexible.

The application was pending before the Primary Examiner for four or five years without securing the allowance of any claims of value. Appeal was then taken to the Examiners in Chief, who held up their decision for thirteen months. Two of the three affirmed the Examiner's decision, while the third dissented. Appeal was finally taken to the Commissioner with the result that all of the broad claims were allowed. In the meantime, the roof had gone into extensive use and had been copied by competitors, chief of which was the Murphy Car Roofing Company. The attorneys for the Railway Association both in the East at New York, and the Western Association at Chicago, had rendered opinions that there were no existing patents that would be infringed by such a construction. However, when the patent issued, they revised these opinions and informed the railroads that further use of this type of roof would be in direct infringement of the patent. Suit was brought by the Hutchins Car Roofing Company against the Murphy Company in the seventh Circuit, the construction of the Defendant differing specifically from that shown in the patent,

chiefly in that instead of attaching the roofing sheets to the sides of the car at the eaves the sheets were extended from eaves to eaves and attached at the ridge. It was, therefore, one of the contentions of the defense that their roof was of a different construction and was not an infringement and the District Court sustained this, holding that the claims were valid but not infringed. The case was appealed and in the decision of the Appelate Court all of the claims were broadly sustained and the decision of the District Court as to non-infringement was reversed. The argument before the Court was made by Mr. Edward Rector of Chicago, but Mr. W. J. Belknap was responsible for a great deal of the preliminary work. In particular, he made a model for demonstrating the equivalence of the Plaintiff's and the Defendant's roof construction. This was a roof frame divided by longitudinal purlines into three sections with the roofing sheets extending over all three or from side to side. These sheets were attached to one of the purlines and were otherwise free. He then used a cardboard cover for one of the three sections which if placed on one side would leave exposed a roof the same as Plaintiff's. If, however, this cover were transferred to the opposite side, the exposed portion would be the roof of the Defendant's. The attorney for the defense paid this compliment, that he saw more inventive genius in this model than he did in the patent. Later, the Hutchins Car Roofing Company and the Murphy Car Roofing Company got together and were endeavoring to secure, through us, a patent on a new type of roof

construction. Walter Murphy made the remark to W. D. Thompson: "Tell Hulbert that if he can get as good a patent for us now as the Latta and Thompson, I will give him another automobile." In explanation, the Hutchins Company presented me with an automobile after securing allowance of the Latta and Thompson patent.

The Balloon Tire Case

A patent granted to the Steel Wheel Corporation, the invention of Alden N. Putnam, was generally known as the balloon tire patent. Putnam when he first came to Detroit was chief engineer for the Detroit Pressed Steel Corporation and while connected with this concern took out a great many patents. One was upon the dished disk wheel and while it was later shown that Michelin in France had invented it at an earlier date, Putnam was an independent inventor and the first to produce such a wheel in America. Among the many applications filed by us for Putnam was one filed in August 1920 upon a new type of wheel and tire combination. The drawings which were made from actual working drawings showed a wheel and tire, the tread diameter of which was the same as that of standard wheels used at that time, but the diameter of the rim was considerably smaller and the cross sectional area of the tire correspondingly increased. In actual measurements the cross sectional diameter of the tire was increased from five inches to eight inches and as the tread diameter was the same as in standard wheels using five inch tires, the rim

diameter was decreased by six inches. Another change was that in place of eight-ply fabric for the walls of the tire, this was reduced to four-ply, and in use the inflation pressure was dropped one-half, as for instance from the seventy pounds pressure used with the old tires to thirty or thirty-five pounds pressure in the changed tire. While this case was pending in the Patent Office and about a year and one-half to two years later, the Firestone Company came out with the first tire known as the balloon tire. Within a year from then, this type of tire had gone into very general use, not so much on new automobiles as on old ones equipped with new wheels and tires. The remarkable performance of such tires in comparison with the old high pressure tires soon convinced manufacturers that this type had come to stay and it was not long before all of the old high pressure tires were withdrawn from the market. In preparing the application for Putnam I was confronted with quite a problem. The only change from the old well known structure was a change in proportion which as a general rule is not considered patentable. However, I drew up the case, emphasizing the advantages resulting from a decrease in the inflation pressure of the tire provided that this was compensated for by a corresponding increase in cross sectional area and by additional flexibility in the walls, due to decrease in the thickness thereof. The invention was then claimed as a wheeled tire modified from standard practice by a substantial increase in cross sectional area,

a substantial decrease in wall thickness, and a substantial decrease in inflation pressure. The claims were promptly rejected by the Primary Examiner and some two years after the filing date appeal was taken to the Examiners in Chief. This appeal was successful and all of the claims asked for were allowed. About a month later we received a notice from the Commissioner, Robertson, stating that his attention had been called to this application in connection with a possible interference, and as he could see nothing patentable in the structure he gave us thirty days to show cause why he should not exercise his supervisory powers and withdraw the case from allowance. During the time the application had been pending in the Patent Office, there had been changes in ownership of the application. The Detroit Pressed Steel had assigned all of their patents and applications for patents relating to wheels to a new corporation known as the Steel Wheel Corporation, the majority of the stock of which was owned by the Motor Wheel Corporation of Lansing. Louis Greist was the attorney for the Motor Wheel Corporation, but our firm continued the prosecution of all applications which had been filed by us. I had also called in consultation Edward Rector of Chicago, after the original allowance of the application, to obtain his judgment as to whether it was desirable to add any further claims before issuing the patent. When the Commissioner sent us this notice, I immediately went to Chicago to discuss the matter with Mr. Rector and also called into consultation Mr. Greist. As a result of this conference Mr. McCauley of Mr. Rector's

