

## RECENT PATENTS <sup>a</sup>

**Aid for Blind Switchboard Attendant:** Robert F. Schuyler, assignor to Bell Telephone Laboratories, Inc., a corporation of New York. A manual switchboard for use by a blind attendant. It contains audio generators for generating distinctly different tones which are responsive to incoming calls. Each tone corresponds to a different row on the switchboard, and these tones are received in a headset which is used by the attendant. (Patent No. 3,234,337, Feb. 8, 1966; filed July 20, 1962, Serial No. 211,272; 5 claims.)

**Abdominal Belt:** Wendolyn F. Gakle. An abdominal belt designed with a plurality of individual, adjustable straps or bands that encircle the body to enable desired compressibility of the body member. The belt is made of a resilient material and is easily adjustable by bands in front of the garment. (Patent No. 3,213, 856, Oct. 26, 1965; filed May 9, 1963, Serial No. 279,240; 3 claims.)

**Apparatus for Transferring Invalids:** Frederick Albert Batty and Peter Lawrence Batty. A wheeled chair which facilitates the movement of an invalid from place to place such as from a bed and a bathtub. (Patent No. 3,220,575, Nov. 30, 1965; filed Sept. 6, 1963, Serial No. 307,150; claims, priority, application Great Britain, Sept. 6, 1962, 34,143/62; 6 claims.)

**Arm Slings:** Charles H. Groesbeck. An easily removable sling that suspends from the shoulder. It can be adjusted easily for different physical sizes and positions; does not soil or require laundering as does a cloth sling. The inventor claims it is inexpensive to manufacture, convenient and dependable in operation, and capable of performing properly after long periods of operation. (Patent No. 3,215,158, Nov. 2, 1965; filed Oct. 31, 1962, Serial No. 234,459; 2 claims.)

**Audiometric Headset:** Willard B. Hargrave. An audiometric headset which can be used in making tests in the presence of ambient noise without resorting to a sound-proof booth. The sound producing apparatus resides within the dome in an interfitted and replaceable manner without need for securing devices separate from the members themselves. (Patent No. 3,220,505, Nov. 30, 1965; filed Apr. 1, 1964, Serial No. 356,676; 7 claims.)

**Cervical Collar:** Nicholas C. Connelly, assignor to S. H. Camp & Company, a corporation of Michigan. A cervical collar that is supposed to provide improved head support and greater stability than previously obtained with existing collar constructions. It is also designed to prevent "rocking" of the collar related to the patient's shoulder and neck which permits considerable head movement. (Patent No. 3,220,406, Nov. 30, 1965; filed Dec. 17, 1962, Serial No. 245,155; 9 claims.)

**Chair for Non-Ambulatory Persons:** Charles R. Bockus. Having a number of adjustable parts to render it more comfortable, this chair can be converted from a wheelchair to a comfort chair. The seat includes an upright post to prevent the patient from sliding off. The chair is adjustable for people who are either very short or very tall. The back is adjustable at top and bottom and can be moved forward or back as well

<sup>a</sup> Patents may be ordered by number from the Commissioner of Patents, Washington, D. C. 20231, at 50 cents each.

## Bulletin of Prosthetics Research – Spring 1966

as tilted in various angles. The armrests and footrests are also movable and may be adjusted to suit the patient's requirements. (Patent No. 3,216,738, Nov. 9, 1965; filed May 1, 1963, Serial No. 277,316; 6 claims.)

**Electrical Hearing Aid:** Jacob de Groot and Johannes Matheus Gerardus Maria Kaanders, assignors to North American Philips Company, Inc., a corporation of Delaware. A hearing aid to be carried behind the ear housing a receiver on supporting brackets and a microphone, a battery housing, and an amplifier on a chassis plate located in the housing. The battery housing and the two supporting brackets with the chassis plate are structurally integral with each other. A switch is provided which occupies very little space in the hearing aid housing. (Patent No. 3,221,111, Nov. 30, 1965; filed Nov. 23, 1962, Serial No. 239,597; claims priority, application Germany, Dec. 16, 1961, N 13,260, N 13,261; 3 claims.)

**Crutches:** Mogens H. Kiehn, assignor to Kiehn Products Company, a corporation of Illinois. A crutch construction to be used as a walking aid for handicapped or disabled individuals. This crutch employs devices for support of the torso as well as the support obtained from the armpits. The crutch is simple in design and according to the inventor, inexpensive to produce. (Patent No. 3,213,870, Oct. 26, 1965; filed Feb. 21, 1963, Serial No. 260,234; 4 claims.)

**Electrical Hearing Aid:** Werner Güttner, Clemens Starke, and Franz Sapara, assignors to Siemens-Reiniger-Werke Aktiengesellschaft, a corporation of Germany. An electrical hearing aid to be worn in the back of the ear comprising a housing containing the microphone, amplifier with regulating elements, battery, and receiver. It has a hook-shaped carrier portion, free of electrical components, connected with the housing and attachable to the upper part of the auricle. (Patent No. 3,209,080, Sept. 28, 1965; filed June 29, 1961, Serial No. 120,640; claims priority, application Germany, May 12, 1961, S 73,924; 7 claims.)

