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WOMEN OF CHANGE

The influence of innovative women can be found from the farthest reaches of space to the deepest trenches in the sea. Confronting gender stereotypes, and at times unrecognized for their technical contributions, women inventors persisted with resolve and ingenuity. Whether facing obstacles large or small, these six women worked to improve daily life and meet society's grand challenges.



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Society of Women Engineers



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CHIEKO ASAKAWA

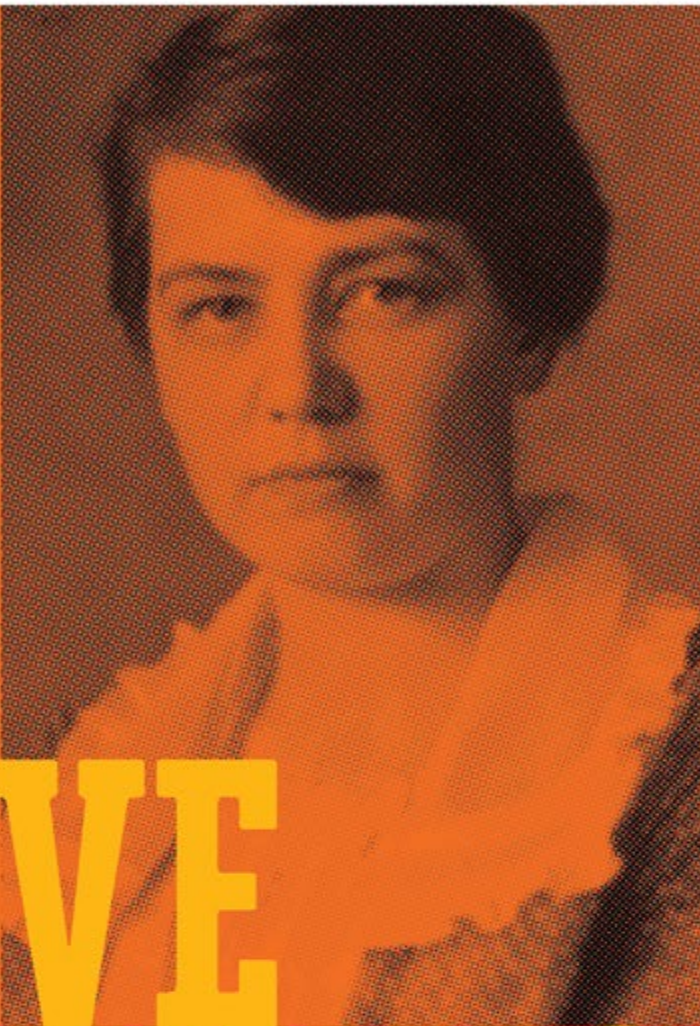
Chieko Asakawa invented the first practical voice browser to provide effective internet access for computer users who are blind or visually impaired. After becoming blind herself at age 14, Asakawa's personal experiences formed the foundation of her innovations that transformed internet accessibility.

2010 SWE Achievement Award Recipient
Photo Courtesy of IBM

INNOVATOR

THE IBM HOME PAGE READER
TURNED WEB TEXT INTO AUDIO AND
ALLOWED THE USER TO SURF AND NAVIGATE
THE INTERNET USING A COMPUTER'S NUMERIC
KEYPAD RATHER THAN A MOUSE. CHIEKO
ASAKAWA'S CONTRIBUTIONS TO ACCESSIBILITY
TECHNOLOGY HAVE TRANSFORMED HOW
INDIVIDUALS WHO ARE BLIND OR VISUALLY
IMPAIRED COMMUNICATE AND INTERACT.

