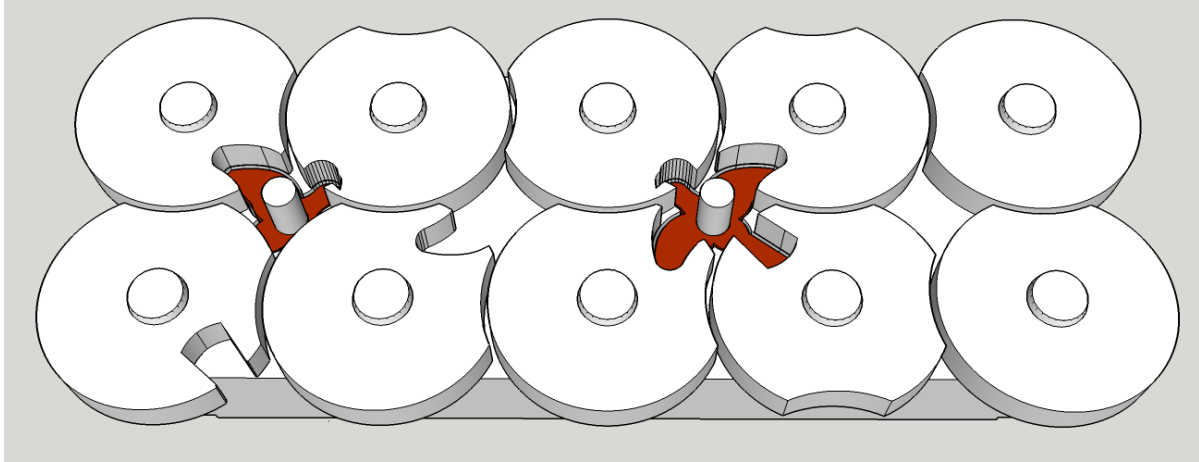


Fowl Play



Goal: Change the colors of the two trapped birds by removing them one at a time, flipping them over, and swapping their places

How it works: There are two birds nested in the base of this puzzle. To remove them, the disks must be rotated until the appropriate cutouts are properly aligned to form the shape of the bird below them. Once a bird can be removed, it must be set aside while the disks are rotated as needed to remove the other bird. The second bird should then be removed and set aside. With the second bird removed, the first bird must be flipped over to show the color of the opposite side and then placed into the second opening. At this point, the sequence of disk rotations must be reversed until the first opening is once again available. Then, turn the second bird over to its opposite color and place it into the available opening.

Strategy: Notice that each disk has one, two, or three concave cutouts, and that the disks are spaced so that without the concave cutouts, the disks would overlap each other. Consequently, any single disk will be free to turn only when a concave portion of each of its surrounding disks is turned toward it (as for the second from the left disk on the top row in the picture above). There will always be one disk that is free to turn, and when it is rotated properly, it will free up a second disk. To get started, one needs to find the free disk and identify which of the surrounding disks can be freed up by rotating this one. Then a strategy is needed to determine the sequence of turns that will result in an alignment to free up one of the birds.

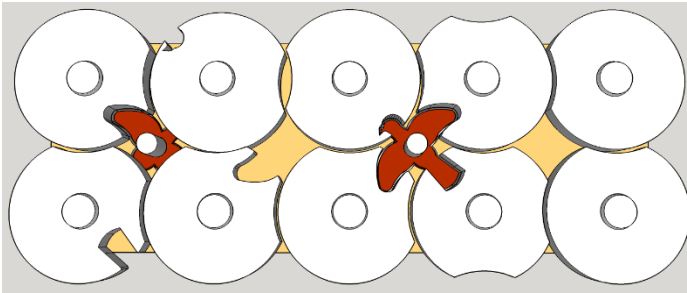
Note that you will need to block the opening for the first bird once you remove it in order to realign the disks to remove the second bird.

You will have to turn each disk at least once (and some of them twice) to change the configuration from freeing up one bird to freeing up the other.

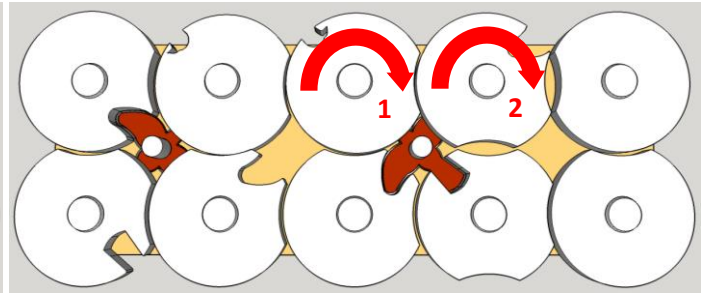
When there are two or three cutouts on a disk, always leave that disk in a position to free up as many of the surrounding disks as possible.

