



Human Integrated Gripping Device

Team 5

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Introduction

- Stroke is the main cause of debilitation in U.S.
 - 700,000 strokes/year
- 15-30% of survivors with permanent disabilities
 - Hemiparesis



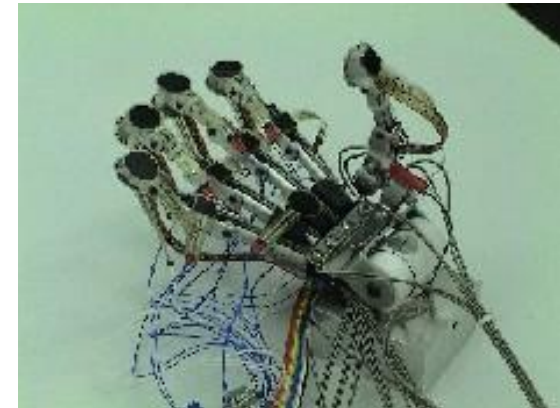
Introduction

- Not being able to feel the world around you
- Solution...

Human Gripping Devices!

Current Market

- 10-DOF Robotic Hand
(Patent No. 6,505,870)
- Power Glove
- Complete Artificial Hands





Human Integrated Gripping Device

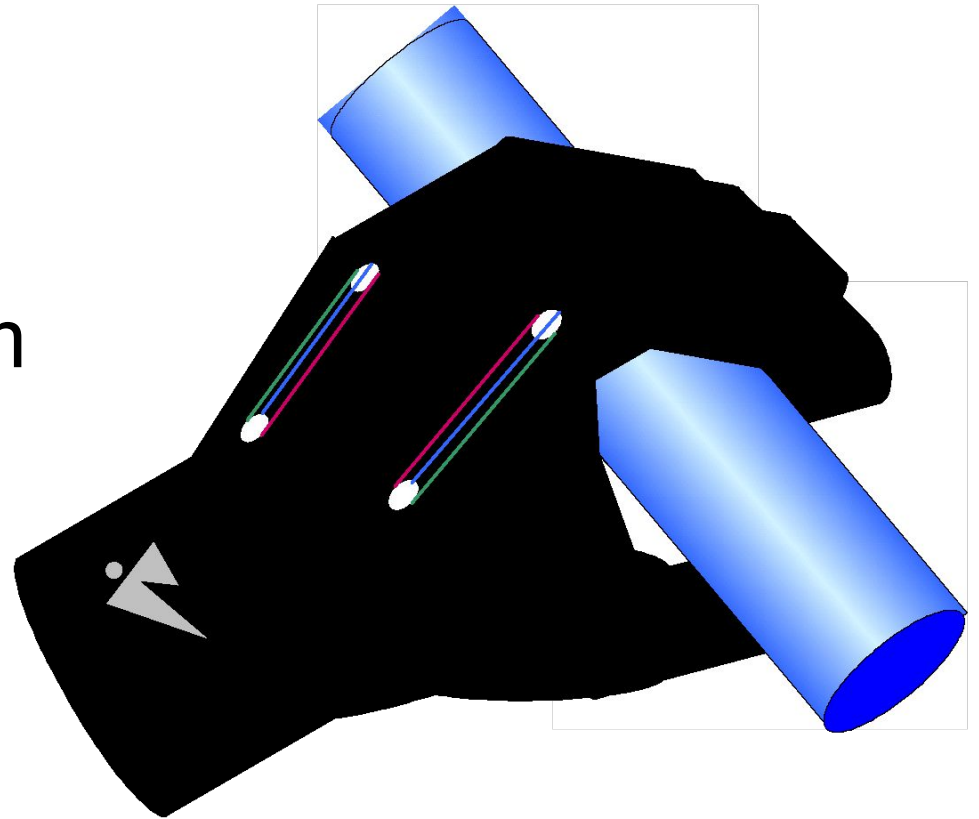
Goals:

