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Sponsored by Simpson Performance Products

Problem Statement

Simpson’s 5-point racing harness production process can be optimized by minimizing non-value-added tasks performed by new and current operators, and by implementing a new storage system to help organize parts.

Purpose

- Optimize production process in order to maximize the number of seatbelts produced .
- Increase overall warehouse capacity.

Areas for Improvement

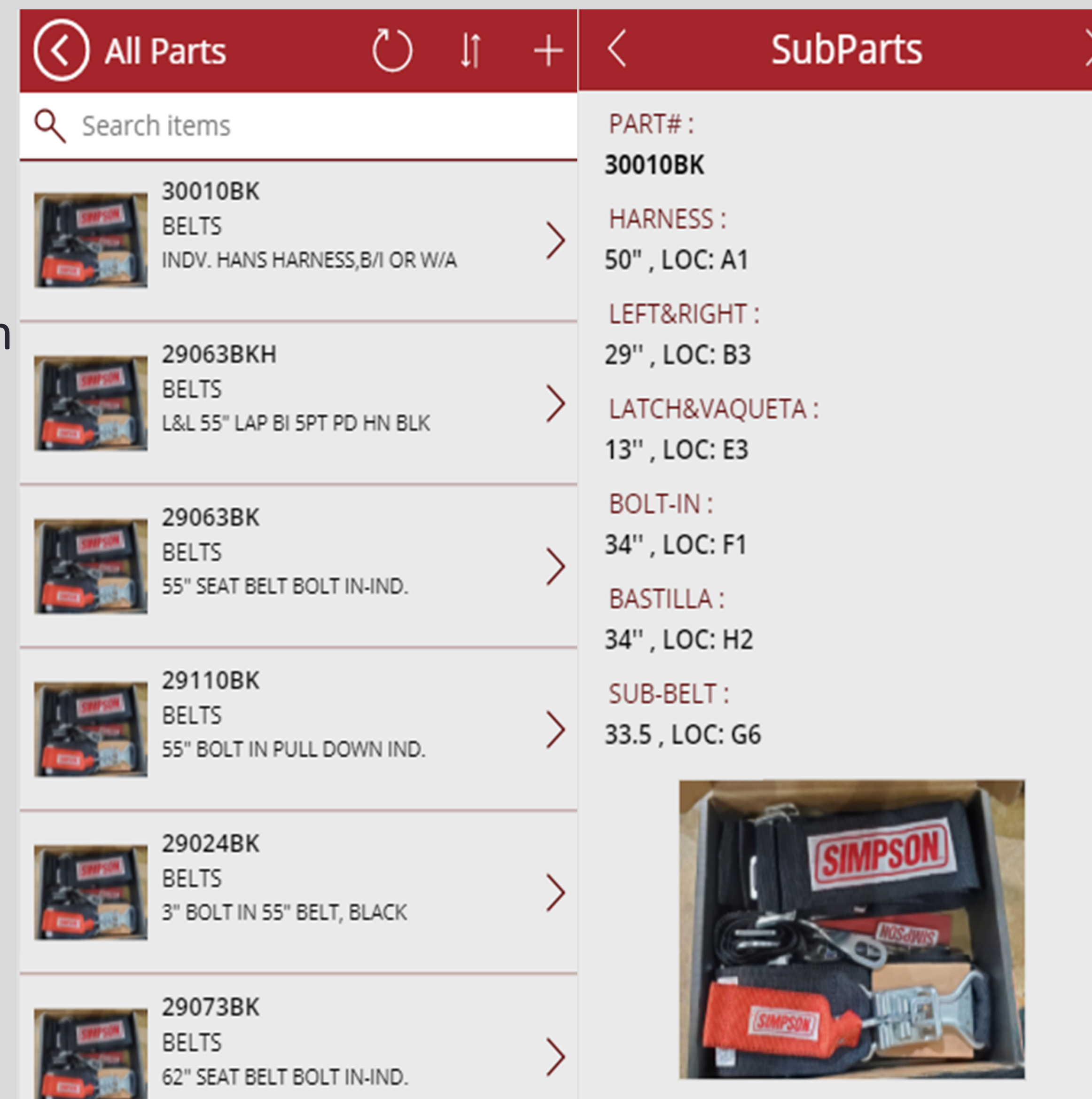
- Operators utilize a binder that they reference to find, assemble, and package parts.
- Storage systems are absent in key areas of the warehouse.
- Sewing operators take many manual attempts to properly align sewing plates.

