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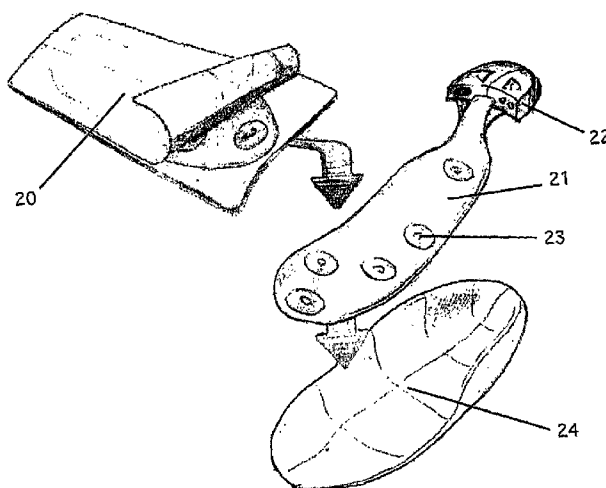
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(54) Title: METHOD AND APPARATUS FOR IMPROVING HUMAN BALANCE AND GAIT AND PREVENTING FOOT IN-
JURY



(57) Abstract: A method and wearable system and for enhancing human balance and gait and preventing foot injury through neu-
rological stimulation of the foot and the ankle. Subthreshold stimulation for neurosensory enhancement is provided via electrodes
or vibrational actuators (23), or combination thereof, disposed in or on a wearable a platform (21), such as an insole (24), sock shoe
(53), removable shoe insert (21), or applied without the support of a platform, to the skin surface of an individual. Suprathreshold
stimulation for therapeutic purposes, such as improving blood flow, is also provided by the vibrational actuators. The actuators and
electrodes are driven by bias signals generated by a bias signal generator that is coupled to a controller (22). The signal generator
under the control of the controller (22) is adapted to generate a non-deterministic random signal, a repetitive pattern or series of pat-
terns. The controller optionally includes a communication port for interfacing with an external computer for purposes of optimizing
and programming the controller. The wearable system is powered by a power source.

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