- Light-weight
- Integrated
- User friendly
- Low cost

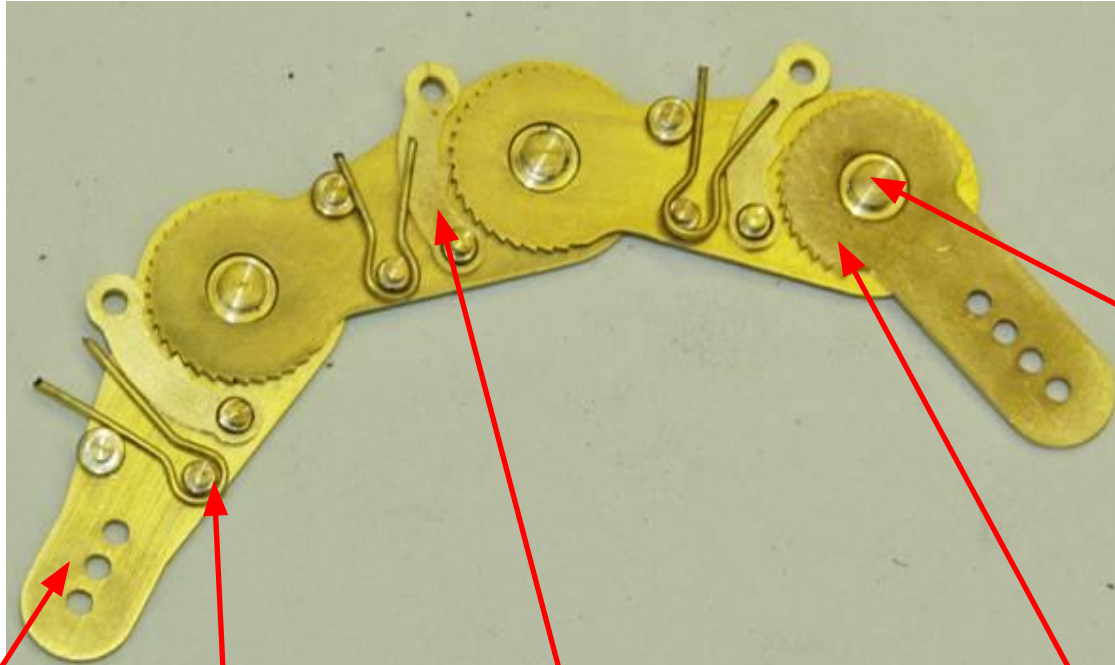
While still being able to experience the benefits of assisted gripping...

