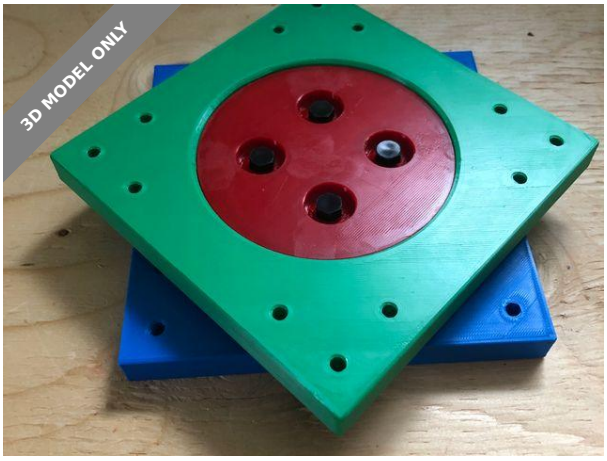

Lazy Susan (Building Blocks Compatible)

TheOddUncle

VIEW IN BROWSER

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Summary

A less than perfect Lazy Susan

Hobby & Makers > Other Ideas

This is a Lazy Susan that performs “OK.” It is part of a series where a crane is built using building block. Problems occur and the solution requires new blocks be designed. This is the way I come up with new building block designs. The solution these blocks were attempting to provide was a being a stable rotating core that would be able to withstand tipping forces that occur when the crane picks up an object. A better solution was discovered and linked below; however, these blocks seemed to have some merit and are included in the growing library of building blocks. The bearings are best printed using PrusaSlicer 0.07 ULTRADETAIL.

Rotating Plates (Building Blocks Compatible) by TheOddUncle | Download free STL model | Printables.com

A PDF pamphlet is included showing how the parts fit together.

I have no design or engineering experience and cannot guarantee the safety of or recommend constructing this project. Project was designed for my nieces and nephews so that they could learn skills and test out theories while building a working mechanism. It is part of a larger project I am working on where easily produced building blocks would allow for a wide array of mechanisms and structures to be accessible for those who

may be interested. I am making this project public in hopes that a wider community can be formed and humbly ask for any feedback you would be willing to provide. Thank you.

The system of building blocks has three main components.

1) 3D printed blocks that I find are best printed using “0.15mm Quality” setting in PrusaSlicer. This produces acceptable tapped holes that will accept 1⁄4"-20 bolts. Generic PLA is the filament that I use and it has more than met my needs. For strength purposes I use 4 perimeters and a 10% gyroid infill with 5 layers on top and bottom. Each file's name will have a number in brackets. This number represents the total of a part needed.

2) 1⁄4"-20 plastic bolts and nuts from McMaster-Carr. Though any 1⁄4"-20 bolt would work, I would not trust children with metal bolts and the plastic ones from McMaster-Carr work well and are the most affordable option I could find.

3) MDF planks that are 1 inch wide, 7/32 inch or 1⁄2 inch thick and variable lengths. Unfortunately, all the 1⁄4 inch material options like plywood and MDF have a thickness of 7/32 inch. This is not the biggest problem as a 1/32 inch washer works “OK” when lining up parts but access to true 1⁄4 inch material would be preferable. The planks have a 9/32 inch hole drilled on the midline starting half an inch in and spaced 1 inch apart. For every 1 inch in length, each plank would have one hole. The planks could be 3D printed however the cost in time seemed too much. A jig for drilling holes in the planks will be released as a separate project. Ripping MDF on a table saw into strips with width 127/128 inches worked well for me.

Plank Lengths needed are:

(7/32 inch thick) 4 x 2 inches, 2 x 3 inches, 1 x 4 inches, 2 x 6 inches, 8 x 7 inches, 2 x 10 inches, 4 x 12 inches, 2 x 13 inches, 3 x 14 inches.

(1⁄2 inch thick) 5 x 4 inches, 3 x 6 inches, 2 x 10 inches, 3 x 16 inches.

A PDF pamphlet is included showing how the parts fit together.

To anyone interested in the project, I thank you for your time and any suggestions or feedback you may provide. There are dangers associated with this project such as choking hazards and moving parts that can cause injury or at the very least discomfort. Again, I cannot guarantee the safety and proper functioning of the project should you decide to construct it. I am releasing the files as a way to bring an idea of mine out into the public and not to encourage you to actually print and construct the repeating catapult. It is more a theory like some would present in a book or paper and I simply do not possess skill in the written word to facilitate such an undertaking.

Model files

red-lazy-susan-insert.stl

green-lazy-susan-top.stl

blue-lazy-susan-base.stl

pink-ball-bearing-half.stl

yellow-ball-bearing-pressure-plug.stl

Other files

lazy-susan-bearing-pamphlet-building-blocks.pdf

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