Gear Ratio Charts for Animation Station

The gear patterns are based on the side of the Animation Station frame with the cross-brace notch in the lower left corner, as depicted in the example in the gear ratio 1:25 panel. Depending on the movements you desire and the location of the action, there are multiple choices for the placement of your gear train.

Based on the speed of your crankshaft, you can choose to speed up or slow down another shaft with cams on it.   Using simple pre-made gears and their combinations, the automata artist can achieve 11 gear ratio changes including 1:1.   Five to slow things down and five to speed them up.

Possible Gear Ratios, using 8-16-24-40 tooth lego gears.

Slow down	same	Speed Up
1:2	1:1	2:1
1:2.5		2.5:1
1:5		5:1
1:12.5		12.5:1
1:25		25:1

The simplest approach is to see what gear combination you need is and just put them over the port holes and see if they mesh. For example, the 1:2.5 or 2.5:1 gear combination could be in any of these port positions; D ←→ B, D ←→ H, E ←→ I, E ←→ C

For the following notes, there are four gear sizes, (the bevel gears are 24 Tooth).

         8 Tooth   (8T)
        16 Tooth   (16T)
        24 Tooth   (24T)
        40 Tooth   (40T)

The "Driving Gear" which will be on the "Crankshaft" with the hand crank, will be listed first in the following examples.

**** Colors of gears do not matter in the illustrations and are only for clarification.

GEAR RATIO   **SEQUENCE**
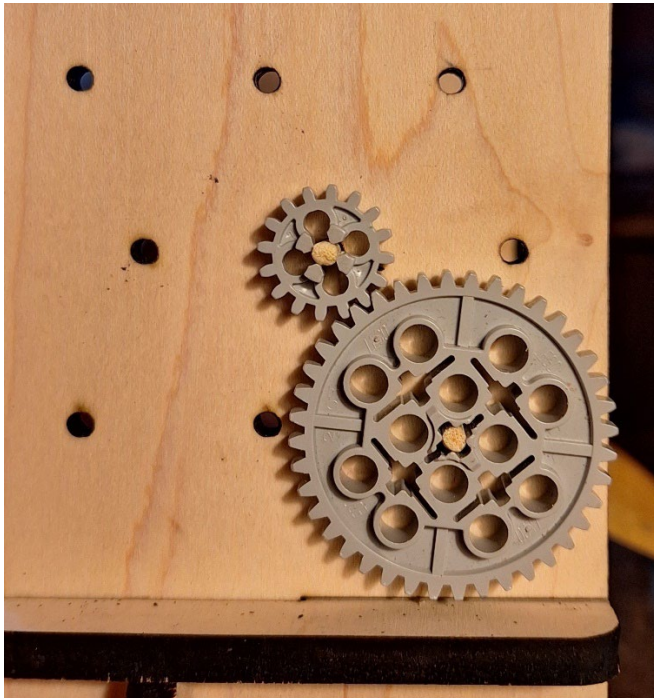

    1:1   12T → 12T → 12T
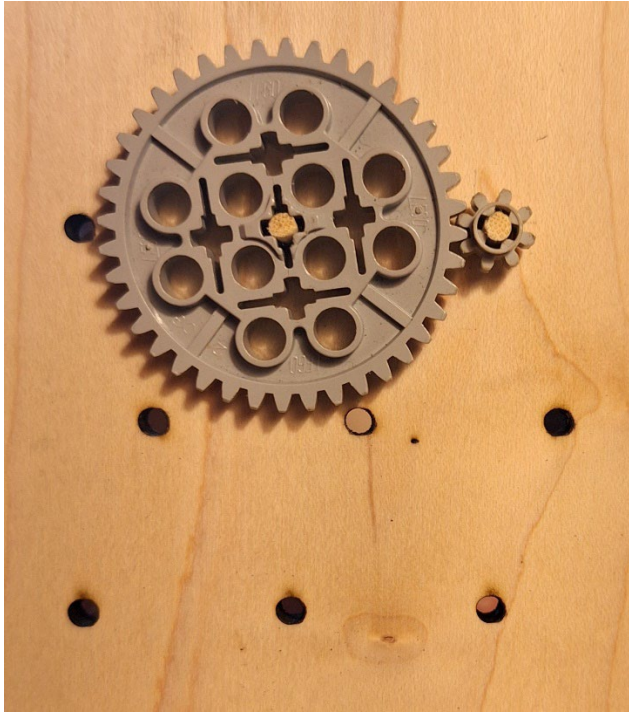
1:2   8T → 40T →16T

2:1   16T → 40T → 8T

1:2.5   16T → 40T

2.5:1   40T → 16

1:5	8T → 40T
	Port C → Port B
5:1	40T → 8T
	Port B → Port C

Example:

In the 1:5 gear ratio panel, if the 8T gear is the "Driving" gear on the crank-shaft in port C, it will take five revolutions to turn the 40T gear, one time, in port B.

If the 40T gear is the "Driving" gear on the crank-shaft in port B, it will take one revolution to turn the 8T gear five times, making this a 5:1 gear ratio.

