

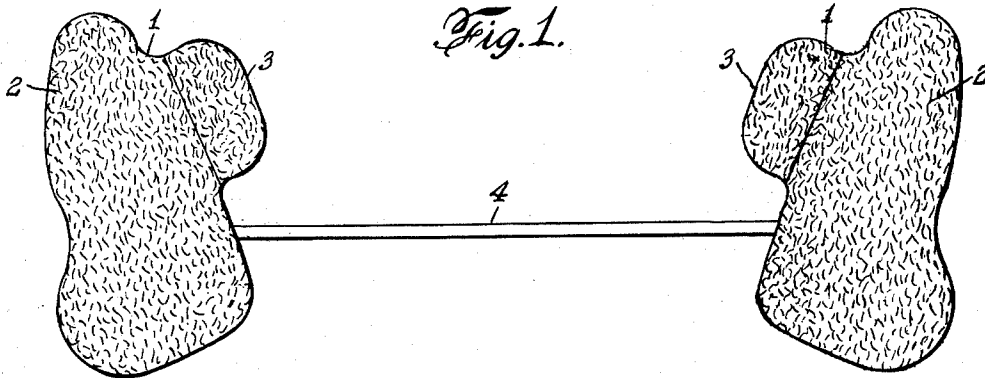
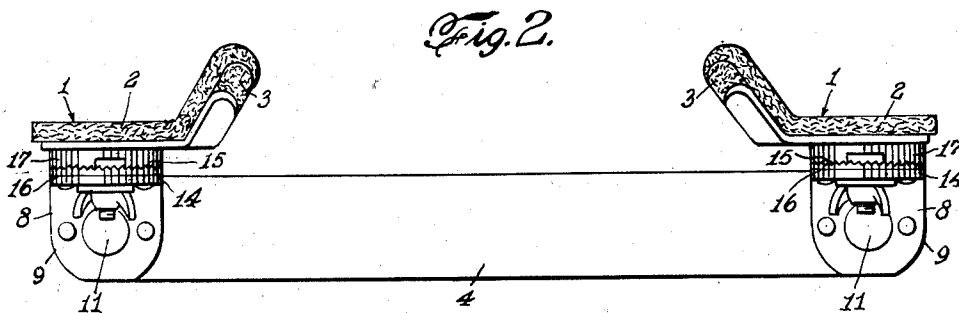
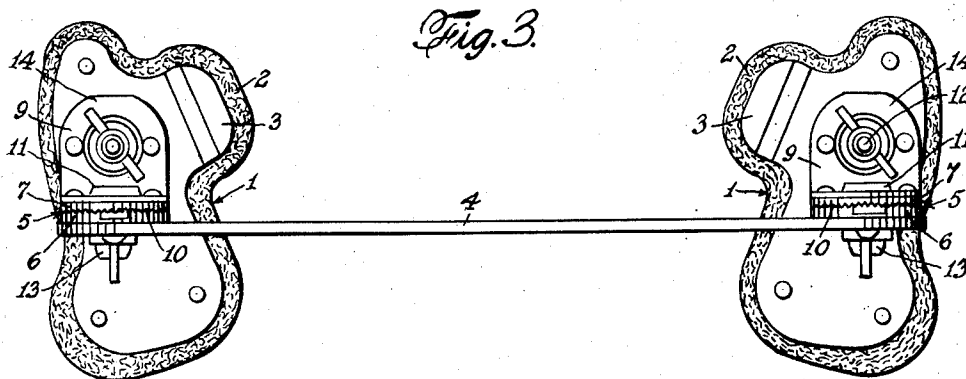
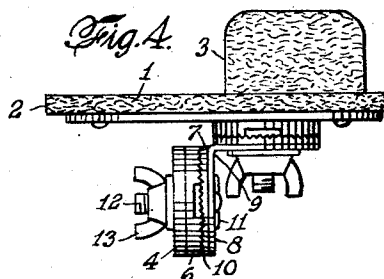
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C. FAULKNER

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ORTHOPEDIC SPLINT FOR THE FEET

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INVENTOR.
CARL FAULKNER

BY

Paul Chenevix
ATTORNEY

1

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ORTHOPEDIC SPLINT FOR THE FEET

Carl Faulkner, Bourbon, Ind., assignor to Orthopedic Equipment Company, Bourbon, Ind., a corporation of Indiana

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2 Claims. (Cl. 128—80)

The present invention relates to orthopedic devices and more particularly to devices for correcting foot deformities such as club feet.

The corrective measures employed in remedying abnormal foot conditions generally involve the use of braces designed to urge the feet into a normal position. The braces, to which the feet are rigidly secured, are adjusted to force and hold the feet in opposition to their abnormal position. For example, where the foot deformity consists of an abnormal toeing-in, the braces are adjusted to urge the feet into a toeing-out position. If the deformity consists of abnormal toeing-out, the feet are urged into a toeing-in position. Other corrective measures may require an inward or outward longitudinal rotation of the feet. In some cases the corrective measures may consist of forcing the feet into a toeing-in or toeing-out position coupled with longitudinal rotation of the feet. Treatment with orthopedic braces of this type usually proceeds in stages and the braces are adjusted and modified as the corrective measures become effective.

