3D-printed pulley

This OSAT is a heavy-duty rope pulley that can be used to raise water from a well.[1] This pulley can be customized to any desired size, and can be paired with multiples of itself to further increase mechanical advantage.

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Bill of Materials

- The wheel and mount are designed to be printed in PLA or ABS, and the parts are customizable to any desired metric bolt size from M4 to M10.
- The parts can be customized here: [http://www.thingiverse.com/thing:571542](http://www.thingiverse.com/thing:571542), and source files are also found here: [http://libre3d.com/category/569/Hand-Tools/listings/801/OSAT-Pulley.html](http://libre3d.com/category/569/Hand-Tools/listings/801/OSAT-Pulley.html)
- Total BOM: Printed mount, printed pulley wheel, 1 bolt for the shaft, 1 nut.

Tools needed

- MOST Delta RepRap or similar RepRap 3-D printer

Skills and knowledge needed

- Ability to operate a 3D printer and Thingiverse Customizer.
Technical Specifications and Assembly Instructions

- Assembly instructions with images can be found here: http://imgur.com/a/5llmk
- Print time estimate: ~4 hours, depending on the parameters entered.
- Assembly time estimate: 2 minutes

Common Problems and Solutions

- Did not experience any issues

Cost savings

- Fully customizable size: **Priceless**
- OSAT Total Cost: Printed parts ($1.86) + hardware($0.74) = **$2.60**
- Closest commercial equivalent: http://goo.gl/ClkS1T
- $8.90 savings and 77.4% savings

References

1. web page: Appropedia Pulley Main Page, Available: https://www.appropedia.org/Pulley