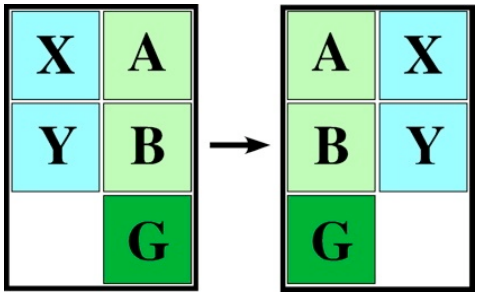
Grandpa's Car

a.k.a. ***Slide-Blocked Sliding Block***
Designed by B. Cutler 1988, made by T. Lensch 2007.
(laser engraved wood, 7.5 by 5.5 by 3/4 inches)

The 5 unit size blocks slide in the tray and can't be removed due to interlocking edges. The edges are formed in a way that not all sliding motions are possible at any given time. The goal is to move Grandpa's car from the right to the left. The edges are such that the left door top / window bottom cannot slide above the car, and hence the middle two squares must be exchanged. By the same parity argument as for the *Fifteen Puzzle*, this implies that the top two squares must also be exchanged. Hence, the puzzle is:



This puzzle is bit harder than the *Moving Day puzzle* but not too hard. The sheet that was sold with the puzzle gives the following solution of 41 moves; here we use a letter to denote moving the corresponding piece and a number to repeat the group in parentheses that many times:

$$(Y\ X\ A\ B\ G)^3\ Y\ B\ A\ X\ B\ Y\ G\ A\ Y\ B\ X\ Y\ A\ G\ B\ A\ (G\ \ B\ \ A\ \ X\ \ Y)^2$$