Arithmometer Encyclopedia Article

Arithmometer

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Contents

Arithmometer Encyclopedia Article.....1

Contents.....2

Arithmometer.....3

Arithmometer

The Arithmometer is generally considered the first mechanical calculating machine to be commercially available and mass-produced. French artist and inventor Charles Xavier Thomas (1785-1870) of Colmar, France, invented the Arithmometer in 1818 (and patented it in 1820). **Blaise Pascal** (with his 5-digit **Pascaline** calculating machine), Wilhelm Schickard (with his 6-digit Calculating Clock), and mathematician Gottfried Wilhelm von Leibniz (who invented the "stepped drum" mechanism for his calculating machine) all invented machines in the first half of the 17th century that influenced Thomas (he is more commonly known as Charles Xavier Thomas de Colmar).

The Arithmometer, small enough to be situated on a desktop, was able to perform arithmetical operations (including the four basic arithmetic functions of addition, subtraction, multiplication, and division) with large numbers, up to thirty digits. This digital-count (base-10) **calculator** was belt-driven, contained a clearing mechanism, and used a switch for addition and subtraction and another switch for multiplication and division. The machine easily performed multiplication but needed assistance from users to perform division. Users dialed numbers onto a set of wheels with a stylus, and then used a hand crank to perform calculations. The Arithmometer was special with regards to competing calculators during the early 19th century because it was the first calculating machine that was manufactured in large numbers and was much more reliable than its competition. Starting in 1820 and for the next ten years around fifteen hundred models were sold, mostly to banking institutions, insurance companies, and other similar businesses. Imitations of the Arithmometer (machines of this general **design** that were of a size to occupy a desktop) were actually manufactured as late as 1920; one hundred years after Thomas de Colmar invented the first one.