

Index

- A2K (Access to Knowledge) movement
244–6, 247, 248
- Abbott, F.M. 9, 282, 284
- Abelshauser, W. 46
- Abrams, I. 195, 196
- academic entrepreneurship 183, 193–4,
247, 249, 265, 266, 274
- Burgess at University of Wisconsin
 189–94
- Northrup at Princeton 186–9, 193–4
- Rowland at Hopkins 183–6, 193, 194
 today 194–6
- Acheson, Edward 26
- Adams, James 27
- Adelphi Charter 239, 245
- Africa 255, 257, 262
- agriculture 238, 246
- Mendelism and British agricultural
 science 200–202, 211
- agricultural context of early
 genetics 202–4
- force for progress 204–7
- system builders 208–10
- plant breeding and IPRs 252–3,
 266–7
- before 1900 253–6
- 1900–1980: scientific 256–9, 281
- 1980–present: era of
 biotechnology 260–266, 281,
 282–3, 284–5
- AIDS/HIV 229, 239, 246, 282
- Aitken, H.G.J. 132, 164
- Akrich, M. 164
- Allen, R.C. 6
- Andersen, B. 2
- Anderson, Roland A. 225
- Andreasson, S. 252
- Anthony & Co 64–5, 68, 69, 72–4, 75
- Aplin, T. 120, 121
- Apple, R.D. 193, 195
- Appleyard, R. 132
- Arapostathis, S. 6, 154, 155, 156
- Argentina 259, 279
- aspirin 54
- Atlantic and Pacific Telegraph
Company 24–5
- atomic research *see* nuclear research
- Australia 9, 255, 281
- Austria 3, 68, 258
- Baekeland: incentives for not patenting
62–5, 75–6
- Eder v Baekeland 66–71
- legal complications 72–4
- undemocratic litigation 65–6
- Baghwati, J. 280
- Bagley, M.A. 283
- Bakan, J. 241
- Baker, E.C. 138
- Baldini, N. 194
- Ball, C.R. 254
- Balut, H. 195, 196
- Bank, M. 147
- Banker, James 34
- Barry, G. 267
- BASF 47, 113
- Batchelor, Charles 27, 35
- Bateson, William 201, 202–3, 205–6,
207, 208
- batteries 189, 191
- Bayer 45, 47, 48–55, 113
- Bayh, Birch 194
- Beauchamp, C. 72
- Beaven, E.S. 206
- Belgium 3, 64–5, 73
- Bell, Alexander Graham 25
- Bello, J.H. 280
- Bernal, J.D. 236, 247, 248

- Berne Convention for the Protection of Literary and Artistic Works 111, 115, 119
- Bessen, J. 63, 68, 75
- Biagioli, M. 64, 146, 217
- Biffen, Rowland 201, 202, 203–5, 206–7, 208–10, 211
- Bijker, W.E. 89
- bilateral trade agreements 261
- bio-energy 238
- BioBricks Foundation 246
- biodiversity 261, 264–5, 266, 267, 282, 283, 284, 286
- biopiracy 282, 284–5
- biotechnology 246
1980–present: era of 260–266, 281, 282–3, 284–5
- Blavatsky, H.P. 150
- Bollier, D. 285
- Bonneuil, C. 253
- Bos, H. 258
- botanical gardens 255
- Bourdieu, P. 147
- Bower, D.J. 286
- Bowler, P. 202
- Brashear, J.A. 184
- Brazil 8, 229, 237, 255, 257, 265, 285
TRIPS 237, 279, 280, 281–2
- British Mendelism *see* Mendelism
- British patent disputes in late nineteenth century 145–7, 154–6
expert witnesses 149, 150, 151, 153
Hopkinson 145, 150, 152–4
Lane-Fox 145, 150–152, 154
Varley 145, 148–50, 154
- British Post Office
patents 33, 128–9, 132, 137, 138, 139–40
telecommunications legislation 129–30
wireless telegraphy 127–30, 139–40
1882–1886 experiments 130–132
1886–1893 experiments 133–5
1893–1896: inductive telegraphy 135
1896: Marconi arrives in Britain 136–7
end of the road: 1896–1899 138–9
- British Seed Corn Association (BSCA) 206–7, 208, 211
- Brockway, L.H. 255
- Bruch, Walter 167, 168–9
- Brunel, Isambard Kingdom 5
- Brunet, F. 68
- Brush Company 148–50, 151
- Bruton, E. 129
- Buchanan, A. 5
- Bud, R. 218
- Bunnell, D. 87
- Burgess, Charles F. 189–94
- Burns, R.W. 132
- Bush, George W. 273
- Bush, Vannevar 221, 222
- business methods 62, 237
- Buttolph, M. 202
- CAMBIA 246
- Campbell-Kelly, M. 87
- Campbell-Smith, D. 129
- Canada 9, 254, 280, 281
- capability approach 239, 245
- Carlson, B.W. 32, 190
- Carlson, E.A. 202
- cartels 248
- Cass, R.A. 240
- Castle, D. 2
- Cathcart, B. 219
- caveats 22
- Ceruzzi, P. 88
- CFT (Compagnie Française de Télévision) *see* colour TV
- CGIAR (Consultative Group on International Research) 257, 266
- Chandler, A.D., Jr 63
- Chandler, Charles F. 70
- China 118, 257, 285
- Choate, P. 38
- CIAT (International Centre for Tropical Agriculture) 283
- civil society organisations 239
- Clamer, Guillian H. 187, 188
- climate change 249
- Cohen, B.I. 63
- Cold War 236, 278

