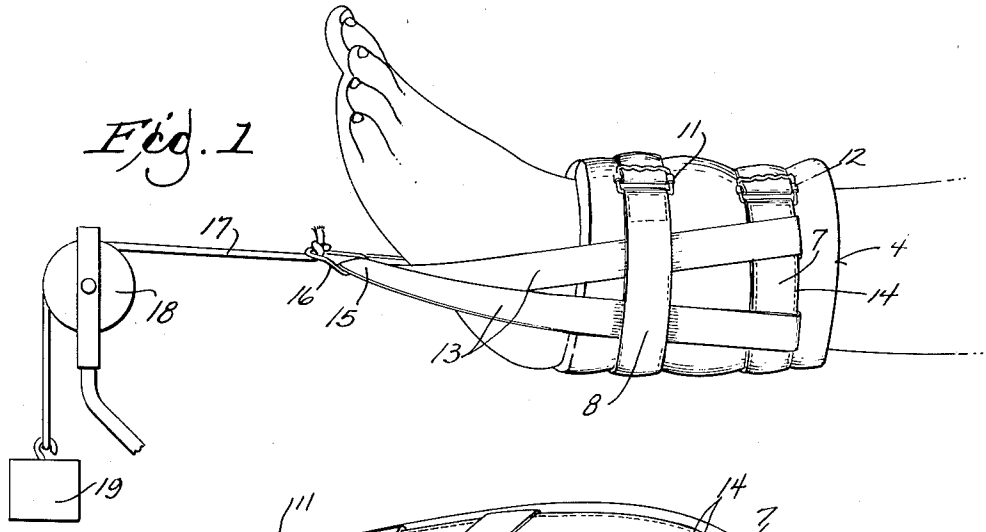
Nov. 15, 1955 R. E. DAVIS 2,723,663

TRACTION CUFF

Filed April 23, 1954

Fig. 1



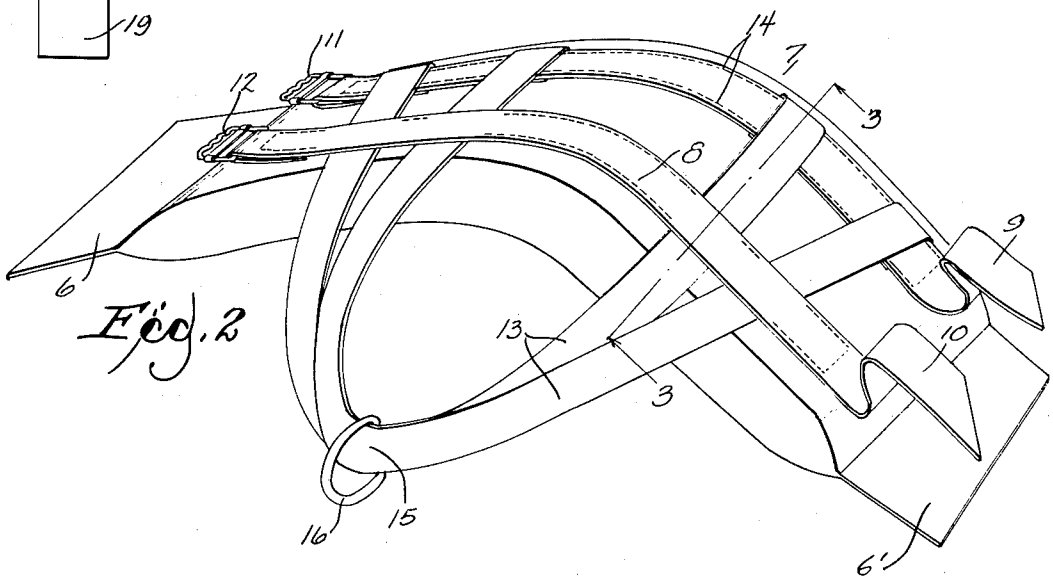


Fig. 2

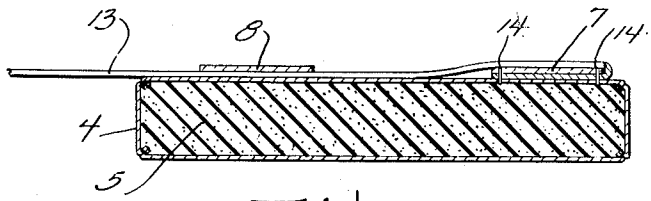


Fig. 3

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TRACTION CUFF

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3 Claims. (Cl. 128—75)

This invention relates to a cushioned traction cuff with top tension strap connections.

A major purpose of the invention is to enable full traction to be achieved without technical aid and without any possibility of skin irritation or restriction of blood circulation or undue pressure upon the nerves.