Always look ahead – identify which disk needs to be turned to line up the tail of the bird, then identify which disks are preventing that one from turning. Then determine what sequence of rotation will get you where you want to be.

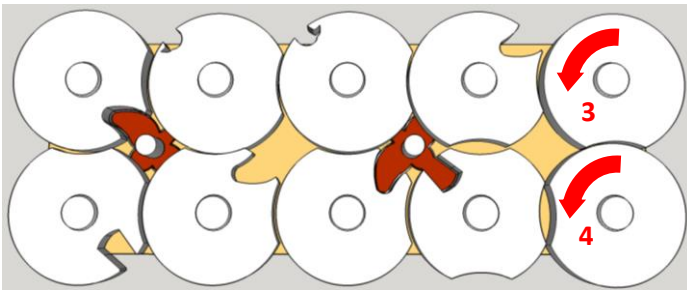
Solution sequences follow:



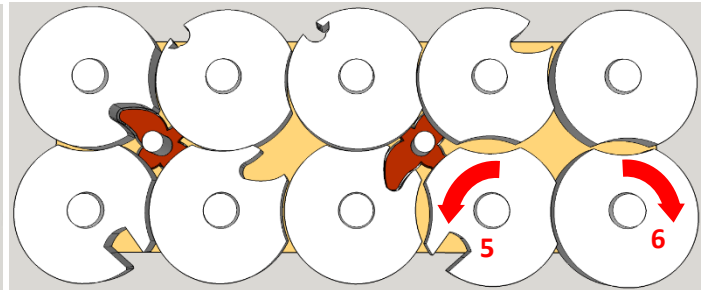
Starting Position with Right Bird Removable