INNOVATOR



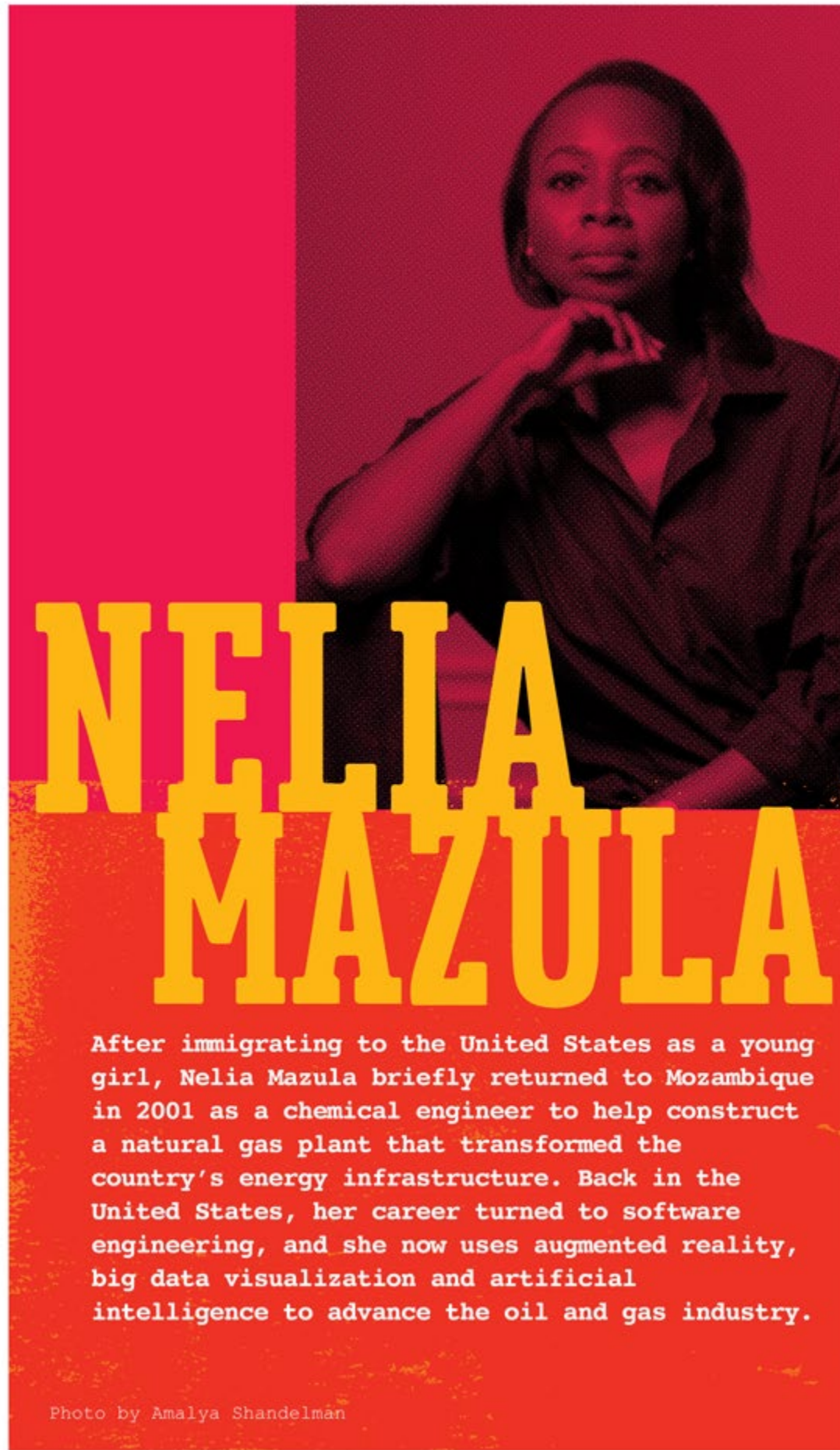
OLIVE DENNIS

A mathematics teacher first, Olive Dennis became in 1920 just the second woman to receive a civil engineering degree from Cornell University. Dennis later became a research engineer for the Baltimore and Ohio Railroad. Riding an average of 44,000 miles a year, Dennis observed railroad service, collected feedback from passengers, and then made recommendations for changes that could enhance the customer experience.

