Contents

Foreword	xxvii
Foreword to the First Edition	xxix
Preface	xxxi
Acknowledgments	xxxv
Top Ten List of Intellectual Property Protection	xxxvii
SECTION I The Intellectual Property Universe	1
Eli Whitney — The Cotton Gin	3
Charles Babbage — The Difference Engine	7
1 Overview of Intellectual Property Law	11
 1.1 Defining "Intellectual Property" 1.2 Specific Intellectual Property Vehicles 1.2.1 Patents 1.2.2 Trademarks and Service Marks 1.2.3 Copyrights 1.2.4 Trade Secrets 1.2.5 Mask Works for Semiconductors 1.3 Which Form of Intellectual Property Protection to Use? Frank J. Sprague — The Electric Streetcar Mary Anderson — Windshield Wiper Blade 	11 12 12 13 14 15 15 15 17
2 Brief Overview of the Law	29
 2.1 Introduction 2.2 Development of the Law and Legal Principles 2.3 Divine Laws 2.4 The Four Types of Law 2.4.1 Constitutional Law 2.4.2 Statutory Law 2.4.3 Common Law 2.4.4 Rusiness Custom 	29 30 30 30 31 31

viii CONTENTS

2.5	Civil Law Systems	32
2.6	Enforcement of Laws	33
2.7	Changes in the Law	33
2.8	Equity	33
2.9	U.S. Courts, State and Federal	35
2.10	The Federal Court System	36
	2.10.1 The Supreme Court	36
	2.10.2 Courts of Appeals	36
	2.10.3 District Courts	37
	State Courts	38
2.12	2 Jurisdiction	38
SECT	ION II Patents	41
Charle	es Goodyear — Vulcanization of Rubber	43
John E	Boyd Dunlop — Pneumatic Vehicle Tires	47
3 Intr	oduction to Patents	51
3.1	Brief History of Patent Protection	51
	3.1.1 Early European Patent Custom	51
	3.1.2 The British Patent System	54
	3.1.3 The U.S. Constitution and the Development of	
	the Present U.S. Patent Examination System	55
	3.1.3.1 Origin and Early Development of Patent Law	
	in the United States	55
	3.1.3.2 Initial U.S. Patent Laws	57
	3.1.3.3 Inventions, Not Discoveries	58
	3.1.3.4 Importance of Disclosure of the Invention	58
2.2	3.1.3.5 Present Patent Law, Rules, and Guides	59 50
3.2	Types of Patent Coverage 3.2.1 What is a Patent?	59 59
	3.2.2 Article or Apparatus Patents	60
	3.2.2 Article of Apparatus Faterits 3.2.3 Method or Process Paterits	60
	3.2.4 Design Patents	61
	3.2.5 Plant Patents	61
	3.2.6 New Technologies	62
3.3	How to Determine What to Patent and What Not to Patent	62
5.5	3.3.1 Broadly, What Can and Cannot Be Patented	02
	Under the Law	62
	3.3.2 From a Business Standpoint, What Should Be Patented	63
3.4	Broadly, What Data Goes into a Patent	64
	3.4.1 Describing the Background and Essential	
	Elements of the Invention	64
	3.4.2 Claiming the Invention	65
3.5	What a Patent is Not	66
3.6	Inventions Relating to Atomic Weapons	67
3.7	The U.S. Government's Right to Practice Your Patented Invention	68

G	eorg	ge Westinghouse — Steam-Power Brake Devices and Alternating Current	69
G	ideo	n Sundback — Zipper	73
4	Inti	roductory Comments on Patentable Subject Matter and Utility	77
	4.1	What Constitutes Patentable Subject Matter?	77
		4.1.1 Categories of Patentable Subject Matter	77
		4.1.2 The Invention Must Be Useful and Work for its Intended Purpose	78
		4.1.3 The Invention Must Be Novel Compared to the Prior Art4.1.4 The Invention Must Be Non-Obvious as	78
		Compared to the Prior Art	78
		4.1.5 The True Inventors Must Be Named	78
		4.1.6 Brief Commentary on Notable Recent Developments	
		Attempting to Determine Patentable Subject Matter	79
	4.2	Utility — The Invention Must Be Useful	80
J	ohn]	Deere — Horse-Drawn Plow	83
E	rastı	us Brigham Bigelow — Powered Carpet-Making Looms	87
5	Nov	velty—The Invention Must Be New	91
	5.1	Statutory Requirements	91
		5.1.1 Time Limits for Filing a Patent Application	91
		5.1.2 Prior Art Activities of the Inventor and Others That	
		Can Defeat Patent Rights	93
		5.1.3 Prior Publications, U.S. and Foreign, as Prior Art	95
	5.2	Preliminary Comments on Protecting Foreign Patent Rights	95
	5.3	Additional Comments on Experimental Use Versus Actual	
		Use of the Invention	96
A	lfred	l Nobel — Dynamite	99
6	Rec	quirement of Non-Obviousness for Patentability	107
	6.1	Development of the Standard of Non-Obviousness	107
		Historical Background	107
	6.3	Supreme Court Cases Predating the 1952 Patent	
		Law Section 103 Non-Obviousness Test	109
		6.3.1 Hotchkiss v. Greenwood, Supreme Court, 1850	109
		6.3.2 Atlantic Works v. Brady, Supreme Court, 1882	110
		6.3.3 Goodyear Rubber and Tire Company v. Ray-O-Vac Company,	
		Supreme Court, 1944	111
		6.3.4 Cuno Engineering Corporation v. Automatic Devices	
		Corporation, Supreme Court, 1941	111
		6.3.5 The Great Atlantic and Pacific Tea Company v. Supermarket	
		Equipment Corporation, Supreme Court, 1950	112
	6.4	The 1952 Patent Statute and the Case of <i>Graham V. John Deere</i>	4.4-
		Company (1966)	113

