

# Cork Ratchet

## Cork based mechanism

Turn the handle and the ratchet wheel advances one tooth at a time. An interesting mechanism to make from household bits and pieces!



Rob Ives / robives.com

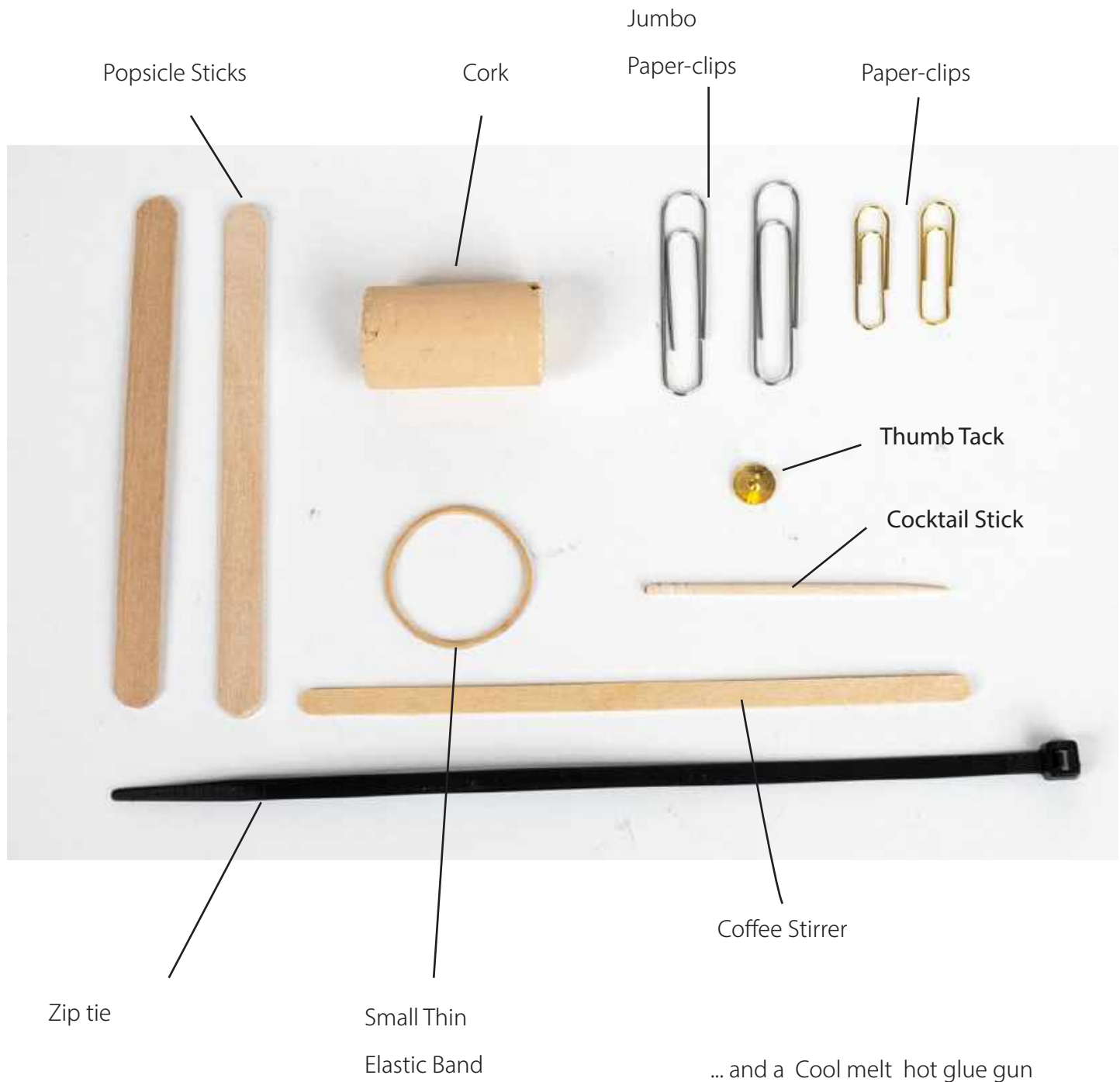


# Cork Ratchet

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# You will need:

As well as some normal household tools you will need the following:

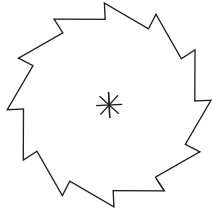
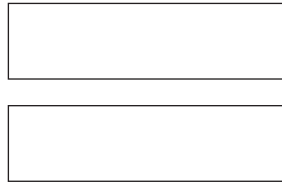


## Cork Ratchet

# Parts and Templates:

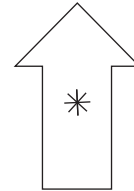
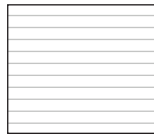
Parts : Print onto thin card.

