

Jan. 19, 1926.

1,570,307

C. E. KIRBY

KINESITHERAPY APPARATUS

Filed July 3, 1924

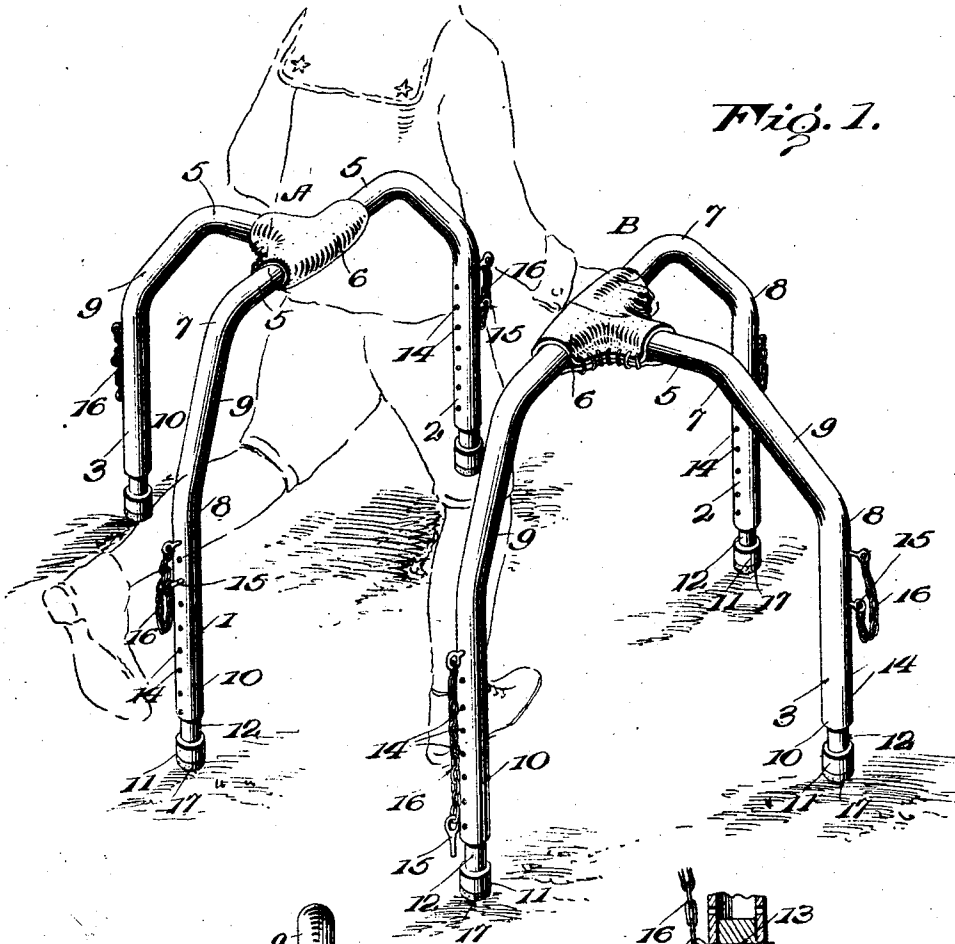


Fig. 1.

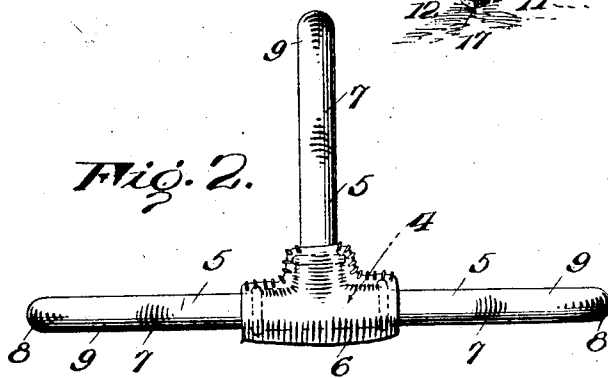


Fig. 2.

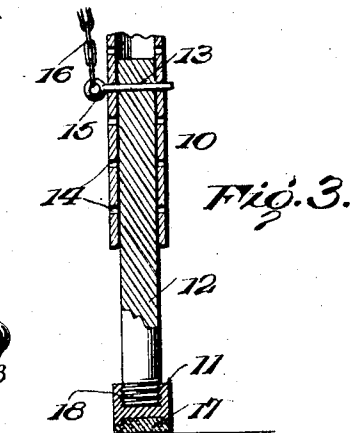


Fig. 3.

INVENTOR
Clarence E. Kirby.

