Revised Preface to Second Edition

Next came the patent laws. These began in England in 1624, and in this country with the adoption of our Constitution. Before then any man might instantly use what another man had invented, so that the inventor had no special advantage from his invention. The patent system changed this, secured to the inventor for a limited time exclusive use of his inventions, and thereby added the fuel of interest to the fire of genius in discovery and production of new and useful things.

Abraham Lincoln, Lecture on "Discoveries, Inventions and Improvements" (February 22, 1860)*

In the spirit of Abraham Lincoln's lecture, the patent system of the United States continues to inspire new technologies by securing for inventors a marketable property right to their inventions. The success of this patent system is evident in the expanding markets for goods and services now protected by patents. Entrepreneurs, start-up companies, and joint ventures, as well as multinational corporations, all depend on the building block of the patent document to support the development and sales of their product lines.

While the sales of these patented products benefit the owners of patent rights, the members of the public at large share in the benefits by having access to needed products at competitive prices. After the September 11, 2001, terrorist attacks on the World Trade Center and the Pentagon, the national interest focused on the need for better security measures in public centers, including airports and stadiums. Inventors seeking to prevent another tragedy began to patent new security devices and needed surveillance equipment, including face recognition systems. In view of possible natural disasters such as an avian flu epidemic or civil disorder resulting from hurricanes such as Hurricane Katrina in September 2005, inventors have also patented advanced first-responder systems to coordinate large-scale evacuations with supplies for survivors. These new technologies benefit society at large as well as prevent the abuse of technology by terrorists seeking mass destruction.

* Lincoln himself was a patentee. U.S. Patent No. 6,469 was granted to him in 1849. See also H. Goldsmith, "Abraham Lincoln, Inventions & Patents," 20 J.P.O.S. 5 (1938).

The need for a technical solution to defeat a mortal adversity dates to the pioneering instinct of the early settlers of this nation. Though surrounded by a new and untamed environment, they were determined to progress beyond what they had been left behind. Buoyed by faith, they did not despair; they believed the Biblical promise: Seek and ye shall find.

Convinced that innovation contributed to the amelioration of society, the enlightened framers of the Constitution enshrined this conviction in Article I, Section 8, Clause 8, granting Congress the power ''[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.'' They envisioned a meritocracy founded not upon birth or social position, but upon one's own achievements. The contributions of authors and inventors were, in their minds, worthy of special recognition.

The Founding Fathers built better than they knew. Innovation did not fade with the passing of the colonial era. It flourished to an extent that the framers of the Constitution could never have dreamed. America's hospitable climate not only nurtured indigenous inventors but attracted many from foreign countries. Ericsson, Bell, Berliner, Tesla, and Steinmetz are but a few of the many who sought and found fame and fortune by applying to secure patent rights to their inventions (U.S. Patents 588, 174,465, 372,786, 381,968, and 533,244). Some began inventing only after arriving here. Some had no formal scientific training. For those with imagination and initiative, invention and the patent system have been the epitome of the American dream.

Yet the public has reaped the greatest benefits. Convenience and comforts formerly unavailable even to monarchs and millionaires are now accessible to all. Invention has wrought greater, more fundamental, and more enduring social change than have war and revolution. The observation that James Watt made more law than all the judges of England is perhaps an understatement. Nor has our own generation remained immune from patented innovations. The transistor of Shockley, Bardeen, and Brattain not only freed electronics from dependence upon vacuum tubes (U.S. Patent 2,524,035) but also made feasible such exotic things as the cardiac pacemaker, fiber optic and satellite telecommunications, the personal computer, and space travel. The photocopier of Chester Carlson, himself a patent attorney, made copying on ordinary paper a reality (U.S. Patent 2,297,691). The scope of inventive subject matter is also expanding. Today, efforts are directed not only at producing better mousetraps but, through gene manipulation, genetically altered mice as well (U.S. Patent 4,736,866). Tools for genetic engineering have created the basis for gene-specific pharmaceuticals patents (U.S. Patent 6,365,391). The founders of the microcomputer industry, including Wozniak, Gates, Bezos, and Jobs have patented video graphics, document processing, Internet shopping, and user interfaces (U.S. Patents 4,136,359; 5,552,982; 5,960,411;

and, 6,262,724).