Photo Courtesy of the B&O Railroad Museum,
Baltimore, Maryland

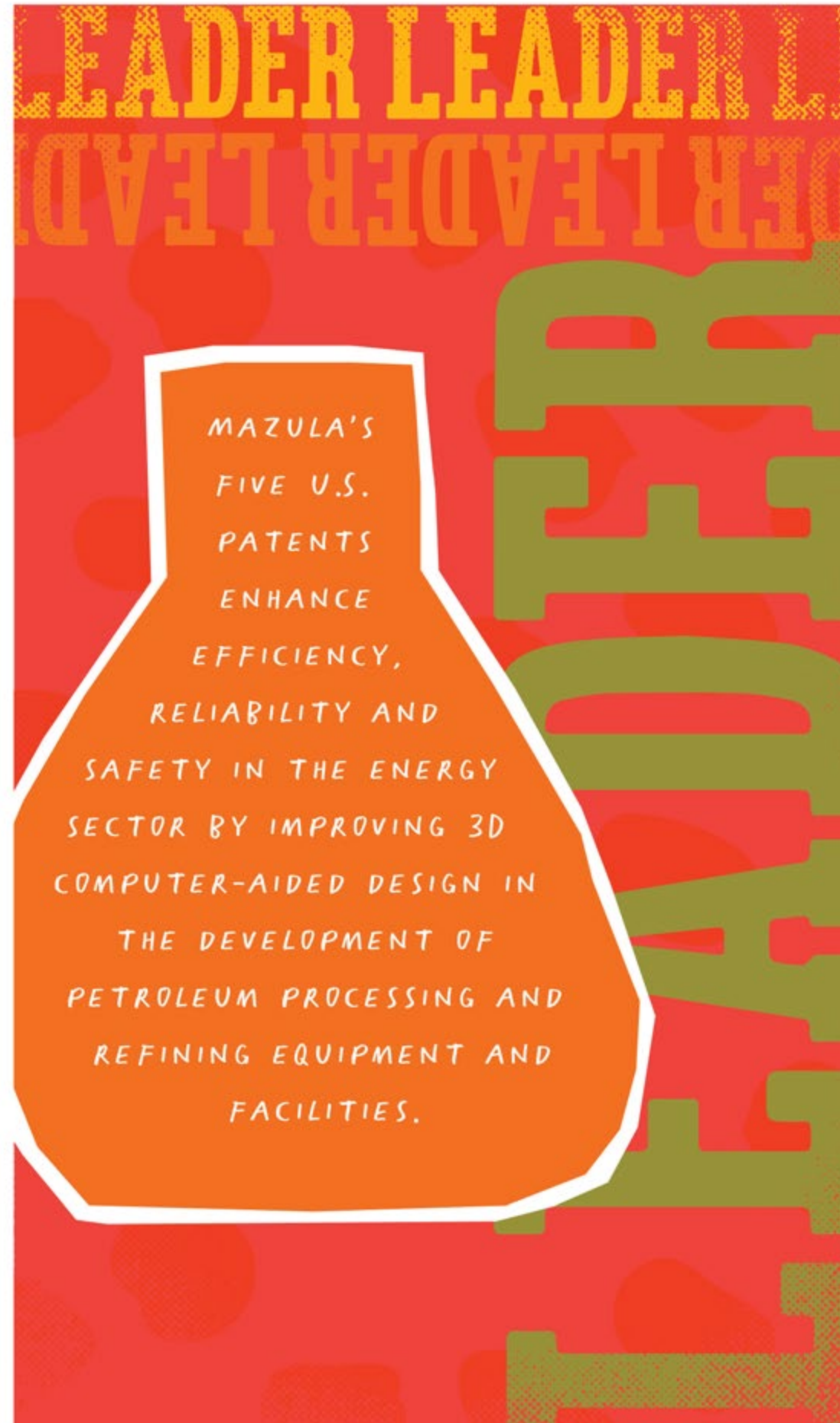
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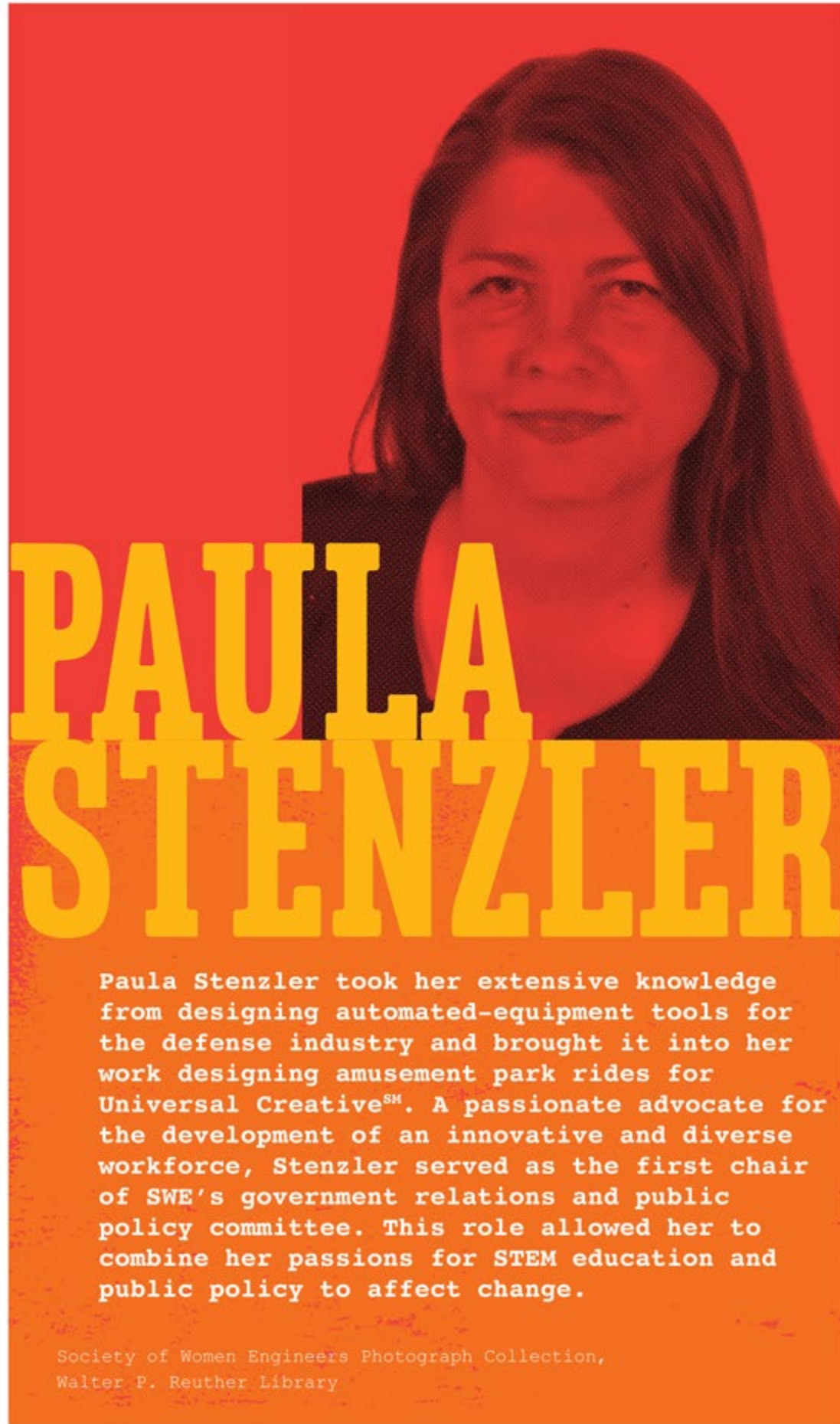
IN 1928, DENNIS RECEIVED A PATENT FOR A VENTILATOR THAT IMPROVED AIR QUALITY IN RAIL CARS. SUPERIOR TO PREVIOUS VENTILATION METHODS, DENNIS' VENTILATOR ALLOWED PASSENGERS TO CONTROL AIR FLOW WITHOUT HAVING TO OPEN WINDOWS. LATER, IN THE 1940S, DENNIS WAS INVOLVED IN THE DESIGN OF THE CINCINNATIAN. THIS STREAMLINED TRAIN INCLUDED INNOVATIVE ADAPTATIONS THAT DENNIS HAD RECOMMENDED DURING HER TIME AS A RESEARCH ENGINEER, INCLUDING INDIVIDUALLY RECLINING SEATS AND EASY-TO-CLEAN SURFACES.