Heretofore, the braces available for correcting these foot conditions were limited in their application and did not readily lend themselves to the correction of the various types of foot conditions noted above. Many braces could only be used to correct certain types of foot deformities. Others were not sufficiently versatile in that they often required extensive, impractical modifications as correction of the foot deformities progressed.

By means of this invention, there is provided an orthopedic device for correcting foot deformities which obviates many of the objections to the devices heretofore available. The device of this invention has wide applicability, is economical to manufacture and can be quickly and simply adjusted as required. The device can be used to effectively correct foot conditions which require longitudinal rotation of the feet, toeing-in or toeing-out, or combinations thereof.

The device of the present invention broadly consists of foot supporting members, held in spaced apart relationship, which can be independently rotatably positioned and locked, with respect to the plane of the soles of normal feet, in two planes; in one plane parallel to the soles of the feet and in another plane, perpendicular to the soles of the feet.

To more clearly understand the nature of the invention, refer to the accompanying drawings wherein a preferred embodiment is illustrated.

In the drawings:

Figure 1 is a top plan view of braces embodying the present invention and illustrates the manner in which the foot supporting members are held in spaced apart relationship;

Figure 2 is a rear elevational view of the braces;

Figure 3 is a bottom plan view; and

Figure 4 is a right side elevational view of Figure 2 and illustrates the manner in which the foot supporting

2

members can be rotatably positioned and locked in two planes perpendicular to each other.

Referring to the drawings, the device comprises a pair of foot supporting plates 1, one plate generally assuming the shape of the sole of a left and the other of a right foot. The plates are covered with felt or similar material for use when the braces are applied to bare feet which are taped or otherwise secured to the plates. When shoes are worn, the felt may be removed and the shoes secured to the plate by clamps, straps or similar means. The center portion of the plates are provided with an upwardly turned flange 3 so positioned that when a foot is placed on the plate 1 the flange 3 engages the side of the foot substantially at the foot arch to thereby secure the foot more firmly in position.

The foot supporting plates are held in spaced apart relationship by a flat connecting bar 4. Each end of the bar is provided with a ratchet type locking member 5 consisting of a fixed lower disc 6, riveted or otherwise secured to the bar 4, and an upper disc 7, rotatable with respect to the lower disc 6, secured to one arm 8 of a right angle connecting bracket 9. The opposed faces of the discs 6 and 7 are formed with a series of notches or serrations 10 which engage each other when the ratchet member is in locked position. The upper disc 7 is provided with a bolt 11 secured thereto and which passes through the lower disc 6 and the bar 4 and extends beyond. The end of the bolt 11 is provided with threads 12 for screw engagement with a wing nut 13. Firmly screwing the wing nut on the bolt forces the upper disc 7 into engagement with the lower disc 6 causing thereby locking the discs in position.

The other arm 14 of the connecting angle bracket 9 is provided with a second ratchet type locking member 15 similar to locking means 5, but which, due to the angular form of the connecting angle bracket 9, is in a position at right angles to the plane of the flat bar 4 and, accordingly, to the plane of the ratchet type locking member 5. One disc part 16 of this locking member is secured to the arm 14 of the angle member 9 and another disc part 17, rotatable with respect to disc part 16, is secured to the underside of the foot supporting plate 1. A bolt and wing nut is also provided to lock this ratchet type member in position.

By virtue of this arrangement of rotatable ratchet type locking members, each foot supporting plate can be locked in various positions independently of each other. The foot supporting plates can be rotated in the plane of the ratchet type locking member 15 to which it is attached and can be locked in any selected position in that plane. The foot supporting plates can also be rotated in the plane of the ratchet type locking member 5 secured to the flat connecting bar 4.

By providing foot supporting plates which can be rotated in two planes perpendicular to each other, the device of this invention can be employed to correct various types of foot deformities. To illustrate, in a case involving toeing-in or toeing-out of the feet, the foot supporting plates can be rotated and locked in the plane of the soles of the feet in any desired position. In the case where the soles of the feet are turned towards or away from each other, the foot supporting plates can be similarly turned. Where the foot deformity consists of a combination of toeing-in or toeing-out and soles turned inwardly towards each other, or outwardly away from each other, the foot supporting plates can be readily positioned to fit and correct these variations. The device can also be quickly adjusted and locked in a new position as treatment progresses.

It is apparent that numerous modifications, variations and substitutions can be made in the foregoing embodi-

ment of the invention without departing from the scope of the following claims.

What I claim is:

1. An orthopedic device for correcting foot deformities comprising in combination a pair of foot-supporting members, spacer means for holding said foot-supporting members in spaced-apart relationship, linkage means connecting each foot supporting member to said spacer means substantially at opposite ends thereof, said linkage means comprising first and second rotatably adjustable members said first and second members each comprising a pair of cooperating ratchet members substantially in the form of discs, said first and second members being adjustably rotatable in planes substantially perpendicular to each other, and locking means connected to and locking each of said first and second members in a selective position.

2. An orthopedic device according to claim 1, wherein said locking means interconnects each pair of said ratchet discs.

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