RECENT PATENTS[a]

Artificial Leg with Stable Link-Type Knee Joint: Denis Ronald William May, assignor to .E. Hanger and Company Limited, London, England. An artificial knee joint comprised of two parts of links joining a stump socket portion to a shin portion in such a manner as to mpart stability to the joint over initial flexure from the upright, such stability being derived from an initial rise in the effective center of rotation. (Patent No. 3,823,424, July 16, 1974; filed Feb. 28, 1973, Appl. No. 336,759; 3 claims.)

Auxiliary Ski for Physically Handicapped Persons: Takafusi Negi, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan. An auxiliary ski, omprising a ski runner with a through hole, a pair of guide plate members erected from a ki runner, and a pole rotatably supported between the guide plate members. Each guide plate has a pair of pole locking slots formed at two different positions in a lengthwise lirection of the pole, and a guiding slot connecting the pair of pole locking slots. The pole s lockable at one of the pole locking slots and is movable, along the guiding slot, in its engthwise direction with respect to the ski runner, and further lockable at the other of the pole locking slots. The lowermost tip of the pole can either be retained in the through hole of the ski runner or be protruded through the hole down to below the ski runner. (Patent No. 3,868,122, Feb. 25, 1975; filed June 21, 1973; Appl. No. 372,179; 10 claims.)

Constant Current Power Pack for Bone Healing and Method of Use: Carl T. Brighton, Zachary B. Friedenberg, and William Redka, assignors to the United States of America as represented by the Secretary of the Navy, Washington, D.C. Bone fracture healing through use of direct current of from 50 to 20 microamperes applied between a cathode nserted into a fracture site and an anode taped to the skin near the cathode implantation ite. A power source is also provided. (Patent No. 3,842,841, Oct. 22, 1974; filed Oct. 29, 1971, Appl. No. 193,728; 13 claims.)

Implantable Electromagnetic Hearing Aid: John M. Fredrickson. Problems of conventional hearing aids (low fidelity, poor frequency response, and feedback) and of hearing aids employing implanted piezoelectric elements (high power requirements and microtrauma) are eliminated or attenuated by implanting a coil and magnet in the ear after removal of the incus. The magnet is fastened to the head of the stapes and the coil is energized by electrical signals from a sound transducer producing a magnetic field which, nteracting with the magnetic field of the magnet, causes movement of the stapes in the same manner as it normally is moved by the incus. (Patent No. 3,870, 832, Mar. 11, 1975; filed July 29, 1974, Appl. No. 492,675; 10 claims.)

Knee Brace: Robert R. Moore. A device for bracing and restraining the knee against normal knee flexion or lateral movement. The device wraps around the leg and is provided with an opening through which the patella may extend. Opposite the opening is

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[a]Patents may be ordered by number from the Commissioner of Patents, Washington, D.C. 20231, at 50¢ each.

a resilient pad contacting the popliteal area of the knee. Rearward of the pad are rigid, longitudinally extending bracing elements, and additional parallel elements are provided adjacent the patellar opening to prevent lateral movement. (Patent No. 3,831,467, Aug 27, 1974; filed Mar. 16, 1973, Appl. No. 342, 163; 10 claims.)

Lower Limb Prosthesis: Ivan A. Long and Richard L. Long. An artificial lower limb prosthesis designed in such a way that the knee joint will release from the straight leg position to a flexing position. The most desirable point of release is when the body moves forward of the artificial foot and the pressure of his weight upon the artificial foot shifts to the toe position. The invention comprises a thigh section, a flexible knee joint, and a shin section. The shin section includes a naturally appearing foot. (Patent No. 3,820,169, June 28, 1974; filed June 2, 1972, Appl. No. 258,949; 10 claims.)

Pneumatic Apparatus for Holding the Posture of Paralyzed, Diseased, Disabled or Wounded Persons: George Morel, assignor to Aerazur Constructions Aeronautiques Issy-Les-Moulineaux, France. The apparatus comprises essentially a pair of trousers of lightweight and high-resistance material, retained on the wearer's body by suspenders belts, trouser-straps, etc., and is provided with zip fasteners and is adjustable by means of lacings. Within the trousers are incorporated flexible inflatable tubes, which when inflated provide the necessary rigidity to hold the body in a proper posture or position. (Patent No 3,823,712, July 16, 1974; filed July 3, 1973, Appl. No. 376,216; 12 claims.)

Reading Aid for the Blind: Hans A. Mauch, Glendon C. Smith, and Richard Bennett assignors to the United States of America as represented by the Veterans Administration of the United States Government, Washington, D.C. A reading aid characterized by a simple means of converting print into distinctive tonal patterns facilitating a relatively speedy and accurate identification by the ears of a blind person. Embodiments feature a unique arrangement for the stereophonic transmission of sound, facilitating the conditioning of a user's ears to distinguish what might ordinarily be difficult to distinguish (Patent No. 3,874,097, April 1, 1975; filed Jan. 8, 1973, Appl. No. 321,851; 27 claims.)