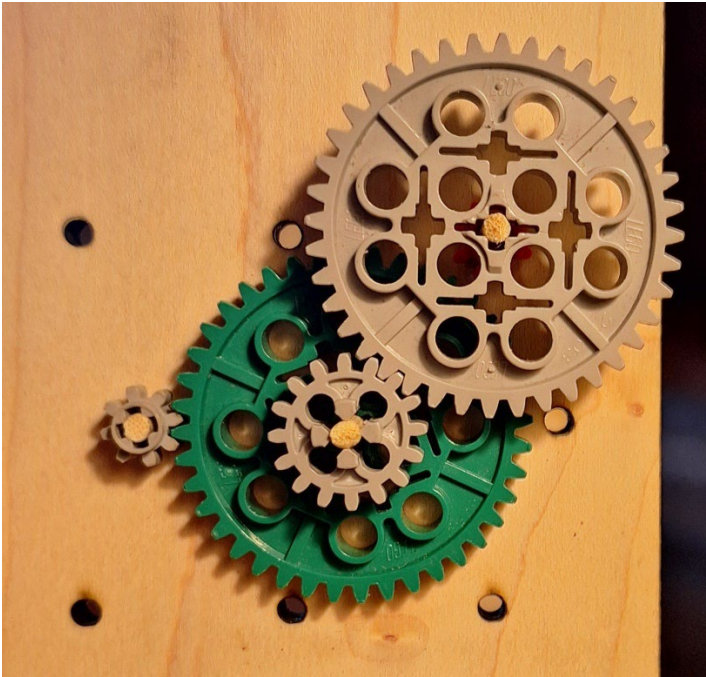1:12.5   8T → 40T

                              16T → 40T
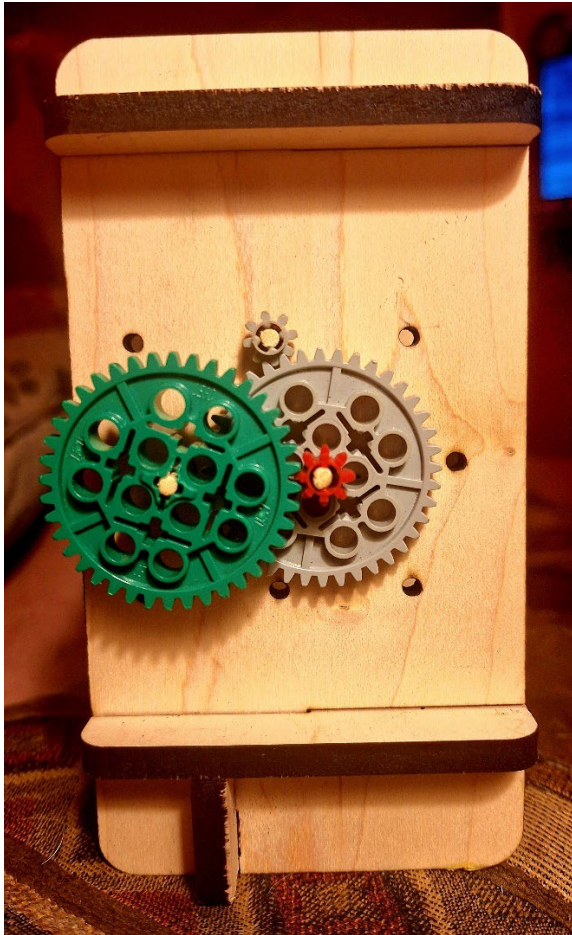
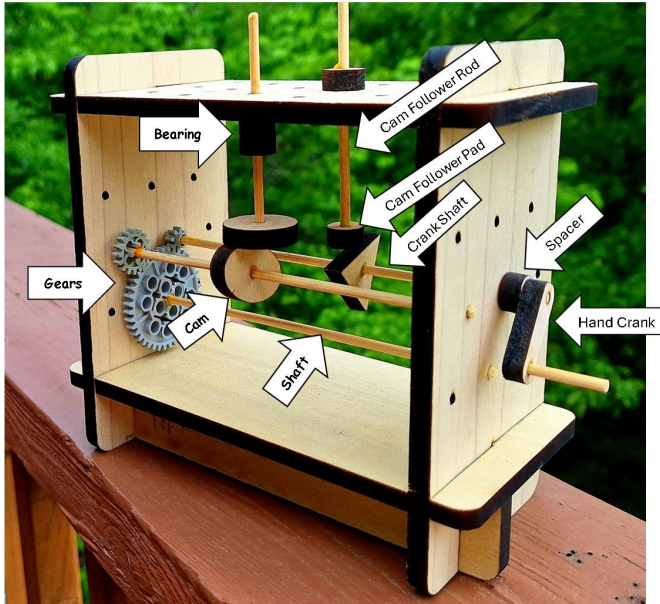12.5:1   40T → 16T

                              40T → 8T

1:25   8T → 40T

          8T → 40T

25:1   40T → 8T

          40T → 8T

Can you determine the gear ration is this labeled photo?

Answer: Gear ratio is 1:2.   It will take two cranks to turn the oval
           cam one full revolution.