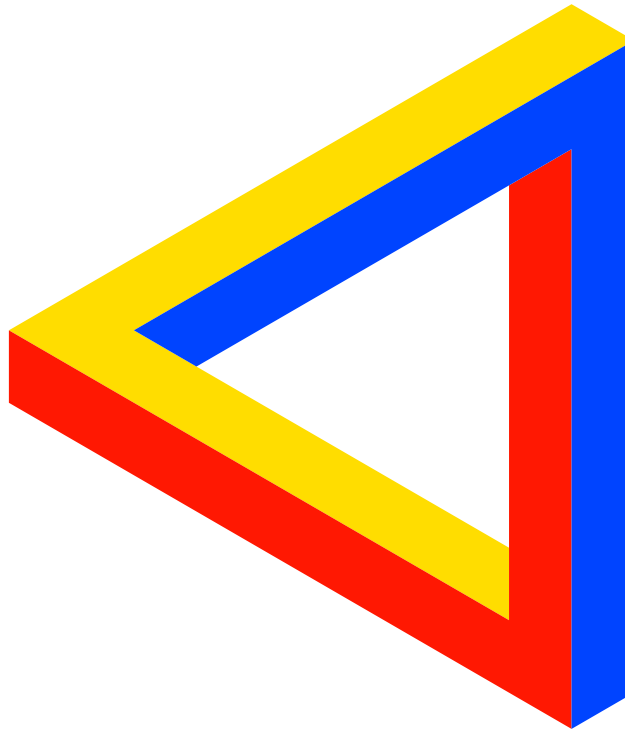


Hans Walser, [20130821]

## **Tribar Spirals**

### **1 The Tribar**

Figure 1 shows the usual tribar.



**Fig. 1: The Tribar**

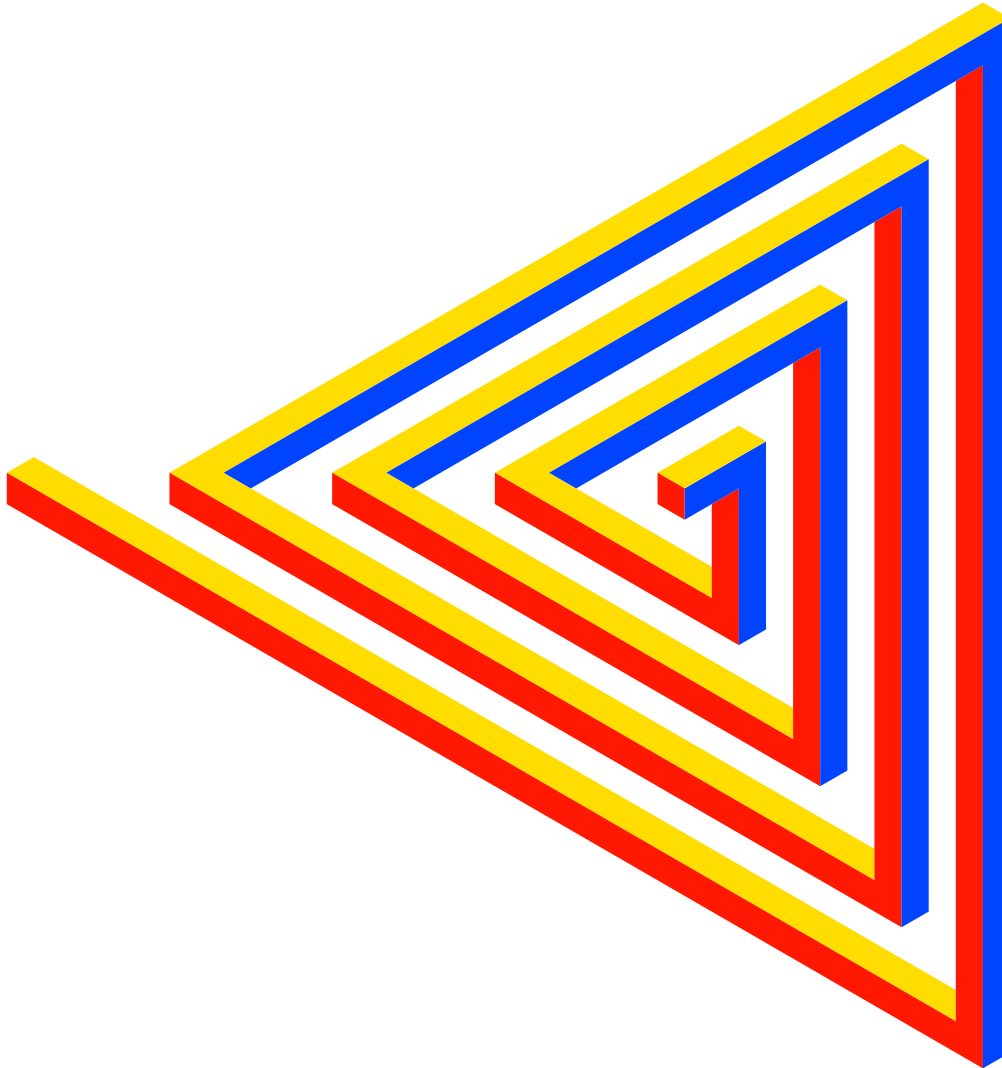
The tribar is an impossible structure, it cannot be realized in the three dimensional world.

