



A Mechanical Bestiary

Automaton Clocks
of the Renaissance



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Éditions Monelle Hayot

A MECHANICAL BESTIARY

AUTOMATON CLOCKS OF THE RENAISSANCE



The appearance of automaton clocks during the Renaissance was made possible by technical horological advances that allowed small mechanical figures to be created. Thus, miniature and portable versions could be produced of the large mechanical figures that had adorned grottos and gardens since the time of Hero of Alexandria, and of the creations of al-Jazari, an ingenious maker of automata who worked during the 13th century, in the time of the Abbasid Caliphate, and of the pleasure gardens that were created in Hesdin the 15th century for the Dukes of Burgundy. Important discoveries, as well as the development of commercial relations with Asia and America, stirred up a new fascination for exoticism that led to the development of *Kunst* and *Wunderkammern*, fantastic curiosity cabinets containing both man-made and natural wonders. While only princely and imperial menageries could boast of live lions, elephants and monkeys, collectors could satisfy their taste for exoticism with mechanical versions of these animals thus creating their own mechanical bestiaries.

The vivid imagination of Augsburg clockmakers was curbed only by the technical limits of automata themselves. In their workshops, these clockmakers created all sorts of animals – domestic, exotic, and fantastic. Their work covered a wide spectrum, from the grotesque and trivial characters who animated drinking games at banquets to the most edifying and virtuous: crucifixions, enthroned Madonnas, and scenes of the flagellation of Christ, which demonstrated their owners' piety. However, religious automata are not included in this exhibition. The principal component in these objects is not the clock itself. The annular balance, which improved clocks' regularity, was modified to drive the eye movements. The friction generated by the automaton's motion tended to hinder the clocks' precision.

The thirty-one automaton clocks presented in this exhibition and book are the largest group ever displayed.

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List of abbreviations

MUSEUMS

GG : Staatliche Kunstsammlungen Dresden, Grünes Gewölbe, Dresden

KHM : Kunsthistorisches Museum, Vienna

MPS : Staatliche Kunstsammlungen Dresden, Mathematisch-Physikalischer Salon, Dresden

BOOKS

Chapuis et Gélis, 1928 : CHAPUIS (Alfred) et GÉLIS (Edouard), *Le Monde des automates : étude historique et technique*, Paris, chez les auteurs, 1928.

Chapuis et Droz, 1949 : CHAPUIS (Alfred) et DROZ (Edmond), *Les Automates : figures artistiques d'hommes et d'animaux - Histoire et technique*, Neuchâtel, éditions du Griffon, 1949.

Maurice : MAURICE (K.), *Die deutsche Räderuhr*, Beck, Munich, 1976.

Expo 1980 : 1980-1981, MUNICH, Bayerisches Nationalmuseum, et WASHINGTON, Smithsonian Institution, *The Clockwork Universe, German Clocks and Automata, 1550-1650*.