Spacers



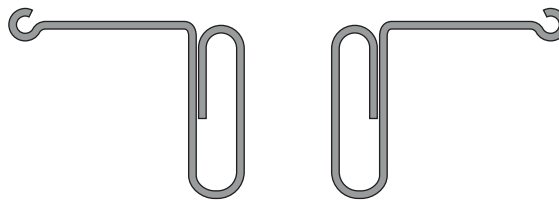
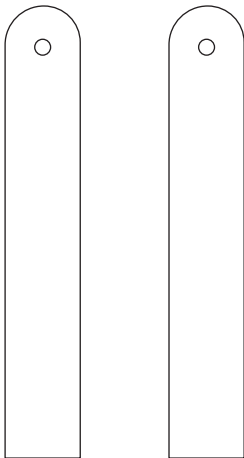
Ratchet

Axle



Optional Pointer

Templates



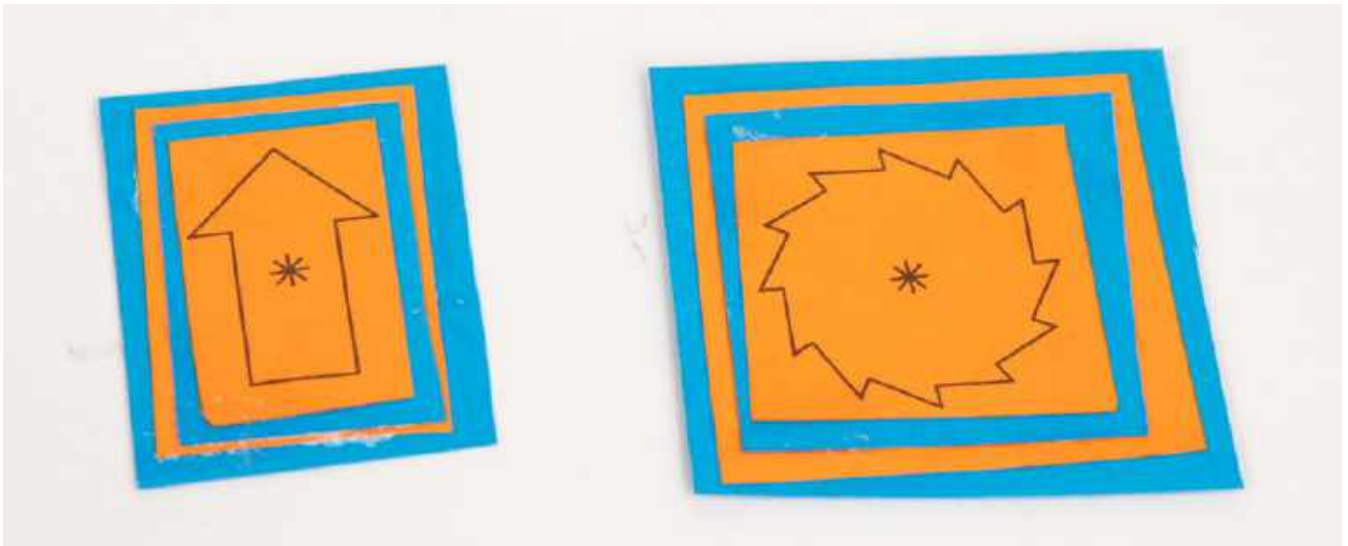


Drill a hole through the popsicle sticks using the template for positioning. The cocktail stick needs to fit easily through the hole.