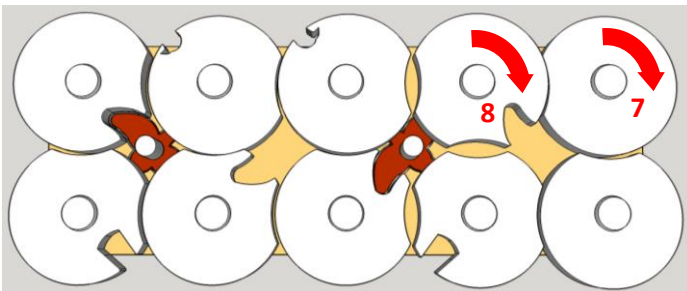
Steps 1 & 2



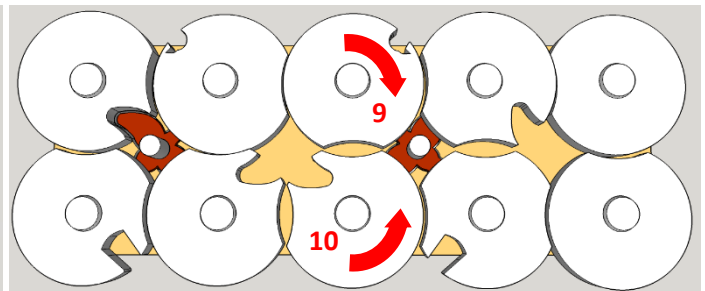
Steps 3 & 4



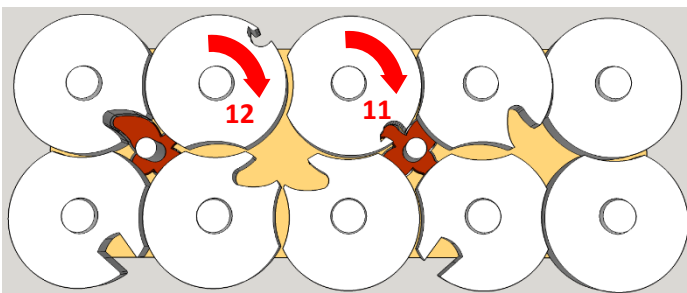
Steps 5 & 6



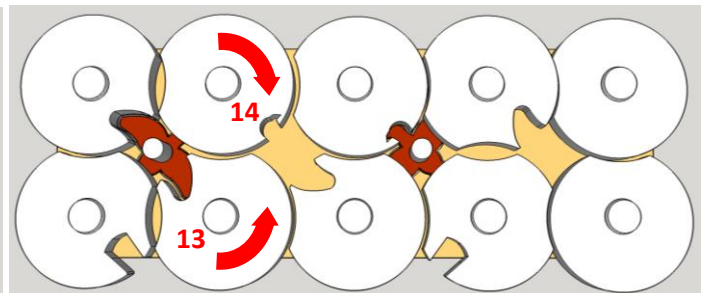
Steps 7 & 8



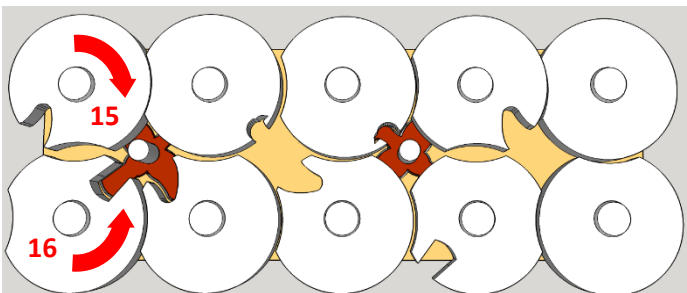
Steps 9 & 10



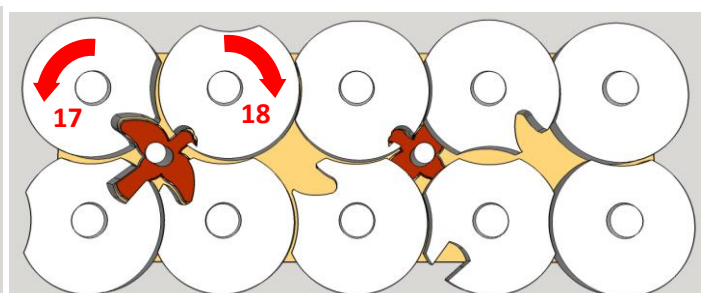
Steps 11 & 12



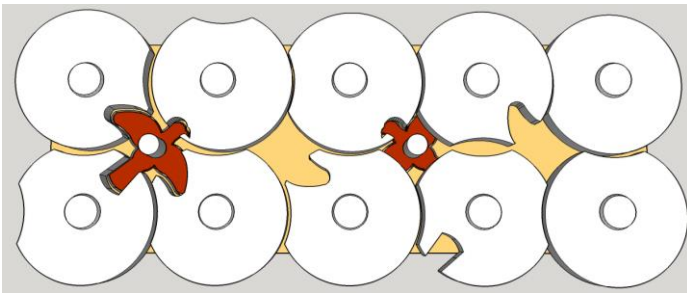
Steps 13 & 14



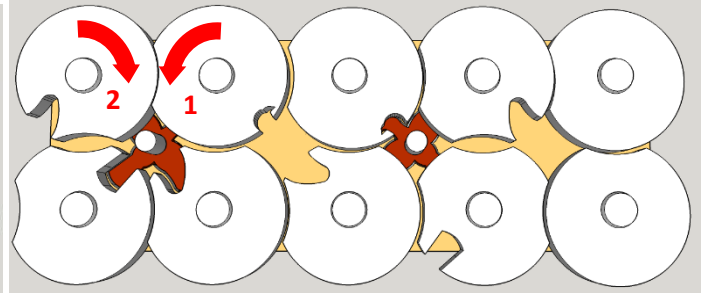
Steps 15 & 16



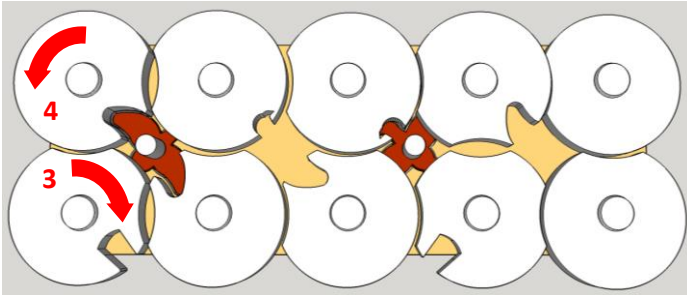
Steps 17 & 18 result in the Left Bird Removable



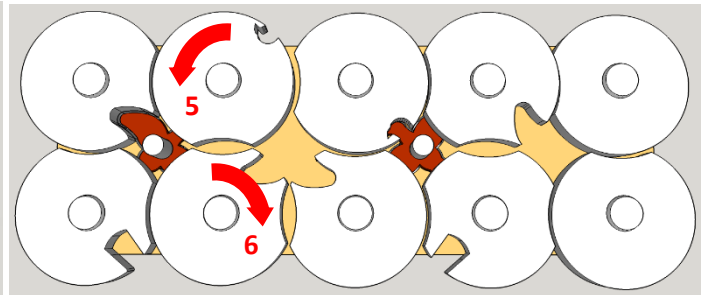
Starting Position with Left Bird Removable



