**Simple gears**

With a hammer and a medium-sized nail, make holes in the exact centres of several used bottle caps. Straighten the edges of the caps to make them as round as possible.

Lay two of the caps on a block of wood so that the toothlike projections mesh together. Fasten them down with carpet tacks, but make sure that they still turn easily. Turn one of the caps and note the direction that the other turns. Add a third cap and note the direction that each turns.

**Using cross belts**

Cross the belt on two spool pulleys and turn one of the pulleys. Note that they now turn in opposite directions.