Releasable Wagon Bed
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The Problem:
Employees at a tree farm are having a tough time handling larger trees, thus resulting in slow shipping speeds and back injuries.

The Solution:
Design a wagon that is both economical and practical to speed up shipping times. This wagon should also have a lower height to aid in the prevention of injuries.

Final Deliverables:
A wagon that has a shorter frame, with a releasable wagon bed that can be picked up by a forklift. A back injury prevention guide, as well as a complete construction guide on how to create another wagon.
The Construction Process

Step 1: Design preliminary sketches

Step 2: Design mock-ups on AutoCAD

Step 3: Evaluate the old wagon frame

Step 4: Disassemble

Step 5: Construct lower frame

Step 6: Construct upper frame

Step 7: Add forklift pockets

Step 8: Put together and paint

Step 9: Finished product
The Results

Test Results:
- Less strain on the back
- Easy use and interchangeability.
- Faster shipping time for larger trees in 15 gallon bags.
  ⇒ Total time saved from beginning to end:
  7 Minutes per wagon load
- Faster shipping times for smaller trees in 1-5 gallons pots.

Graphical Data

Ground-to-Wagon Loading Times

Wagon-to-Semi Loading Times

Total Semi Load Times

“This wagon is going to help us out a ton on many aspects of shipping”
-Kent Berg, Owner

Special Thanks to our
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