| 1.1 | ARTERIAL PROSTHESIS (I.E., BLOOD | 1.47 | . Collagen |
| :---: | :---: | :---: | :---: |
|  | VESSEL) | 1.48 | Protein |
| 1.11 | . Stent combined with surgical | 1.49 | . Made of synthetic material |
|  | delivery system (e.g., | 1.5 | . . Knitted |
|  | surgical tools, delivery | 1.51 | . .Woven |
|  | sheath, etc.) | 1.52 | Velour surface |
| 1.12 | . Expandable stent with | 1.53 | . Braided |
|  | constraining means | 1.54 | Fiber |
| 1.13 | . Stent in combination with graft | 2.1 | HEART VALVE |
| 1.14 | ..Stent penetrating natural blood | 2.11 | . Combined with surgical tool |
|  | vessel | 2.12 | .Flexible leaflet |
| 1.15 | . Stent structure | 2.13 | ..Leaflet made of biological |
| 1.16 | . Having multiple connected |  | tissue |
|  | bodies | 2.14 | ...Supported by resilient frame |
| 1.17 | ..Stent length remains constant | 2.15 | ...Trileaflet |
|  | with lateral expansion | 2.16 | ...Bileaflet |
| 1.18 | ..Having shape memory | 2.17 | ..Supported by frame |
| 1.19 | ...Temperature responsive | 2.18 | ...Resilient frame |
| 1.2 | . Self-expanding stent | 2.19 | .Trileaflet |
| 1.21 | ..Formed inside natural blood vessel | 2.2 | .Having rigid or semirigid pivoting occluder |
| 1.22 | ..Helically wound | 2.21 | ..Fixed cylindrical pin |
| 1.23 | . Including means for graft delivery (e.g., delivery sheath, ties, threads, etc.) | 2.22 | structured to permit only pivoting movement of occluder . Annular support member includes |
| 1.24 | . Including valve |  | projecting means for guiding |
| 1.25 | ..Inflatable graft |  | occluder's pivoting motion |
| 1.26 | . Heart valve | 2.23 | . Strut projecting means |
| 1.27 | .Having plurality of parallel lumens | 2.24 | ....Strut projecting means extends through hole in |
| 1.28 | .Having pleats |  | occluder |
| 1.29 | ..Longitudinal pleats | 2.25 | . .Strut projecting means |
| 1.3 | .Having variable diameter |  | cooperates with depression |
| 1.31 | . .Enlarged end |  | portion of occluder to guide |
| 1.32 | .Having built-in reinforcement |  | pivoting movement |
| 1.33 | . Monofilament | 2.26 | . . Occluder also includes guiding |
| 1.34 | .Having marker (e.g., color, radiopaque, etc.) | 2.27 | projecting means <br> ..Occluder includes projecting |
| 1.35 | . Bifurcated |  | means defining pivoting axis |
| 1.36 | . With means to attach graft to | 2.28 | ...Slot in annular support member |
|  | natural blood vessel (e.g | 2.29 | ....Triangular-shaped slot |
|  | hooks, etc.) | 2.3 | ....Crescent-shaped slot |
| 1.37 | .Having angled cut (i.e., oblique cut) | 2.31 | ....Slot having opposed convex guiding surfaces |
| 1.38 | . Absorbable in natural tissue | 2.32 | ....Elongated oval-shaped slot |
| 1.39 | .Having pores | 2.33 | ..Having particular geometry |
| 1.4 | ..Pore gradient |  | detail |
| 1.41 | .Having living cell | 2.34 | .Having rigid or semirigid |
| 1.42 | . Drug delivery |  | translating occluder |
| 1.43 | . Antithrombogenic | 2.35 | . . Ball-valve type |
| 1.44 | .Having plural layers | 2.36 | . Annuloplasty device |
| 1.45 | . . Impregnation | 2.37 | . Adjustable |
| 1.46 | . Coating |  |  |


