

thousands. Nearly every little kid in Crestwood, Missouri, played with and talked about World War II items and events in the 1970s, everything was analog, harking back to D-Day, and all the kids were hooked.

All types of wristwatches are pictured: time-only, chronographs, dive watches, and more. Many brands of wristwatches are shown: Longines, Omega, Tudor, Breitling, and Hanhart, to name a few. Readers may find the early dive watches made by Elgin, Waltham, and Hamilton particularly interesting. They feature a canteen,

screw-top cap that goes over the crown to prevent water from getting into the movement. These watches were issued to the underwater demolition teams (UDT) tasked with destroying mines on enemy-held beaches prior to amphibious landings in Europe and the Pacific. These teams were the precursor to today's Navy SEAL teams.

This book is a must-have for the serious collector of military wristwatches. Readers will find an amazing array of military wristwatches and will refer to this book again and again.

# Miracles and Machines

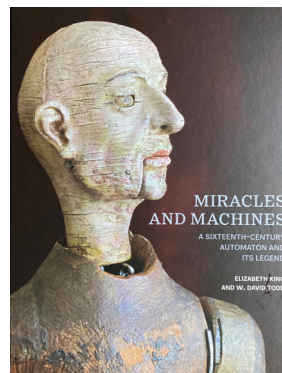
## A Sixteenth-Century Automaton and Its Legend

*Book review by Bob Frishman, NAWCC Silver Star Fellow (MA)*

**O**n an April Sunday in 1562, the son of King Phillip II spied a young maiden in the garden below his window. Prince Don Carlos, age 17 and heir to the Spanish throne, lost his footing as he rushed down the stairs to make her acquaintance. His head struck a closed door, he was knocked senseless, and his condition rapidly deteriorated despite the best medical attention from Court physicians.

Twenty-one days later, as the teenager lay blind, delirious, and dying, a group of local Franciscans delivered to the sick room the corpse of Diego, a fellow friar who had died nearly a century earlier. His remains reportedly remained fresh-smelling as they were laid in the Prince's bed. Don Carlos showed immediate improvement, and within a month his vision and health were restored. Diego eventually was granted sainthood as San Diego de Alcalá (ca. 1400–63), and he is the namesake of San Diego, CA.

The authors of this new Getty book are Elizabeth King, an emeritus art professor and sculptor, and W. David Todd, a Smithsonian emeritus horological curator and conservator. Together they devoted more than 20 years of intensive research to documenting a Smithsonian



*Miracles and Machines: A Sixteenth-Century Automaton and Its Legend* by Elizabeth King and W. David Todd, 2023, 256 pages, 8"x10", hardcover. ISBN 978-1-60606-839-7. Available from Getty Publications ([shop.getty.edu](http://shop.getty.edu)), \$45.00.

late-Renaissance monk automaton. They explore two possibilities in great detail. The first is that this diminutive wooden figure, actuated by iron clockwork and complex linkages, represents San Diego. The second is that it was crafted by Juanelo Turriano (ca. 1500–85), the famed Italian clockmaker employed by Hapsburg Emperor Charles V (1500–58).

With their extensive treatment of 16th-century horology and automata-making, the authors present a major treatise on theological and technological history. Clockmaker

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## HOROLOGICA

Turriano is discussed at length, as is another possible maker of the Monk, Nuremberg craftsman Jakob Bulmann. The book features 27 succinct chapters, 25 pages of additional endnotes, and 141 dramatic illustrations.

Many of the full-page high-resolution images are by photographer Rosamond Purcell, who has been lauded for her natural-light depictions of scientific and natural-history objects. The Monk stands just 16" tall and weighs less than five pounds, so Purcell's detail shots greatly enhance our appreciation for him.

Todd's drawings carefully portray the Monk's mechanical attributes. After the Smithsonian purchased the automaton in 1977, Todd restored it to working order. Using period tools and techniques, he also fabricated a slightly larger functional replica with a transparent body that was exhibited with the Monk for many years.

The Monk was loaned to the "Making Marvels" exhibit (2019–20) at New York City's Metropolitan Museum of Art. A video was produced that captures his walking and turning, chest-striking, speaking simulation, pivoting head and eyes, and brandishing and kissing a small cross. That video may be viewed on the Met's website.

Not just the Monk is featured in the book; several other automata from the same early period, prized in other museums, are fully described. Comparisons among the figures, summarized in a four-page appendix, confirm similar ingenious constructions. These geared wonders are cousins of the portable small clocks and watches newly emerging from Nuremberg and Augsburg workshops. The mechanical figures often were made in those same shops.

The authors make the compelling case that these automata were the first true androids, precursors to lifelike masterpieces by Jacques de Vaucanson, Jean-Eugène Robert-Houdin, David Roentgen, Pierre Jaquet-Droz, Henri Maillardet, 20th-century science-fiction moviemakers, and today's computer-controlled robots.

I have twice viewed the Monk in person: in a Smithsonian study room and at the "Making Marvels" exhibit. I gazed upon another little automaton monk that King studied at the Deutsches Museum in Munich, and at a miniature automated female lute player at the Musée des Arts et Metiers in Paris. Now that I have studied this book, I understand far more completely the significance of these magical artificial beings, more than four centuries old.

