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► **To cite this version:**

Denis Roegel. The (re)discovery of an early specialized mechanical calculating machine (ca. 1850). 2014. hal-01096153

HAL Id: hal-01096153

<https://hal.inria.fr/hal-01096153>

Preprint submitted on 16 Dec 2014

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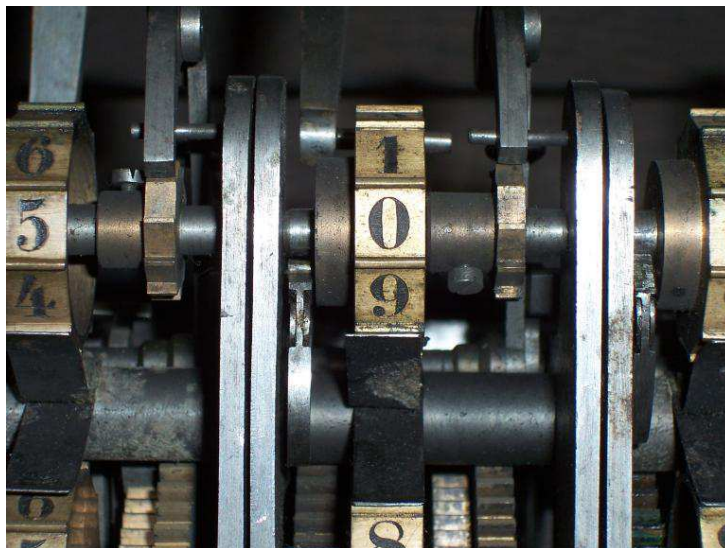
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The (re)discovery of an early specialized mechanical calculating machine (ca. 1850)

Denis Roegel*

16 december 2014

The purpose of this brief note is to announce the (re)discovery of an interesting specialized adding machine. This machine was built by Jean-Baptiste Schwilgué (1776–1856), the well-known designer of the current astronomical clock of the Strasbourg cathedral, a marvel of 19th century engineering. In addition to working on his astronomical clock, he constructed about 500 tower clocks, as well as various machines, scales, calculating machines, etc. In an earlier article published in 2008, we have described his invention of a simple adding machine, which, retrospectively, appears to be the currently oldest known existing key-driven calculating machine. Schwilgué has also invented a new type of digital counter, and both the counter and the simple adding machine were patented in 1844.



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Contrary to these two machines, there is no patent for the specialized adding machine. It was however mentioned in several places, in particular in Schwilgué's biography published by his son Charles in 1857. There, the machine is called a "multiplier" or "multiplying machine."

For those who are interested in the evolution of mechanical calculating machines, this is of course an eye catcher. One is tempted to think that this machine was a real multiplying machine. But it was not. Schwilgué's machine is not a general multiplying machine, in the same way as his simple adding machine is not a general adding machine. But in a certain sense, Schwilgué's machine does multiply something. In fact, a better name for that machine would be a "machine to compute multiples of an integer." Or even better, a "machine to compute sequentially the terms of an arithmetic series." In fact, this machine is merely a large adding machine, but one that can store a constant and use it at every step.

To our knowledge, there is only one copy of this machine. This machine was kept by the Ungerer company, which continued Schwilgué's business after 1858. It was lent to the Strasbourg museums, and may have been on display before WWII. Later, it was put in storage and forgotten. We have first tried to locate this machine (and all other items known to have been constructed by Schwilgué) in 2003. It was only in 2009 that the machine was eventually found. It was in July of that year that we examined, dismantled and analyzed it.

An upcoming article will describe this machine extensively, and will in particular explain why it was made.