THE PUZZLING SIDE OF CHESS

Jeff Coakley

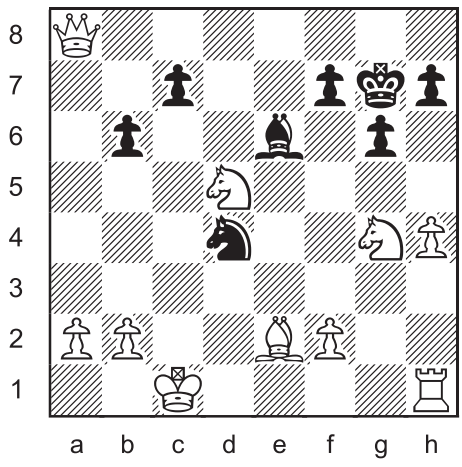
CYCLOTRONIC MINDWARP:
Spiraling Into Control

number 132 February 11, 2017

This column concludes the Mindwarp series of cyclotrons. Five more problems to keep your mental wheels turning.

A *cyclotron* is a three-way switcheroo. Instead of switching two pieces, we switch three. The rules are given below.

Cyclotron 58



Cycle three pieces so that Black is in checkmate.

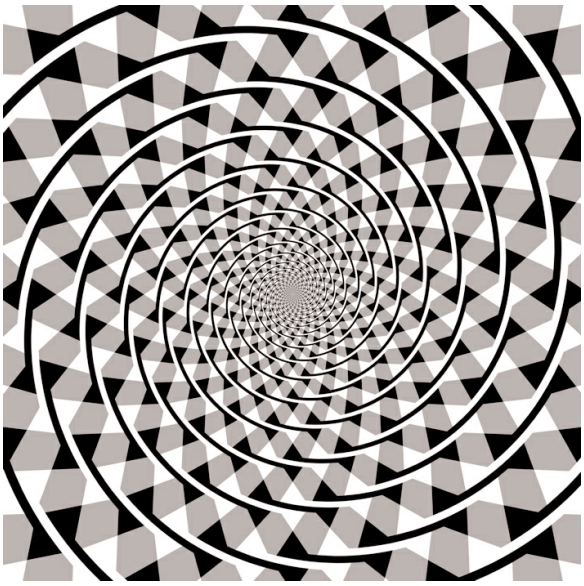
CYCLOTRONS

Switch the position of three pieces so that Black is in checkmate. No actual chess moves are made. The pieces simply swap squares. The pieces trade places in a "cycle". Piece A goes to square B, piece B goes to square C, and piece C goes to square A.

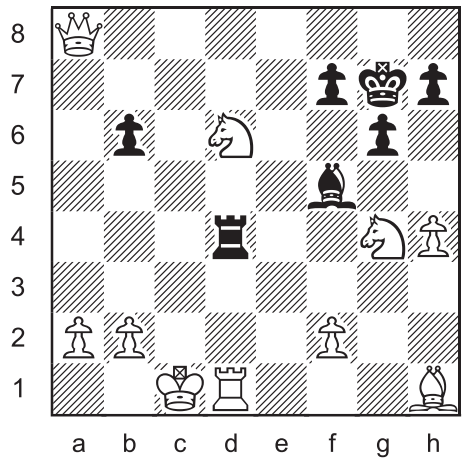
Any three pieces can trade places. Colours do not matter. The cycled pieces can be all white, all black, or a mix of both. Cycling the black king is a common trick.

The position after the cycle must be legal. This rule implies several things.