## 2 Spirals

Now we try to extend the tribar into spirals.

### 2.1 Archimedean Tribar Spiral

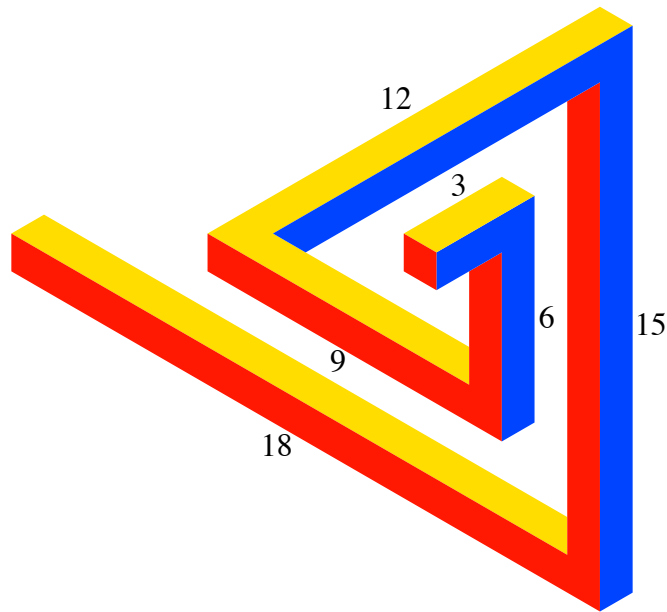
Figure 2 shows the Archimedean tribar spiral.



**Fig. 2: Archimedean Tribar Spiral**

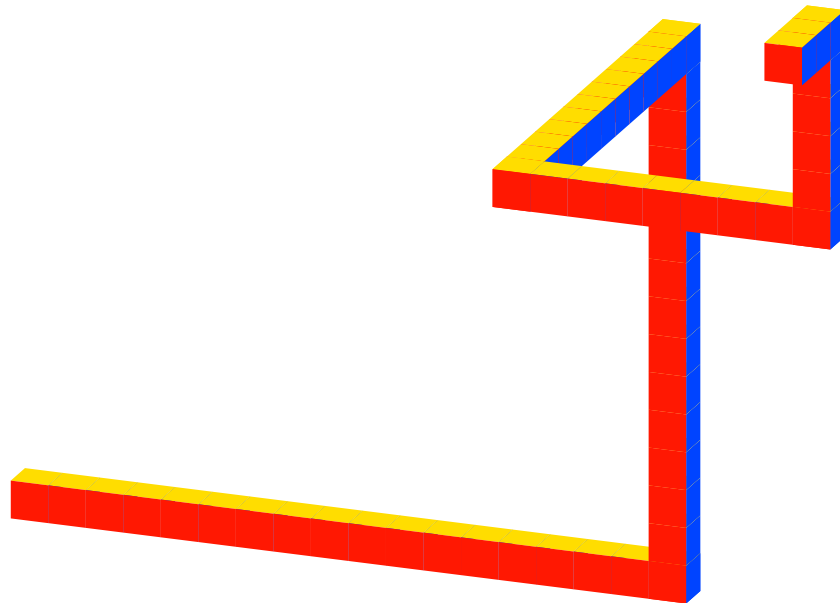
We have a real end in the center. All branches of the spiral have the same width. This figure shows a *not* an impossible structure.

We explain this in a smaller version (Fig. 3). (The indicated numbers give the total lengths of the edges, if the structure is built from unit cubes. The edge lengths are multiples of three.)