**Hand-Operated Extension for Pedal Type Controls for Automotive Vehicle:** Paul V. Malloy. A hand-operated control device for operating the pedal-like control of an automotive vehicle. An elongated member is attached to the control pedal at one end and contains an attachment device at the other end adapted to be grasped along with the steering wheel. (Patent No. 3,226,997, Jan. 4, 1966; filed May 3, 1965, Serial No. 452,784; 20 claims.)

**Hearing Aid:** Stuart G. McCarrell and Harry A. Wayne, assignors to Beltone Electronics Corp., a corporation of Illinois. An improved hearing aid completely contained in a composite unitary structure that is to be worn in the external ear of the user. The microphone and receiver of the assembly are positioned relatively close to one another, enabling greater miniaturization, but are acoustically isolated from each other for maximum gain and power free from acoustical and vibratory feedback. (Patent No. 3,209,082, Sept. 28, 1965; original application May 27, 1957, Serial No. 661,628, now Patent No. 3,061,689, dated Oct. 30, 1962. Divided and this application Aug. 16, 1962, Serial No. 198,694; 1 claim.)

**Hyperextension Back Brace:** Nicholas C. Connelly, assignor to S. H. Camp & Company, a corporation of Michigan. A brace employing side pieces which anchor in the trochanteric region and support a padded rigid pelvic band that widely spreads the pressures applied to the pelvic region across the lower torso and pelvic basin. The inventor states that the improved distribution of pressures produced by the brace results in greater comfort to the patient without sacrificing needed support. (Patent No. 3,220,407, Nov. 30, 1965; filed Oct. 8, 1962, Serial No. 229,039; 1 claim.)

**Invalid Elevator:** William M. Booth, assignor to Welded Products, Inc., a corporation of Michigan. Consists of a frame with vertically positioned parallelogram supports

connected to the frame, a platform suspended between the parallelogram supports and a power drive means to raise and lower the platform. (Patent No. 3,229,788, Jan. 18, 1966; filed June 25, 1963, Serial No. 290,429; 9 claims.)

**Invalid Chair:** Floyd B. Wamsley, assignor to Helen E. Beart. A chair to be used as a wheelchair in association with a bed and a toilet. It is compact and readily manipulated within the confines of dwellings or hospitals. (Patent No. 3,215,469, Nov. 2, 1965; filed Mar. 5, 1962, Serial No. 177,570; 6 claims.)

**Invalid Lift:** Victor R. Hildemann, assignor to Ted Hoyer & Company, Inc., a corporation of Wisconsin. An invalid lift that is small, lightweight, and when not in use can be folded for easy transportation in the rear seat or trunk of a car. The lift can be adjusted while supporting the patient to allow the attendant to guide it through narrow doorways and passageways. (Patent No. 3,222,029, Dec. 7, 1965; filed Jan. 20, 1964, Serial No. 338,909; 6 claims.)

**Method and Apparatus for Testing Hearing:** Arnold Phillip Towne, assignor by mesne assignments of one-third each to E. J. Mosher and M. P. Sullivan of Houston and Harry J. Mosser of Alice, Texas. A testing apparatus that provides an objective hearing test that will test sensation, frequency, and perception simultaneously. At the same time, it tests the coordinated hearing of both ears of a subject, and as well each ear independently of each other. (Patent No. 3,221,100, Nov. 30, 1965; continuation of application Serial No. 38,964, June 27, 1960. This application July 17, 1964, Serial No. 384,577; 24 claims.)

**Method for Adhesively Securing Together Skin and Other Soft Tissue and Bone:** Milton C. Cobey, assignor to the President and Directors of Georgetown University, Washington, D.C. A method of adhesively securing severed tissue together, such as bone, cartilage, tendon, and soft tissue, by providing an adhesive composition which can set rapidly in the presence of moisture after coating upon or injection into the site of the damaged tissue. (Patent No. 3,223,083, Dec. 14, 1965; filed Sept. 9, 1960, Serial No. 54,914; 6 claims.)

**Multipurpose Invalid Chair:** Mattie P. Hubbard. A chair constructed and arranged to provide compactness and convenience. It is made with an upholstered seat cushion which serves to cover and conceal a commode opening. In addition to offering restroom facilities, it includes a detachable and swingable tray which can be used for eating or writing. Also, the chair has a rack for a towel or washcloth, and a handlebar on the back for pushing. The cabinet-type base of the chair contains side cabinets for storage of soap, toothpaste, medicine, toilet tissue, etc. At the bottom, there is a projectable and retractable slide that can be used as a footrest. (Patent No. 3,213,467, Oct. 26, 1965; filed Nov. 26, 1962, Serial No. 240,036; 2 claims.)

**Orthopedic Apparatus Having an Improved Joint Construction:** Candido Reyes, Madrid, Spain. A long-leg brace with joint construction of a new design. (Patent No. 3,230,952, Jan. 25, 1966; filed Mar. 5, 1963, Serial No. 262,932; claims priority, application Spain, Mar. 8, 1962, 275,299; 8 claims.)