office, Mr. Greist and myself, all went to Washington to argue the case before the Commissioner. In view of the importance of the application, the Commissioner had called into the hearing all of his assistants, as well as the Law Examiner, and told us that we would be given as much time as we desired to present our case. I introduced the case; made the principal argument, which was supplemented by arguments by both McCauley and Greist. Our trump card was that it could not be denied that there had been a revolution in the tire manufacture and that the change was precisely that defined in the application, which latter was filed fully a year and a half prior to the earliest tire of this type actually manufactured. Apparently our arguments were convincing, for the Commissioner reversed himself and held the claims to be patentable. Somewhat to our surprise, there was no interference, probably due to the fact that all other applications for patents along this line were so much later that they could not overcome our filing date. The patent was, therefore, passed to issue in 1925. It immediately created a sensation. Putnam, the inventor, had gone on a vacation trip to California and on his way back to Detroit he was stopped at various stations to be interviewed by reporters and to have his picture taken. Our Detroit papers devoted a large part of the front page to the description of the patent and how it would dominate the entire tire industry. A few weeks later I was called to Lansing to meet the directors of the

Steel Wheel Corporation regarding what should be done in order to maintain their rights in this patent. I strongly advised that they should not place the patent immediately in litigation, but rather should endeavor to secure licensees among the tire manufacturers, for the Steel Wheel Corporation did not of itself manufacture any product. Edward Rector was representing the Firestone Company, and, therefore, he was not in a position to directly advise the Steel Wheel Corporation about a matter which might be in conflict with the interest of his client. Greist was also present at the meeting and agreed with me as to policy. Unfortunately, the matter was placed in the hands of Mr. Geyer, one of the leading stock holders of the Steel Wheel Corporation, who started negotiations and then was taken ill, so that for six months nothing further was done. In the meantime, the tire manufacturers got together forming an organization to fight the patent. Rector while not directly appearing, gave advice to his client Firestone and although I do not know what this advise was, I believe it was to the advantage of taking a license under the patent. However, Rector died suddenly before anything further was done. More than a year later, in the fall of 1926, Mr. Harper, president of the Motor Wheel Corporation and also the Steel Wheel Corporation, called upon me and said that they had decided to bring suit under the patent. I told him that I did not personally practice before the Courts, but that our firm would be glad to take the case in collaboration with Greist and Parker Davis of the firm of Rector, Hibben,

Davis & McCauley. We also had in consultation a New York lawyer by the name of ?

After consultation it was decided not to bring suit against the Firestone Company, but rather against the Goodrich Company, and this suit was brought in the Eastern District of Michigan before Judge Tuttle. Prior to the trial we thought it advisable to secure certain evidence from England where the so called Palmer tire had been manufactured years earlier and was a tire of larger dimensions than those used later. We were able to get Palmer, the inventor of this tire, as our expert and sent him with Mr. Greist to England to secure the evidence. After lining up quite a number of witnesses they were surprised to find that none of these witnesses was willing to testify, so that all that Mr. Greist could do was to place this fact in the records. The result of the trial before Judge Tuttle was that he held Putnam not to be the original inventor of the construction, but in his oral opinion the Court made this remark: "If I believed that the change between the old high pressure tires and the balloon tires of today had been brought about by any one man, I would consider this invention of high order".
In other words, the decision was not against the subject matter of the patent, but only that this was not Putnam's invention. It had been decided by the lawyers during the progress of the trial not to put Putnam on the stand. This decision may have been wise, but I feel certain that if the Court had listened to Putnam's own story it would have been very convincing. We had evidence that Putnam had

first explained his invention to Harvey Firestone; that after this Hale, chief engineer of the Firestone Company wrote Putnam and said he was making some tires of large size and would furnish Putnam with a set, provided Putnam would furnish the Firestone Company with sheels to take such tires. There was also a letter from one of the officials of the Firestone Company to the Motor Wheel Company stating that they were making some tires at Mr. Putnam's suggestion. It was also well established that Hale of the Firestone Company was the first to actually manufacture balloon tires. The case was carried to the Court of Appeals, W. J. Belknap making the argument, but in its decision this Court affirmed that of the District Court.

When I was in law college we had a series of lectures by Judge Hossmer of the Circuit Court; in one of which he made a plea for charity on the part of the Patent Bar as to Judges, who after all were only human and likely to make mistakes. He ended his plea by the statement: "All that I have said does not in any way interfere with the inalienable right of every lawyer to damn the Court when his case goes against him." On this principle I suppose I am justified in saying that I believe this decision to be a great miscarriage of injustice. However, the chief blame must be laid to the officials of the Steel Wheel Corporation who instead of endeavoring to immediately secure licensees, let the matter drift along for a year and a half until the whole

tire industry was organized against them. They were then in the position of a Company entirely outside of the tire art endeavoring to collect tribute from all actual manufacturers. This fact I believe had a great deal of weight with the Courts in reaching their decisions.