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

- Linkage System
- Actuator Pumps
- Electronic Configuration
# Timeline

<table>
<thead>
<tr>
<th>Task</th>
<th>Duration</th>
<th>Start Date</th>
<th>End Date</th>
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<tbody>
<tr>
<td>Research/Development</td>
<td>65 days</td>
<td>Mon 9/19/05</td>
<td>Fri 12/16/05</td>
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<tr>
<td>+ Prototype</td>
<td>20 days</td>
<td>Mon 12/19/05</td>
<td>Fri 1/13/06</td>
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<tr>
<td>Skeletal Structure</td>
<td>11 days</td>
<td>Fri 1/13/06</td>
<td>Fri 1/27/06</td>
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<tr>
<td>Actuated Pumping System</td>
<td>6 days</td>
<td>Fri 1/20/06</td>
<td>Fri 1/27/06</td>
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<td>+ Electronics</td>
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<td>Fri 1/27/06</td>
<td>Mon 2/13/06</td>
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<td>Interface</td>
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<td>Mon 2/13/06</td>
<td>Mon 2/20/06</td>
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<tr>
<td>Ergonomics</td>
<td>6 days</td>
<td>Mon 2/20/06</td>
<td>Mon 2/27/06</td>
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<tr>
<td>Aesthetics</td>
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<td>Mon 2/27/06</td>
<td>Mon 3/6/06</td>
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<td>Testing</td>
<td>11 days</td>
<td>Mon 3/6/06</td>
<td>Mon 3/20/06</td>
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<td>Delivery</td>
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<td>Fri 3/25/05</td>
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## Budget

- **Actuators**: $200
- **Titanium**: $50
- **Electronics**: $120
- **Aesthetics**: $80
- **Miscellaneous**: $80
- **Prototype Development**: $70

**Total**: $600

**Retail Price**: $150
Advantages/Comparisons

- Mechanically
  - Titanium = light weight
  - 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.
References

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