- collective invention 3, 6, 27–8, 68
 Germany 3, 109–10, 117, 121
 firm invention 45–7, 56, 57–8, 111, 113
 inventor naming 111, 113, 116
 patent law individualism and 109–13, 122–3
 avoiding anonymity: in corporate interest 119–23
 emergence of ‘team invention’ 113–15
 moral rights in international law 115–18
 scientific property 115–16
 colour TV standardisation in Europe 162–4, 174–5
 fields and players 164–6
 phases of techno-political negotiations 166–7
 1958–1962: cooperation 167–8
 1963–1965: competition 168–71
 1965–1968: confrontation 171–3
 cohabitation 173–4
 competitive restriction clauses 51–2, 53, 55, 73
 compulsory licensing 3, 229, 246, 281, 284
 computer programs *see* software
 contract 114, 117, 264
 employment 45, 48–55, 56–7, 72–3, 117, 121
 social 4
 Conway, G.R. 257
 Cooper, C.C. 147
 copyright 2, 111, 122–3, 237
 software 2, 87, 88–9, 237
 waivers 112, 119
 Corbino, Orso M. 219
 corporate responsibility 267
 Cottrell, Frederick 195
 Crane, R.J. 164, 166
 Crookes, W. 132
 CSF (Compagnie de Télégraphie sans Fil) *see* colour TV
 Cuba 118
 Cullet, P. 282
 Cullis, R. 5
 Culver, J.C. 257
 Curti, M.E. 192
 Cynamid 219
 Dalzell, F. 75
 Dapp, T.F. 249
 Darlington, C.D. 200, 201, 202, 211
 databases 2, 237
 David, P.A. 67
 Davis, R. 88
 de France, Henri 162, 165, 167, 168, 172
 de Gaulle, Charles 166, 170, 175
 De Jonge, B. 265
 Debré, Michel 173
 DeCamp, M.W. 239, 243, 245–6
 Dekkers, J.C.M. 256
 Derclaye, E. 2
 developing countries *see* North-South relations
 Dole, Robert J. 194
 Douglas, F. 283
 Dr Baekelandt et Cie 64–5, 74, 75
 Drahos, P. 9, 277, 281–2
 Duisberg, Carl 48–9, 54
 Duncan, Louis 184
 Dunn, L.C. 202
 Dunning, John 226
 Dutfield, G. 4, 62, 115, 254, 284
 Duvick, D.N. 257
 Dwyer, L. 282
 Dyer, Richard 36
 dynamo (electric generator) 148–50
 Dyson, James 7
 Eastman, George 71, 72, 73
 Eastman Kodak 71, 72
 Eder, Josef M. 64, 66–71
 Edgerton, D. 89
 Edison: protecting inventions at home and abroad 7, 19–20, 37–8
 detailed records 23
 electrical industry 19, 20, 25–6, 27–8, 35–6, 202
 patents and creation of 28–32, 37
 trade secrets 30, 37
 foreign patents 19, 32–6
 market dominance 22–3, 30