Cut the popsicle sticks to length

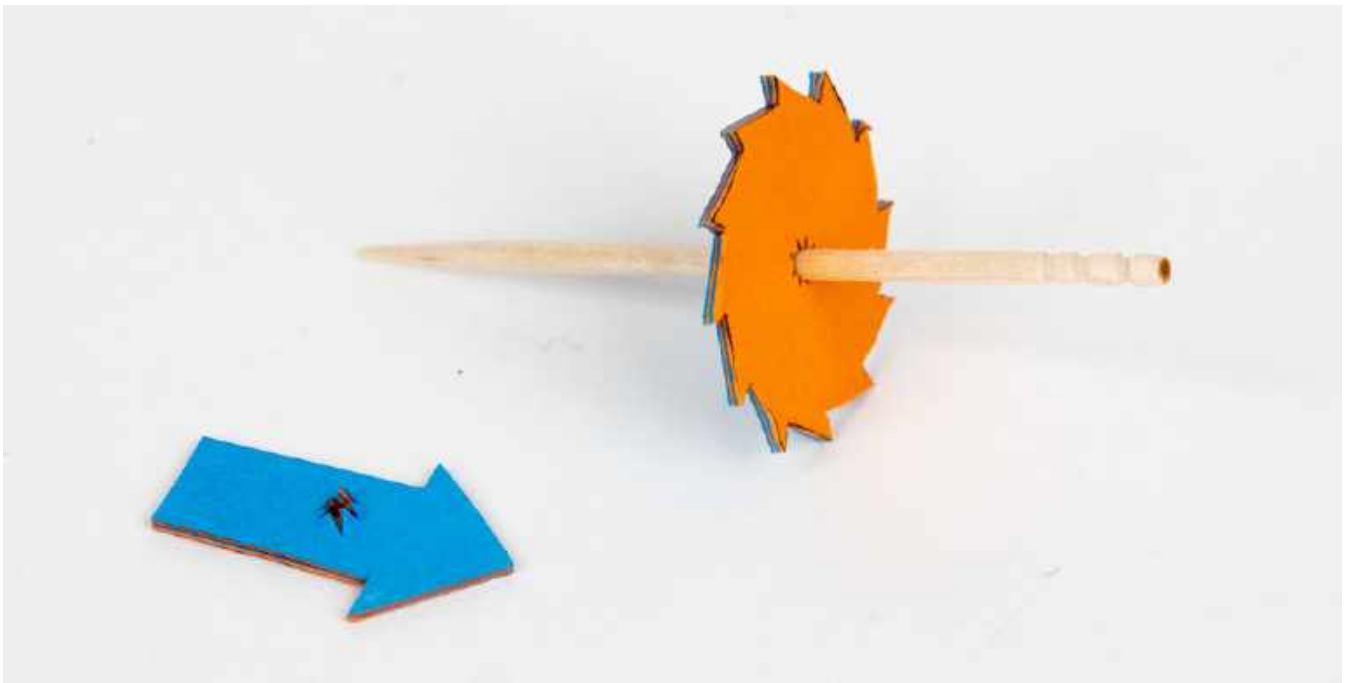


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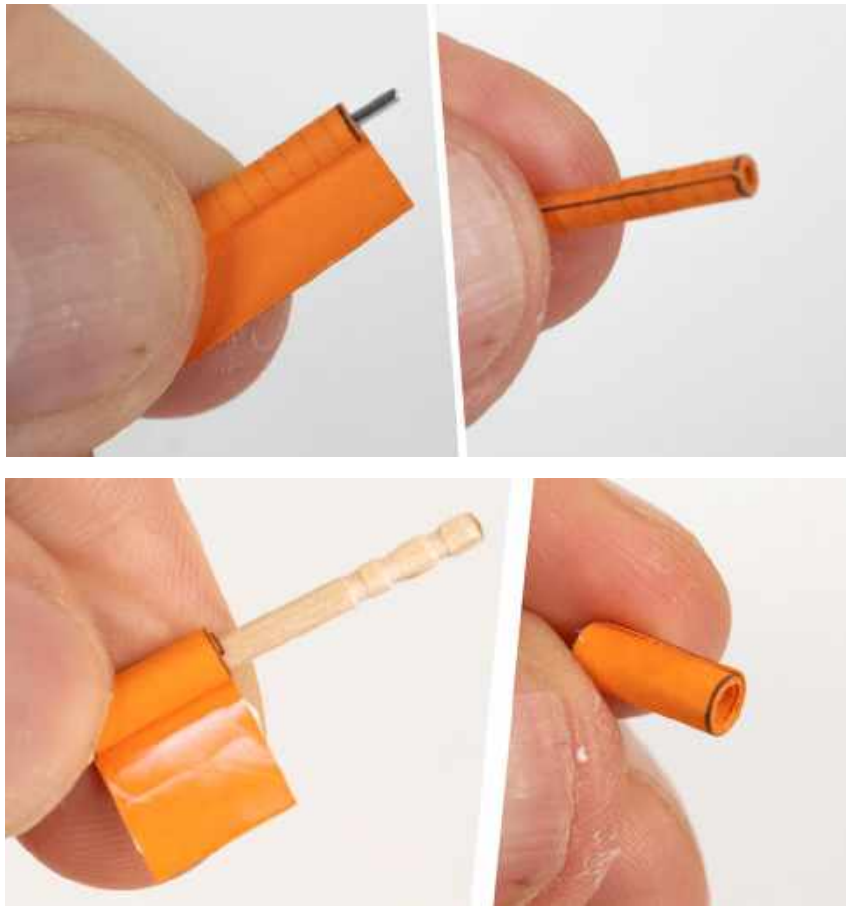


Prepare the ratchet wheel and optional pointer by gluing together four layers of card. Once the glue is dry, cut out the ratchet wheel. Cut the cross holes in the middle.

Push the cocktail stick through the hole, secure it to the centre with a dot of glue.