Objectives

- Provide a new system in which new, and current, operators can easily gather information regarding each seat belt.
- Provide new storage system design in order to maximize space and efficiently organize sub-assemblies.
- Design a jig that minimizes attempts needed to align sewing plates.

Proposed Implementations

Database Interface



Information Offered

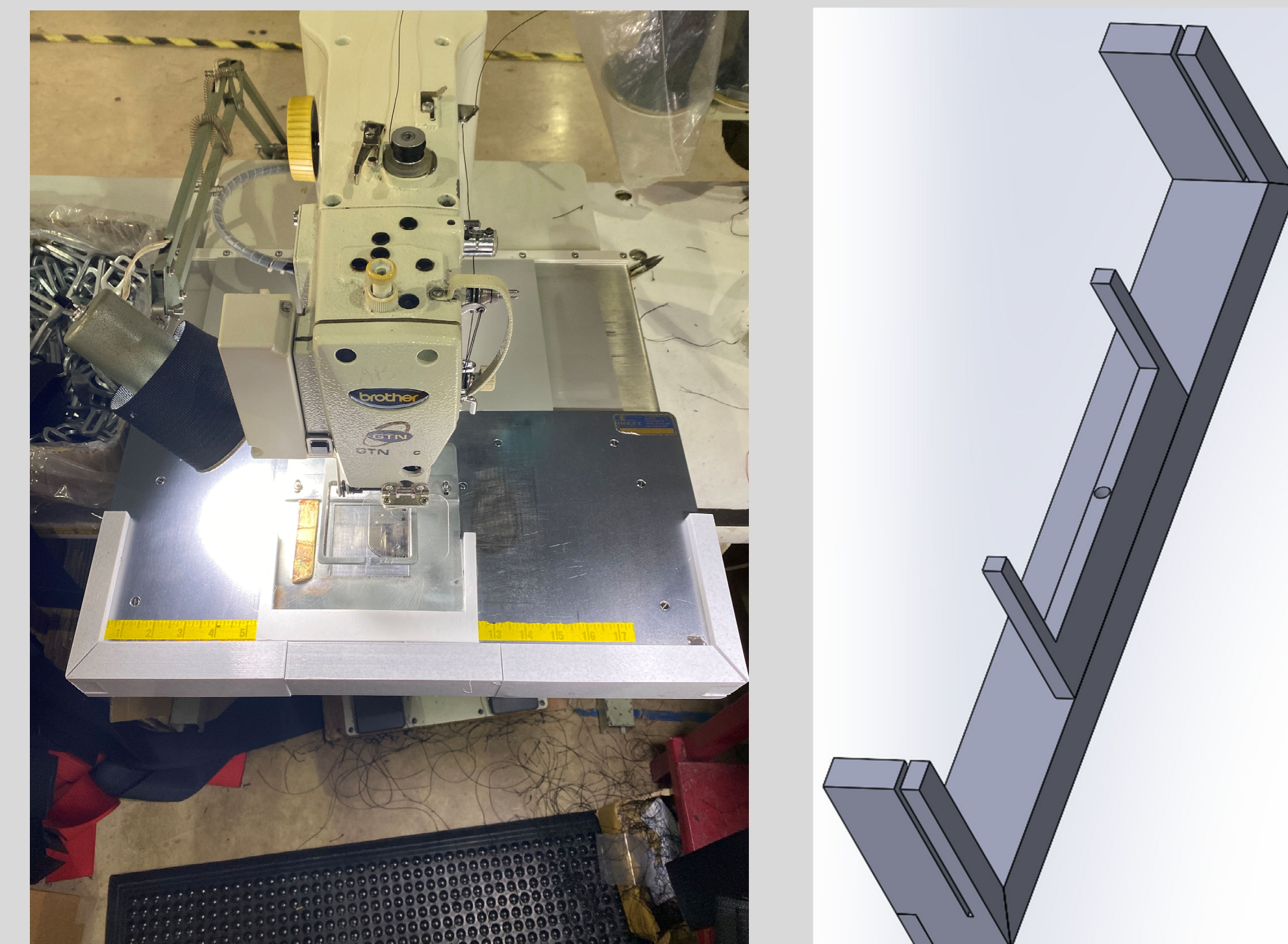
- Allows new, and current, operators to find information about any part.
- Reduces time to locate parts.
- Allows operators to confidently assemble and package without the need of the supervisor.
- Part Location
- Part Description
- Visual Aids
- Eliminates outdated reference system currently in place
- Database created using Power Apps

Storage System



- Assigning a coordinate system along with the storage system allows parts to easily be located.
- Integrated with designed database.
- Opens space within the warehouse.
- Shelf provided by Grainger.

