

Dual-Mode Force Feedback Cam Walking Boot Insert

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SUNY Upstate Medical University is actively seeking a partner to commercialize a simple insert to measure force applied by patients using a cam walking boot.

Current problem

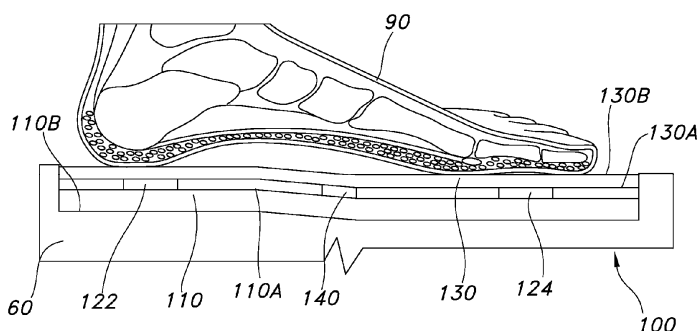
During an average year in the United States anywhere from 75,000 to 100,000 cam boots are prescribed to patients who have suffered an ankle injury. In the rehabilitation of injuries that require a cam boot physicians will typically instruct patients to avoid putting more than a certain amount of weight on their injured foot (for example, no more than 20 pounds). Unfortunately, it is impossible for patients to accurately judge the amount of weight being put on the injured foot without the aid of a force measuring device. Force-measuring inserts for cam walking boots are available, but all current models are so expensive that they are little used. Most patients are physically simply unable to follow this instruction, with detrimental effects on the healing process.

Detailed Description

Upstate's researchers have recently developed an inexpensive, passive mechanical force measuring feedback insert for a cam boot. The insert incorporates two snap domes which make a loud popping or clicking noise when enough much pressure is exerted by a patient's foot to deform the metal dome, such as during a patient's heel strike or toe off. The compression of the insert when it 'snaps' can also be felt when too much force is exerted, providing a second feedback mode. Upstate's insert can be calibrated to respond to various levels of pressure, thus allowing the patient to have both the tactile and audible feedback throughout the duration of their rehabilitation, making it possible for them to finally follow their physician's orders.

Benefits

- Simple design is both low cost and effective
- Capable of measuring force in both the front and back of foot
- Allows patients to more effectively follow doctors orders
- Can be designed to fit in all Cam boots



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