- Menlo Park laboratory 25, 37, 113
 ore milling 19, 34
 patent attorneys 20, 21, 23, 35, 36
 phonograph 19, 27, 33–4, 37
 research and patents 25–8
 telecommunications 19, 20
 telegraph 19, 20–25, 33
 telephone 19, 25, 27, 33–4
- Edmonson, J.M. 186
 Egypt 279
 Eichengruen, Artur 50–51, 54–5
 Eicher, C.K. 257
 Eidam, E. 253
 Einarsson, P. 253
 Eisenhower, Dwight D. 278
 electrical industry/engineering
 British patent disputes in late
 nineteenth century *see separate
 entry*
 Burgess at University of Wisconsin
 189–94
 Edison 19, 20, 25–6, 27–8, 34–6,
 202
 patents and creation of industry
 28–32, 37
 Northrup at Princeton 186–9, 193–4
 Rowland at Hopkins 184–6
 telecommunications *see separate
 entry*
- emerging economies (EEs) 279–86
see also individual countries
- employee-inventors and patents 114,
 116, 117, 122–3
 Baekeland 64–5, 72–4, 75
 Edison 25–8
 Germany 44, 45, 48–55, 56–8, 117,
 121
 Japan 117, 121
 United Kingdom 6–7, 117, 120, 132
 United States 25–8, 65, 72–4, 114,
 117, 121
- employment contracts 117
 Germany 45, 48–55, 56–7
 Japan 121
 United States 72–3, 121
- Enola beans 282–3
 Ensmenger, N. 89
 Enyart, James 277
- ethics 69, 256
 of global justice 235–7
 A2K movement 244–6, 247, 248
 expansion of IP regime and need
 for new ethics 237–9
 IP rights as basic rights 239–42
 Pogge and Health Impact Fund
 242–6
 scientific internationalism 236,
 246–9
- Ethiopia 261
 Etzkowitz, H. 190, 194
 European Patent Convention (1973) 96,
 120, 262
 European Union 249, 262, 263–4, 277,
 279, 280
 Ευθυμίου, Σ. 95
 export processing zones (EPZs) 275,
 278
- Fahie, J.J. 131
 Farbenfabriken vormals Friedrich
 Bayer & Co 45, 47, 48–55
 farmers' rights 259, 264, 265, 266, 267
 FDI (foreign direct investment) 275,
 278
 Feistritz, W.P. 259
 Fermi, Enrico 219–20, 221, 222, 223
 Fessenden, Reginald 28
 Fickers, A. 163, 166, 171, 172
 Fisher, D.E. 164
 Fisk, C. 4, 63, 65, 72, 114, 122–3
 Flechtner, H.-J. 49
 Fontana, R. 62
 food 238, 239, 246, 264
 security 238, 252–3, 258, 264, 266,
 267
- Forman, P. 75
 Fowler, C. 254
 Fox, R. 45
 France 116, 118, 225–6, 241, 253, 263
 Edison 35
 pharmaceutical products 281
 SECAM (Séquentiel Couleur à
 Mémoire) *see* colour TV
- Frank, Eugen 50, 53–4
 Frankel, F.R. 257

- Fraser, N. 238
 Fridenson, P. 163
 Friedel, R. 37
- Galileo 146
 Gates, Bill 87
 GATT (Uruguay Round) 279
 see also TRIPS
 Gavey, John 138, 139
 General Electric 32
 generic drug industry 237, 243, 281–2,
 284, 285–6
 genetics 256, 260, 282, 284
 genes and DNA sequences 237,
 262–5, 267, 281, 285
 Mendelism and British agricultural
 science *see separate entry*
- Van Genugten, W. 252, 267
 George, G. 195, 196
 Germany 3, 4, 7, 201
 chemical industry 44–5, 47, 55, 113
 employment contracts 48–55, 56–7
 patents 44, 45, 55–8, 109–10, 117
 employee-inventors 44, 45, 48–55,
 56–8, 117, 121
 employment contracts 50–51, 54
 firm invention 45–7, 56, 57–8, 111,
 113
 first-to-file 45, 46, 109
 inventor naming 111, 113, 116
 new technical effect doctrine 113
 PAL (Phase Alteration Line) *see*
 colour TV
 pharmaceutical products 281
 photography 69
 plant breeding 263
 plant breeding 258, 263
- Gerschenkron, A. 45
 Ghana 257
 Giannini, Gabriello 220, 225, 227
 Gilguy, C.A. 226
 Gillett, H.W. 188
 Gilman, Daniel Coit 185, 186, 194
 Gilpin, R. 166
 Gilstrap, M. 254
 Gispén, K. 46, 58, 109
 Givon, M. 89
- Gleesener, Valérie 73
 Gold & Stock 22–3, 33, 34
 Goldberg, D. 283
 Gooday, G. 132, 164
 Gopal, R.D. 88
 Gould, Jay 24–5
 Gourand, George 34
 Gowing, M. 218, 222
 Granstrand, O. 7, 62
 Gray, Elisha 25
 Greece *see* software piracy in Greece
 Greenberg, D.S. 183, 194
 Greene, W. 284
 Guagnini, A. 72, 136
 Guequier, Jules 73
 Guise-Richardson, C. 72
- Haber, L.F. 47
 hackers
 software piracy in Greece 86, 93,
 96–8, 99
- Haddon, L. 89, 90
 Harlow, A.F. 133
 Harrison, R.W. 69
 Harwood, J. 200–201, 202, 211
 Hase, Karl Günther von 170
 Hasler, William 206–7
 Hayek, F.A. 241, 248
 Health Impact Fund (HIF) 242–6
 Heaviside, Arthur W. 132, 133
 Heilbron, J. 219, 225
 Heitz, A. 258
 Henrich-Franke, C. 165
 Hering, Carl 187
 Hewlett, R. 216, 224
 Hills, J. 129
 Hirsch, M.L. 282
 HIV/AIDS 229, 239, 246, 282
 Hjalmar-Nilsson, N. 254
 Hoechst 47, 113
 Hogenboom, N.G. 257
 Hollis, A. 243–4
 Holton, G. 219
 home computers *see* software piracy in
 Greece
 Home Grown Wheat Committee
 (HGWC) 204, 209, 210, 211