| 2.38 | . Annular member for supporting artificial heart valve |
| :---: | :---: |
| 2.39 | ..Rotationally adjustable relative to suture ring |
| 2.4 | . Having means for fixedly securing annular support member to sewing ring |
| 2.41 | . Sewing ring |
| 2.42 | .Specific material for heart valve |
| 3.1 | CORPOREAL ARTIFICIAL HEART, HEART ASSIST (E.G., IMPLANTABLE BLOOD PUMP, ETC.), CONTROL REGULATOR, OR POWER SUPPLY THEREFOR, OR METHOD OF OPERATION THEREFOR |
| 3.11 | . Including electrical or magnetic means adjacent to flexible diaphragm or chamber to effect contraction thereto (e.g., electromagnet, shape memory material, etc.) |
| 3.12 | . Powered by muscle |
| 3.13 | .Having enclosed rotary member for directly impelling blood flow |
| 3.14 | ..Blood flow along <br> electromagnetic section of stator member |
| 3.15 | . .Rotary member driven by flexible shaft (e.g., cable, etc.) |
| 3.16 | .Having flexible diaphragm or chamber |
| 3.17 | ..Flexible diaphragm or chamber directly compressed by mechanical member |
| 3.18 | ...Reciprocating mechanical member attached to rotary drive means |
| 3.19 | ...Reciprocating mechanical member attached to reciprocating drive means |
| 3.2 | ...Reciprocating mechanical member driven by pressurized working fluid |
| 3.21 | ..Flexible chamber or diaphragm dirrectly compressed by pressurized working fluid |
| 3.22 | ...Reciprocating member |
| 3.23 | ....Reciprocating member attached to rotary drive means |
| 3.24 | ...Rotary pump |

Flexible diaphragm or chamber directly compressed by mechanical member member attached to rotary drive means member attached to reciprocating drive means member driven by pressurized working fluid dirrectly compressed by pressurized working fluid
3.22 ...Reciprocating member
3.23
....Reciprocating member attached to rotary drive means
3.24
...Rotary pump
3.25
3.26
3.27
3.28
3.29
3.3
4.1
5.12
5.13
5.14
5.15
5.16
6.11
6.12
6.13
6.14
6.15
6.16
6.17
.
.
..Having integral protrusion means for attaching lens to cornea
..Material characteristic of corneal implant
. Intraocular lens
..Combined with surgical tool
..Having fluid-filled chamber
..Lens body having through hole for pressure equalization
..Lens having spacers
..Having cellular growth inhibitors
..Having structure for blocking
or reducing amount of light
transmitted (e.g., glare reduction, etc.)
6.18 ..Having means on lens to reduce overall dimension of lens for overall dimension of lens for
insertion into small incision
6.19 ...Segmented zones
6.2 ....Segments slide
6.21 ....Segments fold
6.22 .. Including mechanically or electrically activated means on lens to alter focal power of lens (e.g., electromagnet,
material which is ablated by of lens (e.g., electromagnet,
material which is ablated by laser, etc.)
6.23 ..Aspheric lens
6.24 ...Multifocal lens
6.25 ..Fresnel lens
6.26 ..Prismatic lens
....Rotary pump reverses during pumping cycle
.Having connecting means to allow blood flow
. Including electrical power generating means
. Including condition responsive means
.Material characteristic
.Method of teaching use of artificial heart or part thereof
EYE PROSTHESIS (E.G., LENS OR CORNEAL IMPLANT, OR ARTIFICIAL EYE, ETC.)
.Corneal implant
..Corneal ring
. .Having hole
..Lens connected to distinct attachment means
6.17

