



## Self releasing geared clamp hook for towels



HD\_Creator

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### Summary

Over-engineered? Sure! So why did I use a complex herring-bone gear? Because we printers can! And gears are simply cool!

[Household](#) > [Bathroom](#)

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### Use-case

This geared self-clamping and self-releasing hook is ideal to hold towels that have no hanger (or have an owner that is too lazy to use hangers).

To hang up the towel, simply touch the lower lever slightly from the bottom and it will lift the upper lever at a multiplied angle. So overall, the hook opens up. Release the towel and the lower hook, the weight of the towel will press the upper lever down to safely lock the towel. The heavier the towel, the harder the upper lever will be pressed down to hold it tight.

To release the towel, you don't need to touch the levers at all. Simply lift up the towel, it will lift the upper lever with it and the lower level will follow only marginally, i.e. the hook will open.

## **Mounting it to a vertical surface**

In the original release of this print, the only way of mounting it to a vertical surface was by screwing it on. That left all users out that could not drill a hole in their intended surface, e.g. on the door of a fridge. Thanks to respective feedback that I got, I have now designed an additional glue plate and a fitting geared part. This add-on can be found here:

<https://www.printables.com/model/206515-add-on-for-award-winning-clamp-hook>

## **Why herring bone gears?**

This kind of gear is difficult to manufacture ... unless you are 3D-printing ... then it is very simple. So why not use the fact that we can easily produce such complex parts to our advantage?

It is simply deeply satisfying, to see the herring bone gear work first thing in the morning when you brush your teeth.

## **Two versions, so you can chose...**

I could not make up my mind if I want this part to be more practical (straight) or more esthetically pleasing (round). As beauty lies in the eye of the beholder, you may not even agree with me, that the round one looks better. So please be my guest and chose which version you like better.

## **Printing**

Simply print all parts in the uploaded orientation. You don't need much infill (I have typically used 15-25%) but I strongly recommend to use at least 3 (better 4) perimeters to make the parts strong enough. I love Prusament PETG for functional parts and do recommend it as thanks to it's flexibility, it accepts metric screws even without a printed thread. For the side plates I have also tested PLA, which works fine.

You need to print:

- Two pieces of the side-plate (it is symmetrical and works for both sides)
- The wall mount
- Your choice of top lever and bottom lever (either both round or both straight)

## Assembly

All you need in addition to the printed parts are 8pcs of screws M3x8. The holes in the gears and levers are designed to accept the screws with a reasonable amount of resistance. That makes sure that the screws stay exactly as you mount them. Make sure to leave some slight play on the gears so that they can move freely.

### Please like it if you like it

I hope you like this fancy design and maybe you even find it useful (I do). Please give me a like if you do, that makes my day.

Happy printing!

## Model files



**bottom-lever-straight-\_v014.stl**



**top-lever-straight-\_v014.stl**



**side-plate-left-and-right-\_v014.stl**



**wall-mount-with-herring-gear-\_v014.stl**



**bottom-lever-round-\_v014.stl**



top-lever-round\_v014.stl

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