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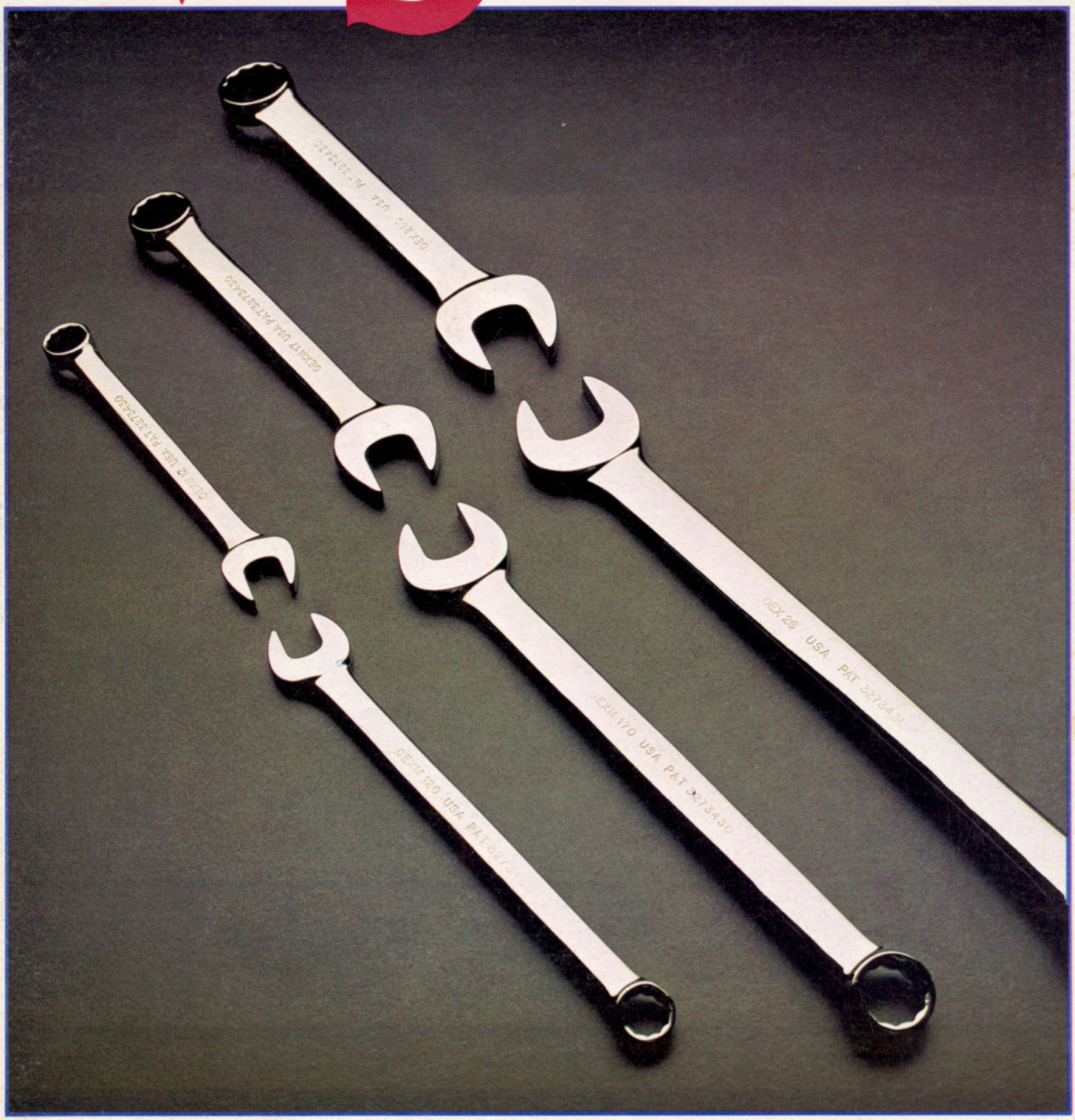

Some tools are optimized for the "tall, thin" designer.

