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**Peggy Aldrich Kidwell\*** (kidwellp@si.edu), MRC671, NMAH, Smithsonian Institution, P.O. Box 37012, Washington, DC 20013-7012. *The Fifteen Puzzle and American Mathematical Recreations*. Preliminary report.

The Fifteen Puzzle was the first mathematical recreation devised in the United States to sweep the world. It attracted the attention of mathematicians and mathematical physicists in the US, the UK, and Europe. Sold commercially in Boston from late 1879, it crossed the country the following spring, and the world soon thereafter. The puzzle consists of 15 tiles (or, in some early versions, cubes), numbered from 1 to 15 and arranged in a 4x4 grid, with a single blank space. The goal is to slide the tiles without lifting them so that they are arranged in numerical order, with the space at the end. The story of the Fifteen Puzzle aptly illustrates of the rise of American invention and manufacture of puzzles. Its rapid diffusion and study reflects the growing role of American institutions for communicating new ideas, both for the population generally and for scholars. Contemporary analysis of the puzzle reflects the growing participation of Americans in an international community of mathematicians. Moreover, like other recreations, the Fifteen Puzzle challenged emerging boundaries between research mathematicians and mathematics educators. (Received December 05, 2011)