After immigrating to the United States as a young girl, Nelia Mazula briefly returned to Mozambique in 2001 as a chemical engineer to help construct a natural gas plant that transformed the country's energy infrastructure. Back in the United States, her career turned to software engineering, and she now uses augmented reality, big data visualization and artificial intelligence to advance the oil and gas industry.

Photo by Amalya Shandelman






Paula Stenzler took her extensive knowledge from designing automated-equipment tools for the defense industry and brought it into her work designing amusement park rides for Universal CreativeSM. A passionate advocate for the development of an innovative and diverse workforce, Stenzler served as the first chair of SWE's government relations and public policy committee. This role allowed her to combine her passions for STEM education and public policy to affect change.

Society of Women Engineers Photograph Collection,
Walter P. Reuther Library

ADVOCATE

DURING HER
25-YEAR CAREER
AT UNIVERSAL
ORLANDO PARKS AND
RESORTS, STENZLER MANAGED
MULTIPLE REDESIGN EFFORTS AT
BOTH UNIVERSAL STUDIOS® AND
UNIVERSAL'S ISLANDS OF
ADVENTURE®. THROUGH THE CREATION
OF NUMEROUS AMUSEMENT PARK SAFETY
SYSTEMS, INCLUDING A METHOD TO TRACK
AND SURVEY EQUIPMENT, STENZLER GAVE
GUESTS THE FREEDOM TO SAFELY ENJOY RIDES.




ROBERTA NICHOLS

Having spent much of her childhood helping her father fix vintage cars, Roberta Nichols had an affinity for the internal combustion engine. To power those engines while also reducing air pollution, she spent her career researching alternative fuels.

1988 SWE Achievement Award Recipient and Fellow
Society of Women Engineers Photograph Collection,
Walter P. Reuther Library