x CONTENTS

			VU.S. Supreme Court Case of KSR V. Teleflex ve Non-Obviousness Analysis	116 117
L	ouis	Pasteur –	– Pasteurization Process	119
El	lisha	Otis — S	Safety Elevator	125
7	The	Patenting	g Process	129
	7.1	Who Ma	y Obtain a Patent: Inventorship and	
		Ownersh	ip of Patent Rights	129
	7.2	Proper D	Occumentation of the Invention	130
		7.2.1 C	Conception	130
		7.2.2 R	deduction to Practice	131
		7.2.3 W	Vitnesses	132
	7.3	7.3.1 P	reparation of a Complete Description of the Structure and Function of the Invention, How the Invention Operates, and	132
			What Advantageous Results Are Obtained by the Invention	132 133
			Disclosing the Best Mode of the Invention Dates of First Public Disclosure, if Any, and What Was Disclosed	133
			Advantages of the Invention Over Known Devices/Processes	134
			What Prior Art the Inventor is Aware of for Disclosure to the	133
			atent Examiner	136
	7.4		al Matters Discussed During the Invention Disclosure	130
	/ . +		Between the Inventor and the Patent Professional	137
		_	Confidentiality of the Meeting	137
			Does the Invention Qualify for Patent Protection	137
			reliminary Novelty Inquiry	137
			Determining the Date of Invention	138
			•	
			Will the Invention Work as Claimed by the Inventor?	138
			A Brief Comment Regarding Foreign Patent Rights	138
			What the Prior Art Lacks	138
			nventor's Initial Concept of Novel Features	139
			Non-Obviousness	139
			nablement	139
	7.5		The Best Mode Requirement	140
	7.5	Invention	n Disclosure Form	140
A	lexa	nder Grah	nam Bell — Telephone	145
8	The	Patentab	oility Search, Freedom-To-Use Search, and Other Searches	155
	8.1	Searchin	g the Content of the Prior Art to Determine	
			ility of the Invention	155
	8.2		ilty Search Parameters	156
			al Types of Searches	157
			he Freedom-to-Use Search	157
			tate-of-the-Art Search	158
			Light-to-Use Search	158

		CONTENTS	xi
	8.4 8.5	Database Searches U.S. Patent and Trademark Office Patent Classification System	159 159
Γh	omas	Alva Edison — The Light Bulb	161
)	The l	Patent Application	169
	9.1	Introduction	169
	9.2	Registration System Evolving into an Examination System	169
	9.3	Goal of a Properly Prepared Patent Application	170
	9.4	Provisional Patent Applications	171
	9.5	Regular, Non-Provisional Patent Application; No New Matter	172
	9.6	Content of a Regular Non-Provisional Patent Application	172
		9.6.1 Title of the Invention	173
		9.6.2 Cross-Reference to Other Applications	173
		9.6.3 Background of the Invention	173
		9.6.3.1 Definition of the Field of the Invention	173
		9.6.3.2 Brief Description of the Problems That Exist in the Prior Art That the Invention is Directed	
		Toward Solving	173
		9.6.3.3 The Results, Objectives, and Advantages	1/3
		of the Invention Not Achieved by the Prior Art	174
		9.6.4 Brief Summary of the Important Elements of the Invention	174
		9.6.5 Brief Description of the Drawings That Illustrate the Invention	175
		9.6.6 Detailed Description of the Illustrated	
		Embodiment of the Invention	175
		9.6.7 Claims Distinctly and Precisely Pointing	
		Out the Definition of the Invention	177
		9.6.8 The Abstract	177
		Your Review of the Patent Application	177
	9.8	Execution of the Declaration, Power of Attorney, and	
		Assignment Upon Completion of the Patent Application	178
Ge	orge I	Eastman — Practical Photography	181
Em	nile Be	erliner — Disc Sound Recording	185
10	Clair	ns of a Patent Application	193
	10.1	Introduction to Patent Claims	193
		Historical Development of Patent Claims	193
	10.2	10.2.1 Court Decisions	193
		10.2.2 1836 Patent Law	194
	10.3	What Claims Are	195
	10.4	Your Review of the Claims of Your Patent Application	197
		Distinguishing Different Types of Claims	198
		More on Method or Process Claims	200
		Composition of Matter Claims	201
		Design Patent Claim	201
	10.9	Dependent Claims	201