**Fig. 3: Smaller Version**

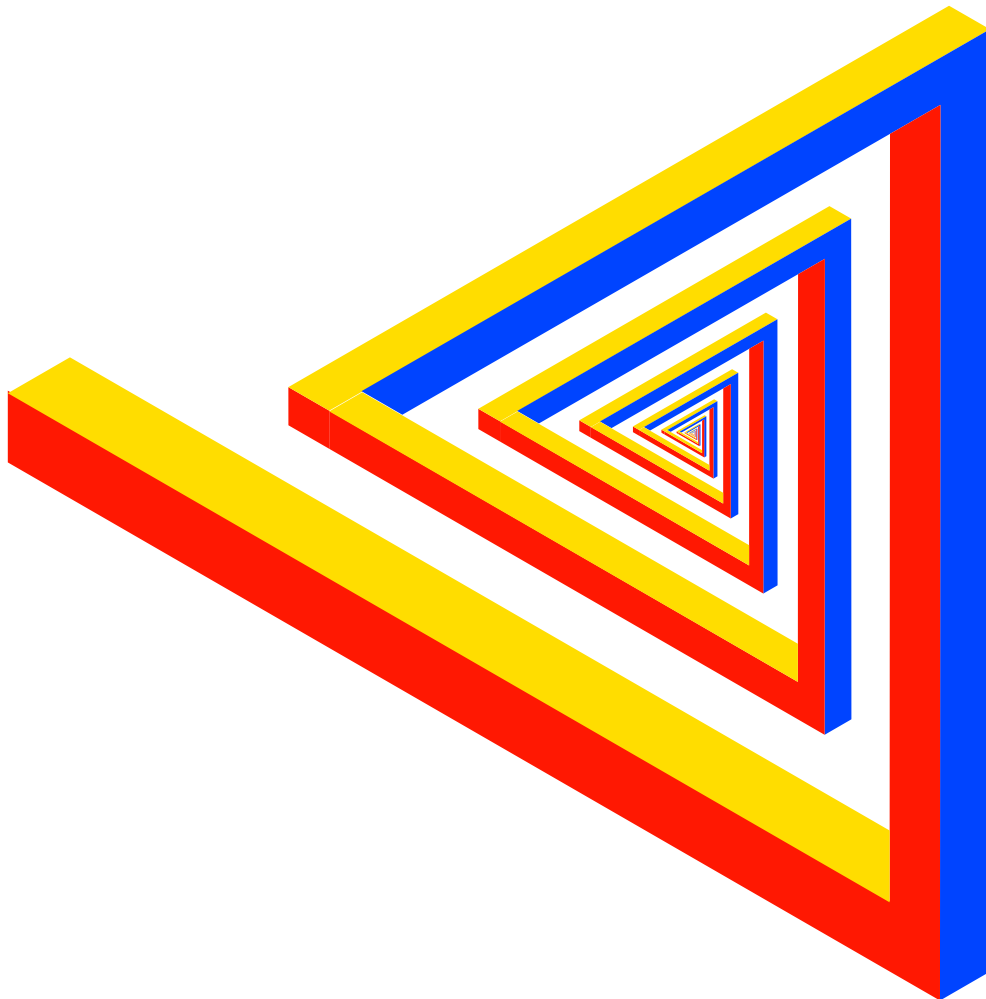
In Figure 4 we have another view of the same structure. Clearly we see that this is possible in the three dimensional world.



**Fig. 4: Other View**

## 2.2 Logarithmic Tribar Spiral

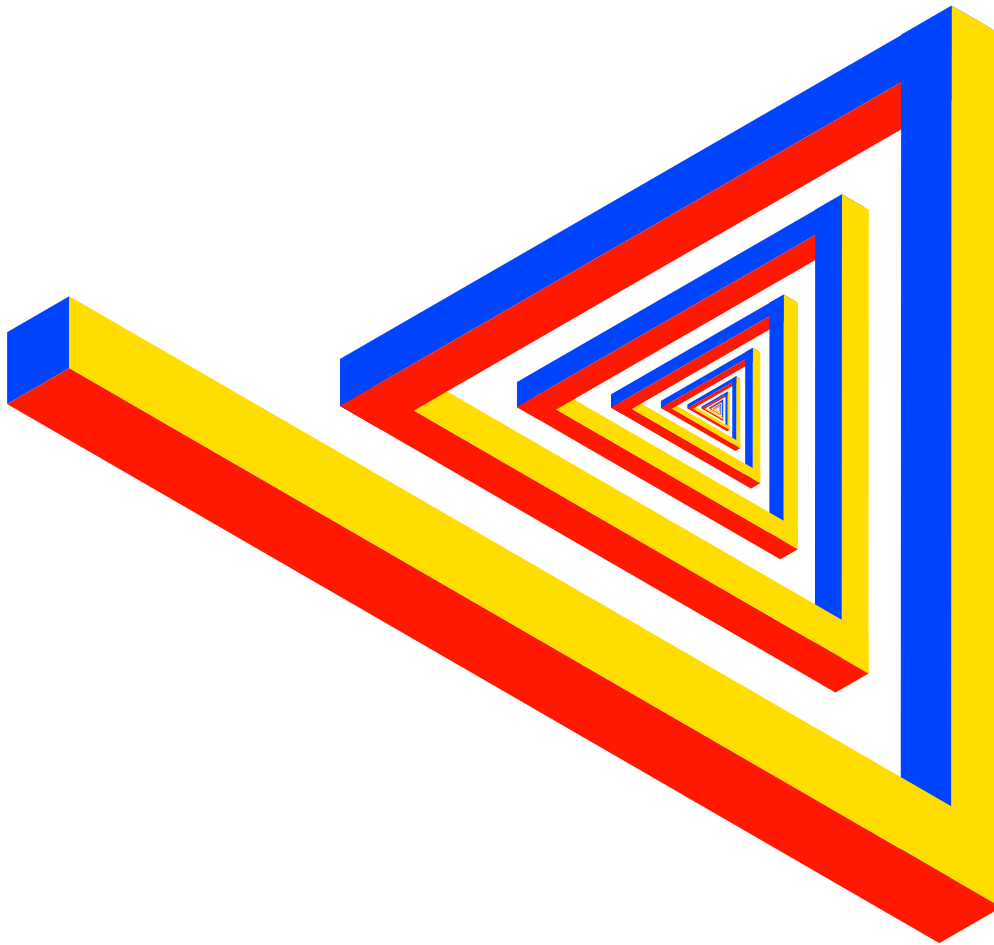
In Figure 5 we have a logarithmic tribar spiral. We have a point at infinity in the center.