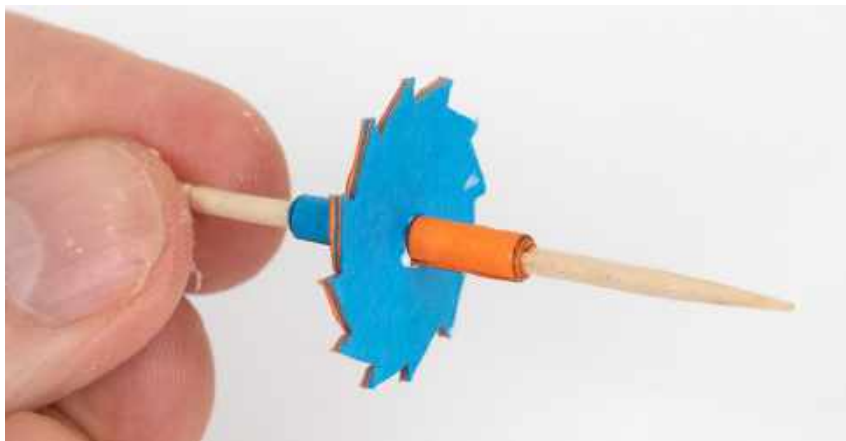


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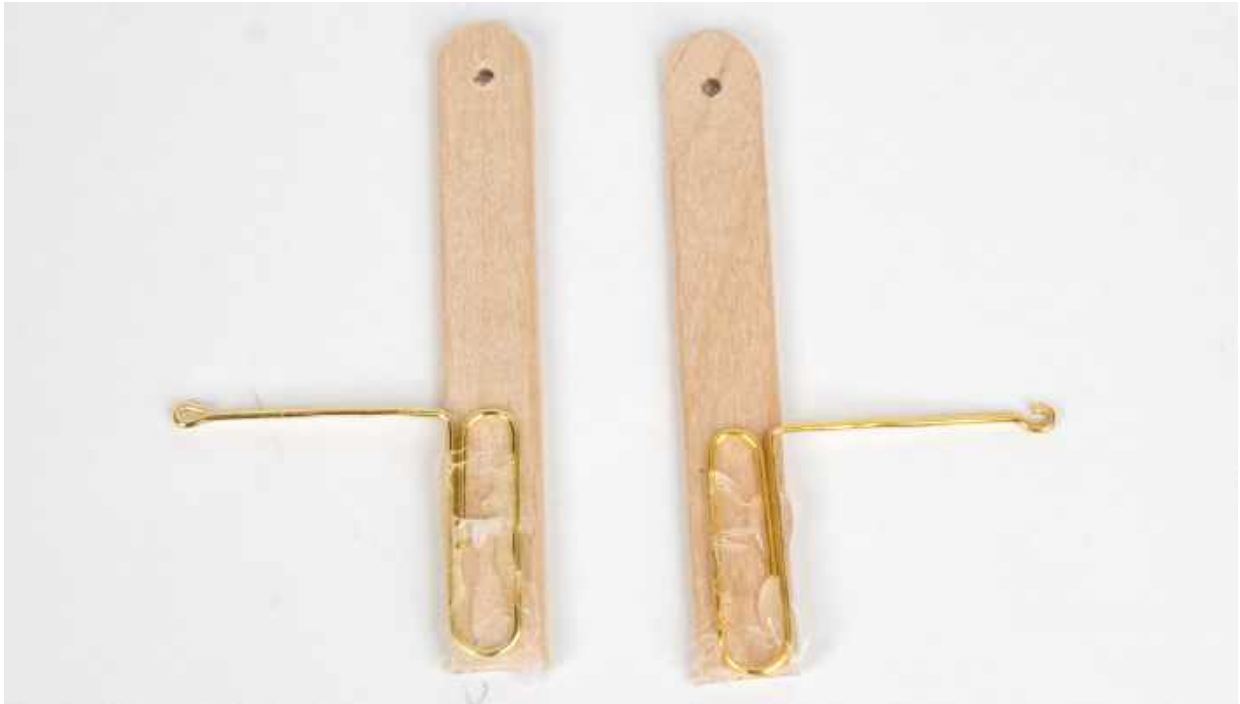


Roll the axle tube round a length of jumbo paper-clip wire and glue it down. Slide it from the wire.  
Make up the two spacers by rolling them around the cocktail stick and gluing them down, slide them from the cocktail stick while the glue dries

Slide the spacers onto the cocktail stick.



# Cork Ratchet

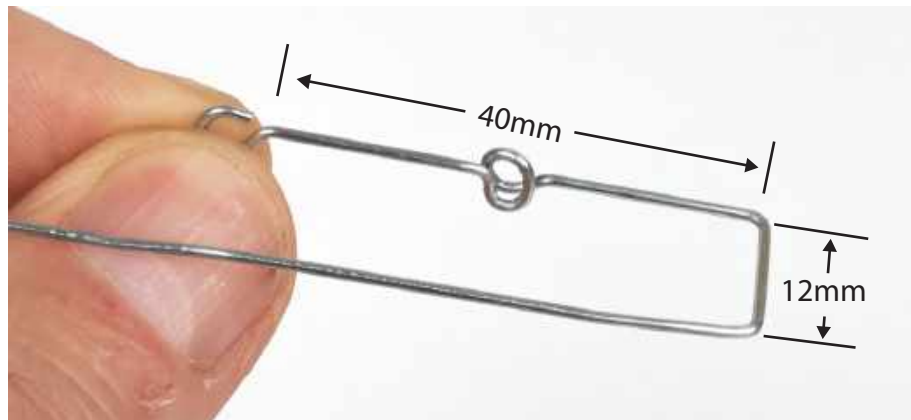
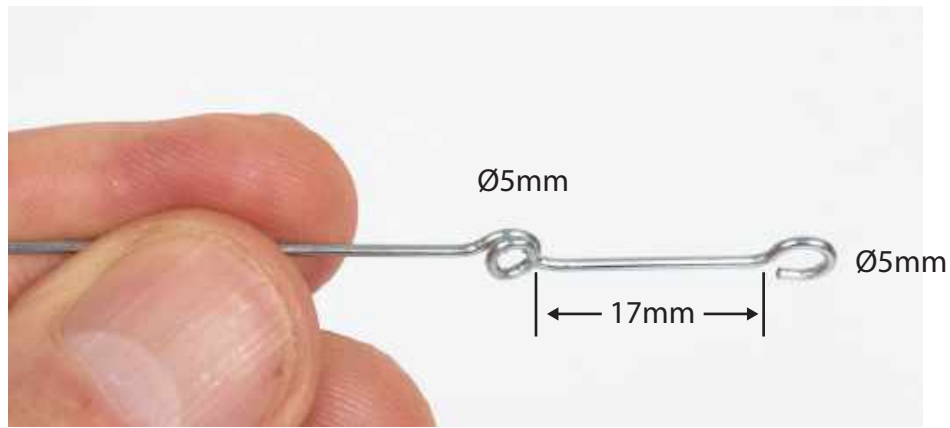