- *a) A pawn cannot be on the 1st or 8th rank.*
- *b) Both kings cannot be in check.*
- *c) There must be a way to reach the position with a legal white move. Impossible checks, especially double checks, are a frequent "violation".*
- *d) In some cases, retrograde analysis is required to decide if the position after a cycle is legal.*

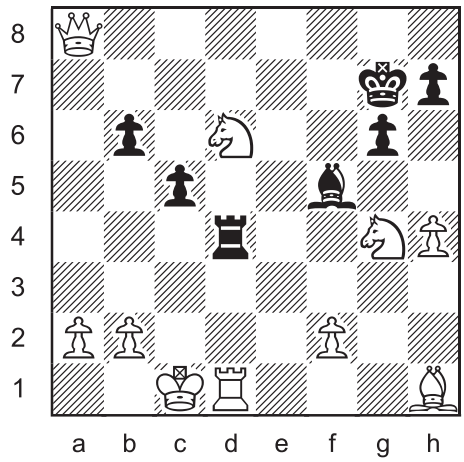


Cyclotron 59



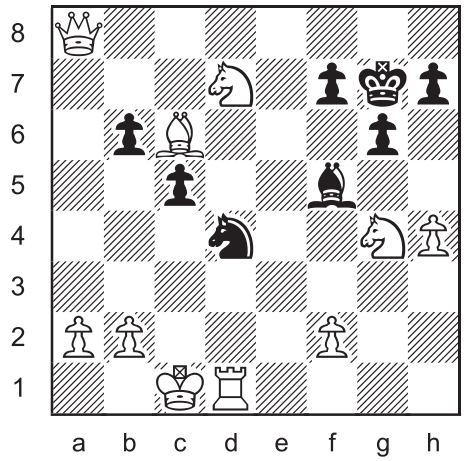
Cycle three pieces so that
Black is in checkmate.

Cyclotron 60



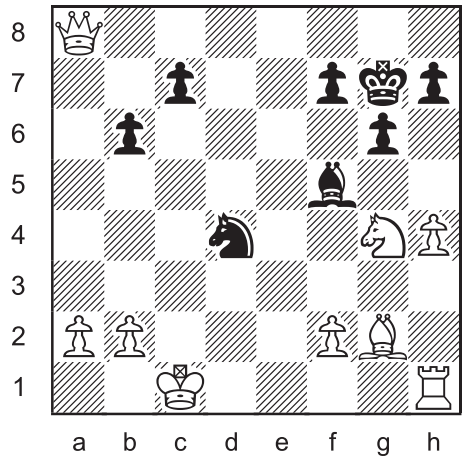
Cycle three pieces so that
Black is in checkmate.

Cyclotron 61



Cycle three pieces so that
Black is in checkmate.

Cyclotron 62



Cycle three pieces so that
Black is in checkmate.

The ultimate goal, a bottomless hole,
Spiraling into control.

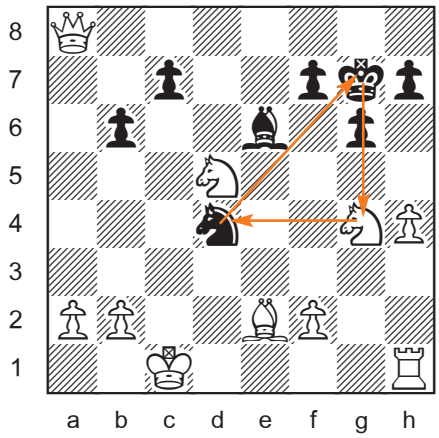
SOLUTIONS

All cyclotrons by J. Coakley. *Puzzling Side of Chess* (2017).

PDF hyperlinks. You can advance to the solution of any puzzle by clicking on the underlined title above the diagram. To return to the puzzle, click on the title above the solution diagram.

Archives. Other columns with similar problems can be found in the Puzzling Side archives (55, 89, 92, 95, 119, 126, 128, 130). For more information on ordinary switcheroos, see column 4.

