2. Stumper
Christmas Tree Farm Market

- 25–30 million Christmas trees sold annually in the US
- 15000 Christmas tree farms across the country
Stump Dangers

- Tripping Hazard
- May obstruct large maintenance vehicles

Current Solution:
Manually trim with chainsaw
Stumper

- Custom built chainsaw
- Ergonomic formfactor
- Trim stumps within 1.5 inches of ground
Sketch Model

- Is this mounting geometry effective?
- Ideal blade angle?
- Maneuverable in our target environment?
Testing

- 1 saw sufficient
- Angle unimportant
- Rocking motion
- Hard to maneuver
## Existing Products

<table>
<thead>
<tr>
<th>Stump Grinders</th>
<th>Brush Cutter</th>
<th>Chainsaw</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Stump Grinder Image]</td>
<td>![Brush Cutter Image]</td>
<td>![Chainsaw Image]</td>
</tr>
<tr>
<td>• Time consuming</td>
<td>• Limited to 4 inch diameter or less</td>
<td>• Difficult cutting position</td>
</tr>
<tr>
<td>• Expensive</td>
<td>• No anchor point to ground</td>
<td>• Unsafe user conditions</td>
</tr>
<tr>
<td>• Hard to maneuver</td>
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Next Steps

• Investigate needs of other target customers like hobby farmers and arborists
• Explore alternative cutting mechanisms
References

Opening Statistics


Infographic