Shape the two paper-clips using the template, Use the hot glue gun to fix them to the popsicle sticks as shown.

Bend a dog leg into a straightened jumbo paper-clip then slip the axle tube into position.



# Cork Ratchet



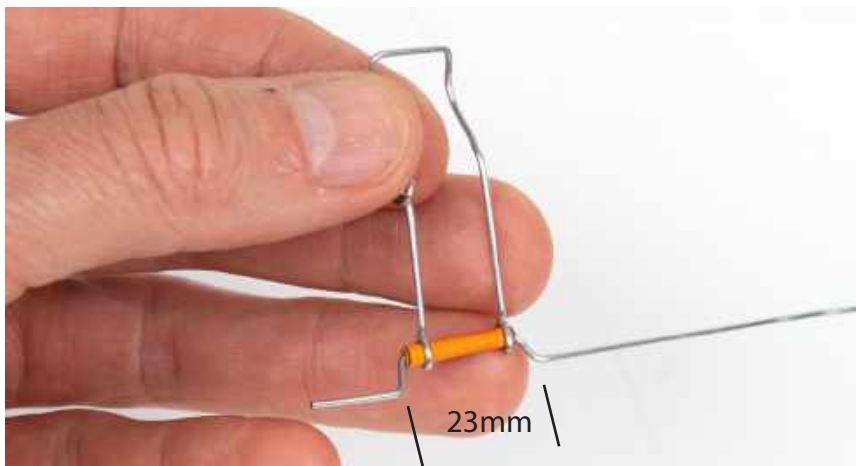
Straighten out the other jumbo paper-clips.  
Fold it up as shown to make the pawl.

# Cork Ratchet



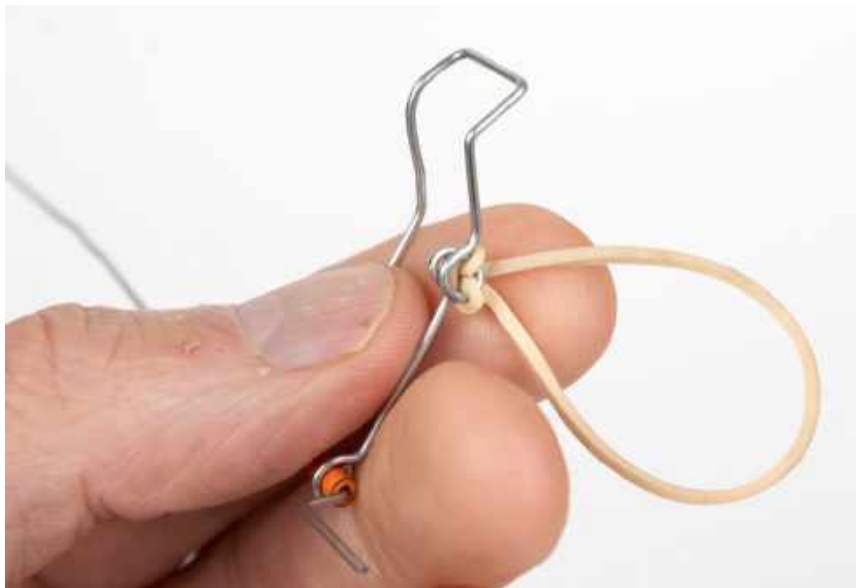


Bend the side-view of the pawl like this.



