

THE FIVE
HELLBRUNN

Water Automats

The **five small grottos**, arranged unspectacularly here on a narrow path, as the so-called Royal Way shows, are unique worldwide today and depict small genre scenes from Greek mythology and the local artisan scene. The inherent technology remains completely hidden from the observer, one sees only small dolls, which carry out their movement to an infinitely uniform rhythm, which are delightful to watch and of a touching simplicity. The pumps that provide these technical works of wonder with water are hidden in a hill of tuff at the beginning of the path that is fringed by a narrow channel.

In the **first grotto** we see the grinder with his wife and child at his daily work. The grinding wheel is apparently turned by the woman who moves her upper body, head and arms. The grinder in the background to the left does not move. The child lying at the front on the ground spits water.

In the **next grotto** we see the mythological scene in which Apollo flays Marsyas. Apollo can be turned on the axis of his right leg and he takes the right arm of Marsyas with him as he moves. Apollo's right arm makes a cutting movement. Marsyas shakes his head in despair.

Grotto number three accommodates the miller at his work. He does not move himself. The mill wheel in the background turns from left to right. The flour, which appears to flow from the miller's bucket on to the millstone is imitated by a white spiral of tin. It turns from above to below as an extension of the millstone axis. The lower part of the flour imitation is turned independently. The clattering of the mill is created in the box below the millstone.

In **grotto four** we see Perseus and Andromeda. In the middle of the background is Andromeda who is bound naked to the rock. The figure does not move. The dragon in the foreground moves from left right. When the dragon has reached the middle, Perseus emerges from the right raising a shield and sword. The hero drops his shield and sword when reaching the dragon and both figures return to their respective starting point. The works in this grotto has the most complicated technology of all. The movement of the dragon is provided by the vertical well of a crown wheel, which is driven via a small cogwheel on the waterwheel well. A larger cogwheel on the waterwheel well drives a wheel, which raises the arms of Perseus via a lever and a wire and via an eccentric wheel simultaneously brings Perseus to emerge.

Grotto number **five** shows the potter in his workshop, which contains the most delightful examples of his art and craft. The potter's wheel turns from left to right. The potter's right hand first makes a small upward movement, then both hands and the head make stronger upward movements, which indicates the typical throwing of a tall vessel. His head also moves. His right foot is moved by the wheel by means of a cog.

Machine construction, a "divine" art

The development of mechanism during the Renaissance goes back to the examination of writings of the Antiquity. (Archimedes, Aristotle, Pliny and Vitruvius). As essential Vitruvius's "Libri decem de architectura" is for the architecture of the New Age, as influential on the mechanism and hydraulic technology of today are the two most important tracts from the second century by Herophilus of Alexandria, "Pneumatica" and "Automata". Due to the great interest in natural science, which during the cinquecento not only encompassed the provision of drinking water and the building of baths, but was also dedicated much more to the love of life and intellectual challenge, which resulted in the most diverse air- and water-driven automats, machines and organs. The technical games became more and more intricate and what was fascinating was the realisation of an effect of hidden origin.

The art of machines appeared to be a "divine art", similar to a crowning imitation of nature, even triumph over it, and finally achieved by the respective ruler.

Homo ludens IX, Automatic Games

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Article: A Pleasure for the Archbishop. The trick fountains machinery at the Summer Palace at Hellbrunn, Katharina Müller-Uri.