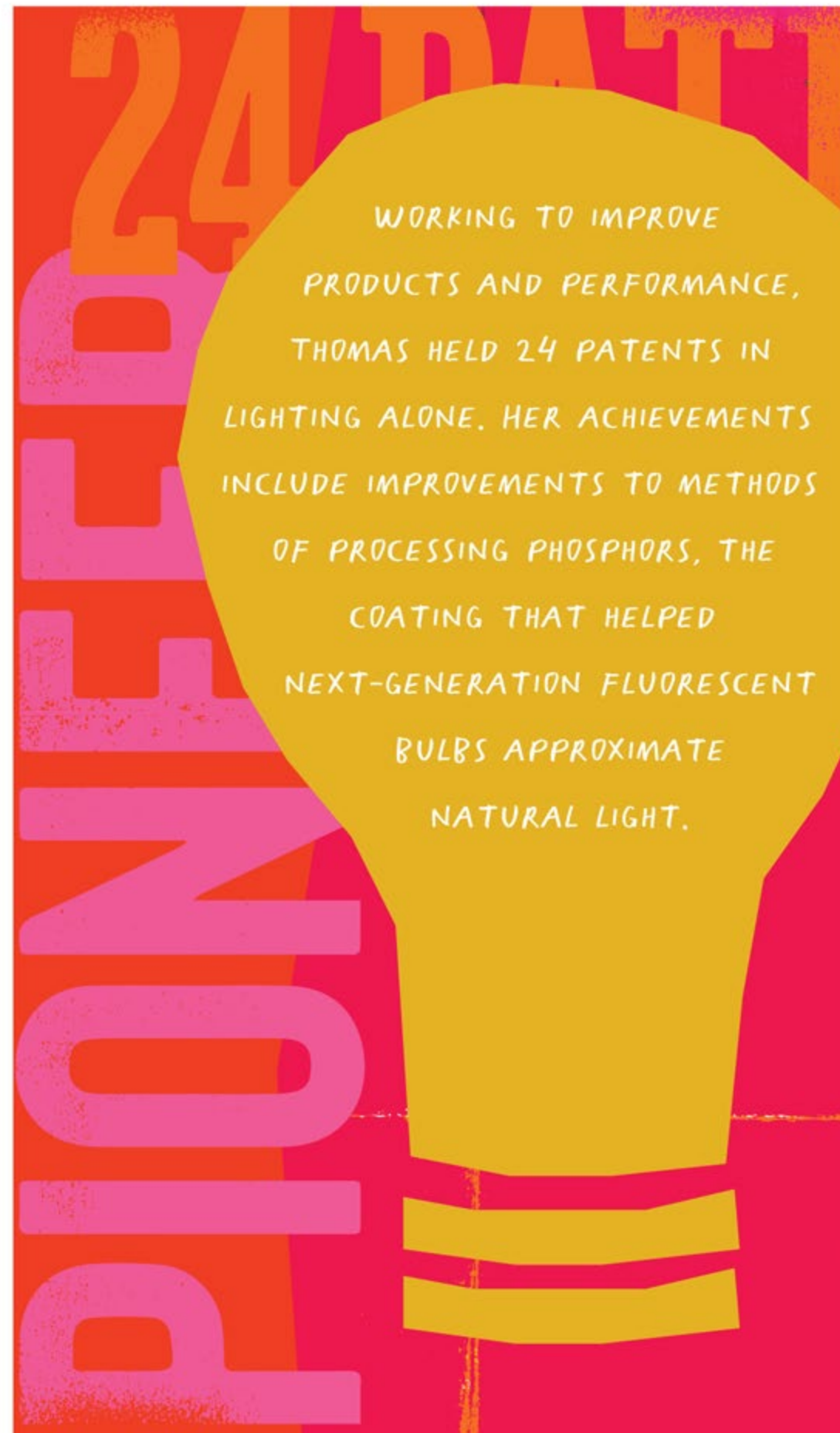
AS
MANAGER
OF FORD
MOTOR COMPANY'S
ALTERNATIVE FUEL
DEPARTMENT, NICHOLS
DEVELOPED THE SPARK
TIMING CONTROLS AND
METHODS FOR REGULATING
THE AMOUNT OF FUEL
SUPPLIED TO ENGINES USING
TWO FUELS.



MARTHA J. THOMAS

A pioneer in lighting research and design, Martha J. Thomas was a scientist for Sylvania for more than four decades, proud of her status as a working mother with four daughters. She established and supervised two pilot plants for the manufacture of phosphor, the substance used to coat the inside of fluorescent lighting tubes.

1965 SWE Achievement Award Recipient and Fellow
Society of Women Engineers Photograph Collection,
Walter P. Reuther Library



WORKING TO IMPROVE
PRODUCTS AND PERFORMANCE,
THOMAS HELD 24 PATENTS IN
LIGHTING ALONE. HER ACHIEVEMENTS
INCLUDE IMPROVEMENTS TO METHODS
OF PROCESSING PHOSPHORS, THE
COATING THAT HELPED
NEXT-GENERATION FLUORESCENT
BULBS APPROXIMATE
NATURAL LIGHT.

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