- Hong, S. 132, 137
 Hoover, H. 66
 Hopkinson, John 145, 150, 152–4
 Hougen, O.A. 190
 Huda, M.N. 259
 Huft, M.J. 282
 Hughes, T. 69, 75, 202, 209, 211
 Hugo, Victor 115
 human rights 116–17, 118, 119, 236, 238, 239
 A2K movement 245–6
 IP rights as 239–42
 natural and legal persons 240–241
 Pogge and Health Impact Fund 242–6
 Humphries, A.E. 204, 210, 211
 Husted, B.W. 88
 Huxley, Julian 236
- India 8, 285
 pharmaceutical drugs 237, 281–2, 284
 plants 255, 256, 257, 261, 264, 282, 283
 public science 265
 TRIPS 237, 279, 280, 281–2, 284
- International Covenant on Economic Social and Cultural Rights (ICESCR) 239, 240–241
 International Labour Office 117
 International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) 264, 266, 267
- Israel, P. 20, 38, 62, 69, 75
 Italy 117–18, 146, 241
- Jackson, Dugald C. 189
 Jacobi, Andreas 51
 Jacobi, Leonard 63, 72
 James, C. 260
 Japan 7, 9, 117, 121, 222, 275, 277, 279
 pharmaceutical products 281, 285
 plant varieties 281
- Jefferson, Richard 246
 Jeffery, J.V. 148
 Jenkins, R.V. 68, 72
- John Hopkins University 183–6, 193, 194
 John Innes Horticultural Institute (JI) 205–6, 208
 Johns, A. 5, 89, 248
 Johnson, Edward 36
 Joliot-Curie, Frèdèric 222
- Kadidal, S. 283
 Kahlenberg, Louis 189
 Kahn, Myrtil 53
 Kapzcynski, A. 245
 Karaganis, J. 279
 Kargon, R.H. 184, 190, 193
 Kenya 257
 Kesan, J.P. 195
 Kettering, Charles 109
 Kevles, D.J. 202, 252
 Khan, Z.B. 63
 Khor, M. 282
 King, Brown and Company 149–50
 Kingston, W. 115
 Kloppenburg, J.R. 254, 258
 Kocka, J. 46
 Koivula, N. 255
 Kowarski, Lew 222
 Kraeuter, D.W. 132
 Kranakis, E. 8, 237, 255, 275, 277
 Krikorian, G. 245
 Κυριακός, X. 98
 Κωνσταντίνου, B. 94
- Ladas, S.B. 116
 Lafont, C. 238
 Lamoreaux, N.R. 38, 44
 Lane-Fox, St George 145, 150–152, 154
 Lanouette, W. 220, 223
 Lassman, T.C. 219
 Latin America 116, 118, 241, 275, 282
 see also individual countries
- Latour, B. 163
 Lavender, Robert 216, 221, 221–2, 223
 Lawrence, Ernest O. 219, 220, 222, 225
 Le Buanec, B. 256
 League of Nations 115, 116
 Lee, L. 148
 Leeds, Morris 186–7

- Lefferts, Marshall 23
 Levin, R.C. 63
 Levy, S. 89
 Leydesdorff, L. 194
 Lilienthal, David H. 216, 227
 Litan, R.E. 183, 195
 Llewelyn, M. 258
 Lodge, Oliver J. 6, 135
 Louwaars, N. 253, 261, 264, 265, 267
 Love, J. 248
 Lubar, S. 2
- McClellan, Cyril 225
 Machlup, F. 5
 Mack, J.G.D. 192, 193
 MacKenzie, N. 236
 MacLeod, C. 5, 6, 7, 62, 63, 110, 217
 McMahan, Brien 216
 McQueen, A. 191, 192
 Maddison, A. 276
 Malawi 261
 Malaysia 257
 Mandel, G. 283
 Manes, S. 87
 Μανούσος, N. 93
 Marconi, Guglielmo 6, 128, 129, 133, 134, 135, 136–7, 138, 139–40
 Maskus, K.E. 277
 medicines *see* pharmaceutical products
 Mees, Kenneth 70
 Meisenzahl, R. 63
 Mendelism and British agricultural science 200–202, 211
 agricultural context of early genetics 202–4
 Agricultural Research Council 207
 force for progress 204–7
 system builders 208–10
 Mercelis, J. 65
 Merton, R.K. 63, 247
 Metropolitan Vickers 220
 Mexican yellow beans 282–3
 Mexico 117, 118, 257, 280
 Meyer-Thurow, G. 44, 48
 Miller, B.S. 227
 Miller, C.A. 236
 Miller, D.P. 115, 116, 241
 Miller, J.D. 184
 Millum, J. 241
 Mirowski, P. 183, 194
 Mitchell, B.R. 280
 Monsanto 261, 277
 moral economy of invention *see* British patent disputes in late nineteenth century
 Morris, S.W. 184, 190
 Morsink, J. 118, 241
 Moser, P. 62, 63
 Mossoff, A. 112–13
 Moulton, John Fletcher 139, 153
 Mowery, D.C. 194, 195, 196
 Mueller, J.M. 280
 Müller, J. 167
 Mullis, Kary 7
 Murmann, J.P. 47, 113
- NAFTA (North American Free Trade Agreement) 280
 Nahin, P.J. 132
 Namias, Rodolfo 70–71
 nation state 238
 National Institute of Agricultural Botany (NIAB) 207, 208, 209, 211
 natural rights 4, 113, 116, 238
 Neblette, Carroll 67
 Needham, Joseph 236
 Nelson, R.R. 195
 Netherlands 4–5, 117, 167
 plant breeding 253, 256–7, 258, 260, 263, 265
 New Zealand 281
 Nieberding, A. 48
 Nigeria 257
 Νικολάου, M. 100
 Noakes, R. 148
 Noble, D.F. 109
 Nogués, J. 281
 non-competition clauses 51–2, 53, 55, 73
 non-governmental organisations (NGOs) 239, 283, 285
 non-profit organisations 195, 253, 265
 North-South relations 273–4, 284–6
 conflict and TRIPS 279–81

