## CLAIMS

1. A portable movement facilitation device for facilitating movement of a limb, comprising

a holding mechanism for securing to at least one digit of the limb;

at least one flex string attached to the holding mechanism, the at least one flex string and the holding mechanism being configured to rely on the at least one digit's skeletal structure as a primary mechanical structure for movement of the at least one digit; and

an actuating device operable to actuate the at least one flex string to facilitate the movement of the at least one digit between an extended position and a flex position; wherein

the actuating device comprises an active actuator operable to actuate the at least one flex string; and wherein

the active actuator includes an encoder for encoding amount of displacement of the at least one flex string.

2. A portable movement facilitation device according to claim 1, wherein the active actuator is operable to actuate the at least one flex string to move the at least one digit from the flex to the extended position.

3. A portable movement facilitation device according to claim 1, wherein the active actuator is operable to actuate the at least one flex string to move the at least one digit from the extended to the flex position.

4. A portable movement facilitation device according to claim 1 or 2, wherein the actuating device further comprises a passive actuator configured to create a biasing force when the at least one digit is moved to the extended position; and wherein the biasing force is arranged to urge the at least one digit from the extended to the flex position.

5. A portable movement facilitation device according to claim 3, wherein the actuating device further comprises a passive actuator configured to create a biasing force when the at least one digit is moved to the flex position; and wherein the biasing force is arranged to urge the at least one digit from the flex position to the extended position.

6. A portable movement facilitation device according to any preceding claim, further comprising guide rings adapted to be worn by the at least one digit, the guide rings being arranged to guide the at least one flex string.

7. A portable movement facilitation device according to any preceding claim further comprising a flex sensor for detecting flexing of the at least one digit.

8. A portable movement facilitation device according to claim 4 or 5, wherein the passive actuator includes at least one resilient member arranged adjacent to the back of the at least one digit.

9. A portable movement facilitation device according to any preceding claim, wherein the active actuator includes at least one motor operable to pull the at least one flex string to move the digit to the extended position or flex position.

10. A portable movement facilitation device according to claim 9, wherein the active actuator includes a bobbin for stowing the at least one flex string, and wherein the at least one motor is operable to rotate the bobbin to dispense or retract the at least one flex string.

11. A portable movement facilitation device according to any preceding claim, wherein the at least one flex string is selected from the group consisting of: fishing line, nylon string, and polyester string.

12. A portable movement facilitation device according to any preceding claim further comprising an abrasion protector to be worn by the limb.

13. A portable movement facilitation device according to any preceding claim, further comprising an IR distance sensor for detecting distance of an object relative to the IR distance sensor.

14. A portable movement facilitation device according to any preceding claim, further comprising a bio sensor for performing electromyography measurements on the limb.

15. A portable movement facilitation device according to claim 14, wherein the bio sensor includes an accelerometer for measuring movements of the limb.

16. A portable movement facilitation device according to claim 15, further comprising a controller operable to control the actuation of the actuating device based on a reading from the accelerometer.

17. A portable movement facilitation device according to claim 14, further comprising a controller operable to control the actuation of the active actuator based on the electromyography measurements.

18. A portable movement facilitation device according to any preceding claim, wherein the limb is a hand, and the at least one digit is a finger or thumb.

19. A portable movement facilitation device according to any preceding claim, wherein the holding mechanism comprises a plurality of finger tip holders, with each holder configured to be secured to a respective digit; and

a plurality of flex strings with each flex string attached to respective ones of the plurality of fingertip holders.

20. A portable movement facilitation device according to any preceding claim, further comprising a glove for carrying the holding mechanism, the at least one flex string and the actuating device.

21. Use of a portable movement facilitation device according to any preceding claim to maintain and/or improve condition of a person's limb and digits.

~~22. A method of operating a portable movement facilitation device according to any preceding claim, the device including a bio-sensor according to claim 14, the method comprising the steps of:~~

~~receiving an electromyography measurement;~~

~~comparing the electromyography measurement with a threshold and if the measurement exceeds the threshold, controlling the actuating device to actuate the at least one flex string to flex the at least one digit.~~

~~23. A method according to claim 22, wherein the bio-sensor further comprises an accelerometer according to claim 18, and the method further comprises the step of~~

~~receiving a reading from the accelerometer;~~

~~comparing the reading with an accelerometer threshold and if the measurement exceeds the threshold, controlling the actuating device to actuate the at least one flex string to flex the at least one digit.~~

~~24. A method according to claim 22 or 23, wherein the device further comprises the flex sensor of claim 9, and the method further comprises the steps of:~~

~~receiving a reading from the flex sensor; and determining whether maximum clenching or maximum flexion has been achieved by the at least one digit.~~

~~25. A method according to claim 24, further comprising the step of stopping the actuation of the actuating device when the maximum clenching or maximum flexion is reached.~~