

INTRODUCTION TO THE PATENT SYSTEM – CHALLENGES FACING SMALL OFFICES

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WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO) REGIONAL
SEMINAR ON THE PATENT COOPERATION TREATY (PCT) FOR SELECTED
AFRICAN COUNTRIES, GABORONE, BOTSWANA, SEPTEMBER 10, 2019.

A BRIEF HISTORY

- ❑ **500 BCE** - THE FIRST REFERENCE TO IP PROTECTION IN HISTORY
- ✓ CHEFS IN THE GREEK COLONY OF **SYBARIS** IN THE SOUTH OF ITALY WERE GIVEN A YEAR TO ENJOY MONOPOLIZED PROFIT FOR A UNIQUE CULINARY DISH THAT THEY HAD CREATED.
- ❑ **270 – 180 BCE** - **VITRUVIUS**, WHO SERVED AS A JUDGE IN A LITERARY CONTEST IN THE CITY OF ALEXANDRIA, EGYPT, EXPOSED AND TRIED SEVERAL POETS WHO WERE GUILTY OF STEALING THE MATERIAL OF OTHERS IN THEIR FIELD
- ✓ **MARCUS VITRUVIUS POLLIO** WAS A ROMAN AUTHOR, ARCHITECT, CIVIL ENGINEER AND MILITARY ENGINEER DURING THE 1ST CENTURY BC, KNOWN FOR HIS MULTI-VOLUME WORK ENTITLED **DE ARCHITECTURA**.
- ✓ THIS MARKED THE BIRTH OF COPYRIGHT LAW AS WE KNOW IT
- ✓ FROM THEN ON, ROMAN JURISTS DISCUSSED DIFFERENT TYPES OF OWNERSHIP FOR INTELLECTUAL WORKS, ALTHOUGH THEY STILL DID NOT HAVE ANY INTELLECTUAL PROPERTY LAWS.



26/09/2019

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VENICE, ITALY, CIRCA 1416 -1474

1416 - THE GREAT COUNCIL OF VENICE AWARDED THE FIRST PATENT FOR A TECHNOLOGICAL INVENTION TO **SER FRANCISCUS PETRI** OF RHODES IN RESPECT OF A DEVICE FOR TRANSFORMING WOOL INTO FELT.

- ✓ INTRODUCTION OF THE “RIGHT TO EXCLUDE” OTHERS
- ✓ FOR A TERM OF 50 YEARS

1421 - ARCHITECT AND ENGINEER **FILIPPO BRUNELLESCHI** WAS GRANTED AN INDIVIDUAL ACT IN PROTECTION OF HIS INTELLECTUAL PROPERTY RIGHTS IN THE MANUFACTURE OF A BARGE WITH HOISTING GEAR USED FOR TRANSPORTING MARBLE.

1474 - STATUTE THEN PROVIDED A STATUTORY ALTERNATIVE TO THE EXISTING AD HOC SYSTEM THAT WAS ALREADY IN PLACE TO PROVIDE INTELLECTUAL PROPERTY PROTECTION.



26/09/2019

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ENGLAND, CIRCA 1623

1623 - THE STATUTE OF MONOPOLIES WAS PASSED BY THE ENGLISH PARLIAMENT

1623 - LUIGI PALOMBI REFERS TO IT AS "THE MOTHER OF MODERN PATENT LAW IN ALL COMMON LAW COUNTRIES".

SIR EDWARD COKE PRINCIPALLY DRAFTED THE 1623 STATUTE TO OUTLAW ABUSIVE MONOPOLIES, PARTICULARLY THOSE GRANTED UNDER THE KING'S LETTERS PATENT.



