joint. It permits a full 10° adjustment on either side of neutral about the vertical and lateral axes and unlimited movement about the longitudinal axis.

During fitting trial the socket is attached to the unit by a single ½" bolt and after satisfactory alignment is achieved, a further four ¼" high tensile screws lock the socket and hip joint unit together.

In accordance with British practice the design includes a hip limiter (stride length adjustment) with a range of from 8° to 20°. Slightly modified the same unit can be used as a hip lock when required.

The device is designed for use with glass reinforced plastic sockets. The antero-lateral corner of the socket is built-up and shaped to accept the unit. The interior form of the socket is reconstituted with a foamed silicone rubber. This hip unit can also be used with a blocked leather socket but a steel tuber plate would be required as the leather would not be strong enough locally to sustain the loads imposed upon it.

This device was designed and constructed in the Prosthetic Research Department of Robert Kellie & Sons, Artificial Limb Manufacturers, Dundee, who have a patent pending. A limited trial of this unit is being carried out.

* * * *

A NEW WEDGE-DISC ALIGNMENT UNIT

By GEORGE MURDOCH, M.B., F.R.C.S.Ed., Dundee

This unit, which embodies the now familiar wedge-disc angular displacement principle, incorporates several distinctive features which will prove valuable to the prosthetist.

An external locking ring is used to facilitate adjustment while the prosthesis is being worn.

The locking ring allows simpler attachment to sockets and eliminates the need for a socket container. Furthermore it is readily fitted to any type of foot or ankle mechanism.

There is axial stability of the unit when unlocked as the design includes a ball with a peg located in a slot thus permitting tilt but no rotation.

Instability, i.e., "wobble," is avoided when the unit is unlocked. This is achieved by use of a rigid vertical bolt and an arrangement whereby the wedges slide, one on the other, to compensate the variation in geometry due to tilt. This also ensures that there is no tendency to shift from a given angle to a lesser angle.

A later model of the unit described and illustrated here incorporates a tab washer placed between the locking ring and the adjacent wedge-disc. This modification ensures no loss of setting during tightening.

The unit can easily be fitted with a slide to enable antero-posterior or medio-lateral displacement independent of tilt, the whole unit still being locked with a single locking ring.

The actual bolt and locking unit, ⅜" diameter B.S.F., is made of high tensile steel. The remainder of the unit may be fabricated in dural or even plastic material with suitable mechanical properties.

The unit is capable of incorporation within the definitive prosthesis once the correct alignment is achieved at the completion of rehabilitation. This can best be accomplished by the use of an epoxy resin.

This device was designed and constructed in the Prosthetic Research Department of Robert Kellie & Sons, Artificial Limb Manufacturers, Dundee, who have a patent pending. An evaluation trial of fifty patients is being carried out.

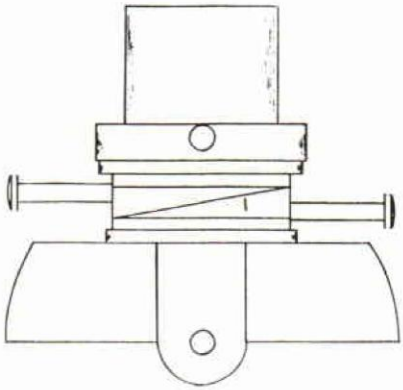

FIG. 1

Sketch of Split Wedge Alignment Unit Assembled

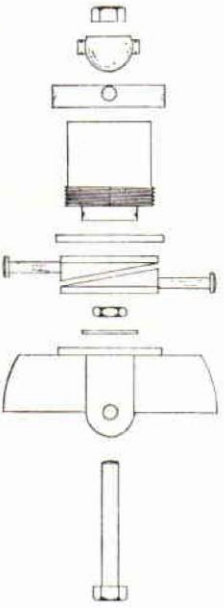

FIG. 2

Unit in exploded form showing from above down: locking nut, ball, locking ring, threaded body with ball seating washer, pair of wedge-discs, clamp nut and washer, ankle base, steel bolt.

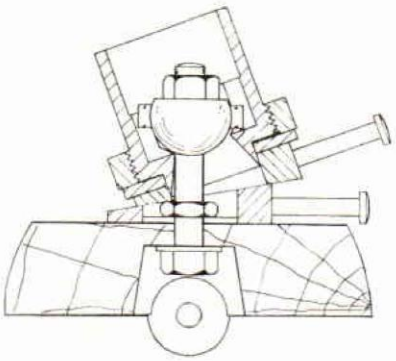

FIG. 3

Sectioned drawing of the unit illustrating tilt