- patents: life and death matter 281–3
- plant breeding 266–7
- before 1900 255
- 1900–1980 257
- 1980–present 261, 262, 265–6, 282–3, 284–5
- US economy and TRIPS 277–9
- US patents: corporatization and internationalization 273, 274–7, 281, 283, 285
- Northrup, Edwin F. 186–9, 193–4
- Norway 117, 265, 281
- Nottenburg, C. 263, 283
- Noveck, B. 283
- Nowotny, H. 194
- nuclear research 216–18
- atomic patents and Manhattan Project 221–3
- early days of 218–20
- post-war dilemma: to purchase or not 223–6
- secret patents: relic from the past 228–9
- technological control internationally 226–8
- Nussbaum, M. 238, 239, 245
- Nuvolari, A. 6
- Odagiri, H. 286
- Odek, J.O. 282, 284
- O’Dell, T.H. 217–18, 226, 229
- Olby, R. 201, 202, 206
- oligopolistic industries 247
- Olivier, Philippe 166, 174–5
- open sharing of knowledge 63, 64, 67, 68, 195, 235–7
- A2K movement 244–6, 247, 248
- plant breeding 259, 266, 283
- scientific internationalism 236, 246–9
- software piracy in Greece *see separate entry*
- Ordovery, J.A. 277
- Orton, William 23–5
- Osram 155, 156
- Oudshoorn, N. 89
- outsourcing 275, 278
- Owens, L. 62, 66, 109
- Palladino, P. 201
- Pallottini, L. 283
- Παπαθανασίου, N. 95
- Paris Convention for the Protection of Industrial Property (1883) 7, 110, 112, 115, 116, 117–18, 255, 276, 280
- Parnell Thomas, John 216
- Passer, H.C. 32
- Pasteur, Louis 255
- Patent Cooperation Treaty (1970) 8, 276–7
- patents 2, 3–9, 94, 194
- academic entrepreneurship 195, 247, 249, 265, 266, 274
- Burgess at University of Wisconsin 191, 193
- Northrup at Princeton 188
- Rowland at Hopkins 184, 185
- today 194, 196
- atomic research *see state secrecy and patents*
- Baekeland: incentives for not patenting *see separate entry*
- biopiracy 282, 284–5
- British patent disputes in late nineteenth century *see separate entry*
- collective invention and patent law
- individualism 109–13, 122–3
- avoiding anonymity: in corporate interest 119–23
- emergence of ‘team invention’ 113–15
- moral rights in international law 115–18
- scientific property 115–16
- colour TV standardisation in Europe *see separate entry*
- compulsory licensing 3, 229, 246, 281, 284
- costs 20–21, 46–7, 63, 65–6, 75, 149, 196, 283
- Edison: protecting inventions at home and abroad *see separate entry*

