**3D PRINTED WOODWORKING AIDS**

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Below is a drawing of a woodworking aid I designed in August for 3D printing. With a dial indicator mounted on it, the aid is used to set saw blades accurately and repeatably to 90° from the saw’s surface [1]. The aid can also be used to set fences on table saws and jointers to 90°. Setting 45° and other angles is also possible.

A close up of a device

Description automatically generated

The picture below is of the 3D printed aid without and with a dial indicator mounted on it.

A picture containing indoor, table, food, sitting

Description automatically generated

I designed this aid using OpenScad, which is readily available, free software for doing 3D designs and producing STL files used by 3D printers [2]. Minimal coding skills are needed to use OpenScad, but it helps to remember a little about the order of doing operations with vectors and matrices. Using this guide to set the angle of a saw blade or fence requires presetting the dial indicator to zero at the desired angle. 3D printed angle guides can be used for this calibration. Shown below are three guides I designed for 45°, 22.5° (from vertical) and 90° angles using OpenScad and then 3D printed. Guides for other angles can be made without requiring any additional OpenScad coding; all that is needed is to set the angle parameter in the existing code. This kind of parameterization is one of the attractive features of OpenScad.

A close up of a box

Description automatically generated

Two other woodworking aids I designed using OpenScad and then 3D printed are shown below. One is made to hold the KM-1 Kerfmaker device of Bridge City Tools, which is used for making accurate kerfs, grooves, dados and cross-lap joints [3, 4]. Shown below is an OpenScad drawing of the Kerfmaker holder and a printed holder with the KM-1 Kerfmaker and a magnetic switch in the holder; the magnetic switch permits the holder to be placed in position on a saw’s surface and then firmly keeps it in place while using the Kerfmaker to cut accurate kerfs.

A close up of a piece of paper

Description automatically generated

The other aid is used to simplify sharpening rectangular and curved scrapers using Peter Galbert’s method [5].

A picture containing cake, indoor, table, birthday

Description automatically generated

3D printers can be used to make aids for woodworking, and OpenScad is a free software program that can be useful for accomplishing the design of the aids.

1. <https://www.bing.com/videos/search?q=dial+indicator+sawblade+angle&docid=607998065924834424&mid=7B0D688152BEE2E766827B0D688152BEE2E76682&view=detail&FORM=VIRE>
2. <http://www.openscad.org/>

1. <https://bridgecitytools.com/products/km-2v2-kerfmaker-pro>
2. <https://www.rockler.com/bridge-city-tools-km-1-kerfmaker>
3. Peter Galbert, “Sharpen and use a curved card scraper,” *Fine Woodworking*, pp. 20-25, Nov/Dec 2018.