| 6.27 | ..Lens having regions with different focusing powers (i.e., multifocal) |
| :---: | :---: |
| 6.28 | . Concentric zones |
| 6.29 | .Radial zones |
| 6.3 | . Diffractive multifocal lens |
| 6.31 | ..Diffractive lens |
| 6.32 | . Multiple lens |
| 6.33 | ...Side by side |
| 6.34 | . In series along visual axis |
| 6.35 | ....One lens is external from natural eye cavity |
| 6.36 | ....One lens is natural crystalline lens |
| 6.37 | ..Focal power of lens can be continuously varied by movement of body part (e.g., head, eyes, ciliary muscles, etc.) |
| 6.38 | ..Having supporting structure for lens |
| 6.39 | ...Supporting structure conforms to shape of capsular bag |
| 6.4 | . Surrounding optic |
| 6.41 | ....Separable from intraocular lens |
| 6.42 | ....Filamentary |
| 6.43 | ...Specific supporting structure (e.g., haptic, plate, etc.) |
| 6.44 | Plate |
| 6.45 | ....Having means to temporarily stabilize haptic |
| 6.46 | ..Haptic and optic junction |
| 6.47 | ....Haptic includes notch |
| 6.48 | ....Haptic has different color from optic |
| 6.49 | ....Haptic has particular crosssectional geometry |
| 6.5 | ....Haptic is formed from multiple layers |
| 6.51 | ....Having loop |
| 6.52 | . Four filaments |
| 6.53 | .Three filaments |
| 6.54 | ..Two filaments |
| 6.55 | ..One filament |
| 6.56 | ..Material characteristic of lens |
| 6.57 | ...Lens includes antithrombotic substance |
| 6.58 | ...Lens has specific glass transition temperature |
| 6.59 | ...Lens composed of swellable material |
| 6.6 | ...Lens includes ultraviolet absorber |
| 6.61 | .Lens is collagen based |


| 6.62 | Lens has specific coating |
| :---: | :---: |
| 6.63 | . Retina |
| 6.64 | . Globe |
| 7 | BREAST PROSTHESIS |
| 8 | . Implantable |
| 9 | LARYNX, TRACHEA, TRACHEOBRONCHIAL PROSTHESIS OR COMBINATION THEREOF |
| 10 | EAR OR NOSE PROSTHESIS |
| 11.11 | IMPLANTABLE PROSTHESIS |
| 13.11 | .Ligament or tendon |
| 13.12 | ..For knee |
| 13.13 | ..Including tension adjusting means |
| 13.14 | ..Including ligament anchor means |
| 13.15 | ..Including an outer sheath |
| 13.16 | . . Removable |
| 13.17 | ..Including natural tissue |
| 13.18 | ..Including bio-absorbable material |
| 13.19 | . . In braided form |
| 13.2 | . .Made from plural strands |
| 14.11 | . Vocal cord |
| 14.12 | . Meniscus |
| 14.13 | .Muscle (e.g., sphincter, etc.) |
| 15.11 | . Hair or skin |
| 15.12 | . .Skin |
| 16.11 | . Bone |
| 17.11 | ..Spine bone |
| 17.12 | ...Having a fluid filled chamber |
| 17.13 | ...Having a spring |
| 17.14 | ...Having ball and socket means |
| 17.15 | ...Having opposed bone-plates which moves relative to one another |
| 17.16 | ...Including spinal disc spacer between adjacent spine bones |
| 17.17 | . Jaw bone |
| 17.18 | ..Facial bone |
| 17.19 | ..Skull bone |
| 18.11 | . Joint bone |
| 18.12 | . . With magnet |
| 19.11 | ...Shoulder joint bone |
| 19.12 | ....Ball and socket joint |
| 19.13 | ..Humeral and glenoid bones |
| 19.14 | ....Humeral bone |
| 20.11 | ...Elbow joint bone |
| 20.12 | ....Constrained joint |
| 20.13 | ....Semi-constrained joint |
| 20.14 | ...Knee joint bone |
| 20.15 | .....Modular type |
| 20.16 | ....Including bone augmentative means |


