

# Supplementary Images for "Realizing the Borromean Rings in Wood via Yosegi Zaiku"

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## Introduction



**Figure 1:** *Examples of Yosegi Zaiku. These two pieces are samples of the work of the Japanese master Ichiro Ishikawa of Hamamatsuya in Hakone, Japan [1]*

## Designing the Pattern Cell



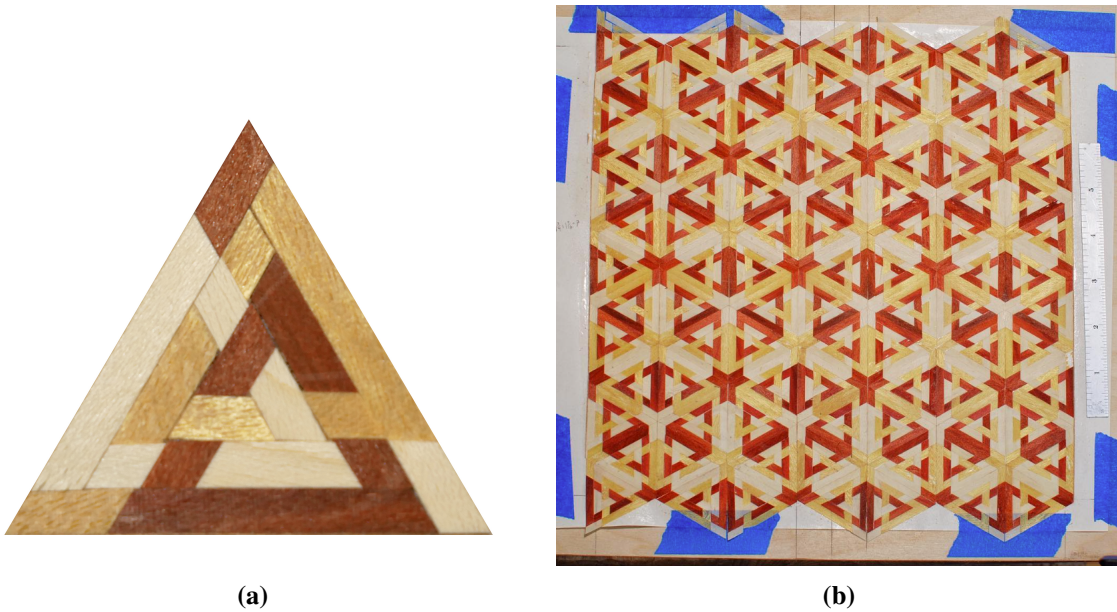
**Figure 2:** *Example of the Borromean Rings appearing as a Valknut. This example is from one of the 7<sup>th</sup>-century Stora Hammars stones in Gotland, Sweden [2].*

### Constructing the Pattern Cell



**Figure 3:** *Building up the layers of the Borromean rings pattern cell. (a) the three pieces of the inner layer, glued and "clamped" via cauls and tightly wound cord, (b) building the middle layer on top of the inner layer*

### Assembling the Cells Into a Block



**Figure 4:** *(a) Closeup of an individual pattern cell from the final pattern block, (b) multiple shavings assembled to reveal the larger tiling pattern.*



## Summary and Conclusions



**Figure 5:** Example of both versions of the Borromean Rings Yosegi used to decorate an Apothecary cabinet[3]

## References

- [1] Ichiro Ishikawa. Hamamatsuya - Yosegizaiku Mokuzougan [http://shopping.hamamatsuya.co.jp/shop-english/html/template/default/assets/img/top/img\\_hero\\_pc01.jpg](http://shopping.hamamatsuya.co.jp/shop-english/html/template/default/assets/img/top/img_hero_pc01.jpg)
- [2] Berig via Wikimedia Commons. “Sacrificial\_scene\_on\_Hammars\_(I).JPG” CC BY-SA 3.0 [https://commons.wikimedia.org/wiki/File:Sacrificial\\_scene\\_on\\_Hammars\\_\(I\).JPG](https://commons.wikimedia.org/wiki/File:Sacrificial_scene_on_Hammars_(I).JPG)
- [3] Nicholas Phillips. “Apothecary Cabinet with Borromean Rings Yosegi” *Bridges Conference Art Exhibition*, Halifax, Nova Scotia, Canada, 27–31 July 2023. <https://gallery.bridgesmathart.org/exhibitions/2023-bridges-conference/nicholas-phillips>.