xii CONTENTS

10.10	How to Read and Understand Patent Claims Drafted by	
	Your patent attorney	202
	10.10.1 Preamble	202
	10.10.2 Transition Phrase	203
	10.10.3 The Body of the Claim	204
	10.10.3.1 Elements	204
	10.10.3.2 Functional Relationship of the Elements	204
	10.10.3.3 Results Should Not Be Included	
	in the Body of a Claim	204
	10.10.3.4 The Two Dependent Claims of the Example	204
Ottmar	Mergenthaler — The Linotype® Hot-Type Composing Machine	205
	re Maiman and Gordon Gould — Light Amplification by	200
Stimula	ted Emission of Radiation (Laser)	209
11 Exa	mination and Prosecution of a Patent Application	221
11.1	U.S. Patent Examination Process	221
11.2	The Patent Examination System-A Little More History	221
11.3	Filing the Patent Application With the USPTO	222
11.4	Examination of the Patent Application	223
11.5	Results of the Examination–The "Office Action"	224
11.6	You and Your Attorney's Response to the office Action	225
11.7	Further Patent Prosecution	228
11.8	Granting the Patent	228
11.9	Infringement During Examination of the Patent Application	229
11.10	Additional Probable Patent Prosecution Events	230
	11.10.1 Continuation Patent Applications and the Request	
	for Continuing Examination	230
	11.10.2 Continuation-in-Part Patent Applications	231
	11.10.3 Divisional Patent Applications	231
11.1	Re-Examination of an Issued Patent by the Applicant,	
	the Infringer, or the Commissioner of Patents	233
11.12	2 Re-Issue Patents	233
Nicolau	s Otto — The Internal Combustion Engine	235
Rudolf 1	Diesel — The Internal Combustion Engine	239
12 Desi	gn Patents	245
12.1	Coverage of Design Patents	245
12.2	The Design Patent Application	246
12.3	Infringement of a Design Patent	247
12.4	1	250
12.5	1	251
12.6	· ·	251
12.7	Design Patents Contrasted with Copyrights	252

CONTENTS	xiii
12.8 Damages For Design Patent Infringement	253
12.9 The Hague Agreement Concerning the International Deposit of Industrial Designs (The Hague System)	254
Nikola Tesla — AC Induction Motor and Radio	259
Clarence Birdseye — Frozen Food	271
13 Protection of Computer-Related Inventions	275
13.1 Introduction	275
13.2 The Torturous Path Through the Courts	276
13.2.1 Gottschalk v. Benson, 1972	276
13.2.2 <i>Parker v. Flook</i> , 1978	277
13.2.3 Diamond v. Diehr, 1981	278
13.2.4 Arrhythmia v. Corazonix, 1992	279
13.2.5 In re: Alappat, 1994	279
13.2.6 The 1996 USPTO Guidelines	280
13.2.7 The 1998 State Street Case	280
13.2.8 The "Mathematical Algorithm" Exception	201
Analysis of State Street	281
13.3 Recent Court Decisions and USPTO Guidelines Attempting to Define	202
Patent-Eligible Subject Matter Regarding Computer-Related Inventions	282 282
13.3.1 Bilski v. Kappos 13.3.2 Alice Corp. Pty. Ltd. v. CLS Bank	283
13.3.3 CAFC Decisions Subsequent to <i>Alice v. CLS Bank</i>	285
13.3.4 Additional Exemplary Comments Regarding Patent-Eligible	203
Subject Matter and Computer-Related Inventions	291
13.4 The USPTO Examination Process to Determine Subject	271
Matter Eligibility of a Computer-Related Invention	292
13.5 Recommended Steps to Obtain Proper Protection of	272
Computer-Related Inventions	294
13.5.1 How to Prepare a Proper Patent Application	
Covering a Computer-Related Invention	294
13.5.1.1 Specification	294
13.5.1.2 Claims	298
13.5.1.3 Determination of Whether a Computer-Related	
Invention Defines Patent-Eligible Subject Matter	
Under Patent Laws	300
13.5.1.4 Functional Descriptive Material: "Data Structures"	
Representing Descriptive Material per se or	
Computer Programs Representing Computer	
Listings per se	301
13.5.1.5 Non-Functional Descriptive Material	302
13.5.1.6 Natural Phenomena Such as Electricity	
and Magnetism	303
13.6. Statutory Subject Matter	303
13.6.1 Types of Claimed Subject Matter	303
13.6.2 Independent Physical Acts, or Post-Computer-Process Activity	304

		13.6.3 Manipulation of Data Representing Physical	
		Objects or Activities; Pre-Computer-Process Activity	305
		13.6.4 Computer-Related Processes Limited to a Practical	
		Application in the Technological Arts	306
	13.7	The Computer-Related Invention Must Still Be Novel and	
		Non-Obvious	307
	13.8	Computer Programming and a Sufficient Disclosure	308
		13.8.1 What Constitutes an Adequate Disclosure in Computer	
		Programming Patent Applications	309
		13.8.1.1 Block Elements More Comprehensive	
		Than a Computer	309
		13.8.1.2 Block Elements Within a Computer	310
		13.8.2 Affidavit or Declaration Practice	311
		13.8.3 Referencing Prior Art Documents	311
	13.9	The Protection of Software Through Contracts	312
		Patent Eligibility of Software and Computer-Related	
		Inventions in Europe	312
		13.10.1 Introduction	312
		13.10.2 The EPO Examination Approach to Computer-Related	
		Inventions	312
		13.10.3 Acceptable Claims for Software Inventions at the EPO	314
		13.10.4 Software and Computer-Related Inventions and Patent	-
		Eligibility in the UK	315
Hed	ly Lam	arr — Spread Spectrum Technology	325
Her	man H	ollerith — Tabulating Machine	329
14	Biotech	mology Inventions	333
	14.1	Introduction to Biotechnology	333
	14.2	History of Biotechnology Patent Protection	334
	14.3	Patent-Eligible Subject Matter and Biotechnology	336
	14.4	Biotechnology and the Written Description Requirement	338
	14.5	Biotechnology and Patent Exhaustion	340
	14.6	Biotechnology and Government Regulation	341
	14.7	Pharmaceutical Patent Strategies	343
	14.8	Medical Procedures	344
	11.0	Trodicul i locodules	511
Ros	alind F	ranklin, James Watson, Francis Crick, and Maurice	
		Discovery of the Molecular Structure of DNa	347
Sta	nley N.	Cohen and Herbert W. Boyer — Recombinant-Dna (rDNA)*	353
15	The F	ratenting of Business Methods	357
	15.1	The Evolution of Patents For Methods of Doing Business	357
	15.1	The State Street Case	359