BY
James B. Michael
ATTORNEY

UNITED STATES PATENT OFFICE.

CLARENCE E. KIRBY, OF CHESTERTOWN, MARYLAND, ASSIGNOR OF ONE-HALF TO
CHARLES J. BUTLER, OF EASTON, MARYLAND.

KINESITHERAPY APPARATUS.

Application filed July 3, 1924. Serial No. 724,097.

To all whom it may concern:

Be it known that I, CLARENCE E. KIRBY, a citizen of the United States, residing at Chestertown, in the county of Kent and State of Maryland, have invented certain new and useful Improvements in Kinesitherapy Apparatus, of which the following is a specification.

This invention is a kinesitherapy apparatus and relates more particularly to an apparatus of this type designed for the treatment of children afflicted with infantile paralysis.

It has been found in the treatment of children whose lower limbs have become paralyzed to a greater or lesser extent by this disease, that they respond most quickly to methods of treatment directed to inducing vigorous circulation in the members afflicted and to those methods employing such aids as are necessary for the child to use the afflicted limbs in as normal a manner as the paralytic condition thereof will permit.

With these observations in view the invention contemplates first, the provision of means whereby one afflicted with infantile paralysis or similar ailment may, without the aid of professional assistance, exercise the afflicted limbs so as to induce a vigorous circulation therein and to thereby keep said limbs in a healthful and receptive state for the treatment; and second, the provision of an apparatus of the type indicated which shall be light and portable and as such, may be used by the person afflicted as a crutch or support by which he is enabled to exercise the afflicted lower limbs in a normal manner, and this, without the use of the cumbersome and awkward braces and straps usually employed in such devices.

The invention consists of certain combinations of parts and details of construction which are fully described in the following specification and one embodiment of which is illustrated in the accompanying drawings, in which

Figure 1 is a perspective view of the apparatus in use.

Figure 2 is a plan view of one of the supporting members.

Figure 3 is a detailed view in section, showing one of the adjustable legs of the supports.

Referring to the drawings more in detail, the apparatus consists of a pair of substantially identical crutch members indicated generally at A and B. These members are essentially three-legged portable supports and are preferably made of light, metal tubing. The legs 1, 2 and 3 of each of the members A and B, are united by a common T-fitting 4, as shown in Figure 2, said legs being attached thereto by the usual cooperating screw threads, or in any other suitable manner. As shown in Figure 1, the legs adjacent to their point of attachment to the T-fitting 4 are formed with substantially horizontal sections 5, said sections together defining a substantially horizontal plane.

A suitable protecting sleeve 6 of leather or other suitable material encases the T-fitting 4, whereby to protect the clothing and person of the child from injurious contact with said fitting while using the apparatus, and furthermore, to provide a suitable gripping surface for the hands of the user.

The legs 1, 2 and 3, beyond the horizontal section 5, are bent at a plurality of points 7 and 8 to form downwardly inclined sections 9 and vertically disposed terminal portions 10. The legs of each of the members A and B are of a height such that the hand-grips 6 coincide substantially with the position of the hands of the user when they hang freely at the sides. The legs 1 and 2 are attached to the aligned ports of the T-fitting 4, while the legs 3 are attached to the lateral port of the fitting and function as integral braces serving to maintain the supporting members A and B in a position such that the legs 1 and 2 thereof define planes substantially perpendicular to the ground. By this arrangement it is apparent that when the apparatus is being used in the manner shown in Figure 1, and as will be fully hereinafter described, the normal forces exerted upon the supports are downwardly and outwardly so that the supports remain firm and unshaken in spite of the vigorous exercises of

the user, thus substantially precluding the possibility of the collapse or overturning of the supports it being noted in this connection that all possibility of interference between the legs of the user and those of the supports is precluded by arranging the legs 1 and 2 in substantially vertical planes.

Each of the legs 1, 2 and 3 is provided with a suitable foot 11, said feet being mounted on the end of posts 12, which are telescopically mounted within the vertical terminal portions 10 of the legs. In order to adjust the members A and B vertically so as to adapt the apparatus to the use of children of different ages, the posts 12 may be provided with transverse bores 13 adjacent to the upper and inner end thereof. These bores are designed to cooperate with series of longitudinally distributed and transversely aligned apertures 14 in the vertical portions 10 of the legs. The foot posts 12 are retained in their desired position of adjustment by means of locking pins 15, carried by chains 16, suitably attached to the legs 1, 2 and 3. It is of course apparent that any other desired means may be employed for varying the length of the legs without departing from the spirit of the invention.