| 20.17 | ....Including in-growth tissue promoting means |
| :---: | :---: |
| 20.18 | Patellar bone |
| 20.19 | .....And a member secured to femoral bone |
| 20.2 | .....Patellar made of two connected pieces |
| 20.21 | ....Having member secured to femoral and tibial bones |
| 20.22 | . Ball and socket joint |
| 20.23 | .. Including roller bearing |
| 20.24 | ..Constrained joint |
| 20.25 | . Including telescoping means |
| 20.26 | ......Including means to permit lateral rocking movement about a horizontal axis |
| 20.27 | .....Including cam means to limit anterior and posterior movement |
| 20.28 | .....Including an intermediate member |
| 20.29 | . Movable |
| 20.3 | . Unicondylar |
| 20.31 | .....Including lateral and medial condyles |
| 20.32 | .Tibial bone |
| 20.33 | .Movable bearing |
| 20.34 | .Tibial stem structure |
| 20.35 | Femoral bone |
| 20.36 | Femoral stem structure |
| 21.11 | ...Wrist, hand (e.g., finger, etc.) |
| 21.12 | .Wrist bone |
| 21.13 | . Ball and socket joint |
| 21.14 | .....Lunate or scaphoid bone |
| 21.15 | ....Finger bone |
| 21.16 | . Ball and socket joint |
| 21.17 | .....Including an intermediate bearing cup |
| 21.18 | .Ankle bone |
| 21.19 | Toe bone |
| 22.11 | ...Hip joint bone |
| 22.12 | ....Combined with surgical tool |
| 22.13 | ....Including lubricating fluid enclosure means |
| 22.14 | . Including a damping element |
| 22.15 | ....Including acetabular cup and femoral head |
| 22.16 | .....Including roller bearing |
| 22.17 | .....Including an intermediate bearing cup |
| 22.18 | ......Intermediate bearing cup movable relative to acetabular outer cup |


| 22.19 | ......Locking element between cups |
| :---: | :---: |
| 22.2 | .......Retaining ring |
| 22.21 | Acetabular cup |
| 22.22 | . Oblong |
| 22.23 | .....Interfitted into a prepared natural acetabulum by force fitting |
| 22.24 | .....And an inner insert liner cup |
| 22.25 | .Adjustable insert liner cup |
| 22.26 | ......One cup includes flexible wall |
| 22.27 | ......Circumferentially threaded acetabular outer cup |
| 22.28 | ......Including locking means between cups |
| 22.29 | .Locking ring |
| 22.3 | .Having flexible wall |
| 22.31 | .....Acetabular cup outer surface is circumferentially threaded |
| 22.32 | .....Acetabular cup outer surface includes integral anchoring means |
| 22.33 | . Mesh outer surface |
| 22.34 | .....Cup includes closure means for closing anchoring hole means |
| 22.35 | .....Cup includes cut-through hole to receive protruding anchoring means |
| 22.36 | ...Screw anchoring means |
| 22.37 | . Pin anchoring means |
| 22.38 | .....Outer surface of cup includes protruding means |
| 22.39 | .....Cup secured to acetabulum by cement |
| 22.4 | ....Total femoral bone (i.e., including joint head and femoral stem) |
| 22.41 | .....Set of plural femoral securement members |
| 22.42 | .. Modular type |
| 22.43 | .....Stem includes protruding means projecting into a bore in joint head |
| 22.44 | ......Bore in neck area of joint head |
| 22.45 | ......Including an intermediate coupler between joint head and protruding means |
| 22.46 | .....Including protruding means projects into a bore in femoral stem or neck |
| 23.11 | ...Femoral joint head |


| 23.12 | al joint head cap |
| :---: | :---: |
| 23.13 | Including an inner shell |
| 23.14 | ......Including neck anchoring means |
| 23.15 | .Femoral stem |
| 23.16 | .Having electrical means |
| 23.17 | Having shock absorbing |
| 23.18 | .Multi-stem |
| 23.19 | .Having a cement channel |
| 23.2 | And cement seal means |
| 23.21 | .Having a collar |
| 23.22 | Removable collar |
| 23.23 | .Having intramedullary |
| 23.24 | .Having a stepped surface |
| 23.25 | .Having integral spacer |
| 23.26 | .....Having anchoring means to attach artificial femoral stem to natural femoral bone |
| 23.27 | .Screw anchoring means |
| 23.28 | .Having augmentative means |
| 23.29 | .....Having textured outer surface |
| 23.3 | orous |
| 23.31 | . Ridges |
| 23.32 | .Having variable stiffness |
| 23.33 | .Hollowed stem |
| 23.34 | . Composite stem |
| 23.35 | .Having particular geometry |
| 23.36 | .....Coating surface |
| 23.37 | ......Cement coating |
| 23.38 | olished |
| 23.39 | ...Total joint bone (i.e., including two connected joint bones) |
| 23.4 | . Ball and socket joint |
| 23.41 | ....Including intermediate elastic joint component connecting two joint bones |
| 23.42 | Joint head bone |
| 23.43 | . . Cup-shaped |
| 23.44 | Stem structure |
| 23.45 | ....Adjustable length |
| 23.46 | ....Including sleeve around stem member |
| 23.47 | . .Adjustable |
| 23.48 | ..Cement bone plug or bone canal positioning means |
| 23.49 | ..Including electrical means to induce bone growth |
| 23.5 | ..Having textured outer surface |
| 23.51 | . Composite bone |
| 23.52 | ..Including an outer sheath |
| 23.53 | . Made of metal |
| 23.54 | Wire mesh |

