

REPORTED ABROAD

KNEE ROTATION UNIT FOR ABOVE-KNEE PROSTHESIS^a

The possibilities of a device enabling rotation of the shank of an above-knee prosthesis in relation to the thigh about their common axis were discussed during the Pan-Pacific Rehabilitation Conference held in 1965 in Tokyo.

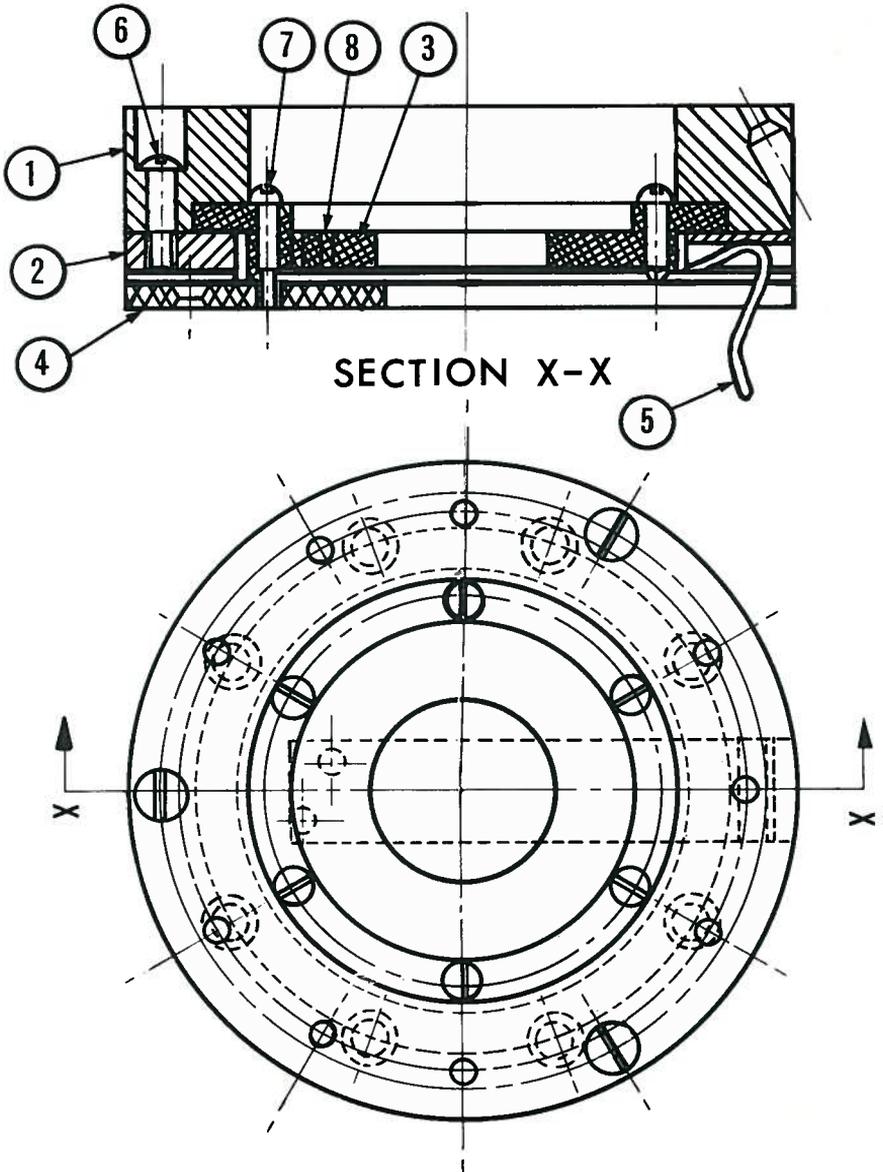
As passive rotation above the knee might prove advantageous in several situations, namely squatting on the floor, gardening, entering a car, etc., the Central Development Unit undertook the development of such a device.

Figure 1 shows the prototype knee rotator in its actual size. Apart from a few minor components the unit is made entirely of anodized aluminum alloy, with bearing surfaces treated with molybdenum disulphide. Its overall weight is 1 lb. (454 grams) including all associated hardware.

The rotator consists basically of two sections. The first section, the body of the rotator (1) with its retaining ring (2), is attached to the distal end of the thigh socket. In a circular groove formed between these two components is placed the turning ring (3) which, with the attachment plate (4) on which it is mounted, forms the second section of the unit, fixed to the proximal surface of the artificial knee. A leaf spring (5) is attached to the turning ring. When depressed by the wearer, the spring rides the underside of the retaining ring allowing rotation of the joint. As the two sections of the rotator bring the limb back into its normal alignment they become locked automatically by recession of the spring into a groove. An audible click serves as an indication that the joint is locked. It is proposed to site the knee rotator after alignment in the space previously occupied by the Gardner-Staros coupling.

To date, only one unit has been fitted for a limited period. However, it was found to be reliable in operation without apparent effects upon the gait. A small batch of these units has now been manufactured for evaluation on a selected group of active amputees.

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KNEE ROTATOR R.D. 10

FIGURE 1