By securing exclusive rights in inventions, the patent system has stimulated continuous, rapid, and steady technological progress, the fruits of which we enjoy today. And although the system directly rewards only applied science, patent profits do support pure scientific research, a dramatic example being the Nobel Prizes made possible by the fortune derived by Alfred Nobel from his patents on dynamite (U.S. Patent 78,317). It should be remembered, too, that Albert Einstein, during some of his most fruitful years, supported himself by working as an examiner in the Swiss patent office. Despite all the demonstrable benefits generated by the patent system, there are still detractors who see it as begetting excessive economic concentration, as erecting barriers to market entry, and as condoning monopoly pricing. Such hostile attitudes, while disheartening, are not surprising in view of the general lack of appreciation of just what the patent system really protects—for many who malign the system do so out of ignorance.

Contributing to the confusion is the fact that, for nearly the past few decades, there has not been a single book on the subject of patent law simple enough to be comprehensible, fundamental enough to be meaningful, and yet complete enough to be of value to the uninitiated. The current authors, following the lead of their predecessor, Peter D. Rosenberg, now desire to redress this condition by revising and updating the three-volume set of the second edition of PATENT LAW FUNDAMENTALS. Rosenberg conceived this work in 1971, when he was a junior patent examiner in the U.S. Patent and Trademark Office. At that time, he worked in Patent Examining Group/Technology Center 1700 where he examined metallurgical processes in Class 75. The first edition was intended to fill the unsatisfied need for a comprehensive, one-volume exposition of patent law and to present it in a readily comprehensible manner to those with little or no prior exposure to the subject, and yet contain enough information to be of substantial value to professional patent law practitioners. He continued writing and updating the book for the remainder of his life—beyond his retirement as a patent examiner in 1995 and until his untimely death in 2001. In keeping with this tradition, the current authors are also former examiners from the U.S. Patent and Trademark Office, where John G. Mills worked in Patent Examining Group/Technology Center 2100 examining computer systems in Class 364 and 707 and Donald C. Reiley worked in Patent Examining Group/Technology Center 3700 examining manufacturing systems in Class 29. The current authors now continue Peter Rosenberg's legacy in this work as a vehicle for demythogizing the complexity of the patent system.

Mythology would have us believe that perfection occurs instantaneously, just as the goddess Pallas Athene sprang full grown from the head of Zeus. Religion teaches that perfection, at least in this world,

is unattainable. History demonstrates that progress toward perfection, albeit a painstaking process, is possible. Technology offers one illustration of this evolutionary, trial-and-error phenomenon, the law another, at least in Anglo-American jurisdictions where the law develops case-by-case, the bulk of the law representing the accumulated wisdom of judges and counsel. Here, the law is generally allowed to evolve in bits and pieces very much like a coral reef, with cases corresponding to the microscopic organisms whose innumerable skeletons make up, in aggregate, the reef, and with legislative enactments providing no more than an overall framework. In Anglo-American jurisprudence, the natural form of the law is opinions of judges in court cases. Any attempt to transpose such law from its natural environment to the artificial confines of a legal text is at best an approximation that can be no more accurate than is a map or chart of geographic features of the globe. Consequently, any treatise that attempts to capture and convey the state of the law at a given historical point must of necessity be imperfect. PATENT LAW FUNDAMENTALS is no exception. While distortion of accuracy cannot be entirely eliminated, the authors have made every effort to keep this distortion to a minimum.

A legal text may be viewed as a verbal portrait of the law. Some legal texts attempt to paint the law in exhaustive detail. PATENT LAW FUNDAMENTALS should, rather, be regarded as more in the nature of a sketch, in which enough detail appears to make patent all significant features, with just enough highlighting to permit identification of salient traits and trends. However, it must be borne in mind that any text, like a portrait, is static and still, fixed at a particular point in time, while the law is dynamic—ever evolving and shifting, however gradually.