		CONTENTS	XV
	15 2	The Bilski Case	360
		What is a Business Method Invention?	361
		The USPTO Guidelines	362
		Recommendations	364
		Understanding a Sample Business Method Patent Claim	365
		The Covered Business Method Review	366
Yv	onne l	Brill — Satellite Propulsion System	371
Lu	ther H	Burbank — Plant Breeding	375
16	Fore	ign Patent Protection	379
	16.1	Introduction	379
		The Traditional System of Obtaining Foreign Patents	380
		The Patent Cooperation Treaty (PCT)	381
		16.3.1 The Broad Provisions of the PCT	382
		16.3.2 Options for Obtaining Foreign Patent Protection	383
		16.3.3 The PCT, or International, Patent Application	384
		16.3.4 The International Search Report and Opinion	384
		16.3.5 The National Phase of the PCT	386
	16.4	National Patent Laws and the PCT: Differences and Alterations	386
		The EPC	387
		The European Unitary Patent and Unified Patent Court Privileged Communications Between a U.S. patent	388
	10.7	attorney and a Foreign Non-Attorney Patent Agent	389
Wi	lbur a	and Orville Wright — Controlled Powered Flight	391
	E C	CAL DA ABOLA	200
[]	Ento	rcement of the Patent Right	399
	17.1	The Patent Clearance Process	399
		17.1.1 The Freedom-to-Use Search and	
		the Non-Infringement Opinion Letter	399
	15.0	17.1.2 The "Right-to-Use" or "Knock-Out" Search	402
	17.2	The Attempt to Design Around the Claims of a Patent:	400
	17.0	Most Infringers Do Not Slavishly Copy the Patented Invention	402
		Literal Infringement of a Patent Claim	403
	1 / .4	The "Doctrine of Equivalents" Where the Claim is Not	405
		Literally Infringed	405 405
		17.4.1 How the Doctrine of Equivalents Works 17.4.2 Limits on the Doctrine of Equivalents	405
	17.5	Defenses to a Charge of Infringement	403
	17.3	17.5.1 Non-Infringement	406
		17.5.2 Patent Invalidity	407
		17.5.3 Unenforceability of the Patent	407
	17.6	Penalties and Damages For Patent Infringement	408
		Marking the Patented Product With the Patent Number	409

	411
C. Donald Bateman — Ground Proximity Warning System	417
18 The America Invents Act of 2011	421
18.1 First to File and the Definition of "Prior Art"	421
18.2 The Narrowed Grace Period	422
18.3 Disclosing the Best Mode of the Invention	422
18.4 Prior User Defense in Enforcement Proceedings	423
18.5 Patent Marking	423
18.6 Filing a Patent Application in the Name of the Assignee	424
18.7 Priority Examination For Important Technologies	424
18.8 Third-Party Challenges to Patent Rights	424
18.8.1 Pre-Grant Submissions	425
18.8.2 Post-Grant Submissions	425
18.8.3 Post-Grant Reviews	425
18.9 Inter-Partes Review of an Issued Patent18.10 Supplemental Examination	426 427
18.10 Supplemental Examination	427
Charles Kettering — Automotive Self-Starter	429
Calvin Souther Fuller, Gerald Pearson and Daryl Chapin — Efficient Solar	Cells 435
19 Ownership and Transfer of Patent Rights	439
19.1 Inventorship, Ownership, and Assignment of Patent Rights	439
19.1.1 The Patent Right as an Asset	439
19.1.2 Initial Ownership of the Patent Right	440
19.1.3 Shop Rights	441
19.2 Patent Licensing	441
19.2.1 The Difference Between a Patent Assignment and License	
19.2.2 When to Think "License"	443
10.2.2 Davidoning on Initial Dalationahim with a Lianus-	444
19.2.3 Developing an Initial Relationship with a Licensee	
19.2.4 The Selection of an Appropriate Licensee	445
19.2.4 The Selection of an Appropriate Licensee19.2.5 Primary License Negotiation and	
19.2.4 The Selection of an Appropriate Licensee19.2.5 Primary License Negotiation and Agreement Considerations	445 447
 19.2.4 The Selection of an Appropriate Licensee 19.2.5 Primary License Negotiation and Agreement Considerations 19.2.5.1 Exclusivity Or Non-Exclusivity 	447
19.2.4 The Selection of an Appropriate Licensee 19.2.5 Primary License Negotiation and Agreement Considerations 19.2.5.1 Exclusivity Or Non-Exclusivity In The Covered Territory	447 447
19.2.4 The Selection of an Appropriate Licensee 19.2.5 Primary License Negotiation and Agreement Considerations 19.2.5.1 Exclusivity Or Non-Exclusivity In The Covered Territory 19.2.5.2 Advance Against Royalties at Signing	447
19.2.4 The Selection of an Appropriate Licensee 19.2.5 Primary License Negotiation and Agreement Considerations 19.2.5.1 Exclusivity Or Non-Exclusivity In The Covered Territory 19.2.5.2 Advance Against Royalties at Signing 19.2.5.3 Royalty Rate As Quid Pro Quo for the Grant	447 447 447
19.2.4 The Selection of an Appropriate Licensee 19.2.5 Primary License Negotiation and Agreement Considerations 19.2.5.1 Exclusivity Or Non-Exclusivity In The Covered Territory 19.2.5.2 Advance Against Royalties at Signing 19.2.5.3 Royalty Rate As Quid Pro Quo for the Grant of the License	447 447 447 448
19.2.4 The Selection of an Appropriate Licensee 19.2.5 Primary License Negotiation and Agreement Considerations 19.2.5.1 Exclusivity Or Non-Exclusivity In The Covered Territory 19.2.5.2 Advance Against Royalties at Signing 19.2.5.3 Royalty Rate As Quid Pro Quo for the Grant of the License 19.2.5.4 To What Is the Royalty Rate Applied	447 447 447 448 448
19.2.4 The Selection of an Appropriate Licensee 19.2.5 Primary License Negotiation and Agreement Considerations 19.2.5.1 Exclusivity Or Non-Exclusivity In The Covered Territory 19.2.5.2 Advance Against Royalties at Signing 19.2.5.3 Royalty Rate As Quid Pro Quo for the Grant of the License	447 447 447 448