23.55 ...Having porous outer surface
23.56 ..Ceramic
23.57 ..Including bioactive coating
23.58 ..Polymers
23.59 ...Polymer coating
23.6 ..Bone surface coating
23.61 ..Bone composition
23.62 ...Cement
23.63 ...Including natural bone tissue
23.64 .Hollow or tubular part or organ
(e.g., bladder, urethra,
bronchi, bile duct, etc.)
23.65 ..Bladder, kidney, lung, or
stomach
23.66 ..Urethra
23.67 ..Inflatable
23.68 ..Including a valve
23.69 ..Helical
23.7 ..Stent
23.71 ..Material characteristic
23.72 .Tissue
23.73 ..Having micro particles
23.74 ..Having textured surface
23.75 .Having bio-absorbable component
23.76 .Having means to promote cellular
attachment
HAVING ELECTRICAL ACTUATOR
.Bioelectrical (e.g.,
myoelectric, etc.)
HAVING FLUID ACTUATOR
LEG
.Extension
. .Foot covering or support
.Torso actuated or controlled
.Torso attachment
.Suspender or attachment from
natural leg
. Socket holder
. .Suction type
..Yieldably mounted
..Cushioning means (e.g., pad or
liner, etc.)
...Fluid
.Adjustable shank or thigh
. Knee
..Combined knee and foot actuator
...Latch
...Spring
..Brake or latch
...Weight or position responsive
...Adjustable friction joint
. . Spring
.Ankle
..Universal joint

| 23.55 | Having porous outer surface |
| :---: | :---: |
| 23.56 | Ceramic |
| 23.57 | ..Including bioactive coating |
| 23.58 | . .Polymers |
| 23.59 | ...Polymer coating |
| 23.6 | ..Bone surface coating |
| 23.61 | . Bone composition |
| 23.62 | Cement |
| 23.63 | ...Including natural bone tissue |
| 23.64 | .Hollow or tubular part or organ (e.g., bladder, urethra, bronchi, bile duct, etc.) |
| 23.65 | ..Bladder, kidney, lung, or stomach |
| 23.66 | Urethra |
| 23.67 | ..Inflatable |
| 23.68 | ..Including a valve |
| 23.69 | ..Helical |
| 23.7 | . .Stent |
| 23.71 | ..Material characteristic |
| 23.72 | .Tissue |
| 23.73 | ..Having micro particles |
| 23.74 | ..Having textured surface |
| 23.75 | .Having bio-absorbable component |
| 23.76 | .Having means to promote cellular attachment |
| 24 | HAVING ELECTRICAL ACTUATOR |
| 25 | .Bioelectrical (e.g., myoelectric, etc.) |
| 26 | HAVING FLUID ACTUATOR |
| 27 | LEG |
| 28 | . Extension |
| 29 | ..Foot covering or support |
| 30 | .Torso actuated or controlled |
| 31 | .Torso attachment |
| 32 | . Suspender or attachment from natural leg |
| 33 | . Socket holder |
| 34 | . . Suction type |
| 35 | . Yieldably mounted |
| 36 | ..Cushioning means (e.g., pad or liner, etc.) |
| 37 | ...Fluid |
| 38 | .Adjustable shank or thigh |
| 39 | . Knee |
| 40 | ..Combined knee and foot actuator |
| 41 | . Latch |
| 42 | ... Spring |
| 43 | ..Brake or latch |
| 44 | ...Weight or position responsive |
| 45 | ...Adjustable friction joint |
| 46 | . . Spring |
| 47 | . Ankle |
| 48 | . Universal joint |