- employee-inventors 114, 116, 117,
 122–3
 Baekeland 64–5, 72–4, 75
 Edison 25–8
 Germany 44, 45, 48–55, 56–8, 117,
 121
 Japan 117, 121
 United Kingdom 7, 117, 120, 132
 United States 25–8, 65, 72–4, 114,
 117, 121
 ethics of global justice 235–7
 A2K movement 244–6, 247, 248
 expansion of IP regime and need
 for new 237–9
 IP rights as basic rights 239–42
 Pogge and Health Impact Fund
 242–6
 scientific internationalism 236,
 246–9
 European Patent Convention (1973)
 96, 120, 262
 first known code 3
 first and true inventor 45–6, 111,
 113–14
 first-to-file 45, 46, 109, 112
 genetic engineering 237, 262–5, 281,
 285
 Germany *see* patents *under* Germany
 Greece 96
 joint 27
 novelty 62, 64, 66–7, 69–71, 256, 262
 parallel importation 246
 patent pools 38, 155, 173, 220, 248
 penicillin 218
 pharmaceutical 2, 218, 237, 239, 241,
 281–2, 284, 285–6
 Pogge and Health Impact Fund
 242–6
 plant breeding 266, 267, 281
 before 1900 255–6
 1900–1980 258, 259
 1980–present 260–261, 262–4,
 265, 282–3, 284–5
 radar 218
 software 2, 62, 96, 237
 subject matter 62, 237, 256, 281
 telegraphy, wireless 6, 128–9, 132,
 137, 138, 139–40
 UK *see* patents *under* United
 Kingdom
 US *see* patents *under* United States
 Paul, B. 282
 Pearsall, W.G. 191
 penicillin 218
 Penning de Vries, F.W. 252–3
 Petit, M. 252
 Peyrefitte, Alain 166, 170, 171–2
 pharmaceutical products/medicines 2,
 218, 237, 238, 239, 240, 241,
 281–2, 284, 285–6
 Pogge and Health Impact Fund 242–6
 Philippines 257
 Philips 4, 94, 162–3, 220, 225, 227
 phonograph 19, 27, 33–4, 37
 photography *see* Baekeland: incentives
 for not patenting
 Pingali, P. 237
 piracy 8
 biopiracy 282, 284–5
 software piracy in Greece *see*
 separate entry
 Pizzighelli, Giuseppe 66–7, 69, 70
 plant breeding 252–3, 266–7
 before 1900 253–5
 IPRs on plants 255–6
 1900–1980: scientific 256–7
 IPRs on plants 258–9, 281
 1980–present: era of biotechnology
 260–261
 IPRs on plants 261–6, 281, 282–3,
 284–5
 Mendelism and British agricultural
 science *see separate entry*
 plant breeders' rights 2, 258–9,
 261–2, 263, 264, 266
 Plant Breeding Institute (PBI) 206, 207,
 208, 209
 Pocock, R.F. 133, 136
 Pogge, T.W. 238, 242–6, 248
 Poillon, Howard 219, 220
 Polanyi, M. 248
 Ponte, Maurice 165, 169–71, 173
 Porter, Harry F. 188
 Portugal 3
 Post Office *see* British Post Office
 Pratt, T. 283

- Preece, William 127–8, 129, 130–131, 133, 134, 135, 136, 137, 138, 139–40
- Prescott, George 24
- Princeton University 186–9, 193–4
- prize systems 248
- Proctor, Larry 282–3
- Provine, W.B. 202
- Prussia 3
- public research 249
 - government agencies and US patents 274
 - plant breeding 252, 266, 267
 - before 1900 254–5
 - 1900–1980 256–7, 259
 - 1980–present 260, 261, 263, 265–6
 - see also* universities
- Punnett, R. 203
- Puskas, Theodore 33–4, 35
- radar 218
- Ragavan, S. 279
- Rawls, J. 238
- RCA 172
- Reichenbach, Henry 72, 73
- Remsen, Ira 185, 194
- Research Corporation (RC) 195, 219
- restrictive covenants 63
 - competitive restriction clauses 51–2, 53, 55, 73
- reverse salient 69, 148, 209
- Rhodes, R. 218, 223
- Richmond, M. 202, 203
- Ricketson, S. 115
- Riesenfeld, S.A. 224, 227
- Roberts, Dewitt C. 22
- Roberts, E.H. 87
- Roosevelt, F.D. 247
- Rosanvallon, P. 165
- Rosen, E.I. 275
- Rosenberg, R. 184
- Rowland, Henry A. 183–6, 193, 194
- Rowlands, P. 135
- Russell, B. 150
- Russia 3
- Sagar, R. 121
- Saint-Gobain 162, 165
- Salk Institute for Biological Studies 235
- Salk, Jonas 235
- sanctions 279–80
- Sarkar, T.K. 132
- Saunders, K.M. 247
- Sayer, A. 147
- Scandinavian countries 167
 - Norway 117, 265, 281
 - Sweden 3, 117, 253, 254
- Schallenberg, R.H. 37
- Schmidt, Robert 51, 53
- Schmidt, S. 164
- Schneider, Theodore C. 184, 185
- science and technology studies (STS) 273–4
- scientific internationalism 236, 246–9
- scientific property 115–16, 241, 247
- Scranton, P. 186
- Seckelmann, M. 62
- Second World War 236
 - state secrecy and patents *see separate entry*
- secrecy 1
 - state secrecy and patents *see separate entry*
 - trade secrets *see separate entry*
- Segrè, E. 220, 223
- Sell, S.K. 277
- Sen, A. 238, 239
- Serrell, Lemuel 23, 36
- Servos, J.W. 193
- Shane, S.A. 194
- Shapin, S. 56, 75
- Shashikant, S. 249
- Shaver, L. 242, 245, 248–9
- sherardizing 191
- Shiva, V. 273, 277, 285
- Singapore 9
- Singer, P. 238, 239
- Sklair, L. 275
- Sky, M.B. 282
- slavery 256
- Smith, B.D. 254
- Smith, Fleming and Company 33
- Smith, J.S. 235
- Sneader, W. 54