**Orthopedic Cervical Brace:** Robert C. Blair, Jr. A rather simple and low cost cervical brace that can be easily adjusted and fitted to a patient without requiring the services of an expert fitter. The major components are readily removable for laundering and easily assembled again. Considerable flexibility of adjustment for fitting a variety of patients with different angular positions of the head is another feature of this brace. (Patent No. 3,224,439, Dec. 21, 1965; filed Mar. 28, 1963, Serial No. 268,621; 7 claims.)

## Bulletin of Prosthetics Research – Spring 1966

**Reading Aid for the Blind:** John G. Linvill. An apparatus for converting an optical image to a vibratory image which may be sensed tactually. It consists of a plurality of separate piezoelectric vibratory reeds disposed in an array and means for vibrating each reed with an amplitude representative of the light from a different region of the image. (Patent No. 3,229,387, Jan. 18, 1966; filed Jan. 14, 1964, Serial No. 337,618; 8 claims.)

**Safety Crutch:** Richard J. Frank. An arm embracing cane-type crutch with rigid cuffs that encircle the forearm securely. The cuffs are releasable when desired. The inventor also states that structural failure of the crutch is unlikely because all the parts are so related and secured so as to prevent such failure regardless of weight of patient or how crutch is used. (Patent No. 3,213,869, Oct. 26, 1965; filed Feb. 27, 1964, Serial No. 347,922; 1 claim.)

**Self-Feeding, Mouth-Controlled Eating Device:** Antal Gratzler. An eating device for people whose hands and arms are impaired. It consists of a horizontally disposed rotatable tray with means for holding variable eating dish combinations. It is used for mouth-controlled, self feeding. (Patent No. 3,228,536, Jan. 11, 1966; filed Nov. 1, 1963, Serial No. 320,743; 8 claims.)

**Stair Climbing Chair:** Robert C. Grier, Jr. A wheelchair capable of being adapted to ascend and descend ordinary stairways without the use of special equipment. During ascent or descent, the chair is controlled by the occupant. (Patent No. 3,226,128, Dec. 28, 1965; filed Sept. 9, 1963, Serial No. 307,430; 3 claims.)

**Stair Climbing Invalid Carriages:** Richard Appenrodt, Benefeld, Germany. A carriage comprising a chair, endless tracks on each side of the chair with track guiding wheels, and an electrical control circuit for operation of guiding wheels. (Patent No. 3,231,036, Jan. 25, 1966; filed May 11, 1962, Serial No. 194,136, Claims priority, application Germany, May 15, 1961, A 37,437; 14 claims.)

**Stair Climbing Wheel Chair:** Harold L. Kemm. A chair controlled and propelled solely by the occupant and adapted to ascend and descend, without an attendant, stairs and similar obstructions. Propulsion may also be obtained by self-contained power units such as battery-powered motors. Varying stair dimensions, with automatic compensation for such dimensions, can be negotiated by this chair according to the inventor. Also, the chair is said to be lightweight, economical to manufacture, adaptable to a folding construction, and easily transported. (Patent No. 3,214,184, Oct. 26, 1965; filed Sept. 26, 1963, Serial No. 311,694; 9 claims.)

**Stair-Climbing Wheel Chair:** Philip E. Massie. A foldable, occupant driven, stair-climbing wheelchair that turns on stair landings. It contains controls for changing the angle of the chair, a drive wheel on each side to support the rear of the chair, a retractable stair traction means on each side for engaging steps, etc. (Patent No. 3,227,465, Jan. 4, 1966; filed Dec. 28, 1962, Serial No. 248,104; 21 claims.)

**Stair-Climbing Wheel Chair:** James D. Thackery. A wheelchair adapted to be manipulated by the occupant up a flight of stair treads or over curbs. (Patent No. 3,215,446, Nov. 2, 1965; filed Aug. 9, 1963, Serial No. 301,026; 6 claims.)

**Vehicle and Deformable Wheel Therefor:** Robert W. McKinley. A single passenger vehicle capable of negotiating a series of steps as well as performing with ease and efficiency on flat surfaces. The chair can be manually operated, controlled, and propelled but allows for the economical inclusion of powered propulsion and control means. Also, this chair retains all the desirable structural and operating characteristics of conventional wheelchairs, such as light weight, collapsibility, carrying capacity, etc. (Patent No. 3,226,129, Dec. 28, 1965; filed Nov. 4, 1963, Serial No. 321,006; 7 claims.)

## Recent Patents

**Wheel Chair Attachments:** Ernest C. Loustaunau. Removable attachments for a wheelchair frame having a side wheel and open upward attachment sockets for mounting armrests, etc. Consists of a combination armrest and wheelguard assembly, and various other attachments. (Patent No. 3,231,293, Jan. 25, 1966; filed June 1, 1964, Serial No. 371,525; 7 claims.)

**Wheel Chair for Regular and Irregular Surface Travel:** Paul P. Weyer. A wheelchair for traveling over regular or irregular surfaces by alternating running gears depending on the surface encountered. It is also foldable. (Patent No. 3,231,290, Jan. 25, 1966; filed Dec. 31, 1962, Serial No. 248,738; 3 claims.)