CONTENTS	xvii
19.2.6 Additional License Considerations	450
19.2.6.1 The Time and Form of Payment	450
19.2.6.2 Who Enforces the Patent Against Infringers	451
19.2.6.3 Defense of the Licensed Product Against a Charge	
of Infringement of a Third Party Patent	451
19.2.6.4 Term of the License	451
19.2.6.5 Indemnification	452
19.2.6.6 Acts Causing Termination of the License	452
19.2.6.7 Confidentiality	453
19.2.6.8 Grant Back Clauses 19.3 Conclusions	453
19.3 Conclusions	453
Philo Farnsworth — The Invention of Television	455
Robert Adler — Ultrasound Television Remote Control	469
20 How to Read and Obtain Information from a Modern U.S. Patent	473
20.1 The Information Page	473
20.2 The Drawings	491
20.3 The Specification	491
20.4 Claims	492
20.5 Caveat	492
SECTION III Employment Contracts, Ethics and the Engineer or	40.5
Scientist as an Expert Witness	495
Willis Haviland Carrier — Air-Conditioning	497
Ivan A. Getting, Roger L. Easton, Sr. and Bradford	
Parkinson — Global Positioning System (GPS)	503
21 Employment Contracts and Non-Compete Restrictions	509
21.1 Employment Contract Provisions Relating to	500
Intellectual Property	509
21.2 Ownership of Intellectual Property	510
21.2.1 Inventions	510
21.2.2 Copyrightable Works of Creative Authorship	511
21.3 Confidentiality Agreements or Nondisclosure Agreements	512
21.4 Outside Information Received by the Employee or Employer	514
21.5 Non-Compete Provisions21.6 Enforceability of a Non-Compete Agreement	515 516
21.7 Inevitable Disclosure	516 519
21.7 Inevitable Disclosure 21.8 Form Agreements	519
21.0 1 01111 / 1510011101110	21)
21.9 Consultants	519

Grace	Hopper — Cobol Computer Language	527
The H	ubble Space Telescope	529
22 Th	e Engineer and Scientist as Expert Witness	533
22	1 The Role of an Expert Witness	533
	22.1.1 Need for Experts	534
	22.1.2 The Standard for Admissibility of Expert	
	Testimony–The Daubert Decision	534
	22.1.3 Expert Assistance by Engineers and Scientists in	
	Complex Litigation	535
	22.1.3.1 Advice and Consultation	536
	22.1.3.2 Trial Assistance	536
	22.1.3.3 Opinion Testimony	537
	22.1.4 Expert Report and Deposition	538
	22.1.5 Deciding Whether You Can Provide the Requisite	
	Expert Assistance	538
	22.1.6 Expert Witness Fees	538
John I	Bardeen, Walter Brattain, and William Shockley — The Transistor	541
23 Et	nics	549
23	1 The Professions	549
23	2 Professional Societies	550
23	3 Codes of Ethics	550
23.	4 Brief Comments Regarding the Nspe Code of Ethics for Engineers	551
	5 Comparing the Law and Ethics	552
	6 Ethical Dilemmas	553
SECT	ION IV Copyrights	555
Jack I	Kilby and Robert Noyce — Miniaturized Integrated Circuits	557
24 Co	pyrights as a Vehicle for Technology Protection	563
24	1 A Brief History of Copyright Law	563
	24.1.1 Pre-U.S. Constitution English Law	563
	24.1.2 U.S. Constitution and Statutes	564
24	2 The Nature of Copyrights	566
	24.2.1 What a Copyright Is, and Is Not	566
	24.2.2 Intangible Rights in a Work Embodied in a	
	Tangible Medium of Expression	566
	24.2.3 Moral Rights	567
	24.2.4 Protecting the Balance Between the Public and the Author	568
	24.2.5 Requirements of Copyrightable Subject Matter	568
	3 Exclusive Rights of Copyright	569
	4 Fair Use	570
24	5 Infringement of a Copyright	571

