

A-WAVES

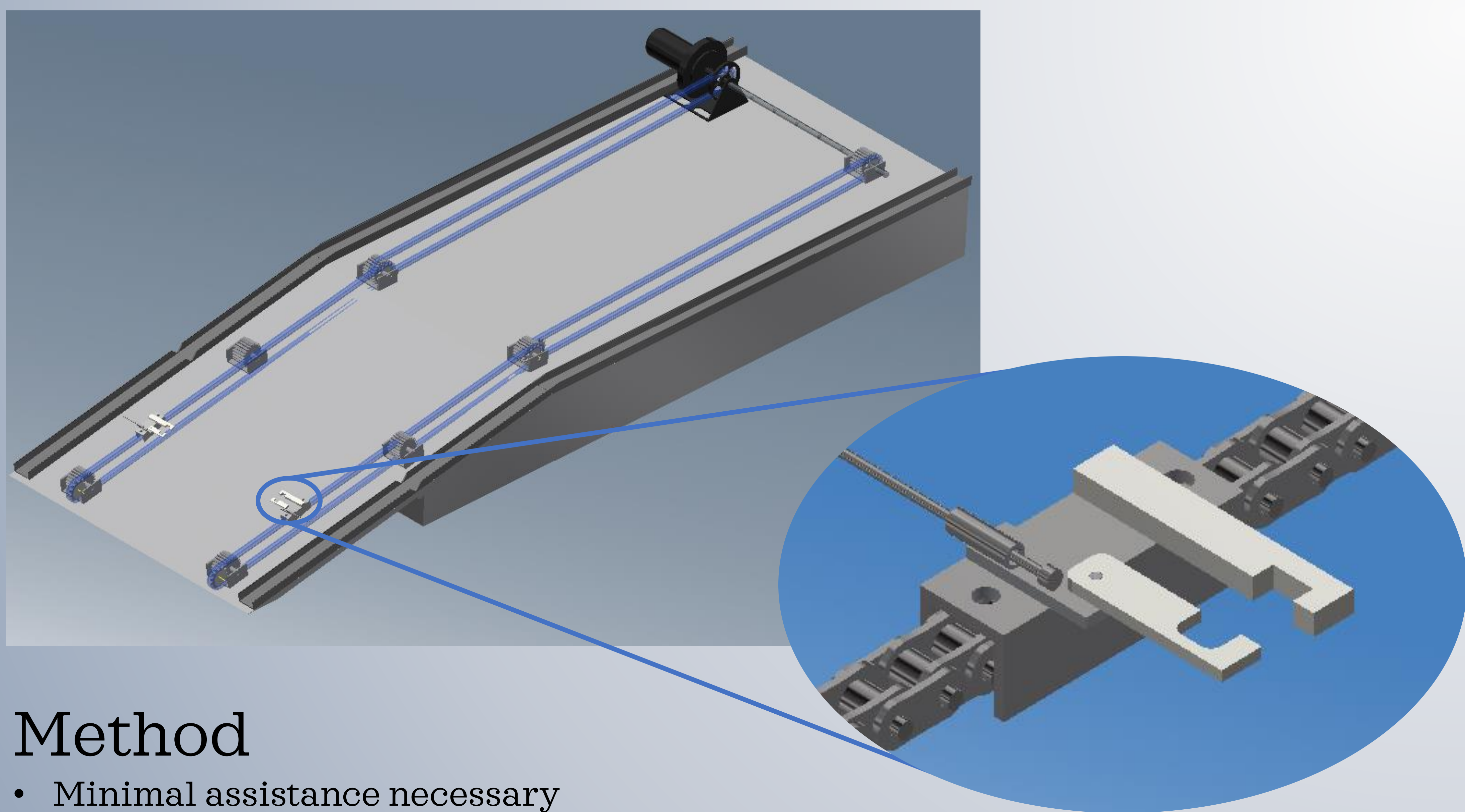
(Automated Wheelchair Accessible Vehicle Entrance System) MEM-38

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- Advised by Dr. Sorin Siegler
- Sponsors: ASME, Botstiber, MEM Grant