Design

- Mechanics
- Release Mechanism
- Glove Interface



Mechanics



Rivets

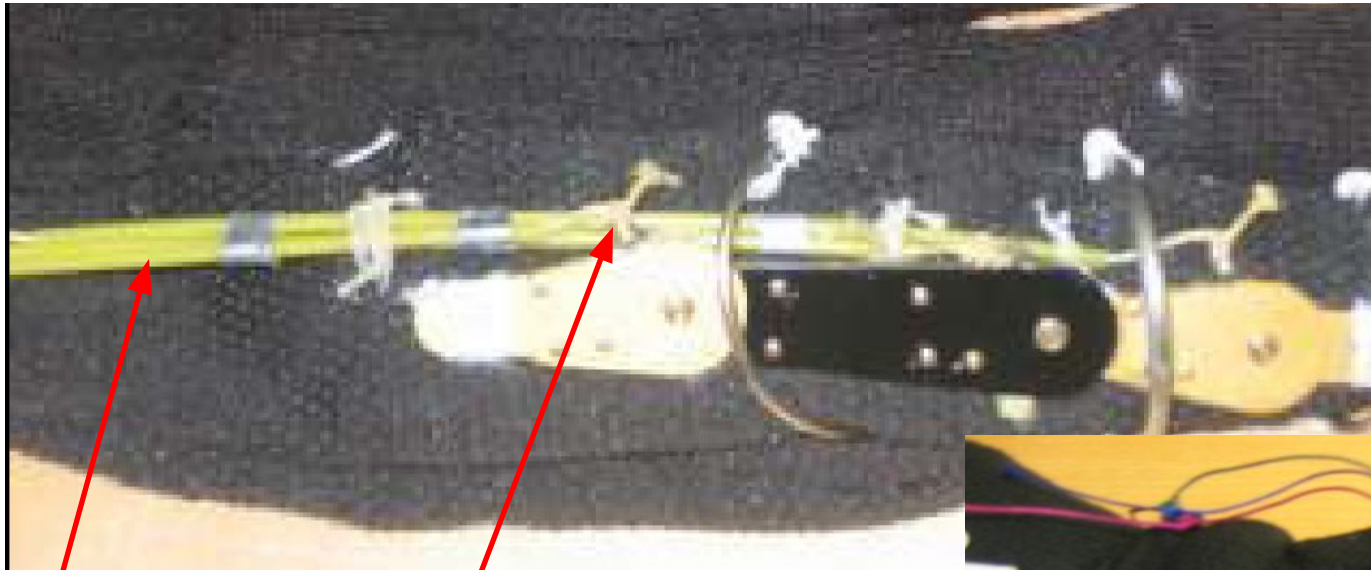
Case

Spring

Pawl

Ratchet

Release Mechanism



Plastic
Tubular
Casing

Kevlar
String



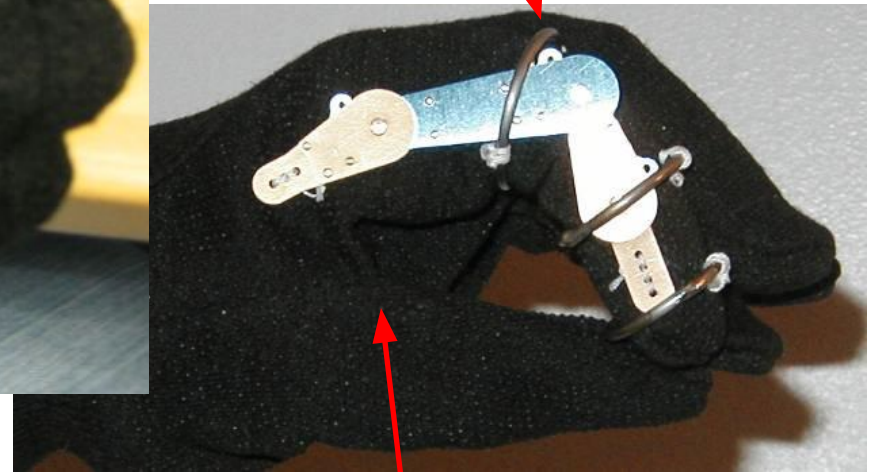
User Release Strings

Glove Interface



Outer Glove

Velcro



Rings

Inner Glove

Budget

Team 5 Expense Report

Item	Vendor	Quantity	Price	Total Cost
EMS inner lining glove	Eastern Mt. Sports	1	20.83	20.83
Mesh lining glove material	AHH	1	21.18	21.18
Velcro Straps	Office Max	1	2.87	2.87
20lb. Fishing Wire	Sports Authority	1	13.78	13.78
Cordura Fabric	Beacon Fabrics	1	22.99	22.99
Stainless Steel blue shim metal	Fastenal	1	27.62	27.62
Stainless Steel 314L	Metals Depot	1	20.50	20.50
Gears	MSC Direct	1	5.27	5.27
24 pin SOIC to 24 pin DIP adapter	Jameco	1	10.94	10.94
High Density Polyethylene sheets	US Plastic	1	33.32	33.32
TOTAL				179.30
Allotted Budget				750.00
Expendable Budget				570.70



Advantages/Comparisons

- Mechanically
 - Small, Compact, Lightweight
 - **Simple** yet **Efficient**
- Ergonomically
 - User Friendly
 - Appealing
- Economically
 - Best Benefit/Cost ratio



Conclusion

- The Human Integrated Gripping Device fulfills the needs of an ever present market with a highly functional yet cost effective product.



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