		CONTENTS	xix
	24.6	Notice	572
	24.7	Copyright Registration and its Importance	572
		The Duration of Intangible Rights of Copyright	573
		Works Made For Hire	574
		Copyright Registration For Computer Programs	575
		24.10.1 Protecting Computer Programs That Do Not Contain	
		Trade Secrets	576
		24.10.2 Computer Programs Containing Trade Secrets	576
		24.10.2.1 Entirely New Computer Programs	577
		24.10.2.2 Revised Computer Programs	577
		24.10.3 Screen Displays	577
		24.10.4 Special Rules for Copyrighting Software	577
		24.10.5 Patent, Copyright, and Trade Secret Protection of	
		Computer Software	578
		24.10.6 Contracts and "Shrink-Wrap" and "Click" Licenses	579
	24.11	Copyright Registration For Automated Databases	579
		Copyright Registration For Online Works	580
		24.12.1 Revisions and Updates	580
		24.12.2 Databases	581
		24.12.3 Serials and Newsletters	581
	24.13	Architectural Works	581
		24.13.1 The AWCPA	581
		24.13.2 Avoiding Infringement of Architectural Copyrights	583
Fe	derico	Faggin, Marcian Hoff, and Stanley Mazor — Single-Chip CPU	585
т.		Codemic Action of Distriction	5 00
JO	sepnine	e Cochrane — Automatic Dishwasher	589
25	The I	Digital Millennium Copyright Act of 1998 (DMCA)—An Overview	593
	25.1	Purpose of the DMCA	593
	25.2	The General Provisions of the DMCA	594
	25.3	Circumvention of Technological Protection Measures	595
		25.3.1 General Approach	595
		25.3.2 Exceptions to the Prohibitions	596
		25.3.2.1 The Original Exemptions	596
		25.3.2.2 The Triennial Exemptions to	
		the Circumvention Prohibitions	597
		25.3.2.3 Fair Use, Non-Infringing Uses, and	
		Anti-Circumvention	598
	25.4	Limitations on Copyright Infringement Liability for Online	
		Service Providers	599
		25.4.1 Background	599
		25.4.2 The Notice and Takedown Procedures	600
		25.4.3 Counter DMCA Notification Procedures	600
	25.5	Copyright Management Information	601
	25.6	Remedies for DMCA Violations	601
	25.7	Example of Potential Conflict	601

Stephe	Stephen Wozniak — Personal Computers	
_	Haartsen and Sven Mattisson — Bluetooth®-Short Distance Wireless nunication Systems	607
26 Ma	ask Work Protection	611
26.	1 Introduction	611
26.	2 The Semiconductor Chip Protection Act of 1984	611
26.	3 Mask Works Generally	612
26.	4 Subject Matter of Mask Work Protection	613
26.	5 Ownership, Transfer, and Licensing of the Mask Work	613
	6 Duration of Protection	613
	7 Rights of Ownership in a Mask Work	613
26.	8 Limitations on Exclusive Rights, Reverse Engineering,	
	and First Sale	614
	9 Mask Work Notice	614
	10 Infringement of Mask Work Protection Rights	614
26.	11 General Comments About Mask Work Protection	614
SECT	TON V Trade Secrets	617
Stepha	anie Kwolek — Kevlar®	619
Percy	Julian — The Synthesis of Cortisone	623
27 Tr	ade Secrets Protection	627
27.	1 The Development of Trade Secret Law	627
27.	2 The Nature of a Trade Secret	628
27.	3 The Definition of a "Trade Secret"	629
27.	4 The Creation of an Enforceable Trade Secret Right	630
	5 Even Threatened Trade Secret Theft Can Be Stopped	632
	6 Creating a Viable Trade Secret Protection Program	633
	7 Damages and Injunctions	636
	8 Confidence	636
27.	9 Can Trade Secrets, After Use, Be Patented?	637
Cheste	er F. Carlson — Electrophotography	639
28 Th	e Federal Defend Trade Secrets Act of 2016	647
28.	1 Introduction	647
28.	2 Civil Seizure	647
	28.2.1 Requirements for Obtaining an Ex Parte	
	Order for Civil Seizure	648
	28.2.2 Elements of the Seizure Order	648
	28.2.3 Protection from Publicity	649
	28.2.4 Materials in Court Custody	649
	28.2.5 Service of the Order	649
	28.2.6 Seizure Hearing	650