Reading Machine Employing a Two-Dimensional Multiple Snapshot Process: Hans A Mauch and Glendon Smith, assignors to the United States of America as represented by the Veterans Administration, Washington, D.C. Apparatus for scanning and translating objects and their images into identifying signals characterized by an image receiving surface including a plurality of photocells arranged in adjacent vertical columns. Means are included to provide that the snapshots taken of the image in one direction are electrically stored and the stored representatives are subjected to an electrical scanning in different direction. This is done in a manner to reduce the stored representation of the image to the most definitive portions enabling greater accuracy in the read-out of the image scanned through conventional signaling means. (Patent No. 3,827,025, July 30 1974; filed Aug. 10, 1971, Appl. No. 170,551; 20 claims.)

Saddle Stirrup for Use by a Leg Amputee: Douglas H. Dabney. Saddle stirrups for use by horseback rider who has had one or both legs amputated. Each stirrup includes a cup the configuration of a hollow, open topped, circular cone. A pair of buckles on the cone mate with a pair of straps which attach to a saddle. The buckles and straps permit adjustment of the length and of the angle of the stirrup cup to suit the rider's need (Patent No. 3,812,650, May 28, 1974; filed May 21, 1973, Appl. No. 362,452; 16 claims.

Shoulder Disarticulation Prosthetic Systems: Woodrow Seamone and Gerhard Schmeser, assignors to the United States of America as represented by the Secretary of the Navy Washington, D.C. An externally powered prosthesis with proportional control provide

by a displacement sensor comprised of a movable magnet and a stationary semiconductor element which responds to changes in magnetic field strength. The movable magnet is displaced by the transverse motion of the amputee's skin which produces a signal in the semiconductor element which is proportional to the skin motion. Control of the prosthesis is accomplished by amplification and utilization of the signal to drive and electric motor, powered by an external battery. (Patent No. 3,866,246; Feb. 18, 1975, filed Nov. 14, 1972, Appl. No. 306,480; 7 claims.)

Stair Climbing Tracked Vehicle: Howard Jensen, assignor to Ramby, Inc., Bronxville, N.Y.. A wheelchair-like stair-climbing vehicle which has a pair of main tracks and a pair of auxiliary tracks hinged in front, an automatic (partly and preferably hydraulic) pitch control mechanism controlling the rate of relative rotation between the main and auxiliary tracks, and a self-leveling seat. (Patent No. 3,869,011, Mar. 4, 1975; filed Jan. 2, 1973, Appl. No. 320,115; 14 claims.)

Support Means for the Even Distribution of Body Pressure: Eric Flam, assignor to Johnson and Johnson, New Brunswick, N.J. A mattress is provided having a gradation of its compression modulus so that the weight of a person is distributed uniformly. Intersecting cut scores extend partially into the mattress and at their intersections provide upstanding columnar tufts. The surface area of the columnar tufts and the variance of the depth of the cut scores reduces the pressure on body surfaces not only to below that which would occlude arteries, but on some surfaces to below the value determined to occlude capillaries. The mattress is especially useful for patients susceptible to decubitus ulcers. (Patent No. 3,828,378, Aug. 13, 1974; filed July 31, 1972, Appl. No. 276,506; 6 claims.)

System for Operating a Prosthetic Limb: Eduard Horvath, assignor to Firma Otto Bock Orthopadische Industrie KG, Duderstadt, Germany. A servomotor for moving a prosthetic limb is actuated by a controller which responds to local variations in muscular rigidity as determined by one or more pressure sensors bearing upon the flesh of the wearer within an annular frame contacting an area of his body. The frame may be resiliently supported in a cutout of a rigid sleeve by one or more springs urging it into contact with an underlying stump. The contacts of the sensor form part of an electromagnetic vibrator whose oscillations, felt by the user, are modulated by a feedback signal controlled by the position or the speed of the prosthetic limb. (Patent No. 3,820,168; June 28, 1974, filed Sept. 11, 1972, Appl. No. 288,093; 8 claims.)

Wheel Chair: Paul F. Curry. A wheelchair having a front wheel assembly which includes two casters supported on a swinging frame. If the front wheel assembly starts to go over the edge of a step, the frame swings as one caster goes over the step while the other caster is supported on the step. Tilting of the frame operates a brake to stop the advance of the wheelchair. (Patent No. 3,827,718, Aug. 6, 1974; filed May 30, 1973, Appl. No. 365,124; 5 claims.)