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VLSI DESIGN was founded to explore, expand, and define the interrelations between very-large-scale integrated circuits (VLSI) and computer architecture, design strategies, costs, and aids, as well as the electronics industry as a whole. VLSI DESIGN is unique in that it is written by and for the participants in this dynamic field. VLSI DESIGN intends to be the communication focus of a new VLSI design community, encourage its development, and help define its directions.

Over 27,900 copies of this issue printed.

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Cover

Just as mechanics' tools come in a variety of sizes for different mechanics and different applications, CAD tools for IC layout are also tailored to the user. Some CAD systems are meant for the "tall, thin designer"—one who handles the entire chip design from circuit simulation through IC layout. Other systems are designed for very specific (and very narrow) tasks. Cover photo by Victor Budnik, Palo Alto, CA. Snap-On® tools courtesy of Bob Atkinson, San Jose, CA.

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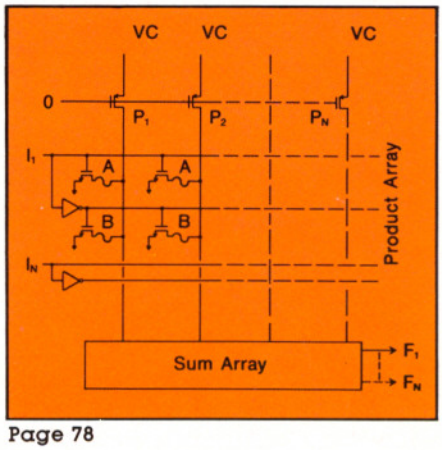

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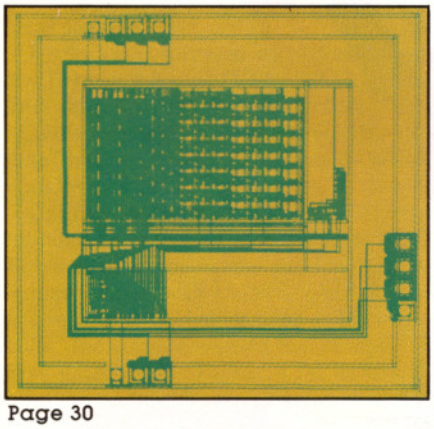

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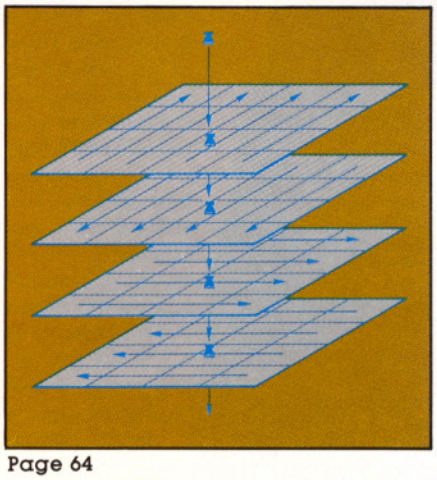

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20 An Example of Simplified Custom nMOS Design in Industry

Jeffrey C. Osborne and Michael A. Tremblay, *Hewlett-Packard Company*

The authors, who had no previous experience in IC design, found that several enhancements were required before a simplified design approach could be used in an industrial setting.

30 The MacPitts Silicon Compiler: A View from the Telecommunications Industry

Jeffrey R. Fox, *GTE Labs, Inc.*

The author used the MacPitts software, developed at MIT Lincoln Laboratories, to implement several telecommunications chip layouts—including that of a Touch-Call® receiver IC that had been designed earlier using standard cells.

38 Conference Preview: The 1983 Design Automation Conference

The DAC is the foremost showcase for new developments in computer-aided design and design automation. This year's meeting includes an interesting twist: limited-attendance workshops, that will be held *twice*.

48 Recent Progress in CAD Systems for IC Layout

Jerry Werner, *Editor-in-Chief*

This round-up discusses current activities of the new companies who are (or soon will be) offering CAD tools for IC layout, and also reviews recent developments by traditional CAD suppliers.

64 A VLSI Legal Move Generator for the Game of Chess

Jonathan Schaeffer, Patrick A.D. Powell, Jim Jonkman
Institute for Computer Research, University of Waterloo

The real trick in mapping a function onto a silicon chip lies in a careful statement of the problem, as this case study shows.