	CONTENTS	s xxi
	28.2.7 Action for Damages Caused by a Wrongful Seizure	650
	28.2.8 Motion for Encryption	650
28.3	Remedies	650
	28.3.1 Injunctions	650
	28.3.2 Award of Damages	650 651
	28.3.3 Willful and Malicious Appropriation28.3.4 Claim of Misappropriation Made in Bad	031
	Faith by Plaintiff	651
	28.3.5 Period of Limitations	651
28.4	Rights of Trade Secret Owners	651
	Whistle-Blower Provisions	652
	28.5.1 Use of Trade Secret Information in an	
	Anti-Retaliation Lawsuit	652
	28.5.2 Notice of Immunity	652
SECTIO	ON VI Trademarks, Service Marks and Cybersquatting	653
	E. Blum, Rangaswamy Srinivasan, and James Wynne — Excimer	
Laser Si	urgery (Lasik)	655
9 Trad	emarks and Service Marks	659
29.1	Origins of the Protection of Trademarks and Service Marks	659
29.2	Trademark Selection and Adoption Process	661
	29.2.1 Creating a Trademark	662
	29.2.2 Screening or Narrowing Step	663
	29.2.3 Clearance Process for Determining the Availability	((2
20.2	of a Trademark for Your Use	663 665
	Filing For Registration of Your Trademark Protecting and Maintaining Your Trademark Registration	666
	Trademark Protection Outside the United States	666
	The Madrid Protocol—The "International"	000
27.0	Trademark—An Overview	668
Iohn M:	auchly and John Presper Eckert — The Eniac Computer	669
•	ersquatting	681
	What is Cybersquatting?	681
30.2	The UDRP	682
	30.2.1 Administration of the UDRP	682
	30.2.2 Process for a UDRP Claim	683
	30.2.3 UDRP Requirements	684
	30.2.3.1 Identical or Confusingly Similar to a Trademark 30.2.3.2 No Legitimate Interest	684 684
	30.2.3.3 Bad Faith	686
	30.2.4 Remedies	686
30.3	The Anticybersquatting Consumer Protect Act (ACPA)	687
	30.3.1 Elements of an ACPA Claim	687
	30.3.2 Remedies	689
	50.5.2 Remedies	007

SECTION VII The Commercialization and Management of Intellectual Property 69 George de Mestral — Hook-And-Loop Fastener (Velcro®) 69			
			John A. F
_	gineering Management and Commercialization of ellectual Property		
31.1	Introduction	701	
51.1	31.1.1 The Rapidity of Technological Change	701	
	31.1.2 People and Technology Development	702	
	31.1.3 Intellectual Property Strategy	703	
	31.1.4 Motivations Supporting Innovation	705	
	31.1.4.1 Individual and Organizational Motivations	705	
	31.1.4.2 Intrinsic and Extrinsic Motivations	706	
	31.1.4.3 Economic Motivation	706	
	31.1.4.4 Socio-Political Motivation	706	
	31.1.4.5 Possible Conflict Between Organizational	706	
	and Individual Motivations	706	
31.2	31.1.4.6 Developing Successful Motivations Introduction to Intellectual Property Pr	707 707	
31.2	Introduction to Intellectual Property Business Strategies Objectives of Intellectual Property Management	707	
31.3	The Sole Inventor in an Alien Field	708	
31.5	Strategic Development of Intellectual Property	711	
31.6	Disgorging Patentable Inventions	712	
31.7	Determining What and What Not to Patent	713	
	31.7.1 Patentability Search Results	714	
	31.7.2 Business Factors Determining Whether to Obtain		
	Patent Protection	715	
	31.7.2.1 Importance of the Technology	715	
	31.7.2.2 Competitive Advantage	716	
	31.7.2.3 Enforceability	716	
	31.7.2.4 Commercial Value	717	
	31.7.2.5 Licensing Value	717	
	31.7.2.6 Foreign Markets	718	
	31.7.2.7 Defensive Patenting 31.7.2.8 Timing of Public Disclosure of the Invention	719 719	
31.8	Determining Who Would Be an Appropriate Licensee for	/19	
31.0	Your Invention	720	
31.9	Drafting Strategic Patent Claims	720	
	Determining Where to Obtain Patents	721	
	Determining Other Industries That May Benefit		
	From a License	722	
31.12	Ensuring Your Product or Process Does Not Violate		
	the Patent Rights of Others	722	
31.13	Policing the Market For Potential Infringements of Your Patents	723	

	CONTENTS	xxii
31.14	The Enforcement of Process Patent Claims Against an	
	Importer of a Foreign-Made Product	723
31.15	Trimming the Intellectual Property Tree	724
	Essay on Innovation Management	724
Les Paul	— Solid Body Electric Guitar	727
	the Bastards"—Business Factors Controlling Intellectual erty Litigation Strategies	731
-		/31
32.1	Introduction to Intellectual Property Litigation	
	Strategies and Tactics	731
32.2	The Dawn of an IP Rights Infringement Lawsuit	731
	32.2.1 Got IP?	731
	32.2.2 A Potential Infringement of Your IP Rights	
	Bubbles to the Surface	732
	32.2.3 Conducting an Audit of Your IP	733
32.3	Litigation Considerations in IP Rights Enforcement	734
	32.3.1 The Pre-Filing Investigation	734
	32.3.1.1 Patent Enforcement	734
	32.3.1.2 Trademark/Service Mark Enforcement	737
	32.3.1.3 Copyright Litigation	743
	32.3.1.4 Trade Secret Enforcement	744
	32.3.2 The Benefits of Litigation v. the Costs	746
	32.3.2.1 Value of Potential Benefits of Litigation	746
	32.3.2.2 Litigation Costs	750
	32.3.2.3 The Disruption to Employees and Normal	
	Business Activities	751
	32.3.2.4 Preventing the Disclosure of Trade	
	Secret, Proprietary, and Confidential	
	Information to Your Competitor or	
	to the Public During Litigation	755
22.4	32.3.2.5 Short Notes on Other Litigation Factors	757
32.4	Conclusion	761
lgor Siko	orsky — Helicopter	763
Frank Za	amboni — Ice Resurfacer	769
33 Techi	nology Transfer—Universities, Hospitals, and Research Centers	773
33.1	Introduction	773
	Ownership of Institution-Developed Innovations	774
55.2	33.2.1 Typical University Ownership Policies and Provisions	774
	33.2.1.1 What Is Owned by the University	775
	33.2.1.2 Copyrights and the Academic Exception	775
	33.2.1.3 Ownership of Intellectual Property	113
	Created by University Students	776
		, , ,

