

ST

Transformations/Links In Class Exercise

1. a) Describe the position of the chain on a bike when it's in its highest gear.
 b) Describe the position of the chain when it's in its lowest gear.
2. Use the table to find the highest 5 gears.

gear		34	24	22	20	18	16	14	
3	48	1.4	2.00	2.18	2.40	2.67	3.00	3.43	3
2	38	1.1	1.58	1.73	1.90	2.11	2.38	2.71	2
1	28	0.8	1.2	1.3	1.4	1.6	1.8	2.0	1

teeth on cranks teeth on cranks

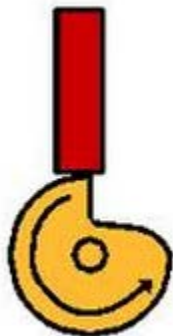
1 2 3 4 5 6 7

3. a) The wine bottle opener represents what kind of transformation system? _____
 b) Is the transformation from circular to linear? Why ?



4. a) What did they include on the cam to hold it in place? _____
 b) Is the link direct or indirect? _____

c) In this system, they did not use a teardrop –shaped cam or an off-centered cam. Instead, what did they design?



<http://www.youtube.com/watch?v=UpS8OjdXSow>

d)

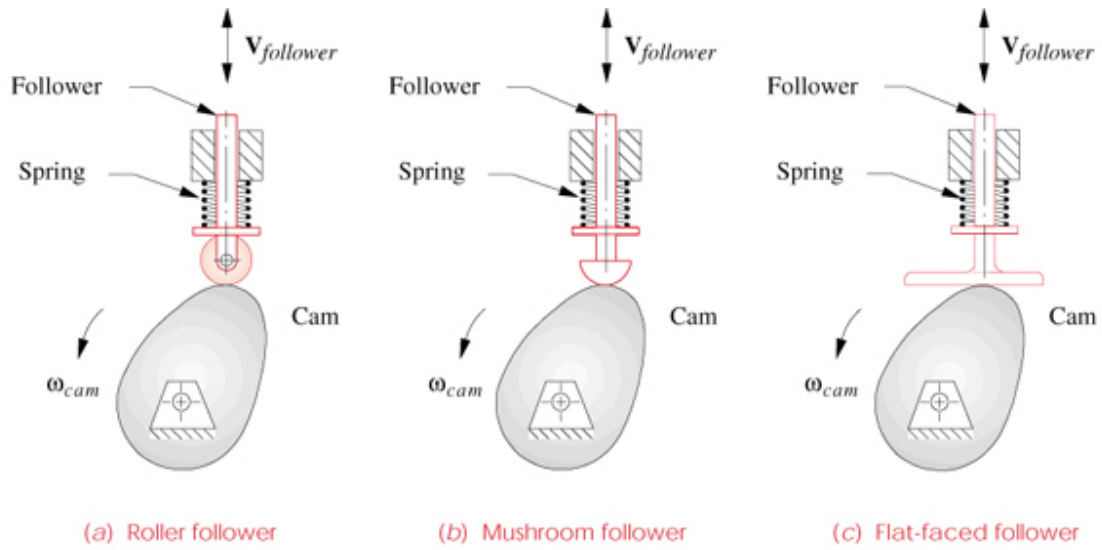


FIGURE 8-3

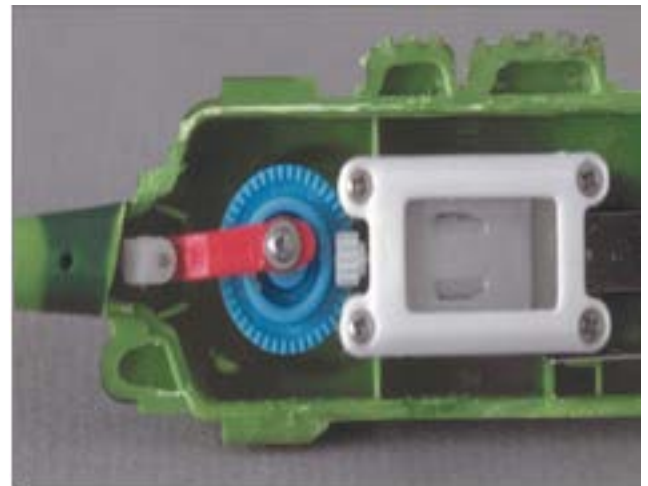
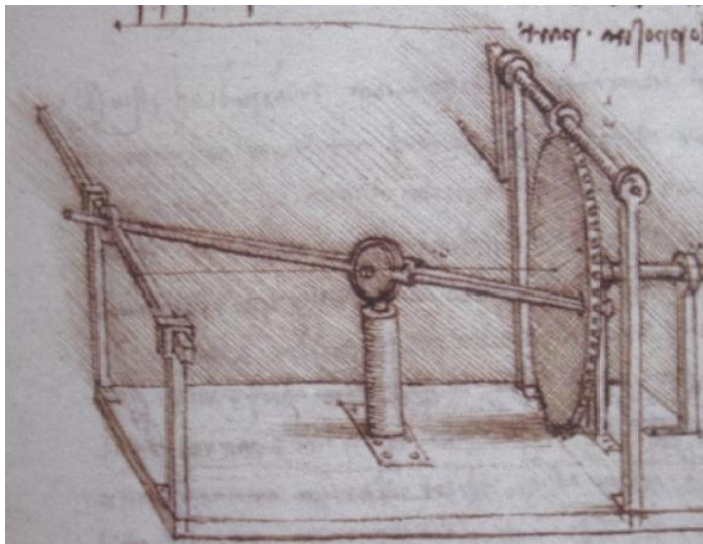
Three common types of cam followers

Why are the above links indirect? _____

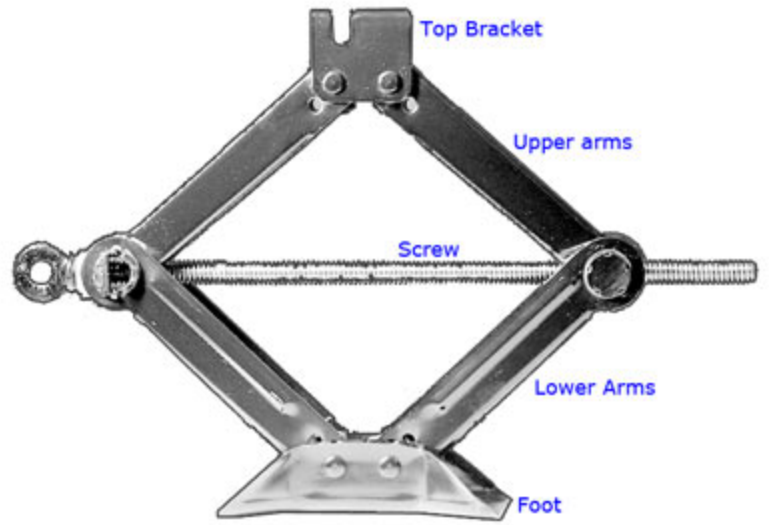
What variations have they used for the follower? _____

5. a) Where's the slider in this electric toothbrush?

b) What famous artist and inventor came up with this design of a crank-slider mechanism?



6. a) As you turn the screw clockwise on a car jack, what happens to the lower and upper arms?



- b) How do place the jack so that you don't hurt yourself?