| 49 | . Resilient |
| :---: | :---: |
| 50 | ..Resiliently actuated or controlled |
| 51 | ..Elastic cord |
| 52 | . . Spring |
| 53 | . Foot |
| 54 | . .Toe |
| 55 | . Resilient |
| 56 | ...Fluid cushion |
| 57 | ARM OR COMPONENT (E.G., ELBOW, WRIST, HAND, FINGER, ETC.) AND ACTUATOR OR CONNECTOR THEREFOR |
| 58 | .Torso supported and actuated |
| 59 | . Elibow |
| 60 | ..With forearm actuation |
| 61 | .Wrist |
| 62 | . With wrist actuation |
| 63 | .Arm or torso initiated finger actuation |
| 64 | .Finger actuator embodied in simulated hand |
| 65 | .With article or article holder |
| 66.1 | MISCELLANEOUS |

## CROSS-REFERENCE ART COLLECTIONS

| 900 | StENT FOR HEART VALVE |
| :---: | :---: |
| 901 | METHOD OF MANUFACTURING PROSTHETIC DEVICE |
| 902 | METHOD OF IMPLANTING |
| 903 | . Blood vessel |
| 904 | . Heart |
| 905 | . Eye |
| 906 | . Corneal |
| 907 | . Method of manipulating parts of intraocular lens structure for implantation |
| 908 | . Bone |
| 909 | METHOD OR APPARATUS FOR ASSEMBLING PROSTHETIC |
| 910 | . Heart |
| 911 | . Bone |
| 912 | METHOD OR APPARATUS FOR MEASURING OR TESTING PROSTHETIC |
| 913 | . Heart |
| 914 | . Bone |
| 915 | METHOD OR APPARATUS FOR PREPARING BIOLOGICAL MATERIAL |
| 916 | . Blood vessel |
| 917 | . Collagen |
| 918 | . Heart |
| 919 | Bone |

METHOD OR APPARATUS FOR PREPARING OR TREATING PROSTHETIC<br>.Blood vessel<br>.Heart<br>. Bone<br>MATERIAL CHARACTERISTIC<br>.Natural<br>.Synthetic

## FOREIGN ART COLLECTIONS

FOR 000 CLASS-RELATED FOREIGN DOCUMENTS
Any foreign patents or non-patent literature from subclasses that have been reclassified have been transferred directly to FOR Collections listed below. These Collections contain ONLY foreign patents or non-patent literature. The parenthetical references in the Collection titles refer to the abolished subclasses from which these Collections were derived.

FOR 100 ARTERIAL PROSTHESIS (E.G., BLOOD VESSEL, ETC.) (623/1)
FOR 101 HEART VALVE (623/2)
FOR 102 CORPOREAL ARTIFICIAL HEART, HEART ASSIST (E.G., IMPLANTABLE BLOOD PUMP, ETC.), CONTROL REGULATOR, OR POWER SUPPLY THEREFOR, OR METHOD OF OPERATION THEREFOR (623/3)
FOR 103 EYE PROSTHESIS (E.G., LENS OR CORNEAL IMPLANT, OR ARTIFICIAL EYE, ETC.) (623/4)
FOR 104 . Corneal implant (623/5)
FOR 105 .Intraocular lens (623/6)
FOR 106 MISCELLANEOUS (623/66)
FOR 107 IMPLANTABLE PROSTHESIS (623/11)
FOR 108 . Hollow or tubular part or organ (e.g., bladder, urether, bronchi, bile duct, etc.) (623/12)
FOR 109 .Ligament or tendon (623/13)
FOR 110 .Muscle (e.g., sphincter, etc.) (623/14)
FOR 111 .Hair or skin (623/15)
FOR 112 . Bone prosthesis (623/16)
FOR 113 ..Spinal column (e.g., vertebra, spinal disc, etc.) (623/17)
FOR 114 ..Joint (623/18)

FOR 115 ...Shoulder (623/19)
FOR 116 ...Elbow or knee (623/20)
FOR 117 ...Wrist, hand (e.g., finger, etc.), ankle or foot (e.g., toe, etc.) (623/21)
FOR 118 ...Hip (623/22)
FOR 119 ....Femoral head (623/23)