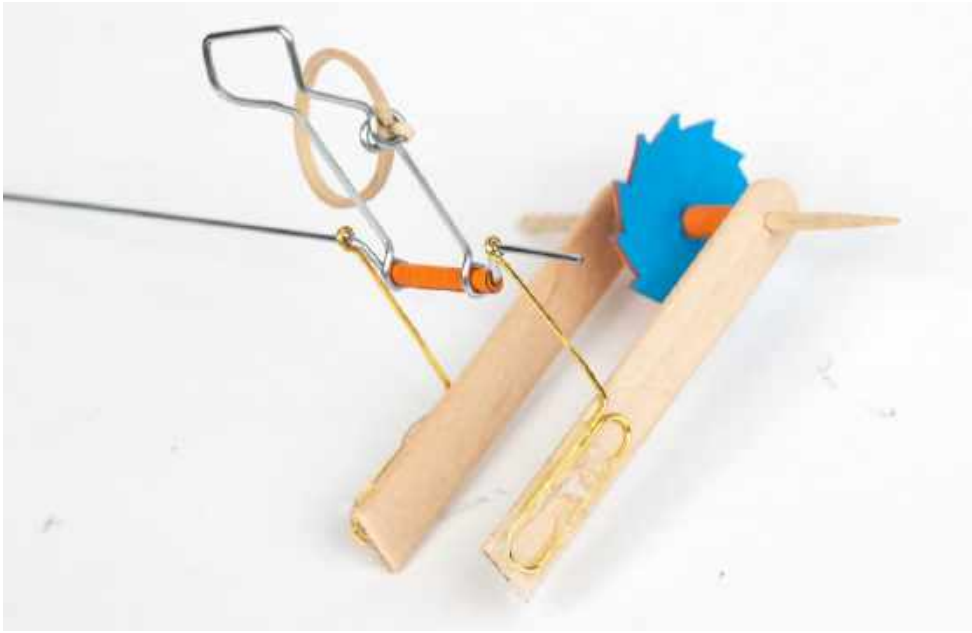
Bend the crank wire so that the crank is roughly 23mm wide.

Fit the pawl loops over the axle tube and nip them up so that they are a tight fit.



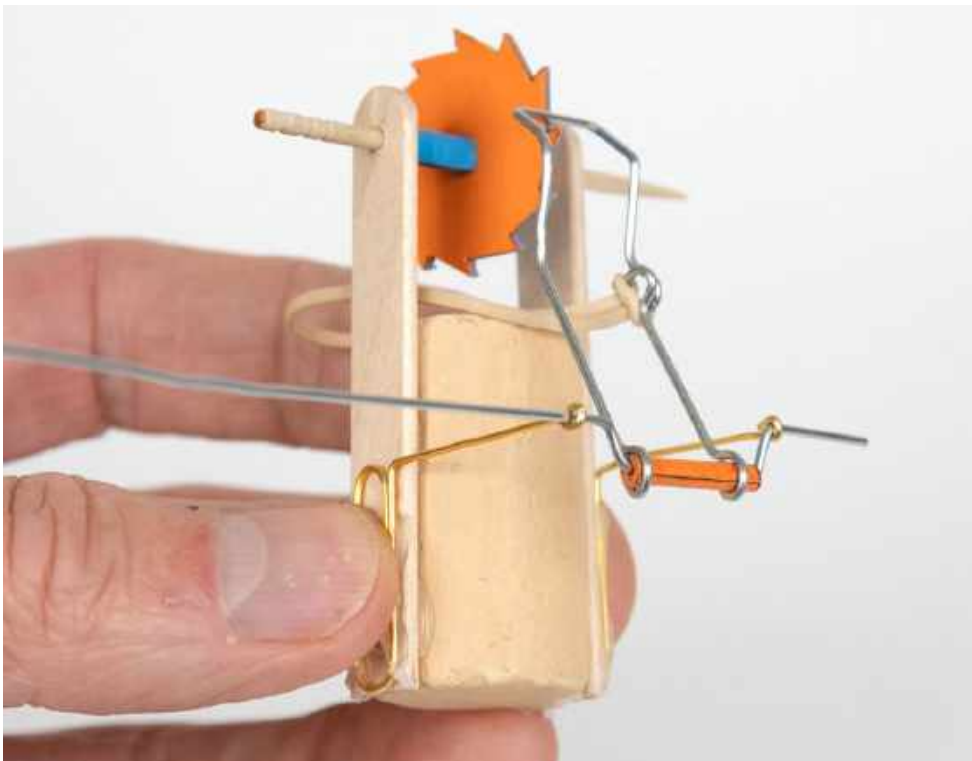
Attach the elastic band to the loop in the pawl.