**Fig. 5: Logarithmic Tribar Spiral**

Can you imagine that this Spiral is constructible in the three dimensional world?

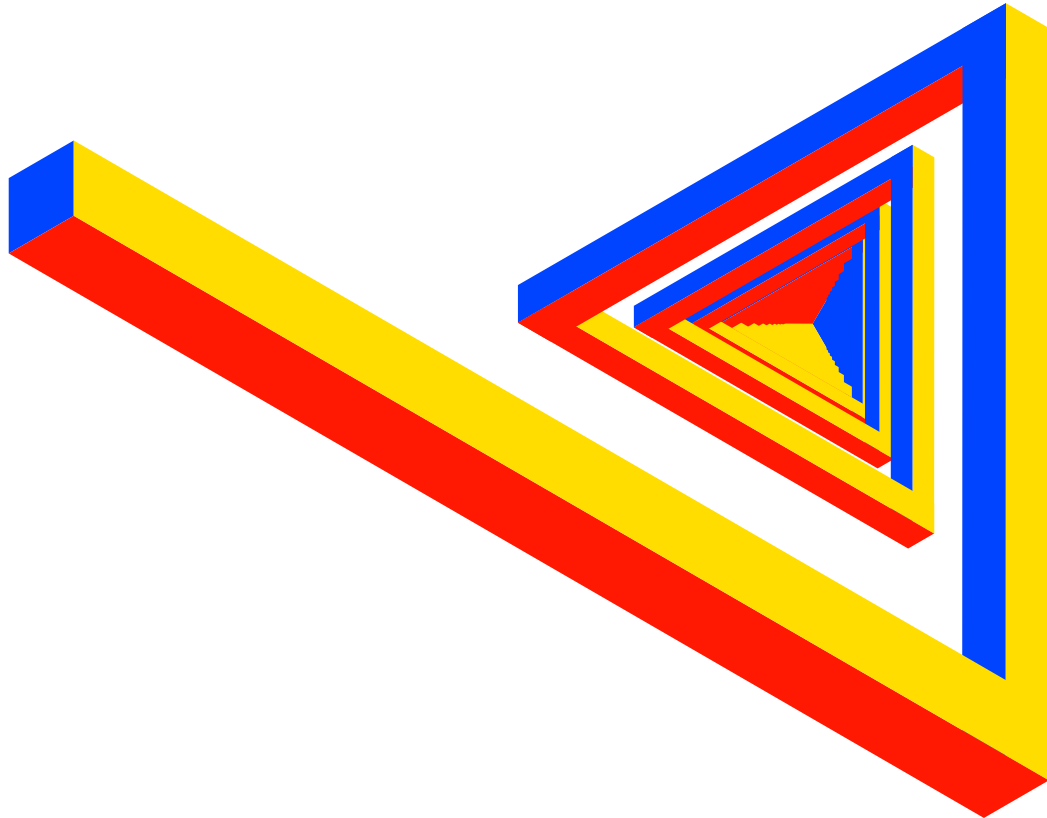
Figure 6 gives another version. It goes down and down.



**Fig. 6: Another Logarithmic Tribar Spiral**

But the perspective in Figure 6 is not correct.

Figure 7 gives a better, but still not correct version.



**Fig. 7: Staircase to Hell**