LET US NOW DEFINE A PATENT

- ❖ A PATENT IS AN **EXCLUSIVE RIGHT** GRANTED FOR AN INVENTION WHICH IS A PRODUCT OR A PROCESS THAT PROVIDES NEW WAYS OF DOING THINGS OR OFFERS A NEW TECHNICAL SOLUTION TO A PROBLEM
- ❖ A PATENT FOR AN INVENTION IS GRANTED BY GOVERNMENT TO THE INVENTOR, GIVING THE INVENTOR **THE RIGHT TO STOP OTHERS, FOR A LIMITED PERIOD, FROM MAKING, USING OR SELLING THE INVENTION WITHOUT THEIR PERMISSION.**

WHAT IS THE ESSENCE OF PATENT PROTECTION?

- **OBJECTIVE**
 - PROMOTE TECHNOLOGICAL AND ECONOMIC DEVELOPMENT BY ENCOURAGING INNOVATION AND INVENTIVENESS
- **MECHANISM**
 - PATENT RIGHTS FOR INVENTORS (LIMITED MONOPOLY)
- **BALANCE**
 - BETWEEN PATENTEES' RIGHTS (PROTECTED INVENTIONS) AND THE PUBLIC INTEREST (GROWTH OF KNOWLEDGE IN THE PUBLIC DOMAIN THROUGH DISCLOSURE OF THE INVENTION)
- **RELATIONSHIP WITH OTHER NATIONAL POLICY MEASURES**
 - PUBLIC HEALTH (E.G. HIV/AIDS DRUGS), USE OF GENETIC RESOURCES (PIC, DISCLOSURE AND BENEFIT SHARING), TRADITIONAL KNOWLEDGE, ENVIRONMENT PROTECTION

THE BALANCING ACT

I. THE INVENTOR'S INTERESTS:

- WANTS A STRONG MONOPOLY IN ORDER TO HAVE AN EDGE OVER COMPETITORS
- HAS THE INTENTION OF KEEPING THE INVENTION SECRET!!
- HAS INVESTED A LOT OF TIME AND MONEY, SO HE SHOULD BE PROTECTED!!!

II. COMPETITOR'S/PUBLIC INTERESTS:

- THE IDEAS OF OTHERS SHOULD BE FREE TO USE
- ALL IDEAS SHOULD BE AVAILABLE TO THE PUBLIC
- MONOPOLIES SHOULD HAVE AS SHORT A DURATION AS POSSIBLE

MAIN FEATURES OF A PATENT RIGHT

- THE RIGHT TO PREVENT OTHERS, FOR A LIMITED PERIOD, FROM **MAKING, USING OR SELLING** THE INVENTION **WITHOUT THEIR PERMISSION**.
 - IT IS **NOT** A RIGHT TO MAKE OR SELL THE INVENTION
- ONLY AVAILABLE FOR **NEW** INVENTIONS IN A FIELD OF **TECHNOLOGY**
- NEEDS TO FULFILL ALL CONDITIONS OF PATENTABILITY
- GEOGRAPHICALLY LIMITED UNDER **NATIONAL** PATENT LAWS – **TERRITORIAL!!**
- BUT THERE ARE **REGIONAL** AND **INTERNATIONAL** TREATIES TO FACILITATE MULTIPLE FILINGS – NO SUCH THING AS A **REGIONAL** OR **INTERNATIONAL** PATENT (EXCEPT OAPI?)
- HAS A LIMITED DURATION - **20 YEARS** FROM THE FILING DATE
- ANNUAL RENEWAL OR MAINTENANCE **FEES** (INCREASING WITH TIME) - **ANNUITIES**
- SOME **LIMITATIONS** TO THE RIGHTS
- PROPERTY RIGHTS ALSO VEST IN INVENTIONS (**PERSONAL PROPERTY**)
 - MAY BE SOLD OR LICENSED OUT

REQUIREMENTS FOR PATENTABILITY

IN ORDER TO BE PATENTABLE, AN INVENTION MUST MEET THE FOLLOWING REQUIREMENTS:

- ❑ **NEW** - NEVER BEEN MADE PUBLIC IN ANY WAY, ANYWHERE IN THE WORLD, BEFORE THE DATE ON WHICH THE APPLICATION FOR A PATENT IS FILED – [S.8 INDUSTRIAL PROPERTY ACT 2010 FOR BOTSWANA](#)
- ❑ **INVOLVE AN INVENTIVE STEP** – IF, WHEN COMPARED WITH WHAT IS ALREADY KNOWN, IT WOULD BE OBVIOUS TO SOMEONE WITH GOOD KNOWLEDGE AND EXPERIENCE OF THE SUBJECT MATTER (A PERSON REASONABLY SKILLED IN THAT ART), THEN IT LACKS INVENTIVENESS
- ❑ **CAPABLE OF INDUSTRIAL APPLICATION** - AN INVENTION MUST BE CAPABLE OF BEING MADE OR USED IN SOME KIND OF INDUSTRY. THIS MEANS THAT THE INVENTION MUST TAKE THE PRACTICAL FORM OF AN APPARATUS OR DEVICE, A PRODUCT SUCH AS SOME NEW MATERIAL OR AN INDUSTRIAL PROCESS OR METHOD OF OPERATION

UNPATENTABLE SUBJECT-MATTER

AN INVENTION IS NOT PATENTABLE IF IT IS:

- ✓ A DISCOVERY;
- ✓ A SCIENTIFIC THEORY OR MATHEMATICAL METHOD;
- ✓ AN AESTHETIC CREATION, LITERARY, DRAMATIC OR ARTISTIC WORK;
- ✓ A SCHEME OR METHOD FOR PERFORMING A MENTAL ACT, PLAYING A GAME OR DOING BUSINESS;
- ✓ THE PRESENTATION OF INFORMATION OR A COMPUTER PROGRAM, AS SUCH;

NB: IF THE INVENTION INVOLVES MORE THAN THESE ABSTRACT ASPECTS SO THAT IT HAS PHYSICAL FEATURES (SUCH AS SPECIAL APPARATUS TO PLAY A NEW GAME) THEN IT MAY BE PATENTABLE.

- ✓ IN ADDITION IT IS NOT POSSIBLE TO GET A PATENT FOR PLANT VARIETY, A METHOD OF TREATMENT OF THE HUMAN OR ANIMAL BODY BY SURGERY OR THERAPY OR A METHOD OF DIAGNOSIS.

S.9 OF THE INDUSTRIAL PROPERTY ACT 2010

THE FOLLOWING SHALL NOT BE REGARDED AS INVENTIONS AND SHALL BE EXCLUDED FROM PATENT PROTECTION —

- (A) A DISCOVERY OR A PLANT, ANIMAL, MICRO-ORGANISM OR SUBSTANCE AS FOUND IN NATURE, INCLUDING THE HUMAN BODY;
- (B) A SCIENTIFIC THEORY OR MATHEMATICAL METHOD;
- (C) A LITERARY, DRAMATIC, MUSICAL OR ARTISTIC WORK OR OTHER AESTHETIC CREATION;
- (D) A SCHEME, RULE OR METHOD FOR DOING BUSINESS, PERFORMING A MENTAL ACT OR PLAYING A GAME;
- (E) A COMPUTER PROGRAM.

THE FOLLOWING SHALL NOT BE PROTECTED BY PATENTS, EVEN IF THEY ARE INVENTIONS —

- (A) METHODS FOR TREATMENT OF THE HUMAN OR ANIMAL BODY BY SURGERY OR THERAPY, AS WELL AS DIAGNOSTIC METHODS PRACTICED IN RELATION THERETO, EXCEPT PRODUCTS FOR USE IN ANY SUCH METHODS;
- (B) AN INVENTION THE COMMERCIAL EXPLOITATION OF WHICH IS NECESSARY TO PROTECT PUBLIC ORDER OR MORALITY INCLUDING PROTECTION OF HUMAN OR ANIMAL HEALTH, PLANT LIFE OR TO AVOID PREJUDICE TO THE ENVIRONMENT;
- (C) PLANTS AND ANIMALS OTHER THAN MICRO-ORGANISMS;
- (D) ESSENTIALLY BIOLOGICAL PROCESSES FOR THE PRODUCTION OF PLANTS OR ANIMALS.

THE PATENT APPLICATION...