Introduction

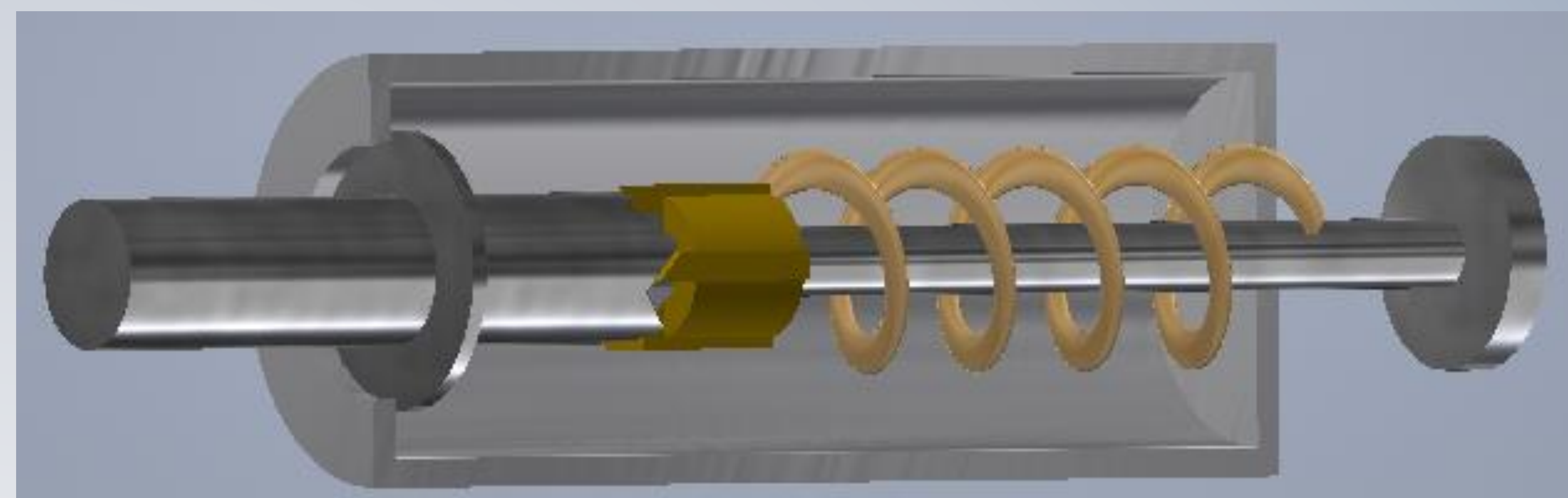
Most vehicles are not designed with wheelchair accessibility in mind. Some companies are working to make vehicles more accessible. There are vehicles that have been modified with ramps to accommodate wheelchairs, but this is not a perfect solution.



