

How did the Daniel's smithy work?

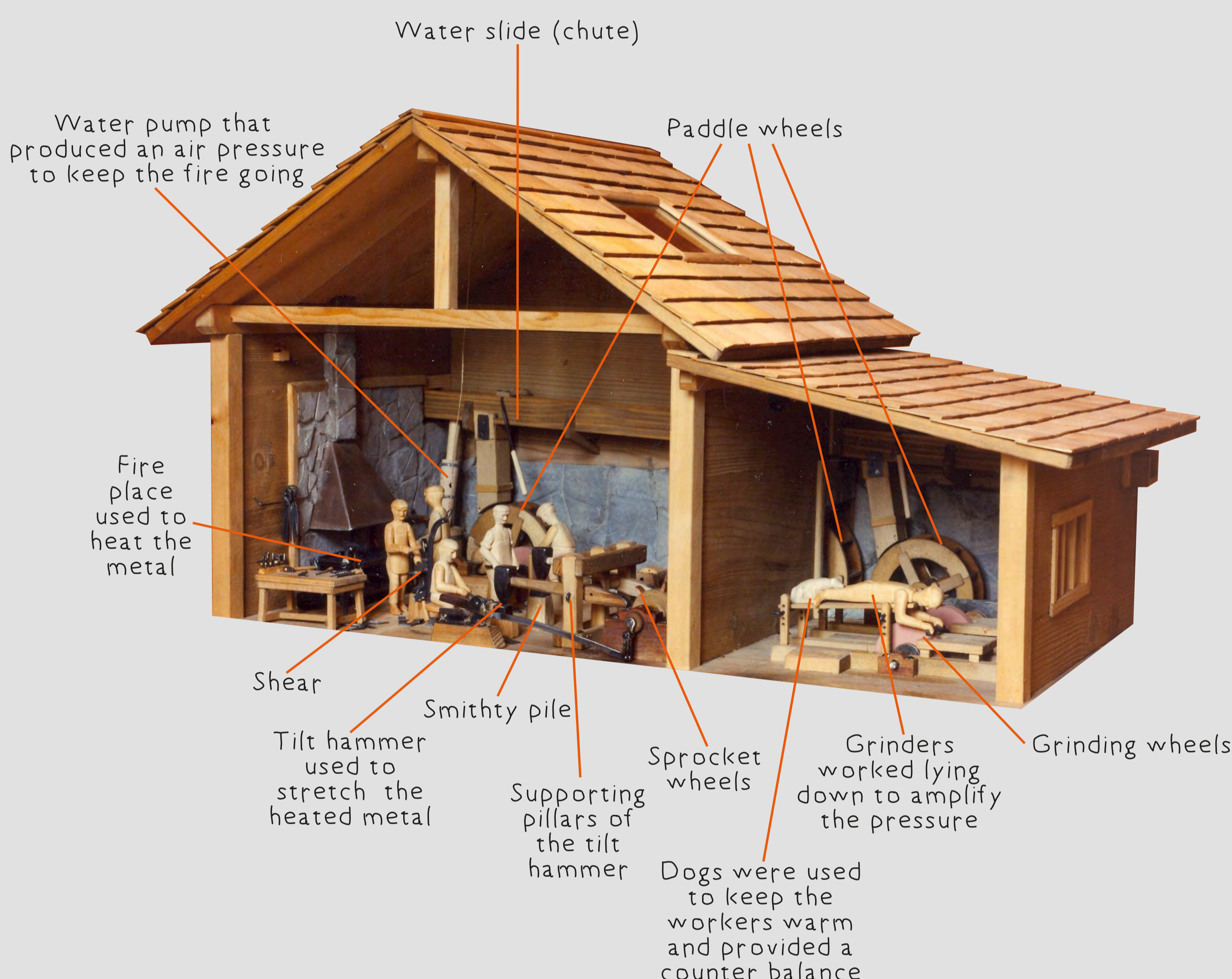
In this smithy, Daniel Opinel and his workers made different bladed tools and knives, using hydraulic machines. The water was channeled from the Arvan river to the atelier. Here it entered by a water slide which activated the three paddle wheels.

In the workshop's first room, a paddle wheel was linked to two sprocket wheels, punctuating the strokes of the two tilt hammers. You have to imagine that the sound of the hammers echoed through the valley!

The second paddle wheel was connected directly to the grinding wheels of the adjoining room. The hydraulic force enabled the grinding wheels to turn allowing the grinders to sharpen the different tools and blades.