Lest the numerous nonlawyer users of this text be lulled into a false sense of security, a caveat must now be given. While most statements in the text are based upon case law, such must be qualified by significant facts and surrounding circumstances of the case, not all of which can always be presented in a text of limited length. Moreover, law, particularly case law, is subject to modification by subsequent legislation and case law. Accordingly, the reader should not take as absolute and immutable any statement of law made in the text no matter how dogmatically it may be couched. Such statements should rather be taken only as guideposts, indicating how a court has decided and may decide in the future.

Nonlawyers, particularly those trained in the scientific method and attuned to investigation by experimentation, may not fully appreciate that definitive pronouncement of man-made law comes only from courts and legislatures. While any scientist is free to perform experiments at will to discern natural laws, at least in Anglo-American jurisprudence, definitive elucidation of man-made law comes only from courts and only in response to actual cases and controversies. It

is for this reason that Blackstone styled judges as "the oracles of the law." Courts seldom give advisory opinions and persons with only an academic interest lack standing to present a case for the purpose of gaining the court's interpretation of the law. However, much as such limitation on ascertaining the law may cause uncertainty and frustration, there exist compelling and overriding constitutional reasons for the policy. Any extra-judicial interpretation of statutory or case law, including that appearing in this text, is conjecture rather than law. It is hoped, however, that the force of the authors' logic may, at least in time, find favor with the oracles of the law. This is not to imply that the authors are so presumptuous as to indulge in a pattern of extrapolating court opinions and suggesting that such are, or even ought to be, the law. To do so would be to usurp the sensitive province of counsel and the prerogative of the judiciary. To chronicle, rather than to criticize, is the overriding mission of the text. As in responsible journalism, editorials are clearly indicated as such and have been segregated from the factual presentation.

The present edition carries forward the basic format of the first edition. In addition to updating the law, there is much new material. This falls into three categories: new topics, a reorganization and consolidation of existing topics, and a breakdown of other topics. Into the first category fall the new chapters on Trade Secrets, Trademarks, and Copyrights. Exemplifying the second category is the chapter on Patent Claims. The chapters on Priority of Invention and Patent Litigation exemplify the third category. Those with little prior knowledge of patent law should particularly appreciate the expansion of Chapter 1, as well as the following chapter, entitled "Some Popularly Held Misconceptions About Patents." For the professional, the coverage of nearly all topics has been significantly expanded; older precedents are included where they make a material contribution to the law.

Two obstacles that can assume awesome proportions in attempting to enlighten by written discourse are appropriate emphasis and interrelationship of topics. The extent of these obstacles is directly proportional to the complexity of the subject matter. In any subject, there exists a hierarchy of importance. Exceptions and details, relatively unimportant but nevertheless necessary for completeness of coverage, may occupy more space than essentials. Where knowledge is conveyed by writing, there is a tendency for the key concepts to become buried and obscured in a morass of detail. A text, regardless of what it attempts to emphasize, imparts on the mind a sense of uniformity of importance of the information it conveys. A lecturer can omit detail and effectively interject emphasis. Topical breakdowns, while they facilitate written presentation, often artificially compartmentalize a subject and may actually impede the reader from gaining the overview and perspective that are so much a part of mastery of a subject. Chapter 2 points out key concepts, where pos-

sible, by building upon the reader's prior general knowledge. A conscious and determined effort to analogize, to correlate, and, where appropriate, to distinguish, topics has been carried out in the text in part through the extensive cross-referencing of sections. This progresses with each revision. In time, it is hoped that the cross-referencing will be as extensive and as rich as the overtones characteristic of a fine musical instrument or the bouquet of a fully aged wine. It is such controlled complexity that imparts character to a work. Things of great beauty and enduring value, whether they be pearls or writings, are not generated spontaneously, but rather are the product of a gradual and painful developmental process.

It is fervently hoped that members of the general legal and scientific communities will glean from this work a genuine appreciation of the problems involved in translating a scientific conception into legally enforceable property rights, and that members of the patent bar will find here a coherent and meaningful exposition of the patent law. Although instruction in patent law has been sorely neglected in universities, it is generally agreed that patent law is truly an intellectual discipline, involving a unique blend of logic, law, and science.