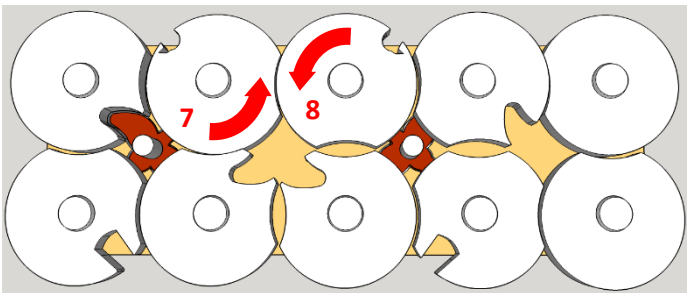
Steps 1 & 2



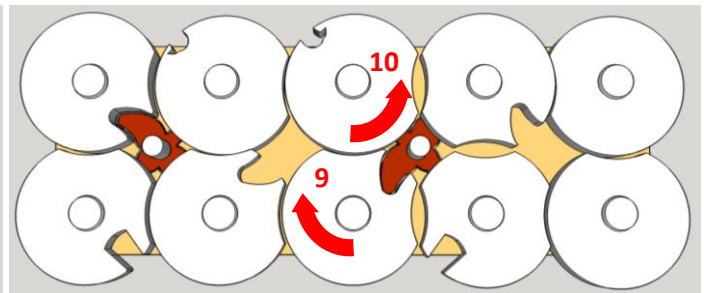
Steps 3 & 4



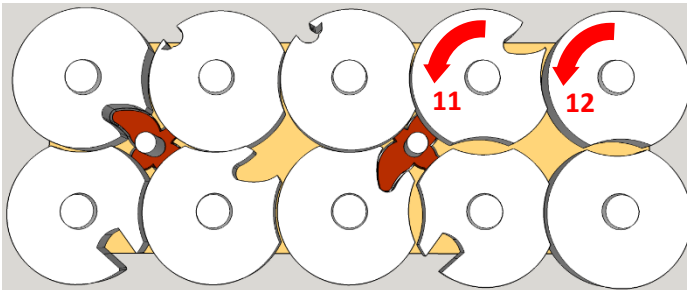
Steps 5 & 6



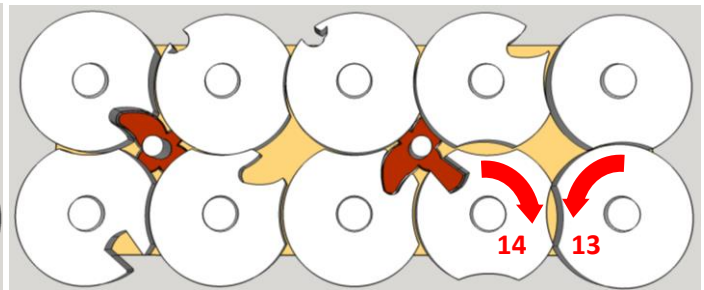
Steps 7 & 8



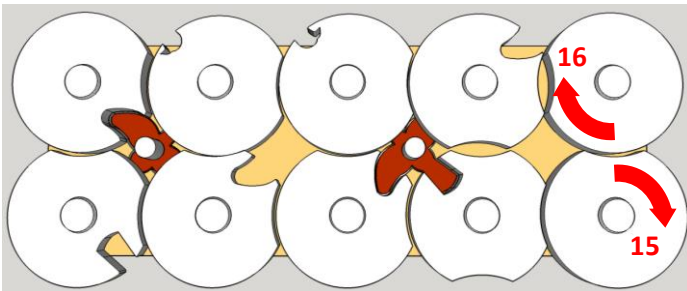
Steps 9 & 10



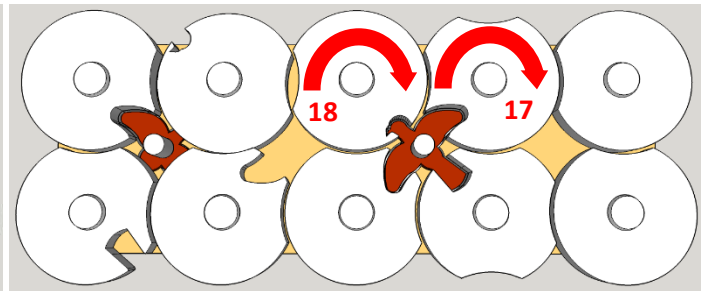
Steps 11 & 12



Steps 13 & 14



Steps 15 & 16



Steps 17 & 18 result in the Right Bird Removeable