# Cork Ratchet

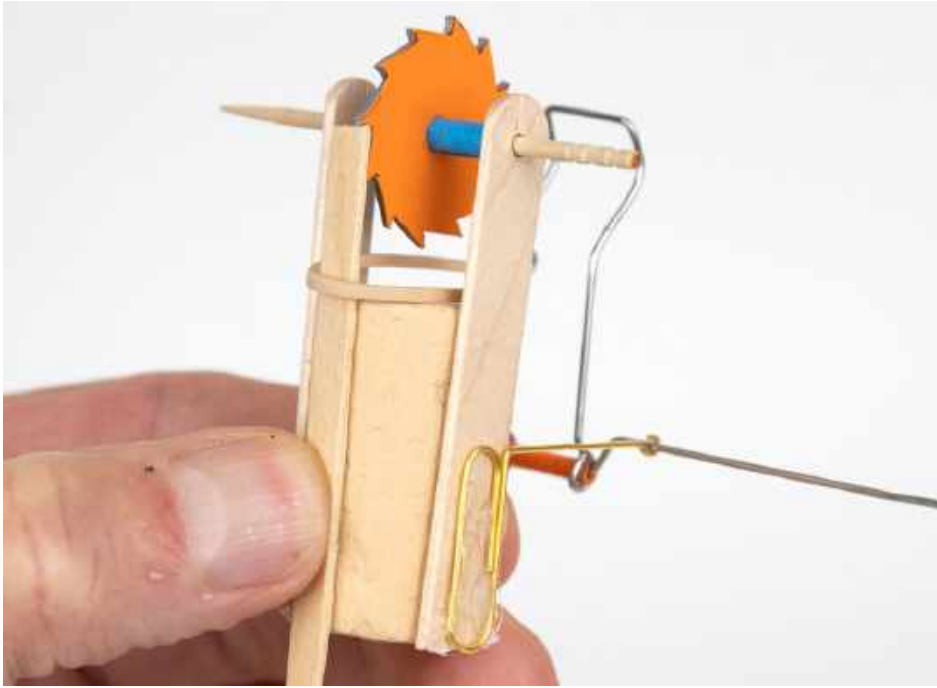


Thread the two popsicle sticks onto the ratchet and crank. Note the direction of the bend in the pawl and the ratchet teeth.

Tack them to the sides of the cork with a dot of hot glue

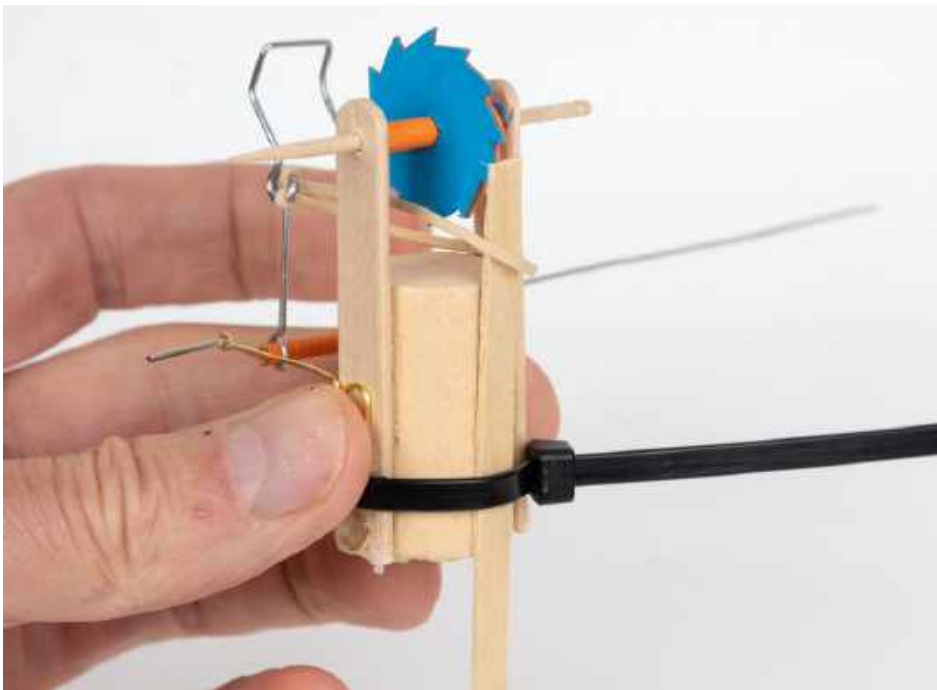


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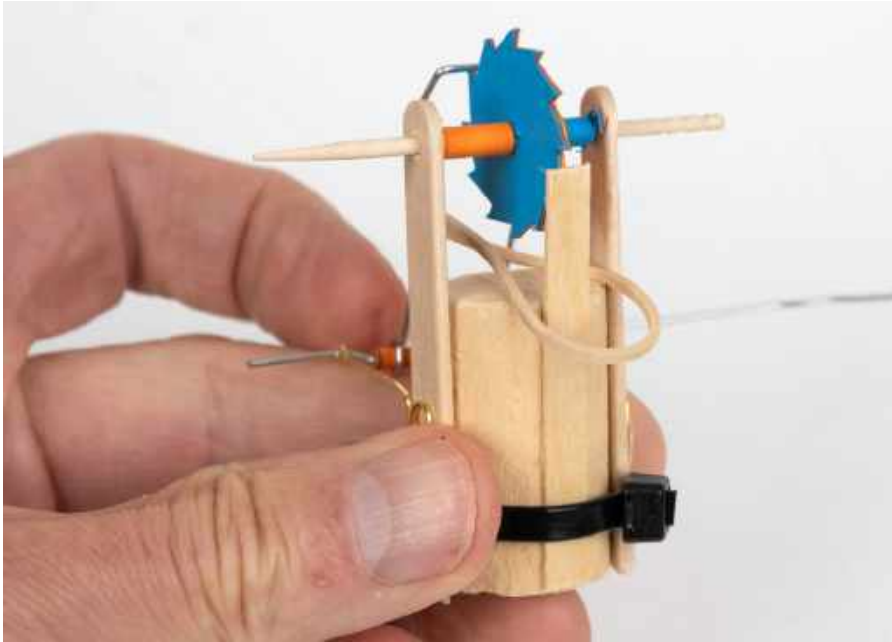


Cut off the end of the coffee stirrer making a square end. Hold it into position so that the top is lined up with the cocktail stick axle. Note the position of the elastic band.

