Setting the Combination

I figured out how to at least make it work with the numbers of my choosing. I have just completed assembly and tested it to determine mechanical reliability – so far, so good.

At present my combination works by turning CW several turns and then stopping on the 1st number. Then turning CCW, bypassing the 2nd number 2 times (stopping on the 2nd number the third time it appears). Then turning CW bypassing the 3rd number once (stopping on the third number the 2nd time it appears). Finally turning CCW to the last number.

I had not intended for it work this way, it's just how it turned out using the method I used to get it to work with my numbers. I suspect that if the dogs were located differently it would behave differently.
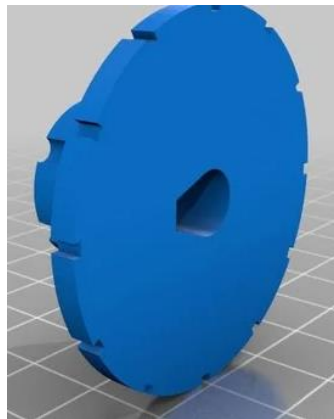
The video shows the sequence of assembly but it is not intuitive for figuring out how to set up the combination. So how do we figure it out?

We'll start with what we know - the last number has its own spindle so you need it, the dial with the numbers is needed to turn the spindle to the correct position, a blank wheel is needed for the next-to-last number of the combination (we know that too) and some dogs are needed to make things happen. I used only the simple dogs that protrude on one side of the wheel.
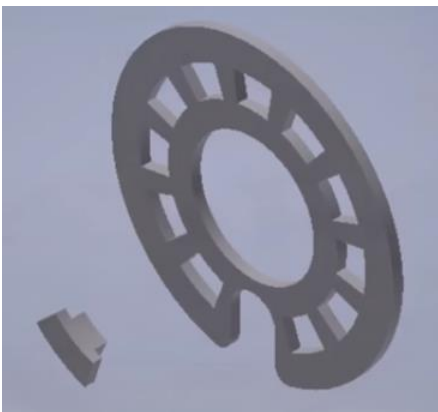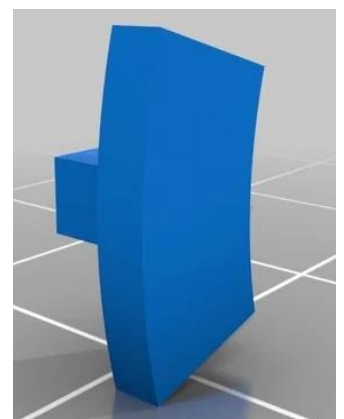
Spindle of last number	Dial	Wheel	Dog

Install a dog on the wheel. I installed the dogs right next to the notches (like shown in this image) in all of the wheels just to keep things the same. I believe that choosing a different location may alter the behavior regarding bypassing numbers during rotation.

Install a C-clip in the 2nd notch down on the spindle housing and place the blank wheel on it followed by another C-clip on top to retain the wheel. Align the notch in the wheel with the locking post.

Put the spindle through the cover and attach the dial. Set the dial to the 3rd number (next to last number) in the combination.

Looking at the assembly from the rear, envision where the dog needs to be on the bottom of the spindle disk to push against the wheel dog that would push the wheel to its present location while rotating the dial CCW. Don't forget that you are viewing from the rear.

Install the dog on the bottom side of the spindle disk and reassemble. Now test.   Rotate the spindle CW stopping on the next to last number - it should align the notch in the wheel with the post. Now rotate the dial CCW to the last number in the combination, aligning the notch in the spindle disk. It's Unlocked!

You're ½ way home. Now just do the same thing concentrating on the wheel just set up and the 2nd number in the combination and then again between the first and second numbers. Good Luck!

Len