The feet 11 are preferably provided with anti-friction tips 17 of rubber or leather, which are suitably attached to the foot posts by means of cooperating screw threads 18.

In using the apparatus as an exercising device for inducing the vigorous circulation in the lower limbs of the user, the members A and B as shown in Figure 1, are spaced apart with the planes defined by the legs 1 and 2 thereof lying parallel to one another at a distance such as to permit the free passage of the body of the user therebetween. The user then grasps the hand-grips firmly and by straightening his arms, raises his feet clear of the floor. The legs are then vigorously exercised either by means of their own muscles, or, if they are so seriously afflicted as to render this impossible, by swinging the legs from the waist or in any other manner desired. Having thus induced a rapid and stimulating circulation in the lower limbs, the child lowers his feet to the floor and uses the members A and B as supports to enable him to use his legs in the usual manner for walking, the members A and B in this case serving as means for taking the weight of the user from step to step.

In this connection it is to be noted that the person and limbs of the user are entirely free and unconfined, and that the members A and B, being light in weight but extremely firm and stable due to their peculiar construction, afford supports that may be easily carried by the user as he progresses step by step. Furthermore, no dexterity is required on the part of the user to maintain himself in a position of equilibrium such as

is necessitated by the use of canes, crutches, etc., of the usual design.

It is to be further noted that the foregoing description and the accompanying drawings are solely for the purpose of illustrating one embodiment of the apparatus and not as defining the scope of the invention, which is set forth in the appended claims.

What I claim as new is:

1. In an apparatus of the character described a pair of three-legged portable supports, two of the legs of each support defining a plane substantially perpendicular to the ground and parallel to each other, the third leg of each support extending transversely of the plane of the two other legs and engaging the ground at a point displaced laterally therefrom, all of said legs being bent at a plurality of points to form vertically disposed ground engaging extremities and horizontally disposed upper extremities connected by inclined intermediate section, a fitting connecting the adjacent upper ends of the legs of each support, a hand-grip carried by each support and means carried by the legs to adjust the supports and hand-grips vertically to a height coinciding substantially with the hands of the user.

2. A crutch or support comprising a plurality of legs, a hand grip connecting said legs at a height coinciding substantially with the hands of the user, and a lateral brace connected to the legs and engaging the ground at a point such that the legs are maintained in a substantially vertical position.

3. In an apparatus of the character described a crutch or support comprising a fitting arranged in a horizontal plane, a plurality of legs carried by the fitting and having their adjacent extremities terminating in horizontal portions lying in the plane of said fitting, one pair of said legs lying in a substantially vertical plane, and a hand-grip carried by the fitting at a height coinciding substantially with the hands of the user.

4. In an apparatus of the character described a pair of crutches or supports each comprising a plurality of legs provided with vertically disposed ground engaging extremities and horizontally disposed upper extremities and defining spaced apart parallel planes substantially perpendicular to the ground, said horizontal extremities being at a height coinciding substantially with the hands of the user, means to connect the legs of each support, and a brace leg carried by each connecting means engaging the ground at a point displaced laterally from the plane of the first mentioned legs.

5. In an apparatus of the character described a pair of crutches or supports each comprising a plurality of legs provided with vertically disposed ground engaging extrem-

ities and horizontally disposed upper extremities and defining spaced apart parallel planes substantially perpendicular to the ground, means to connect the legs of each support, a brace leg carried by each connecting means engaging the ground at a point displaced laterally from the plane of the first mentioned legs, and a hand-grip carried by the connecting means of each support at a height coinciding substantially with the hands of the user.

6. In an apparatus of the character described comprising a pair of multi-legged portable supports or crutches of a height coinciding substantially with the hands of the user, the legs of each support defining a plane substantially perpendicular to the ground, said planes being spaced apart and parallel to one another, a brace leg carried by each support to maintain said first mentioned legs in a vertical position and means to adjust all of said legs vertically.

7. A crutch or support comprising a plurality of legs connected together at a common point, two of said legs being disposed in a substantially vertical plane, a brace leg extending laterally of said plane to maintain the support in operative position, a hand grip carried by the legs at a height coinciding substantially with the hands of the user, and means to independently vary the length of the legs and brace whereby to vary the height of the support.

8. In an apparatus of the character described comprising a pair of multi-legged portable supports or crutches, the legs of each support defining a plane substantially perpendicular to the ground and spaced from each other, a brace leg carried by each support to maintain said first mentioned legs at a substantially vertical position, and a hand grip carried by each support at a height coinciding substantially with the hands of the user.

In testimony whereof I affix my signature.

CLARENCE E. KIRBY.