

CLAIMS

What is claimed is:

1. A robotic hand system comprising:
 - a palm region; and
 - one or more fingers, each finger comprising:
 - an actuator device;
 - a respective proximal member having a first end mechanically coupled to the palm region robot and configured to rotate around a respective first pivot relative to the palm region;
 - a respective distal member having a first end mechanically coupled to a second end of the proximal member and configured to rotate around a respective second pivot relative to the proximal member; and
 - a respective cable having a first portion coupled to the actuator and a second portion extending along the proximal member and the distal member, the second portion separated away from the first pivot and the second pivot and having an end with a higher dimension than a diameter of the cable, the end with higher dimension structured to engage the distal member when the cable is pulled by the actuator.
2. The robotic hand system of claim 1, wherein the end with higher dimension is floating within a region of the distal member.
3. The robotic hand system of claim 1, wherein the end with higher dimension includes at least one of:
 - a potted end; or
 - an end with a potted insert.
4. The robotic hand system of claim 1, wherein each finger comprises a respective channel structure extending at least partially along the respective proximal member and the respective distal member, the respective channel structure hosting at least partially the second portion of the respective cable.

5. The robotic hand system of claim 4, wherein the end with higher dimension of the second portion of the respective cable is structured to engage a ledge structure of the respective channel structure when the respective cable is pulled by the respective actuator.
6. The robotic hand system of claim 1, wherein each finger comprises:
 - a respective first torsion spring placed around the respective first pivot; and
 - a respective second torsion spring placed around the respective second pivot.
7. The robotic hand system of claim 1, wherein each finger comprises:
 - a respective magnet coupled to the respective first pivot; and
 - a respective hall effect sensor placed proximate to the respective magnet.
8. The robotic hand system of claim 7, wherein the respective magnet includes a ring magnet placed around the respective first pivot.
9. The robotic hand system of claim 1, wherein each finger comprises:
 - a respective magnet coupled to the respective second pivot; and
 - a respective hall effect sensor placed proximate to the respective magnet.
10. The robotic hand system of claim 1, a distance between the respective cable and the respective first pivot varies and/or a distance between the respective cable and the respective second pivot varies.
11. A finger device, comprising:
 - an actuator device;
 - a proximal member having a first end mechanically coupled to base member and configured to rotate around a first pivot relative to the base member;
 - a distal member having a first end mechanically coupled to a second end of the proximal member and configured to rotate around a second pivot relative to the proximal member; and
 - a cable having a first portion coupled to the actuator and a second portion extending along the proximal member and the distal member, the second portion separated away from the first pivot and the second pivot and having an end with a higher dimension than

a diameter of the cable, the end with higher dimension structured to engage the distal member when the cable is pulled by the actuator.

12. The finger device of claim 11, wherein the end with higher dimension is floating within a region of the distal member.

13. The finger device of claim 11, wherein the end with higher dimension includes at least one of:

- a potted end; or
- an end with a potted insert.

14. The finger device of claim 11, further comprises a channel structure extending at least partially along the proximal member and the distal member, the channel structure hosting at least partially the second portion of the cable.

15. The finger device system of claim 14, wherein the end with higher dimension of the second portion of the cable is structured to engage a ledge structure of the channel structure when the respective cable is pulled by the respective actuator.

16. The finger device of claim q1, further comprises:
a first torsion spring placed around the first pivot; and
a second torsion spring placed around the second pivot.

17. The finger device of claim 11, further comprises:
a magnet coupled to the first pivot; and
a hall effect sensor placed proximate to the magnet.

18. The finger device of claim 17, wherein the magnet includes a ring magnet placed around the first pivot.

19. The finger device system of claim 11, further comprises:
a magnet coupled to the second pivot; and
a hall effect sensor placed proximate to the magnet.

20. The finger device of claim 1, a distance between the cable and the first pivot varies and/or a distance between the cable and the second pivot varies.