- Sneep, J. 254
 social construction of technology
 (SCOT) 89
 social and cultural capital 146, 147, 154
 social inventing 3
 see also collective invention
 software 119, 245
 copyright 2, 87, 88–9, 237
 patents 2, 62, 96, 237
 software piracy in Greece 85–6, 100–
 101
 actors 89, 100
 beyond business and economics 87–9
 copying cassettes 94–5, 101
 copyright legislation 88–9
 economy 91, 101
 hackers 86, 93, 96–8, 99
 home computing 90–93
 mediators 89
 computer stores as key 98–100
 patent legislation 96
 Pixel magazine 85, 86, 91–6, 97–8,
 100
 program listings, type-in 95–6
 Somsen, G. 236
 South Africa 246, 255, 259, 265–6
 South Asia 259
 South Korea 9, 279, 285
 Southeast Asia 255
 Soviet Union 170–171, 172–3, 175, 228
 Spain 3, 281
 Sprague, Frank 26
 standardisation *see* colour TV
 state secrecy and patents 216–18
 atomic patents and Manhattan Project
 221–3
 early days of nuclear research 218–20
 post-war dilemma: to purchase or not
 223–6
 secret patents: relic from the past
 228–9
 technological control internationally
 226–8
 Steenbock, Harry 193, 195
 Stiglitz, J.E. 286
 Stoltzenberg, D. 49
 Stomps, T.J. 256
 Strange, Patrick 153
 Strange, Philip 148
 Sturtevant, A. 202
 Sussex, I.M. 260
 Swaminathan, M.S. 237
 Swan, Joseph 4, 35–6
 Swann, J.P. 63
 Swarts, Céline 72–3, 74
 Sweden 3, 117, 253, 254
 Sweetnam, G.K. 184
 Swinyard, W. 88
 Switzerland 4, 117, 263, 265, 276, 281
 system building *see* Mendelism and
 British agricultural science
 Szasz, F.M. 218
 Szilard, Leo 220, 222, 223

 Tansey, G. 252
 technical standards *see* colour TV
 standardisation in Europe
 technology transfer in agriculture
 252–3, 267
 Technology Transfer Offices (TTOs)
 194–6
 technology-in-use 89
 telecommunications 127
 Edison 19, 20
 telegraph 19, 20–25, 33
 telephone 19, 25, 27, 33–4
 Rowland at Hopkins
 telegraph 184–6, 193, 194
 telegraphy, wireless *see separate*
 entry
 Telefunken *see* colour TV
 telegraph
 Edison 19, 20–25, 33
 Rowland at Hopkins 184–6, 193, 194
 telegraphy, wireless 6
 patents 6, 128–9, 132, 137, 138,
 139–40
 Post Office 127–9, 139–40
 1882–1886 experiments 130–132
 1886–1893 experiments 133–5
 1893–1896: inductive telegraphy
 135
 1896: Marconi arrives in Britain
 136–7
 1896–1899: end of the road 138–9

- telecommunications legislation 129–30
- television *see* colour TV
- Thailand 229, 279
- Theile, R. 169
- Thompson, E.P. 146
- Thomson-Houston 30–32, 38
- Thursby, J.G. 196
- trade marks 2, 110, 259
- trade secrets 1, 6–7
 - Baekeland 63, 64–5, 71, 74
 - combining patents and 217
 - Edison 30, 37
 - Germany 47, 50, 51
 - see also* state secrecy and patents
- traditional knowledge 265, 266
- tragedy of the anticommons 246
- TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement 8, 237, 238, 242, 246, 273, 274, 276, 277
 - global South fought back 284–6
 - life and death import of 281–2
 - North-South conflict and 279–81
 - plant breeding 261, 267
 - Pogge and Health Impact Fund 242–6
 - US economy and 277–9
- Truman, Harry S. 235–6, 278
- Trune, D.R. 195
- Τσουάντζ, Ν. 95
- Tungsten Association 155
- Turchetti, S. 218
- Turneaure, F.E. 192
- Tympas, A. 89

