Gerdig UFO

Each of the eight balls is split in half, and so is the main center white disk. By rotating the two halves of the disk with respect to each other, different halves of the balls can be matched up. As shipped from the factory, the blue center dial can be rotated to point the red dot to any ball, and pushing the white button in the middle of the dial causes that ball to be flipped. The puzzle can be solved one ball at a time:

If necessary, use the button to make both halves of this ball you want to fix be on the top half of the disk. Rotate the bottom half counter clockwise from the position of one ball to the other. Flip that ball. Then rotate the bottom half clockwise to match the two halves. Since the bottom half was rotated the same amount in both directions, the previously solved balls remain solved, and so this procedure can be repeated to solved all the balls.

In this basic factory configuration, this puzzle amounts to a simpler version of the Octo puzzle. However, the white cap of the button can be unscrewed to expose four rods with teeth that can be pulled out. In the factory setting shown on the right above, one rod (at the lower left) has been pulled out of its slot and pushed back in at the lower left corner, which causes the point of the dial that faces down to be active (rotate the ball a half turn first so after pushing in the rod it positions correctly). This can be done to any of the rods, allowing the push of the button to cause 1, 2 (at both 90 and 180 degree configurations), 3, or 4 balls at once to be flipped. The dot on each of the four points of the dial (on both sides) can be rotated between blue and red to remind you of which points are active. Do all of this with the puzzle in the solved state (since not all positions are reachable in other settings). Jaap's Page gives solutions for all other settings.

Further Reading
Gerhard Patent, from: www.uspto.gov - patent no. 5,370,394

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