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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!

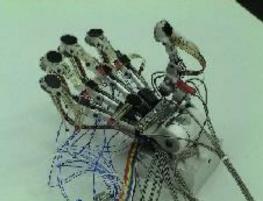
## **Current Market**

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



Complete Artificial Hands





### **Human Integrated Gripping Device**

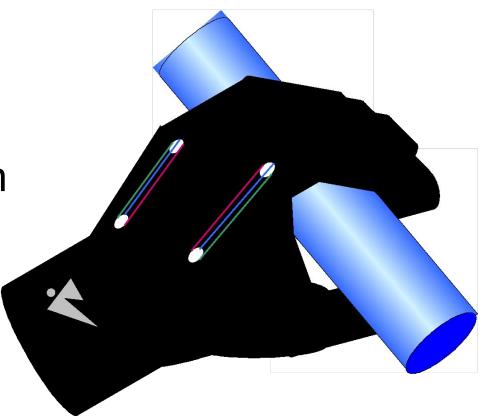
Goals:

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

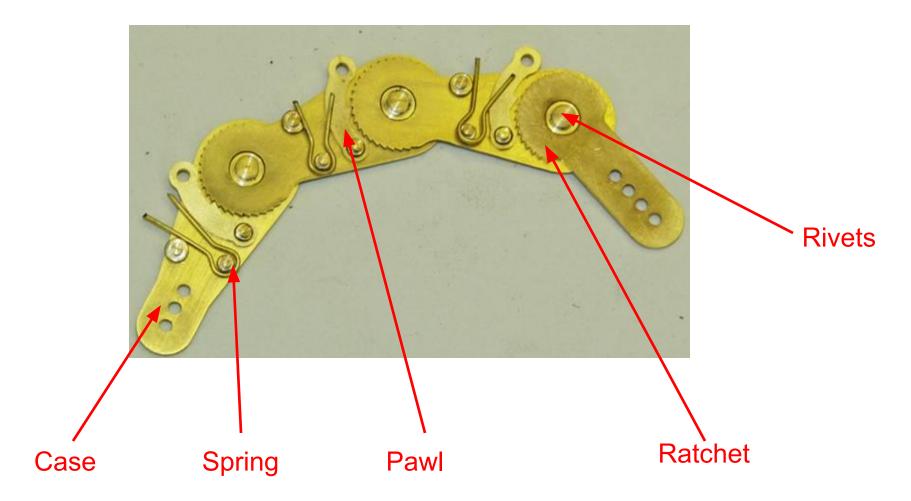
While still being able to experience the benefits of assisted gripping...

# Design

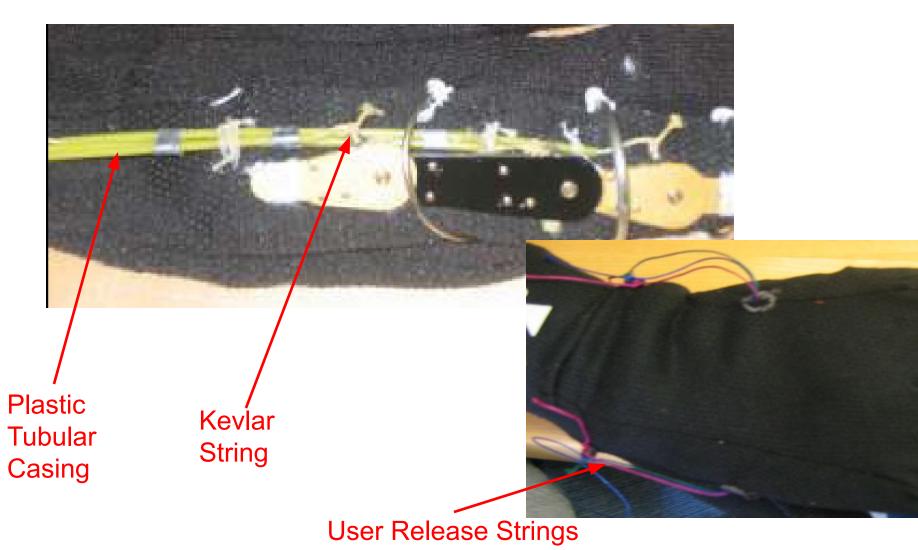
- Mechanics
- Release Mechanism
- Glove Interface



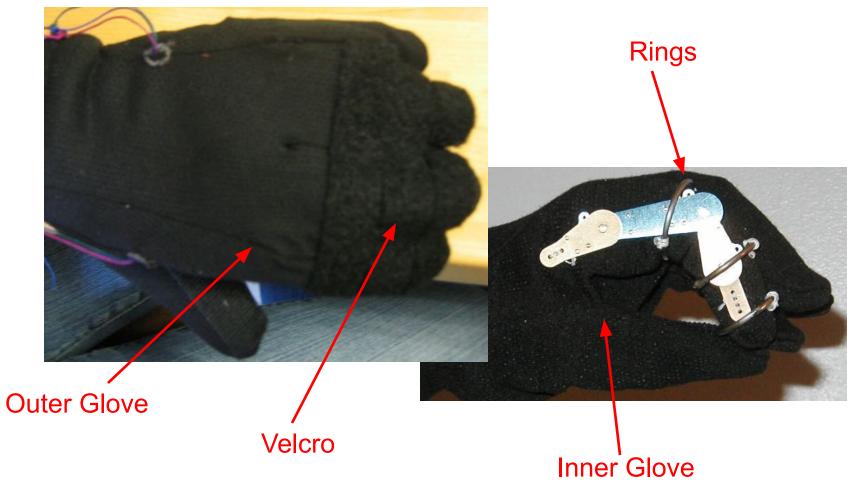
#### **Mechanics**



#### **Release Mechanism**



## **Glove Interface**



# Budget

#### **Team 5 Expense Report**

ltem	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.

# Acknowledgements

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