A 12-Loop 4 G4G12

George I. Bell
7! Ingersoll Pl, Boulder CO, 80303, USA
gibell@comcast.net
http://www.gibell.net

Equipment: Together with the 39-hole board on the next page, you will need a set of 38 counters (the pegs). Pennies are commonly used, but dice or sugar cubes are easier to pick up.

Puzzle #1 "The Central Game"
Place a peg on every circle except the center, d5. Now jump any peg over an adjacent peg into an empty circle, removing the jumped peg. Continue in this fashion, your goal is to clear the board and finish with a peg in the center, d5. Note that jumps are only allowed along columns or rows (there are four possible starting jumps: d3-d5, b5-d5, f5-d5 or d7-d5).

Puzzle #2 "The G4G12-Loop"
Fill the board except for g4, play to reach the **loop position** denoted by the shaded circles on the board. The peg at g4 can then perform 12 jumps in a big loop (g4-g6-e6-e8-c8-c6-a6-a4-c4-c2-e2-e4-g4), removing all remaining pegs and finishing at g4[1].

Puzzle #3 "The Unique Solution"
Fill the board except for d1, play to finish at d1. In this paper [1] we prove that this puzzle has a unique solution (up to symmetry and jump order).

Note: The three puzzles are in approximate order of increasing difficulty. For solutions, email me or see the web site at the top of this page.

[1] George I. Bell and John D. Beasley, "New Problems on Old Solitaire Boards", Board Game Studies #8, presented in Oxford, England (2005), published online in 2014 at http://bgsj.ludus-opuscula.org or see http://arxiv.org/abs/math/0611091

[1]Hint: Try working backwards from the loop position. Equivalently, play forward from the complement of the loop position.

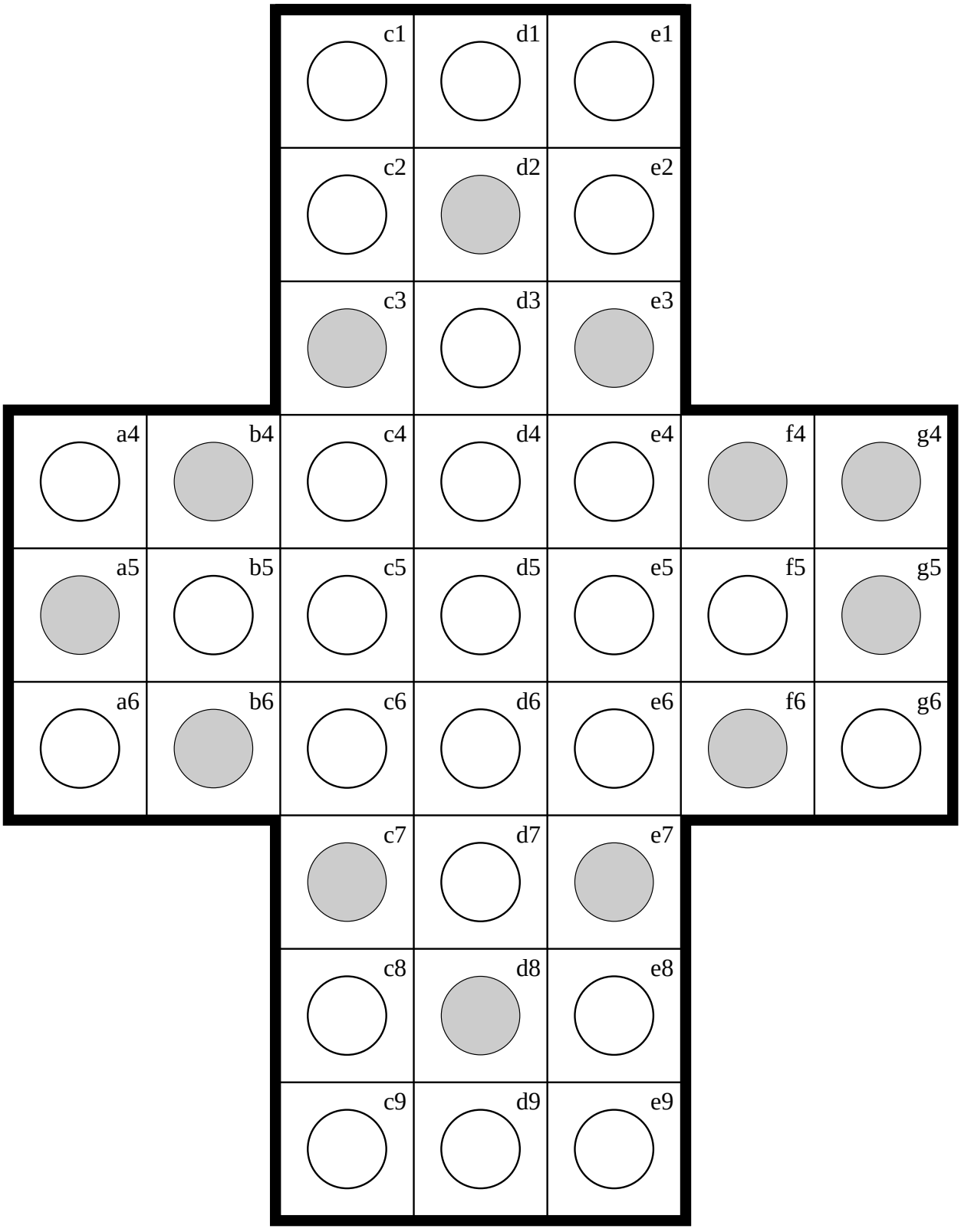

Figure 1: The 39-hole board.