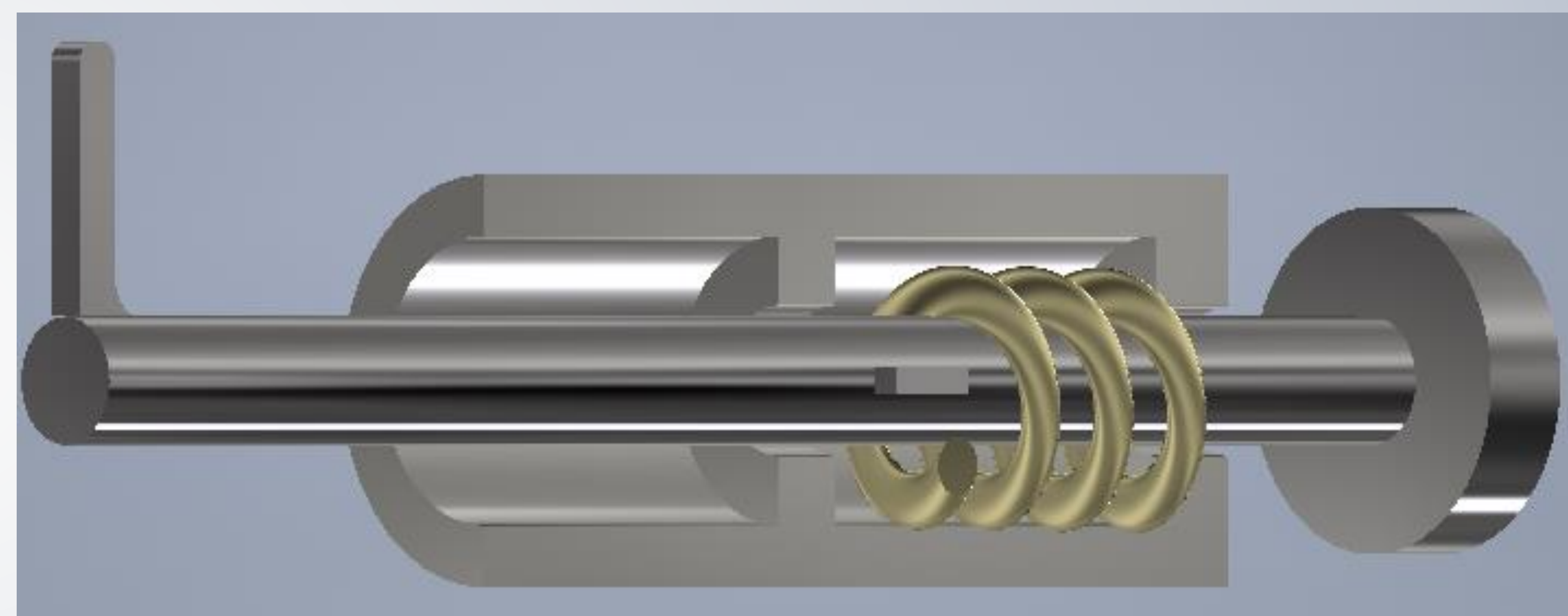
Method

- Minimal assistance necessary
- Engages with wheelchair at bottom of ramp
- Motor turns on → Wheelchair is pulled into the vehicle
- Stays engaged during transit
- Vehicle is shut off → Ramp is lowered → Process reversed
- System disengages

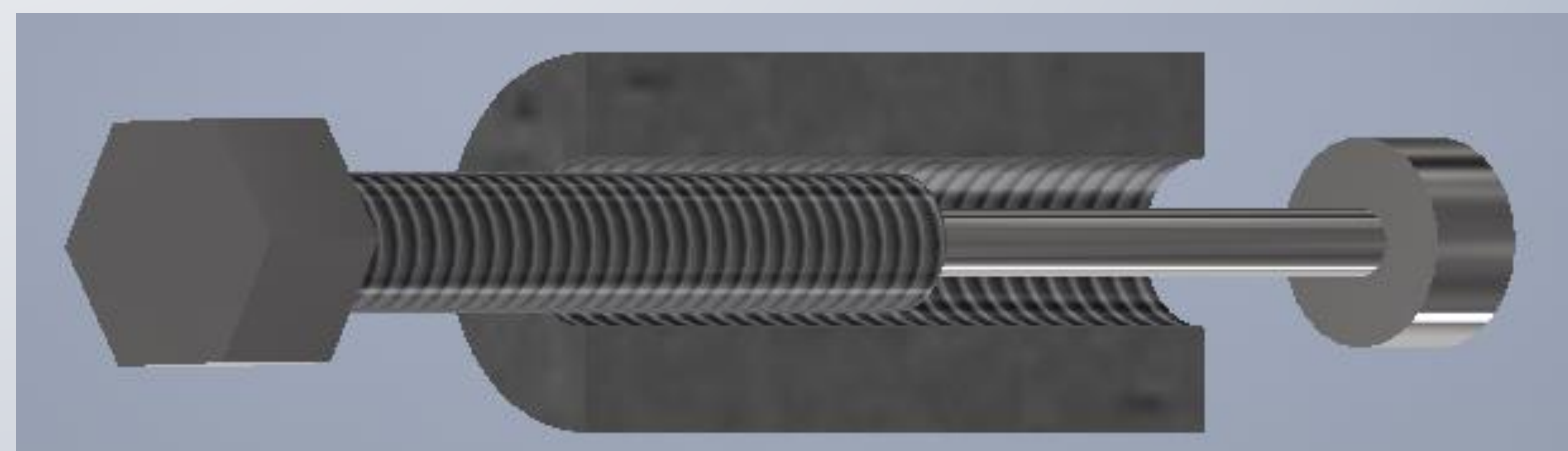
Engagement Mechanism Prototypes



- Inspired by a pen
- Push to engage
- Push to disengage
- Spring loaded system
- Stays engaged



- Lever based concept
- Push to engage
- Pull to disengage
- Spring loaded system
- Turn to lock/unlock
- Stays engaged



- Screw based concept
- Twist to engage
- Twist to disengage
- Simple mechanical system
- Stays engaged