

2. Outline of Virtual Sculpting and Virtual Printing Scheme

2.1. *Virtual sculpting*

In our virtual sculpting, an original workpiece and several virtual chisels are prepared in a virtual space. The original workpiece is a curved surface polyhedron that is a simple shape with a CSG (Constructive Solid Geometry) expression. Each virtual chisel is defined by an ellipsoid, a cube and a cylinder, and the shape of a carved solid object is also expressed with a CSG expression. As carving operations, the user can remove or attach

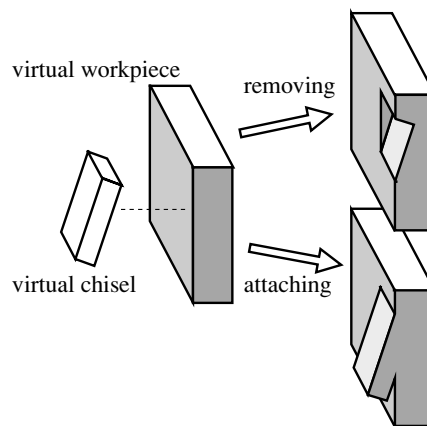


Fig. 1. Deformation by removing and attaching the shape of a virtual chisel.

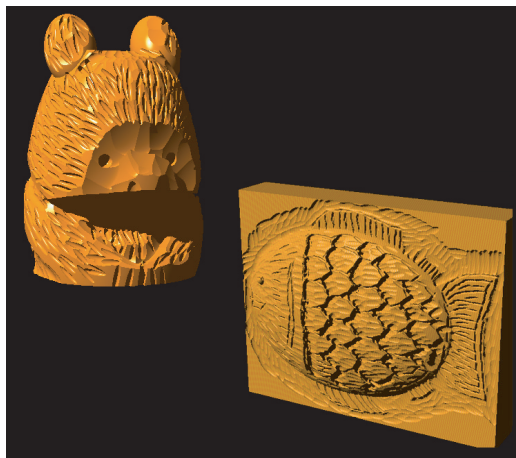


Fig. 2. Examples of virtual sculptures created by our virtual sculpting scheme.