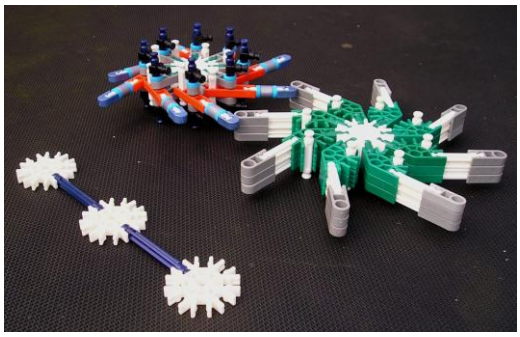
How to Make a K'Nex Ratchet

Introduction

Ted has recently discovered that K'Nex actually make a ratchet, but before that discovery Ted had to invent his own. His first attempt was an unreliable and clunky affair which suffered from a lot of friction.

The Pawl and Ratchet Assembly

Ted's new ratchet was a vast improvement, producing a very smooth action with very little friction. On the right is a photo of it.



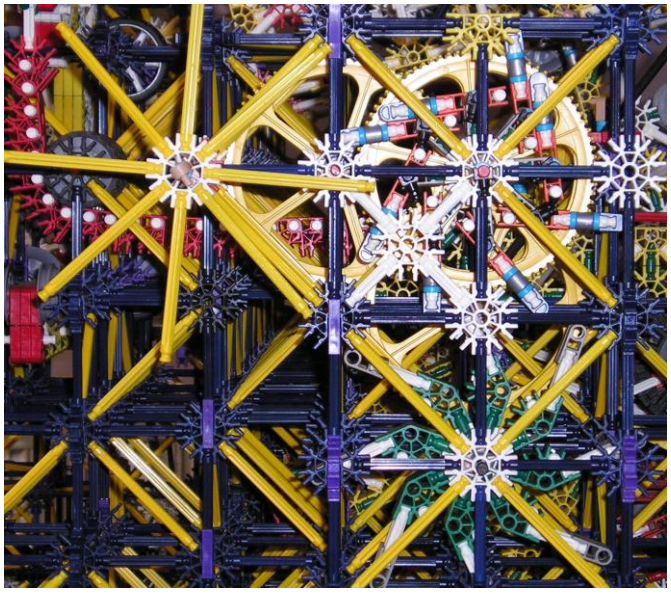
If you enlarge this you can see how it was made.

At the top of the picture you can see the pawls, each of which consists of an orange two-way connector with a vertical white rod at the inner end. On the other end is a white rod with a blue spacer, a silver spacer, and then another blue spacer. A blue clip is attached to the end. It is this clip which engages the teeth of the ratchet. On each of the vertical blue rods is a black rotational connector, a blue washer, a one-way connector, a two-way orange connector, another one-way connector, and finally another black rotational connector.

On the right-hand side of the picture you can see the ratchet assembly. There are enough details in the picture to see how it was made.

The distance between the two assemblies is shown on the left-hand side of the picture – the rods passing through each assembly must be two blue rods and a white connector apart.

When the ratchet is in use, both the pawl and ratchet assemblies above will be vertical, with the pawls on top, so that the rods passing through each assembly are horizontal.



On the left is a picture of Ted's fruit machine's timing mechanism. You can see the pawl and ratchet on the right-hand side. Click here to see a larger version of it.

On the left-hand side you can see a crude flywheel — this governs the speed of the mechanism.

The pawl and ratchet assembly will fall to pieces if it is exposed to a lot of force, and so any structure which incorporates it must be designed accordingly.