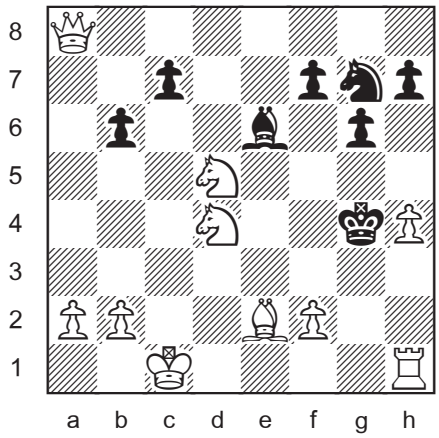
Cyclotron 58



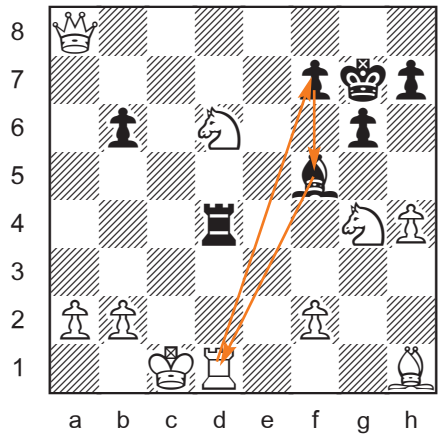
Nd4→g7 Kg7→g4 Ng4→d4

The cycle forms an isosceles right triangle.

The order in which the pieces are cycled is not important. The resulting position will still be the same. See diagram below.



Cyclotron 59

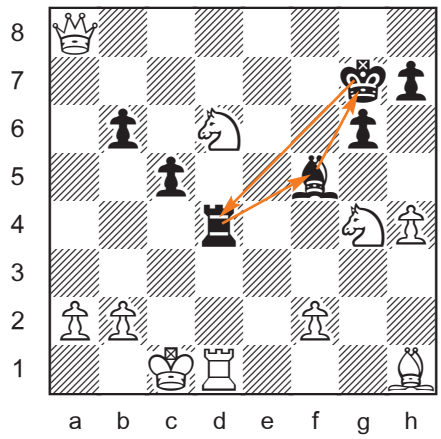


Rd1→f7 f7→f5 Bf5→d1

For a change, the black king stands his ground.

Cycles involving Kg7→h1? (with Rd1 and Qa8 unmoved) yield an impossible double check.

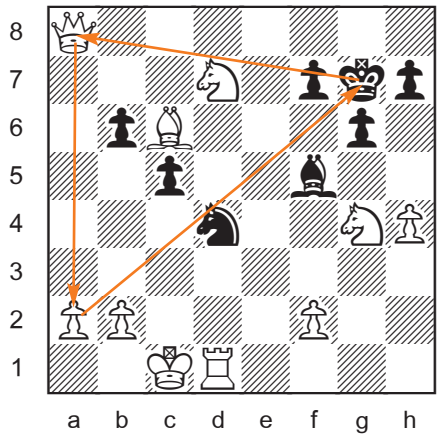
Cyclotron 60



Rd4→f5 Bf5→g7 Kg7→d4

The cycle Qa8→g7 Kg7→d4 Rd4→a8? is an impossible double check, as are tries with Kg7→h1?

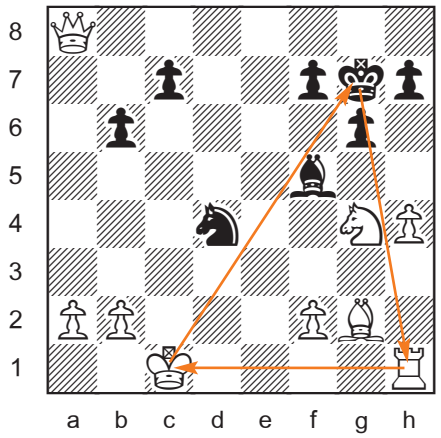
Cyclotron 61



a2→g7 Kg7→a8 Qa8→a2

The last move was the discovered check Ba4-c6#.

Cyclotron 62



Kc1→g7 Kg7→h1 Rh1→c1

Both kings get in the swing of things.

The last move was the discovered check Bf1-g2#.

Well, friends, that's it for the *Mindwarp* experience. Hopefully no permanent mental disorders were incurred. For any lingering side effects, please consult your local pharmacist.

Until next time!