Water Power in the Mills

The major source of power for many years was the water of the Merrimack River. The drop in the river at Amoskeag Falls would cause the water to fall approximately 54 total feet. The pressure and weight of all this moving falling water equalled about 36,000 horsepower of energy.

In order to power the Amoskeag Mills, the rushing water from the Upper Canal flowed through an underground pipe or “penstock” into the mill buildings and fell down into a horizontal water “turbine” beneath the floor. This acted like the waterwheels that powered local sawmills and gristmills. The spinning turbine, through a series of gears and pulleys, transferred this energy to shafts that ran up through the factory floors. The gears were then connected to leather belts that operated the machinery. The water continued flowing under the building and downhill, into the Lower Canal and eventually back into the river.

Water-power was originally the only source of power in the millyard, and was only made possible by the building of the canals. Here in Manchester, or Derryfield as it was called at that time, one man saw the potential of the Merrimack River for industrial progress. That man was Samuel Blodget.

Samuel Blodget was very interested in industry and progress. After a trip to Manchester, England, he became inspired by the Industrial Revolution already taking place there. He was interested in improvements in transportation, and especially canals. He had a vision that he could build a canal to bypass the Amoskeag Falls, which, along with other canals on the river, would then allow river traffic to go all the way from Concord, New Hampshire to Boston. This was the great era of canal boating on the Merrimack River. Later, the Blodget Canal was lengthened and improved, becoming a power canal for the Amoskeag Manufacturing Company. After his death, Derryfield’s name was changed to Manchester, honoring Samuel Blodget’s dream of becoming the “Manchester of America.”

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Fun Fact:
Samuel Blodget funded the building of the first canal with his life savings. When he ran out of money, he petitioned the state of New Hampshire to be given permission to hold the state’s first lottery. Blodget sold about 9,000 pounds worth of lottery tickets. He kept half of the money and very publicly gave the rest away for prize money.
Can you put the pictures in order from first to last in order to create power for the mills?

1. Water spinning the turbine
2. Water exits back to river
3. Water fills up the penstocks and drops down
4. Water is diverted to the canals
5. Turbine spins the belts, powering all the looms
6. Water flowing down the Merrimack River