Front Page

(12) **United States Patent**
Dean et al.

(10) Patent No.: **US 6,849,223 B2**
(45) Date of Patent: **Feb. 1, 2005**

Title

(54) **FABRICATION OF A POLYMERIC PROSTHETIC IMPLANT**

(75) Inventors: **David Dean, Shaker Heights, OH (US); Malcolm Cooke, Richfield, OH (US)**

(73) Assignee: **Case Western Reserve University, Cleveland, OH (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 372 days.

(21) Appl. No.: **10/127,019**

(22) Filed: **Apr. 19, 2002**

(65) **Prior Publication Data**
US 2002/0171178 A1 Nov. 21, 2002

Related U.S. Application Data
(60) Provisional application No. 60/284,803, filed on Apr. 19, 2001.

(51) Int. Cl.⁷ **B29C 35/08**

(52) U.S. Cl. **264/400; 264/401; 264/482; 264/494; 156/272.8; 156/273.5; 156/275.5; 156/298; 156/303.1; 156/379.8**

(58) **Field of Search** **264/400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000**

(56) **References Cited**
U.S. PATENT DOCUMENTS
4996,010 A * 2/1991 Modrek 264/401

ABSTRACT
(57) Processes for fabricating a customized, three-dimensional, bioerodable, polymeric prosthetic implant are provided. In a highly preferred embodiment, the prosthetic implant has a porous network. The method employs a stereolithography process. The solution comprising chips of one or more photoinitiator, a highly preferred embodiment, the solution comprises poly (propylene) fumarate (PPF) and a solvent for controlling the viscosity of the solution. During the fabrication process, the solution is placed in a container in the stereolithography instrument. The prosthetic implant can be formed when successive layers of the solution are exposed to UV light energy to produce a pattern of cross-linked and non-cross-linked polymeric regions corresponding to a cross-sectional image of the three-dimensional CAD image.

OTHER PUBLICATIONS
International Search Report dated Aug. 30, 2002.
* cited by examiner

Primary Examiner: Stefan Staicovici
(74) Attorney, Agent, or Firm: Calfee, Halte & Griswold LLP

Inventors

Assignee

Filing Date

References Cited

15 Claims, 5 Drawing Sheets

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ANATOMY OF A PATENT APPLICATION

- ❖ **TITLE** – STATEMENT ON THE FIELD OF THE INVENTION
- ❖ **ABSTRACT** - SHOULD DESCRIBE THE INVENTION AT A VERY HIGH LEVEL IN THE LEAST WORDS POSSIBLE
- BACKGROUND** - A DISCUSSION OF THE 'STATE OF THE ART' WITH REFERENCES TO PRIOR ART DOCUMENTS SUCH AS KEY PATENTS, BOOKS OR JOURNAL ARTICLES
- ❖ **PROBLEM** - THE NATURE OF THE PROBLEM IS OUTLINED AS PART OF THE STATE OF THE ART
- ❖ **DETAILED DESCRIPTION** - EXPLAINS THE INVENTIVE STEP AND HOW IT WORKS
- ❖ **DRAWINGS/ ILLUSTRATIONS** - SHOULD EXPLAIN THE INVENTION IN SUFFICIENT DETAIL THAT READING THE DETAILED DESCRIPTION SECTION MERELY CONFIRMS IN WORDS THE INFORMATION PROVIDED BY THE DRAWINGS.
- ❖ **CLAIMS** - COVER THE **LEGAL ASPECTS** OF THE **MONOPOLY**, WITH THE FIRST BEING THE MAIN CLAIM AND THE LATER DEPENDANT CLAIMS REFERRING BACK TO EARLIER CLAIMS IN DESCRIBING WHAT IS NEW ABOUT THE INVENTION. THESE ARE THE LEGALLY OPERATIVE PART OF A PATENT APPLICATION – EVERYTHING IN A PATENT REVOLVES AROUND THE CLAIMS.