My improved cuff is particularly useful in the treatment and correction of fractures of the legs, pelvis and vertebrae and in the treatment and correction of dislocations and lesions. It is also used in the treatment and surgical application of surgical pins or other fasteners in the hip joints, tibia, fibulae and femurs.

In the past, patients requiring traction have been shaved and taped and usually bandaged for the protection of the skin and in an effort to avoid constriction. Yet injuries to the patient have persisted and constriction has prevented adequate blood flow despite all precautions. The present invention involves a cuff which is cushioned with sponge rubber, felt, down, or pneumatically and which is strapped about the ankle and has straps of its own which are slidably related to a strap encircling the cuff near its bottom and which are connected to another strap encircling the cuff near its top to distribute the stress to the patient's limb so effectively as to avoid constriction despite the application of full traction. The straps which are attached to the cushion to encircle the patient's ankle outside the cushion have a yoke connected with them which is supported by the cushion free of contact with the patient's foot and provides for attachment of the traction devices, whatever their nature.

Due partly to restriction of blood circulation, and due partly to impossibility of adequate insulation of the patient's feet, previous tension devices have usually resulted in the patient's feet becoming painfully cold. The present device may be applied over a sock or other footwear, if desired, thereby keeping the patient's feet comfortably warm.

In the drawings:

Fig. 1 is a view in side elevation showing my improved traction cuff in use.

Fig. 2 shows the cuff in perspective on an enlarged scale.

Fig. 3 is a detail view taken in section on the line 3—3 of Fig. 2.

My improved cuff comprises a cuff **4** containing a pad or cushion **5** which may be of any suitable type or construction such as felt, sponge rubber, down or pneumatic. Beyond the pad, the jacket **4** has terminal flaps **6** and **6'** which will ordinarily lap after the cuff is applied to encircle the patient's limb in the manner suggested in Fig. 1.

Stitched to the outside of the jacket **4** of the cuff are limb encircling straps **7** and **8** with free end portions **9** and **10** receivable through the buckles **11** and **12**. Each end of the stirrup comprises a plurality of tension elements (straps) **13** which have their ends folded about the limb encircling strap **7** as shown in Fig. 3 and anchored by the stitching **14** which secures the limb encircling strap **7** to the cuff **4**. The stirrup straps **13** then pass freely

beneath the limb encircling strap **8** without connection thereto. The fact that the spaced multiple ends of the stirrup straps are free at all points except where they connect to the cuff near its top margin transfers all stirrup tension to the top margin of the cuff, this being a major feature of the invention. Stirrup strap bight **15** is of sufficient length to lie beyond the patient's foot. The thickness of the cuff provided by the cushion **5** supports the stirrup free of contact with the sides of the patient's foot. A stirrup fastening device **16** receives connection with the traction device, which may be of any desired construction. As illustrated, the traction device simply consists of rope **17** passing about pulley **18** and supporting weight **19**.

The tension exerted by the traction device is so distributed by the stirrup **13**, the limb encircling straps **7** and **8**, and the cushion **5** as to tend to exert its pull from the top of the cuff above the ankle bone and at all sides of the limb, thus eliminating any problem of constriction. No previous preparation is required, since no irritation of the patient's skin is experienced. The cuff is almost instantly applicable and removable simply by releasing the straps **9** and **10** from their respective buckles **11** and **12**. As previously noted, the cuff is readily applicable over hosiery or other protective garments used to keep the patient's feet warm, this being another major advantage over a traction connection which requires the expert application of tape directly to the patient's skin.

While reference has been made to the application of the traction cuff to a patient's ankle, this being its common use, it is also applicable to a patient's wrist with similar advantages.

I claim:

1. A traction cuff comprising a padded cuff of such length as to encircle a patient's limb, together with a stirrup each end of which comprises a plurality of tension elements, the several elements extending freely across the lower margin of the cuff and connected with the cuff at points spaced along its upper margin to exert tension distributed about the limb by the cuff.

2. The device of claim 1 in which the cuff has upper and lower limb encircling strap means unitarily connected externally to it adjacent its upper and lower margins, the strap means having terminals connecting the cuff about the patient's limb, the stirrup ends extending beneath the lower strap means free of connection therewith and having fixed connection with the upper strap means being anchored to said strap means.

3. A traction cuff for application to a patient's limb, said cuff comprising a jacket having terminal tabs and provided intermediate said tabs with a thick cushion of limb encircling length, a pair of straps mutually spaced adjacent the upper and lower margins of the cuff and connected with said jacket outside the cushion and provided with free end portions adapted for connection to hold the cuff about the patient's limb, together with stirrup means comprising a tension strap device having a bight of such dimensions as to clear the patient's extremity and having at least four ends slidable beneath the strap at the lower margin of the cuff jacket and connected at points spaced along the strap at the upper margin of the cuff jacket, the said bight having a tension connection and said device being arranged to distribute tension from the upper margin of the cuff downwardly about the patient's limb.

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