- Uganda 257, 261
- Ukraine 253
- Ulliyett, B. 219
- unfair competition 63, 96
- United Kingdom 3, 6–7, 229
 - atomic research 222, 226, 227, 228
 - copyright
 - waivers 112, 119
 - Kew Gardens 255
 - Mendelism and British agricultural science 200–202, 211
 - agricultural context of early genetics 202–4
 - force for progress 204–7
 - system builders 208–10
 - patents 45–6, 114, 115, 116
 - colour TV 162, 165, 167
 - disputes in late nineteenth century 145–56
 - Edison 32, 33, 34, 35–6
 - employee-inventors 6–7, 117, 120, 132
 - inventor's right of attribution 112
 - Patents Act 112
 - telegraphy, wireless 128–9, 132, 137, 138, 139–40
 - scientific internationalism 236, 247
 - telecommunications
 - British Post Office *see separate entry*
 - United Nations 116, 118, 238
 - Educational, Scientific and Cultural Organisation (UNESCO) 236, 241, 242
 - United States 3, 7, 8, 9, 235–6
 - academic entrepreneurship 183, 193–4, 247, 265, 266, 274
 - Burgess at University of Wisconsin 189–94
 - Northrup at Princeton 186–9, 193–4
 - Rowland at Hopkins 183–6, 193, 194
 - today 194–6
 - America Invents Act 2011 112
 - atomic research *see* state secrecy and patents
 - Bayh-Dole Act 194, 265, 266
 - biodiversity 284
 - caveats 22
 - copyright 2, 119
 - Edison and US patents 19–25, 37–8
 - creation of electrical industry 28–32
 - research and patents 25–8
 - patents 2, 109–10, 112–13, 247

- academic entrepreneurship 184,
185, 188, 191, 193, 194, 195,
196, 265, 274
- Baekeland 65–6, 68, 69
- business methods 237
- corporatization 273, 274, 283
- Edison *see above*
- employers and employees 25–8,
65, 72–4, 114, 117, 121
- first-to-file 112
- first-to-invent 45–6, 111, 113–14
- internationalization 273, 274–7,
281, 285
- joint 27
- non-obviousness 114–15, 283
- pharmaceuticals 285–6
- plants 258, 262–3, 265, 281,
282–3
- scientific property 116
- state secrecy and *see separate entry*
- TV: NTSC-system 162, 163, 167,
168–9
- plant breeding and IPRs 266
- before 1900 254–5
- 1900–1980 257, 258, 259
- 1980–present 262–3, 265, 281,
282–3
- scientific internationalism 236
- Trade Act of 1974 (s 301) 279–80
- TRIPS 273–4, 284, 285–6
- North-South conflict and 279–81
- US economy and 277–9, 285
- Universal Declaration of Human Rights
116–17, 118, 236, 239–40, 241–2,
245, 248–9
- universities 116, 183, 193–6, 249, 274
- agricultural research and education
256–7, 260, 265, 266, 267
- British Mendelism 201, 202–3,
204–5, 206, 207, 208
- John Hopkins University 183–6, 193,
194
- nuclear research 219–20, 221
- Princeton University 186–9, 193–4
- University of Wisconsin 189–94,
247
- UPOV (Union for the Protection of New
Varieties of Plants) 259
- UPOV Convention 258–9, 261–2,
266
- Upton, Francis 27, 29
- utilitarianism 4, 238, 239
- Vaïsse, M. 170
- Van den Belt, H. 113, 247
- Van Genugten, W. 252, 267
- Van Hise, Charles R. 192
- Van Monckhoven, Désiré 70
- Varley, Samuel 145, 148–50, 154
- Velox 63–4, 65, 66–7, 69–71, 72–4,
75–6
- Venice, Republic of 3
- Veraart, F. 89
- Veysey, L.R. 193
- Villard, Henry 31
- Von Halban, Hans 222
- Wallace, Henry 224
- Warner, D.J. 186
- Warren, L.M. 284
- Weart, S. 220
- Weaver, Lawrence 207, 209
- Webster, Sir Richard 150, 151, 153
- Welch, E. Baker 22
- Wellerstein, A. 218, 221, 222
- Welling, W. 68
- Wellington, P.S. 206
- Wells, H.G. 236
- West Africa 255, 257
- Western Union 22, 23–5, 34
- Westinghouse 30–32, 219
- subsidiary: British Westinghouse
145, 153
- wheat 253, 257, 282
- British Mendelism 203–4, 205,
206–7, 208–10, 211
- Wheatstone, C. 149
- Wilkins, M. 35
- Wilkof, N. 2
- Willcox, D. 188
- Willison, D.J. 252
- Willison, R. 88
- Wisconsin Alumni Research Fund
(WARF) 195

- Wood, Thomas 201, 202, 203, 204, 205,
206, 207, 208, 209
- World Intellectual Property
Organization (WIPO) 8, 265
- World Trade Organization (WTO) 237,
285
see also TRIPS
- Wyatt, James 187
- Yavetz, I. 132
- Yu, P.K. 241, 279
- Yugoslavia 279
- Zaire 257
- Zimbabwe 257
- Zimmerman, P.A. 47
- Zworykin, V. 172