CHALLENGES

COMMON CHALLENGES

- THE ECONOMIC ENVIRONMENT IN MOST COUNTRIES DOES NOT ALLOW FOR ADEQUATE INVESTMENT IN RESEARCH & DEVELOPMENT (R&D) AND COMMERCIALISATION OF RESEARCH RESULTS
- IP INFRASTRUCTURAL DEFICIENCIES:
 - ✓ POOR AND INEFFECTIVE IP ADMINISTRATION AND MANAGEMENT INFRASTRUCTURE
 - ✓ LITTLE OR NO LINKAGE BETWEEN RESEARCH INSTITUTIONS AND PRIVATE CORPORATE CAPITAL TO PROMOTE COMMERCIALIZATION OF RESEARCH RESULTS
- POOR INTERNET CONNECTIVITY AFFECTS ACCESS TO TECHNOLOGICAL INFORMATION WHICH IS INVALUABLE IN RESEARCH ACTIVITIES
- LIMITED HUMAN AND FINANCIAL RESOURCES –LOW OR ABSENT PATENT DRAFTING CAPACITIES
- A GENERAL INADEQUATE APPRECIATION OF IP AT ALL LEVELS OF SOCIETY

CHALLENGES FACING SMALL OFFICES LIKE MALAWI

- ❖ A GENERAL LACK OF IP AWARENESS AT ALL LEVELS;
- ❖ FOR A LONG TIME, ABSENCE OF POLICY GUIDANCE ON IP MATTERS – NATIONAL IP POLICY AND IMPLEMENTATION STRATEGY (NIPS) WAS A DRAFT FOR A LONG TIME UNTIL IT WAS ADOPTED BY CABINET ON 2ND APRIL, 2019, AND LAUNCHED ON 3RD MAY, 2019;
- ❖ OLD PATENT ACT – PRE-COLONIAL, 1958 ACT;
- ❖ NEED FOR A CRITICAL MASS OF IP EXPERTS ACROSS ALL DISCIPLINES TO CHAMPION IP MATTERS AT INSTITUTIONAL LEVEL;
- ❖ THE CHALLENGES THAT COME WITH BEING PART OF MAINSTREAM CIVIL SERVICE (LOW AND ILL-TRAINED STAFF, LIMITED BUDGETS ETC);
- ❖ LOW BUDGETARY ALLOCATION FOR R&D:
 - ✓ R&D EXPENDITURE UNCOORDINATED, SPORADIC AND MAINLY AT INSTITUTIONAL LEVELS;
 - ✓ POOR INTER-INSTITUTION COORDINATION ON RESEARCH ACTIVITIES RESULTING IN RESOURCE WASTAGES DUE TO REINVENTION OF THE WHEEL AND RESEARCH DUPLICATION; AND
 - ✓ THE NATIONAL INNOVATION FUND YET TO BE ACTIVATED.

CHALLENGES FACING DEVELOPING COUNTRIES

BALANCE BETWEEN THE PRIVATE RIGHTS AND PUBLIC INTERESTS

- ✓ THE NEED TO AVOID **INAPPROPRIATE PATENTING**, SUCH AS PATENTING OF A CLAIMED INVENTION THAT IS NOT NEW OR DOES NOT INVOLVE AN “INVENTIVE STEP”
- ✓ SUFFICIENCY OF THE DISCLOSURE AND ADEQUATE PATENT CLAIMS OF THE PCT INTERNATIONAL PHASE APPLICATIONS

CHALLENGES FACING DEVELOPING COUNTRIES

BALANCE BETWEEN THE PRIVATE RIGHTS AND PUBLIC INTERESTS

- ✓ THE NEED TO ENSURE ACCESS TO MEDICINES: TRIP'S FLEXIBILITIES, COMPULSORY LICENSING, PARALLEL IMPORTATION
- ✓ THE NEED TO AVOID **BIO PIRACY** – **THE PROTECTION OF TRADITIONAL KNOWLEDGE AND CONSERVATION OF OUR BIO-DIVERSITY IS INCREASINGLY BECOMING A NATIONAL PRIORITY**



THANK YOU FOR YOUR KIND ATTENTION