xxiv CONTENTS

33.	3 A Typio	cal University Technology Transfer Program	777
		Purpose of the OTM	777
	33.3.2	The Bayh–Dole Act	778
	33.3.3	Sponsored Research	779
		Patent Decisions	779
	33.3.5	Intellectual Property Disclosures/Reports of	
		Research Progress	780
		Screening, Evaluation, and Assessment	780
		Market Assessment	780
		Release by License or Assignment to Inventor	781
		Marketing or Seeking Partners	781
		Marketing and Related Agreements or Pre-Licensing	781
		Licensing	782
	33.3.12	License Compliance	782
Ferdina	and von Z	eppelin — Rigid Airships	785
Bernar	d Silver a	nd Norman Joseph Woodland — Optically Scanned Bar Code	789
34 Into	ernational	Intellectual Property Creation, Protection,	
and	Enforcen	nent Strategies	793
34.	1 Introdu	action	793
34.	2 IP Crea	ation Strategies to Maximize Global IP Protection	794
		Investment Sources	794
		Technology Development Location Choices	795
		Product Production Location Choices	796
		Marketing Considerations	797
34.		Considerations Regarding Where to	
		IP Protection	797
		Legal Concerns	797
2.4		Procedural Concerns	798
34.		ing and Business Concerns Potential Market Size	799
		Product Life Cycle and Other Factors	799 800
	34.4.3		800
3/1		aris Convention and Non-PCT Country	800
J -1.		Protection	800
34		a PCT Patent Application First	801
	_	enture Relationships	801
		Why Create a Joint Venture	801
	34.7.2	Drawing Investment to the Joint Venture	802
		34.7.2.1 The Strength of IP Assets	802
		34.7.2.2 Reassuring Investors	803
		34.7.2.3 Technology Licensing	803
		34.7.2.4 IP as a Foundation of Marketing Strategies	803
		34.7.2.5 IP and Buyout Strategies	804
34.	8 Formin	g a Joint Venture Based on IP	804

CONTENTS	XXV

Go	Godfrey Hounsfield and Allan Cormack — CAT Scanner Paul Lauterbur and Peter Mansfield — Magnetic Resonance Imaging		807	
Pa			811	
35	The 1	Future		815
		What 1	al Thought Applied to Problem Solving Investors Will Look For in the Future Relative to	815 816
	25.2		ctual Property oping Countries	822
			rsity Technology Transfer	824
			r of Engineering Management Degrees At U.S. Universities	825
		Conclu		826
Ha	rry C	oover –	– Super Glue®	829
Sp	encer	Silver –	— Post-IT [®] Notes	833
36	Entr	epreneu	rship Law	839
	36.1	Introd	uction	839
	36.2	Transi	tion from Employee to Employer	840
		36.2.1	Restrictions Emanating from Your Current Employment	840
			36.2.1.1 During and after Employment	840
			36.2.1.2 Fiduciary Duties	840
			36.2.1.3 Trade Secrets	841
			36.2.1.4 Unfair Competition	841
		36.2.2	Restrictions Arising from an Employment Contract	841
			36.2.2.1 Moonlighting Provisions	841
			36.2.2.2 Non-Competition and Non-Solicitation	
			Restrictive Covenants	842
			36.2.2.3 Protection of Intellectual Property	
	262		and Confidential Information of the Employer	842
	36.3	_	izing the New Business	843
		36.3.1	Overview	843
			36.3.1.1 Sole Proprietorship	843
			36.3.1.2 General Partnership	843
			36.3.1.3 Limited Partnership	844
			36.3.1.4 Limited Liability Partnership	844
			36.3.1.5 Corporation	844
		2622	36.3.1.6 Limited Liability Company	845
		36.3.2	Brief Comments on Choosing an Advantageous	0.45
	26.4	T., 4 - 11 -	Business Entity Structure	845
			ctual Property Assets	846 846
	30.3	Financ	Introduction and Overview	
				846 848
			Equity Financing	848 849
		30.3.3	Bank Financing	849

xxvi CONTENTS

36.6	Employment Law	849
	36.6.1 Employee or Independent Contractor?	849
	36.6.2 Employment Statutes	850
	36.6.2.1 The Fair Labor Standards Act	850
	36.6.2.2 Worker's Compensation Laws	850
	36.6.2.3 Occupational Safety and Health Act (OSHA)	851
	36.6.2.4 Title VII of the Civil Rights Act	851
	36.6.2.5 The Americans with Disabilities Act	851
	36.6.2.6 Age Discrimination in Employment Act	851
	36.6.3 Employment Agreements	851
	36.6.4 Compensation with Equity in the New Venture	852
36.7	Financial Statements	852
	36.7.1 The Purpose of Financial Statements	852
	36.7.2 Basic Accounting Concepts	853
	36.7.3 The Types of Financial Statements	853
	36.7.3.1 The Balance Sheet	853
	36.7.3.2 The Income Statement	854
	36.7.3.3 The Cash Flow Statement	854
36.8	Recommendation and Acknowledgment	854
37 Curr	ent Events	857
37.1	AC Versus DC	857
Bibliography		865
Index		