To accommodate both the uninitiated and the seasoned professional, the whole of PATENT LAW FUNDAMENTALS reflects a concerted effort to relate those principles of patent law considered indispensable to grasping how the system works as well as its limitations and implications. Interrelationships among the various doctrines of patent law and, in turn, their relationships to principles of general law are stressed. Nevertheless, to the extent possible, each section of the text is presented as a self-explanatory entity which does not presuppose for its comprehension information contained in a subsequent section. Where information in another section is germane, an appropriate cross-reference appears. Nearly all statements are supported with case citations, which have been entirely relegated to footnotes in order not to interrupt the flow of the narrative. This work should thus serve as a tutor to the uninitiated and as a tool to facilitate research by seasoned professionals.

An attempt has been made in this edition to avoid the legalisms that are so frustrating to the layman. Where, however, these were found to promote clarity and precision, rather than obscure it, they remain undisturbed. The emphasis, particularly in the early chapters, is upon the more abstract and immutable aspects of patent law. As the work progresses, more frequent references are made to specific statutory implementation. While subject to change, the concreteness of the statute should reinforce the reader's grasp of the underlying principles.

The first edition of PATENT LAW FUNDAMENTALS was most enthusiastically received. Particularly gratifying was the apparent widespread use of the treatise by the judiciary: the book has been cited by numerous courts, including the United States Supreme

Court, as well as at least ten recent citations in other Federal Courts. Also gratifying has been the response from those previously unfamiliar with patent law, some of whom asserted that the work facilitated their entry into the profession.

The law has by no means stood still. Much has occurred in the interval between the book's first publication and the present edition. Domestically, there is an entirely new Copyright Act that works fundamental changes in the scheme of copyright protection. There has been a substantial amendment to the 1952 Patent Act, generically called the American Inventor's Protection Act of 1999, which provides for the pre-grant publication of patent applications eighteen months after their initial filing. Numerous new Rules of Practice have been put into effect, including new rules of appellate practice now covered in Chapter 15 as well as patent interference practice now covered in Chapter 16 of this treatise. A plethora of court decisions has been generated, further defining and explaining the rights and duties of the public and patentees. Developments in the international arena have been even more dramatic and far-reaching: the Patent Cooperation Treaty, the European Patent Convention, and the other regional patent conventions strongly support this assertion.

No doubt some of these legislative and administrative changes will, at least in time, prove salutary. While there always will be room for improvement, unfortunately, not infrequently, that which is proffered in the name of ''progress'' or ''reform'' in practice has the diametrically opposite effect—further complicate the law, place additional burdens upon applicants, and divert precious professional time and clients' limited financial resources from the merits to formalities and peripheral issues. Proliferating statutory complexity is accompanied by an exponential increase in implementing regulations. Reforms, however well intentioned, if too numerous or extreme, can sap the very vitality of the system that they were intended to invigorate. Most would agree that the transformation of pastures into parking lots constitutes neither progress nor improvement.

The latest releases of this treatise have focused on new rule changes for patent practice before the U.S. Patent & Trademark Office including new guidance on accelerated examination; the Patent Prosecution Highway (PPH) programs between the USPTO and the patent offices of the United Kingdom, Japan, Korea, and Canada; new guidance on the USPTO's statutory requirements for computer related inventions; new guidance on the USPTO's Web-filing procedures for patent applications through EFS-WEB as well as electronic access to patent office documents through Private and Public PAIR; guidance on the new rules of practice before the Board of Patent Appeals & Interferences; and the proposed revised continuation practice and proposed claims practice before the Patent & Trademark Office.

Although the authors do not wish to be cast as apologists for the status quo, they confess a conscious effort to refrain from indulging

in a discourse on what the law should be—their being content to expose the law for what it is. No doubt, however, some of their own opinions have slipped into the text and they would, therefore, like to make it clear that this work is entirely their own doing and in no way represents the position of their respective employers. The authors hope this work will in some small measure serve to ensure future use of the patent system as it stimulates and sustains an ever-expanding economy.

John Gladstone Mills III
Robert Clare Highley
Donald Cress Reiley III

Washington, DC
March 2008