Adaptive Disc Golf Launcher for Disabled Veterans

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Multiple Disciplinary Design Program

Background

Over 294,000 Americans, including 43,000 Veterans, live with spinal cord injuries often causing paralysis and limiting access to sports like disc golf.

Sports improve quality of life after injury

Challenge

Disc Launcher needs to:

- Launch 100 ft
- 1 minute set up
- User approved

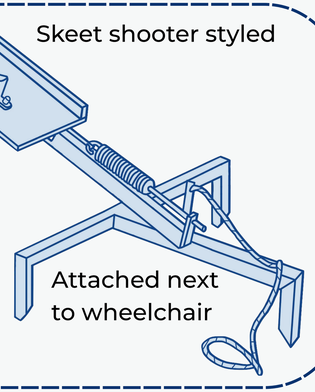
Current disc-launchers are either too heavy or are manual devices requiring significant upper body strength. Neither allows partial quadriplegics to meaningfully participate in disc golf.

Need Statement

Disabled veterans with partial quadriplegia need a way to play disc golf with greater functionality and independence

Prototyping

Skeet shooter styled



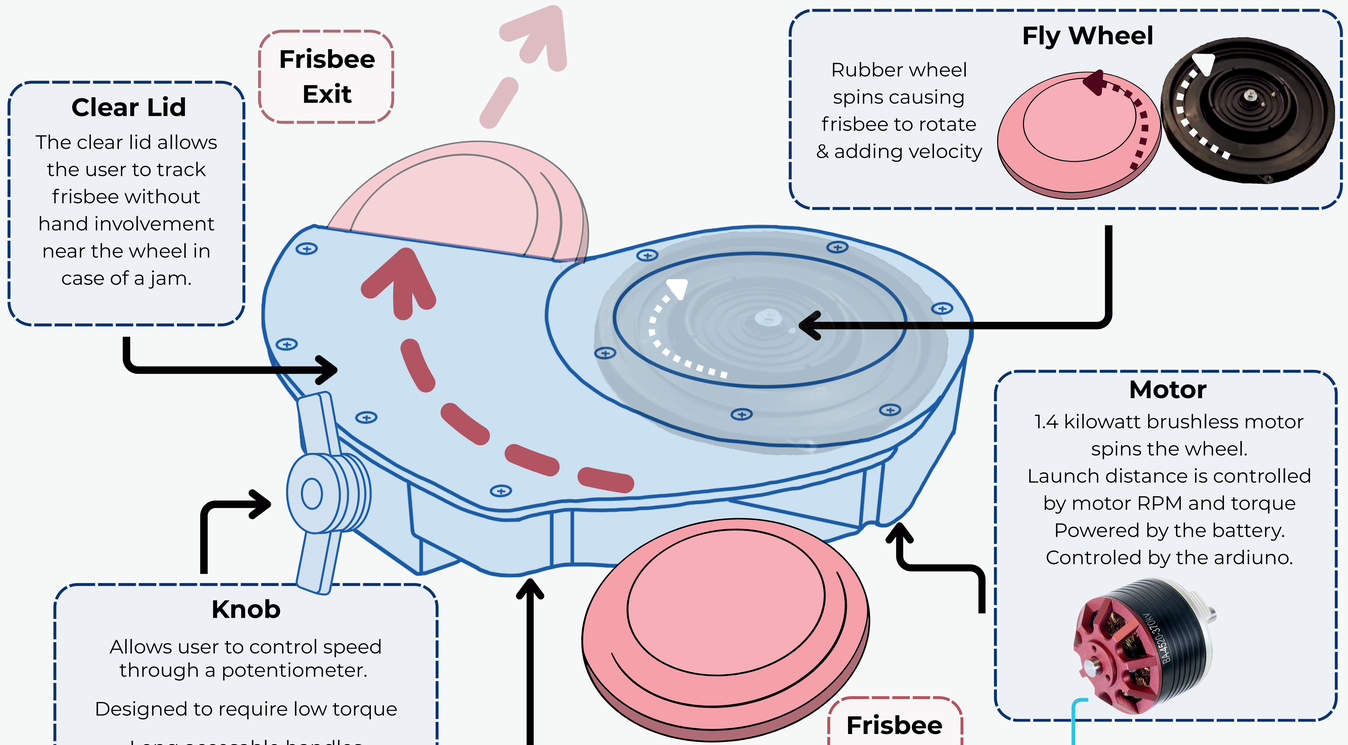
- Skeet shooter
- Optimizes distance
- Safety issues
- Too much force required

Final Solution

Successful user tests with varying levels of paralysis

- Improved accuracy, durability & distance
- Less force required & lighter

Final Design



Testing

- Frisbee laucnhed over 100 ft ✓
- Took less than 1 min to setup ✓
- Users loved the design ✓

- Requests for ramp to load frisbee
- Mounting system can't be universal

Distance	Accuracy
91.6 ± 8.6 ft	20.0 ± 17.2 degrees
70.2 ± 8.7 ft	25.0 ± 6.6 degrees
37.7 ± 4.8 ft	33.4 ± 2.6 degrees

Next Steps

- Hand off project to VA
- Increase accesibility features
- Streamline electronics
- Increase durability

Acknowledgments

MultiDisciplinary Design: Alissa Burkholder Murphy
DAV: John Kleindienst, John DeMaggio, Oscar Olguin