Today, traces of these activities can still be seen: three of the tilt hammers' supporting pillars, the smithy pile, and the channel that evacuated the water from the smithy to the river remain.

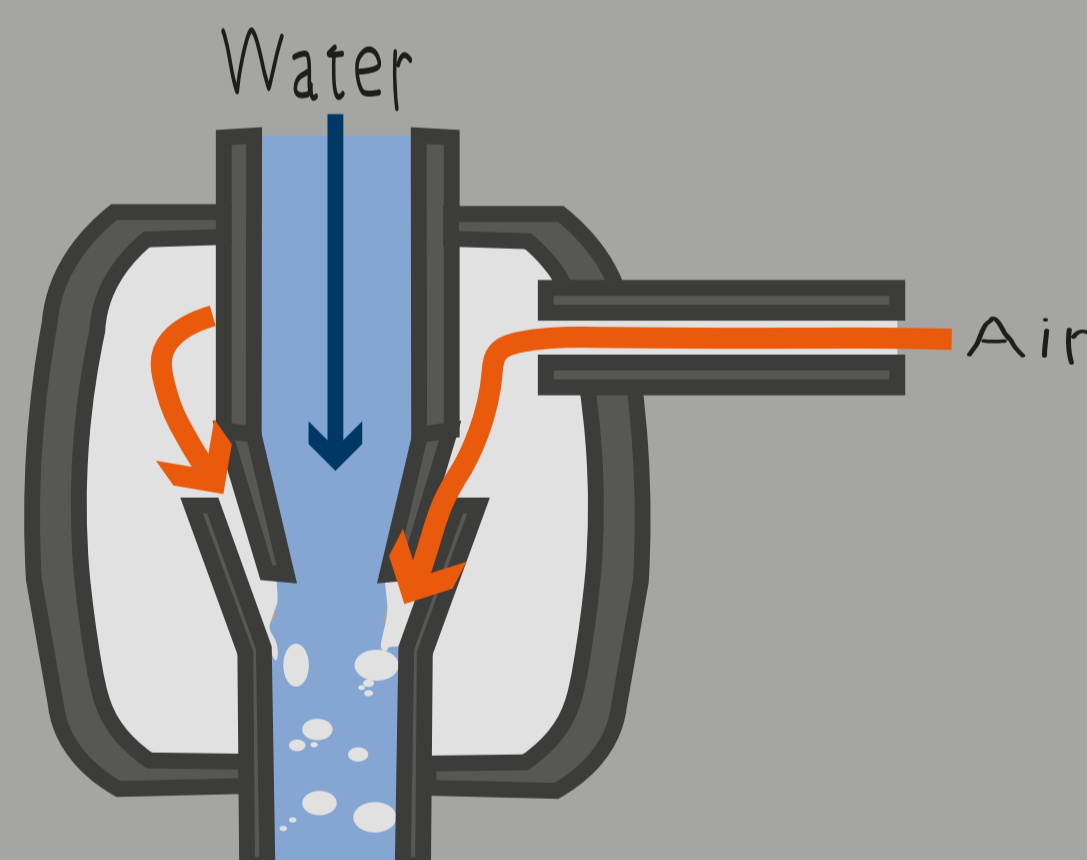
Daniel's smithy explained



This reconstruction is based on Marcel Opinel's childhood memories. Scan the QR-code on the panel to see the workshop model in motion.

Using water to make fire

Daniel Opinel used a water pump in his smithy. Water fell vertically in the water chute producing an under pressure of air which was then used to feed the fire. This installation replaced the traditional bellow.



Famines, fires, epidemics, and floods !

Life in Gévoudaz was however not always running smoothly! In the 19th century, the village was struck by both famines, fires, epidemics, and floods. The proximity of the Arvan river was absolutely vital for the industrial activities, but also, at times, destructive!

For example, in July 1874: a flood destroyed the channels and filled Daniel's workshop with black mud. This incident left Daniel Opinel seriously considering an invitation from an exiled friend to join him in America. But, upon reflection, he decided to stay and rebuild the smithy.

Eyewitness

"The Arvan river was providing the necessary energy, but this did not come for free: the revenge was often sudden and destructive.

When the thunderstorms hit, we used to run to the flood valves to try to protect the road from the rising water. The muddy whirlpools and big blocs transported by the river could destroy them with a single blow. The river would fill up the channels and wreck the wooden turbines! [Often] the water hit directly on the dam that was then carried away."

- Alphonsine Vallin, Joseph Opinel's niece.