Wrap the zip tie into position and pull it tight.

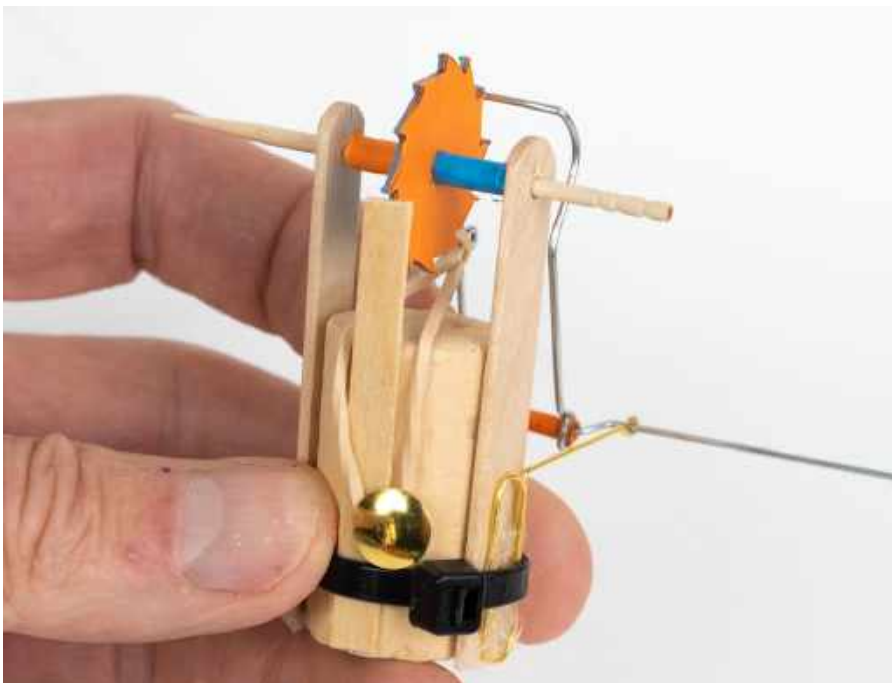


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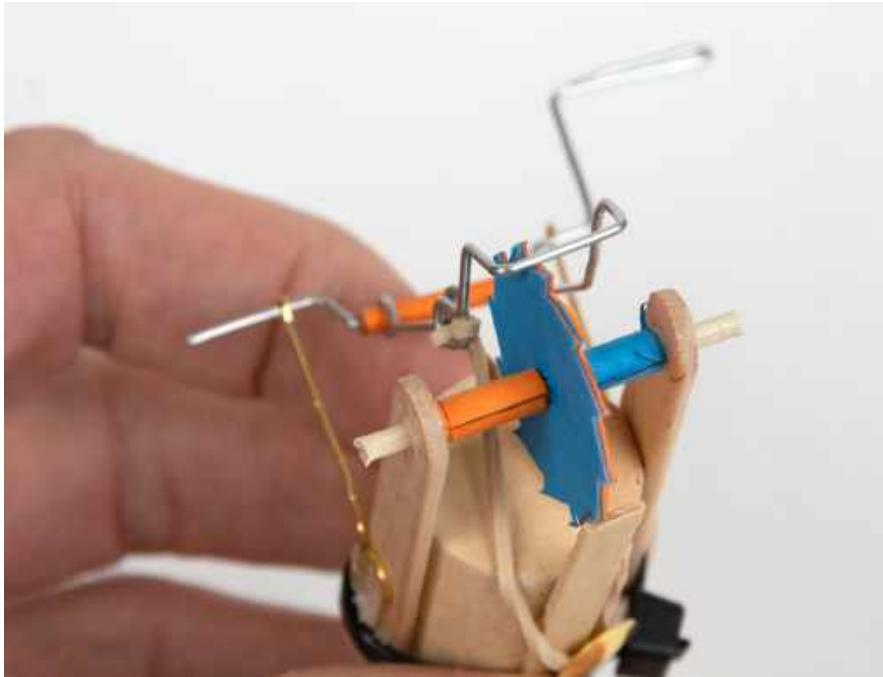


Cut off the zip tie.  
Cut off the end of the coffee stirrer.

Pull the elastic band down so that the pawl lightly touches the wheel and pin it to the cork with the thumb tack.



# Cork Ratchet



Fold the end of the paper-clip crank to make a handle.

Turn the handle and the ratchet wheel will advance one tooth at a time with a satisfying click!



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