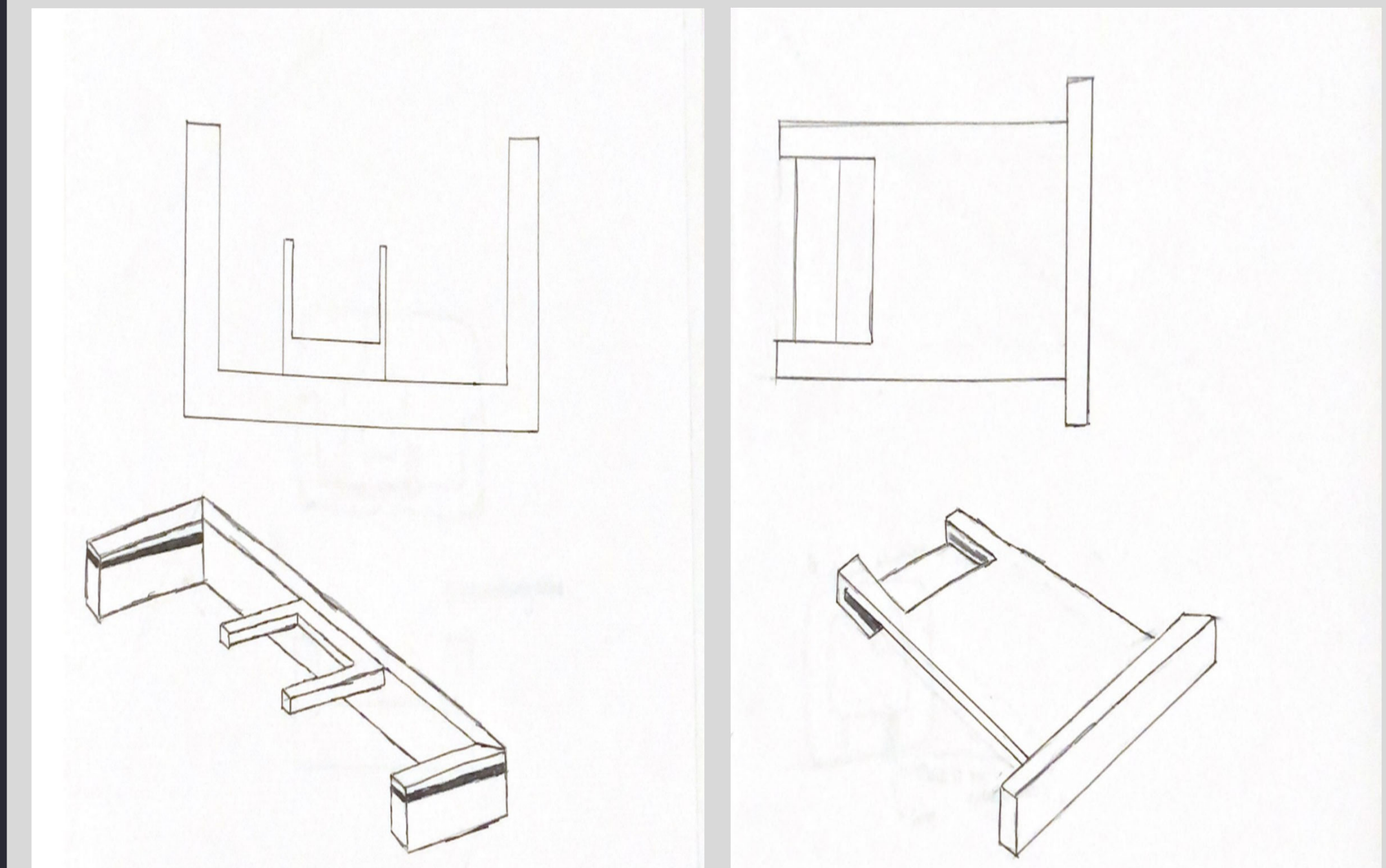
Alignment Tool



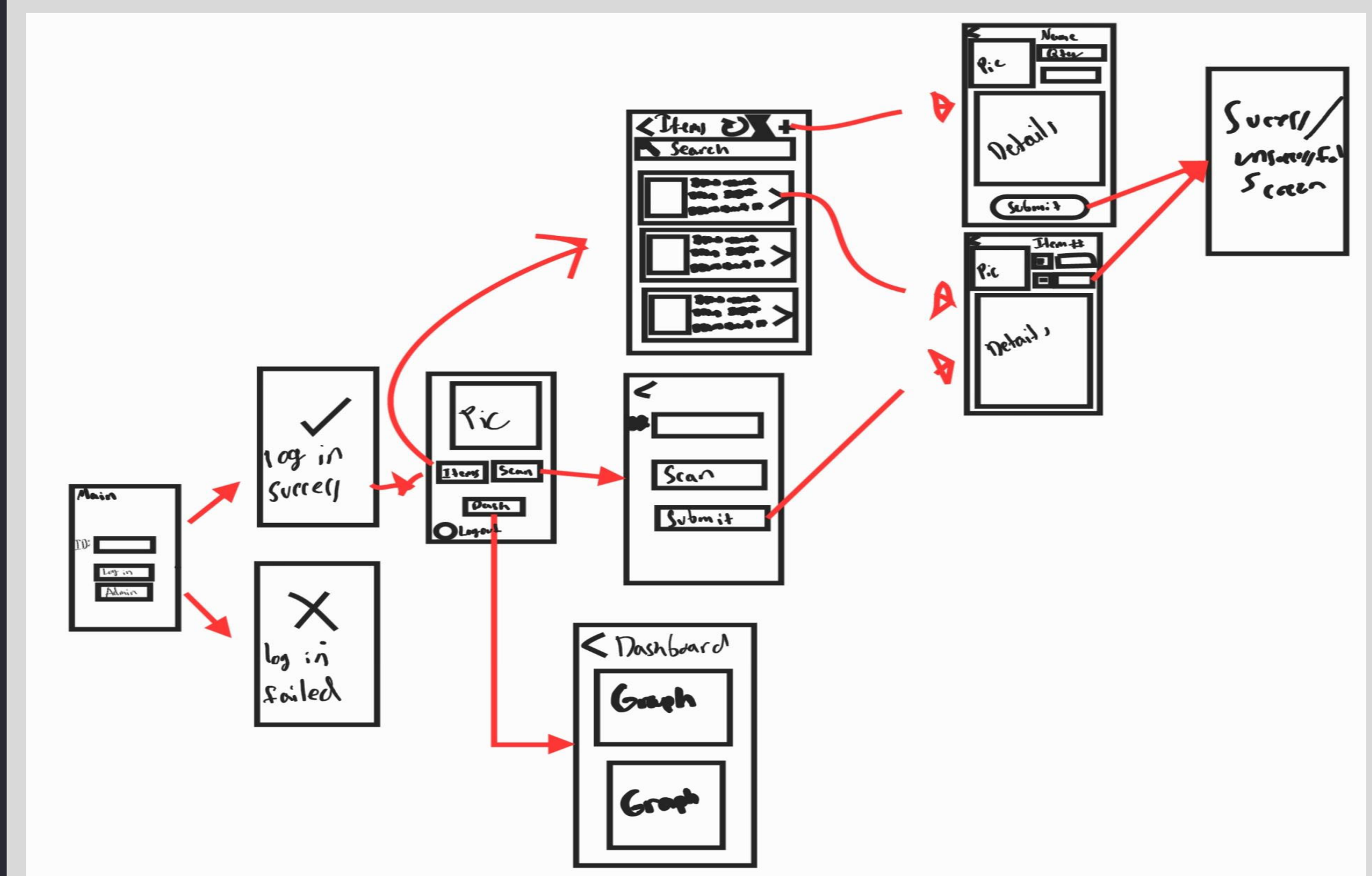
- Helps operators center the stitching plate easily, minimizing multiple manual attempts.
- Reduces time needed to realign stitching plates.

Process

Conceptualization



After generating ideas for an alignment tool using the 6-3-5 method, the top two designs were selected and refined.



Scheme of Database

Current and Future Work

- Database design
- Frequently updating database to best fit the needs of operators
- Identifying key points within the warehouse to install storage system
- Designing alignment tool.
- 3D printing prototype of jig.
- Testing jig prototype.
- Continually improving all designs until exceptional.