



HYDRAULIC SAWMILL (*HAUT-FER*)



HISTORY

The sawmill that you are going to visit dates from the very beginning of the 20th century. It was built on the site of a flour mill which is known to have stood there since 1590.

THE SAWMILL

In 1905, because of competition and the state of the buildings, the new owner, Joseph Léonard, decided to turn the mill into a sawmill. He reconstructed the building, the alternative frame saw ("*haut-fer*"), accommodation for the sawyer ("*sagard*") and modified the hydraulic installation by creating the retaining pool and underwater pipe work.

In 1908, the municipality of Mandray purchased the sawmill, it then burnt down in 1910 and was rebuilt one year later, looking as it does today. It was leased to a *sagard* whose salary varied in accordance with the quantity of wood to be sawn, but most of all with the flow of the river. He supplemented his income with some growing and farming.

A few alterations were made: in 1928, premises were built on the canal in order to house the sorting machine and grain flattener purchased by the town council for the residents to use. In 1929, an electric motor was installed, to be used only to compensate for water shortages. Due to profitability issues, the sawmill ceased to be operational in 1986.

THE RENAISSANCE

In 1992, a group of volunteers decided to restore it with help from the town council and the Parc des Ballons des Vosges.

In 1995, the sawmill was officially opened and the "Haut-Fer" association was established. The site is now managed by volunteers, who also organise visits.

In 2009, with financial support from the town council, the *Département* and the Region, a new programme of works commenced: renovation of the hydraulic system and creation of an exhibition room.

SUPPORT FOR YOUR VISIT

The wood that is sawn in front of you comes from the local forests, belonging to individuals who deliver it to the sawmill in order for it to be chopped up according to requirements: boards, girders, beams, laths...

THE SAWING

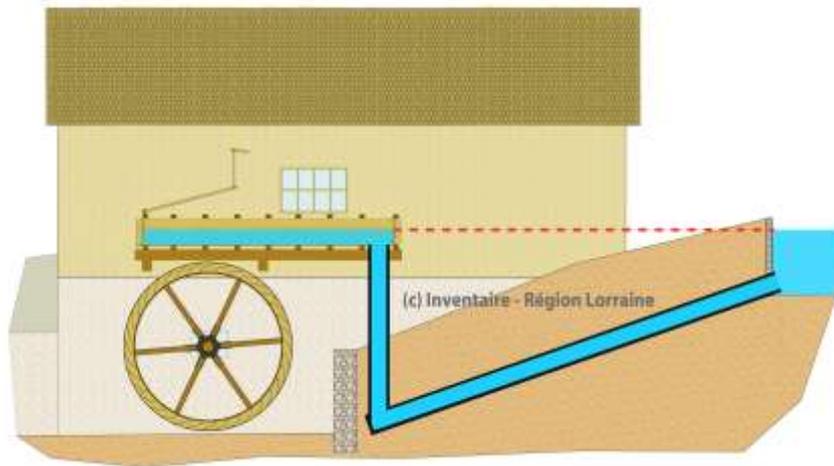


The first job of the *sagard* is to debark the logs, thus ridding them of the small stones, earth and also parasites that have been collected inside the bark. He then loads a log onto the cart by rolling it along movable sleepers. He adjusts its position in relation to the blade and fixes it onto the cart. To start up the saw, the *sagard* pulls alternately on two cords in order to make the water fall onto the wheel then engage the mechanism. The sawing then takes place as the blade drops down, then as it goes back up the car moves forward. This intermittent movement is produced by the wedge of wood that causes the grooved wheel to move in one direction only. This movement is sent by the toothed wheel to the roller on which the cart rests.

When the cut is almost completed a bell is activated as a warning to the *sagard*. A few moments later, when the cut has completed, an automatic stop system closes the water inlet and stops the saw.



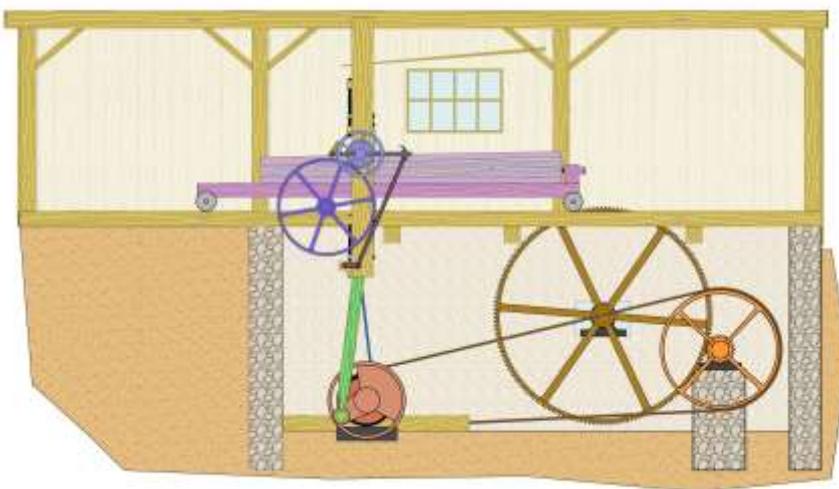
THE HYDRAULIC MOTOR



The reservoir-pool located at the back of the building is powered by a canal which diverts some of the water from the stream very nearby. An underground pipe forming a siphon links the pool to the wooden trough located above the wheel. The surface level of the pool corresponds horizontally to the 50 centimetres of water in the trough.

When the *sagard* pulls the cord, he opens a trap which discharges the water on top of the runnel wheel; it is the weight of this that causes the wheel to turn round. The wheel has a diameter of 3.6 metres and has 36 runnels.

UNDERGROUND



The large cast iron wheel, with wooden teeth, is connected to the runnel wheel and had an identical diameter. All the pulleys, belts and gears enable the rotational speed to be increased by 10. When the *sagard* pulls the second cord, he shifts the belt which causes the saw frame to start moving.

The small wooden pulley on the first level transmits the wheel's movement to a grain sorter and flattener located in a building adjoining on the right.

