



Crumb Sweeper



LoboCNC

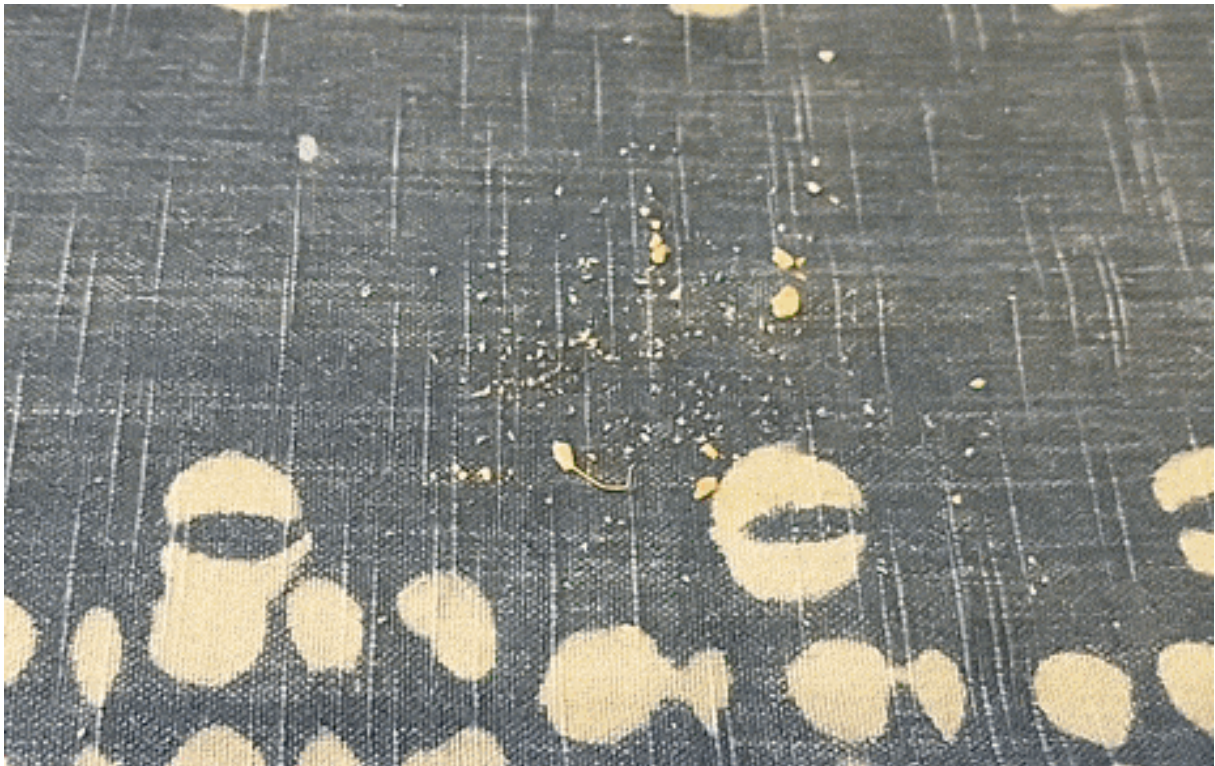
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updated 26. 11. 2023 | published 26. 11. 2023

Summary

Just in time for Thanksgiving cleanup!

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This little crumb sweeper is just like the ones you see at the fancy restaurants, complete with a 3D printed roller brush. A few sweeps back & forth (works in either direction) kick the crumbs up into the little catch tray.

The hard part of this design was not in figuring out how to print a cylindrical brush, but figuring out how to cut the brush free from the outer support cylinder. The solution is a printed shearing tool that gets pushed inside the brush support cylinder to snap off the ends of the bristles flush with the cylindrical surface.

Printing

Use exactly 0.2mm layers to print the bristles properly. I used PLA which produced bristles of about the right stiffness. You may want a brim on the Brush and ShearTool parts for stability. Lastly, make sure you use the “Random” seam alignment when printing the brush. The default “Aligned” mode tends to put the weaker seam at the base of the bristles, which is exactly where you don't want it.

Liberating the Brush

First, note that one end of the outer support cylinder on the brush extends beyond the brush. Place this end down on a table. Insert the pointy end of the shear tool into the the top end of the brush cylinder. Don't twist the shear tool - just press it down firmly into the cylinder to start shearing off the ends of the bristles. You'll probably need to tap on the end of the shear tool with a small mallet to force it all the way through.

When you've reached the bottom, push the liberated brush back up through the top of the cylinder.

Now you can snap the brush in between the nubs on the sweeper top. The sweeper bottom just slides onto the top and clicks in place over two little friction nubs.

To use, just roll lightly back & forth over your table cloth. Works best on a cloth surface.

Model files

sweeper-top.stl





sweeper-bottom.stl



brush.stl



sheartool.stl

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