

# Invention Allows Alliance of 2 Weaker Competitors Against Stronger One

By STACY V. JONES Special to The New York Times

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**Robert Zubrin, 19 years old, at board set up for three-player chess game he invented** The New York Times/Jack Manning

## *Invention Allows Alliance of 2 Weaker Competitors Against Stronger One*

By **STACY V. JONES**

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WASHINGTON, March 31 —Robert Zubrin, a 19-year-old sophomore at the University of Rochester, was awarded a patent this week for a chess board on which

<b>Patents of the Week</b>	three players can compete, instead of the traditional two. Patent 3,652,091 asserts that, in chess with
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only two participants, a skilled player wins with monotonous regularity because little luck is involved. In the Zubrin game, two weaker players can form an alliance against a superior third.

The hexagonal board has three identical territories with a total of 96 play spaces. The black, white and red armies are of standard size and the chessmen can

cross the borders. Under the suggested rules, the victor is the player who is left after the other two have been eliminated by having their kings captured.

The inventor, the son of Mr. and Mrs. Charles Zubrin of Great Neck, L. I., is an "A" rated chess player and a member of the university chess team. His father is director of commercial development for Topps Chewing Gum, Inc., Brooklyn.

Young Mr. Zubrin, a mathematics major, went to the Soviet Union in 1970 to study Russian so that he could read the many books on chess in that language.

He hopes the three-handed chess board will be marketed

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# A Three-Player Chess Board Among Ideas Patented in Week

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this year to take advantage of the interest in the forthcoming world championship matches.

## \* Nuclear-Fusion Process

Another step toward harnessing nuclear fusion for peaceful purposes has been taken by three inventors in the physics department of a German university.

Patent 3,652,393 was granted this week to Wolfgang Kaiser, Hans Opower and Heinz Puell of the Technische Hochschule in Munich. It is understood that the procedure has been operated successfully on a laboratory scale.

Nuclear fusion is best known because of its function in the hydrogen bomb. Energy is released when nuclei join, or coalesce. Existing atomic plants generate power through fission, or splitting, of heavy nuclei in the fuel.

In the patented process two lasers facing each other are directed at hydrogen fuel, consisting of deuterium or a deuterium-tritium mixture, held in a vacuum between them. Plasmas consisting of ionized gas form around the fuel and, as these expand, ions collide, causing fusion. Power can be drawn off in the form of heat or a flow of charged particles.

## \* 24-Hour Cash Dispenser

The Docutel Corporation, Dallas, received a patent this week for equipment that can dispense cash for banks 24 hours a day.

Called the Docuteller, the dispenser is protected by Patent 3,651,986, granted to Marion R. Karecki and Thomas R. Barnes. A depositor inserts his credit card and punches in his code number and the amount of money he wants. If the machine finds everything in order, the customer gets a packet of currency.

The machine patented this week is part of more elaborate equipment called Total Teller, which the First Na-

tional Bank of Washington is installing in various offices. An advertisement this week pictures a customer who needed cash on Sunday morning. "She pushed a button and got it," the ad says.

The Total Teller permits two cash withdrawals a day for a maximum of \$100 and enables patrons to make deposits, transfer funds between checking and savings accounts and pay bills.

## \* Straight-Line Clocks

A New Jersey electrical engineer has invented clocks that show time in straight lines instead of in a circle.

Sidney Cooper of Cherry Hill was awarded Patent 3,651,634 for the system, which directs spots of light at linear scales, displaying the hour and minute clearly, day or night.

The inventor set out to prove that accurate linear clocks were practical with the usual motors and gears.

As the clock motor turns, light from a small bulb is transmitted by fiber optics to the figures. The light is "piped" through thin, transparent threads. In models Mr. Cooper has produced, the hour and minute are illuminated on horizontal or vertical dials arranged in various ways. Seconds may also be shown, and the scales may be curved instead of straight.

Several clock manufactures are considering production of the linear instruments. The inventor says the use of fiber optics gives craftsmen a chance to create unique, fascinating decorator items for home and office.

To get a copy of a patent, send the number and 50 cents to the Commissioner of Patents, Washington, D. C. 20231. Design patents are 20 cents each. To reach an inventor or assignee, if the address given is insufficient, write him care of the Commissioner of Patents, being sure to cite the patent number.