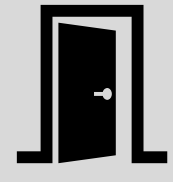


Team 510: Swing Gate Lock Improvement

Kayla Boudreaux | Jacob Brock | Ernest Patton | Dior Reece | Olivia Walton | Bradley Wiles

User Issues

Failure to Close



Poor Gate Installation



Latch Misalignment



Key Goals

Universal



DIY Friendly



Mechanical



Robust



Commercially Profitable



Targets

- Maintain current power source
- Lock engages as desired and passively releases
- Endures extreme environments
- Account for vertical sag in any gate

Objective

The objective of this project is to design an innovative gate latch mechanism that effectively addresses current issues with misalignment and improper latching. Our goal is to develop a solution that ensures reliable engagement, enhanced durability, and ease of installation.

Machined Design



Right Hinged Gates



Fascia Mounted

Side Mounted

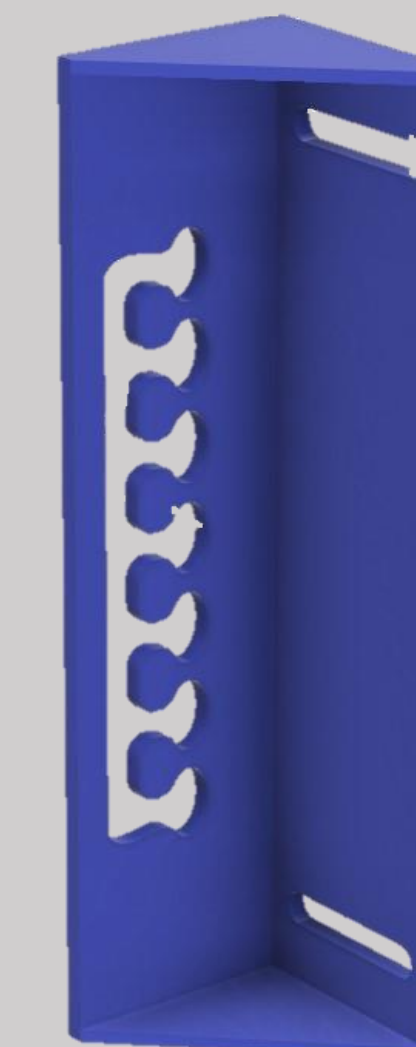
Left Hinged Gates



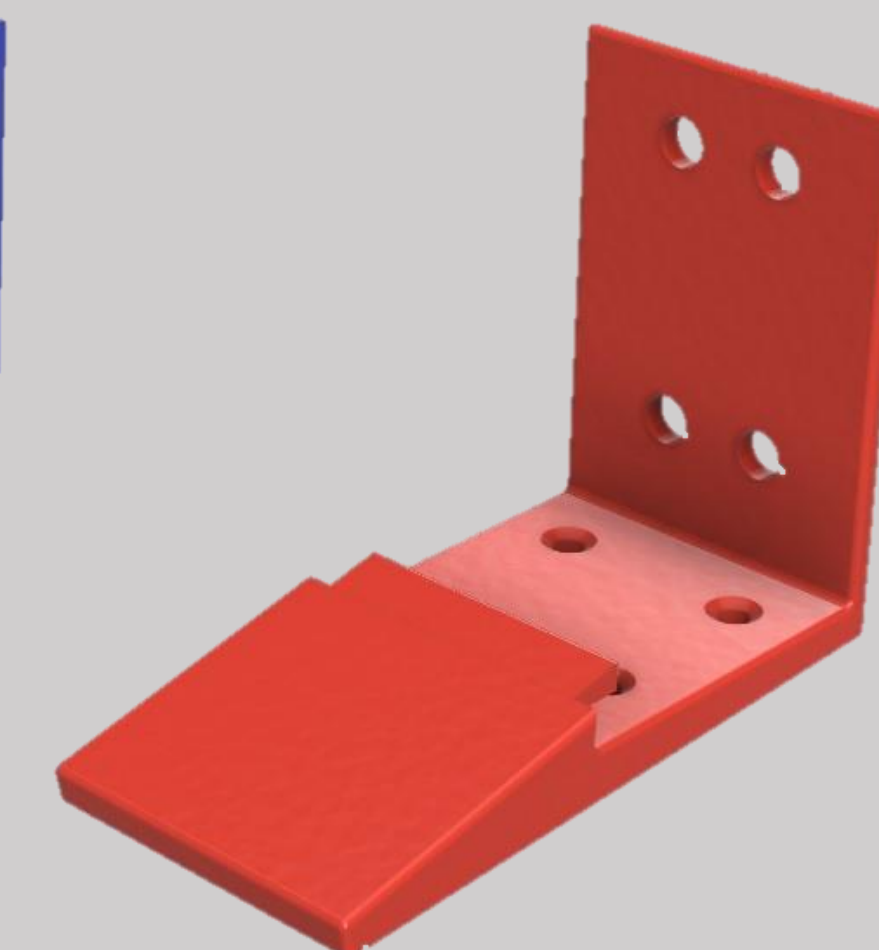
Fascia Mounted

Side Mounted

Adjustment Plate



Ramp



Material Selection

Powder Coated

Aluminum 6061

Results

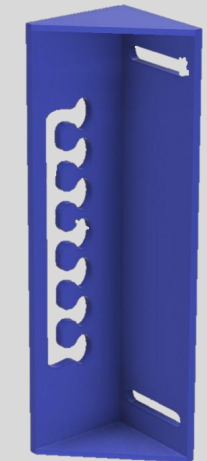
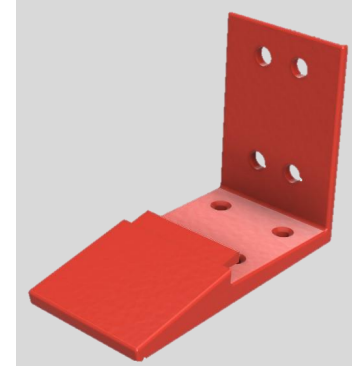


Plate accounts for 3.54 inches of misalignment



Ramp accounts for 0.50 inches of misalignment

Conclusion

In conclusion, our adjustment plate and ramp combination allows the user 4.04 inches of total adjustability. This improvement seeks to minimize common alignment issues and foster the longevity of the swing gate lock.

Acknowledgments

FAMU-FSU College of Engineering

Project Coordinator
Dr. Shayne McConomy

Project Advisor
Dr. Simone Hruda

Project Sponsors
Darryl Beadle & Mickey Nguyen