

CHAIN REACTION CONTRAPTION

Chain reaction: a series of events, each caused by the previous one

HOW TO MAKE ONE AT HOME

I. GET INSPIRED

Look at some chain reaction contraptions; there are a lot out there.

You can search online for some of the suggestions below.

Or put *Chain Reaction Machine* or *Rube Goldberg Machine* into search and get results.

Cartoonists *Rube Goldberg* (USA) and *Heath Robinson* (UK), were both working pre 1950s, both drew fantastic cartoons and illustrations.

Pop Music Combo *OK GO*'s video for song *This Too Shall Pass*

Artists *Fischli and Weiss* made lots, a short film: *The Way Things Go*

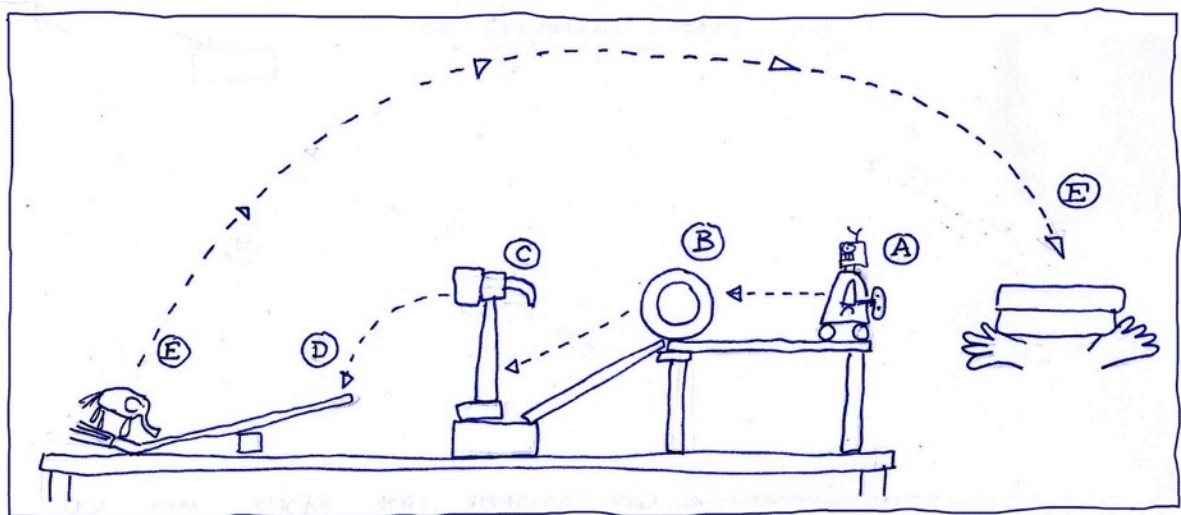
Animated cartoon *Tom and Jerry: Designs on Jerry*. Funny, clever, looks great

Films: these all have great getting up and/or breakfast contraptions:

- *Pee Wee Herman's' Big Adventure*
- *Wallace and Gromit: The Curse of the Were Rabbit*,
- *Chitty Chitty Bang Bang*,

Not all strictly Chain Reaction but got the vibe.

Board Game *MouseTrap* is based around a chain reaction contraption



2. DECIDE WHAT YOUR MACHINE WILL DO

Solve a problem.

A simple problem makes the use of a complex machine funnier.

It also makes the end move easier to achieve.

Some ideas:

- : put some peas on a plate
- : drop a sugar lump in a cup of tea
- : put a coin in a saving jam jar or piggy bank
- : pop a balloon
- : make a toy dive into a bowl or glass of water
- : ring a bell

3. GATHER SUPPLIES

Collect your tools and a diverse selection of items.

Don't overwhelm yourself with too many

You can always go back for more as things develop.

Some ideas:

Items that roll

- balls - marbles, bouncy, ping pong, golf, tennis...
- rolls of sticky tape
- toy cars and trains
- rolling pin
- toilet roll, cardboard tube
- beaker/cup, bottle/jar
- cotton reel
- chopsticks (interesting roll in an arc)
- fruit (possible wonky roll)
- ball of string (can you make use of the string unrolling)

Ramps and tracks

- toy train tracks
- car tracks
- toilet rolls
- tubes, pipes
- books (cover, open, closed hardback page edges)
- trays
- funnel

Items as barriers and gates

- pencils
- spoons
- lollipop sticks
- rulers
- chopsticks
- straws

Items that move/fall over

- dominoes
- books
- mousetrap
- scissors
- toaster
- fan
- wind up, mechanical toys

Items for building/infrastructure

- Books
- boxes
- Lego
- wooden blocks
- recycle bin items
- kitchen utensils : wooden spoons, cutlery, mixing bowls, saucepans....
- toys (I think supporting a ramp with a toy dinosaur is cool)

Securing & holding together

- masking tape
- blue tac
- string
- rubber bands
- bulldog clips
- paper clips

Tools

- Scissors
- craft knife (adults)

Lay your stuff out so it's easy to see and get your hands on.

4. EXPERIMENT

Play with items, discover how they move.

Can a domino push over a book?

How will an item roll down a ramp?

Can a ball bounce off a track into a bowl?

How do we control a movement so it will work every time?

Experiment with ways to join sections, one triggering the next.

Different ways to release an object or make something fall over.

5. BUILD

Start from the end and work backwards.

Some people like to work out all the moves and draw it.

I like to have a few ideas and adapt as I go along.

If you have discovered a move you really like you can make sure it fits in.

For the first contraption you make: keep it simple.

Maybe 4 to 6 sections/actions

Use ramps and tracks, things rolling and falling over are relatively easy.

6. SHOW TIME

Before you set off the contraption:

- take photographs.
- film an explanation of what will happen in each section.

Start the contraption and film it working

KEEP YOUR FIRST ATTEMPT SIMPLE AND MANAGEABLE

GOOD LUCK

• BOOM •

*** Next page for Top Tips ***

TOP TIPS

1. Vary the speed.

If you can have a section that takes a relatively long time that will be a good contrast to most sections that will be over quickly.

2. Don't worry about a fail

If an idea doesn't work, don't be disheartened, adapt it or try something else, it's all part of the process

3. Test and test again

Try and make sure a section will work every time, before moving on to making the next section. If it works 10 times in a row its good. If it needs changing or adapting, look at the variables, control everything you can.

4. Avoid ready mades

Marble runs, car tracks, railway tracks can all be very useful, but avoid using them, too much, for their original purpose.

Use them to roll unexpected items.

It will be more interesting if we see stuff being used in unexpected ways.

5. Find an interesting start

This is the opening of the 'show'.

One way to build tension is to use something you can set off that moves slowly or has a relatively long time moving before it triggers something else.

Also MAYBE here is a good place to use a ready made, like a marble run or toy car track.

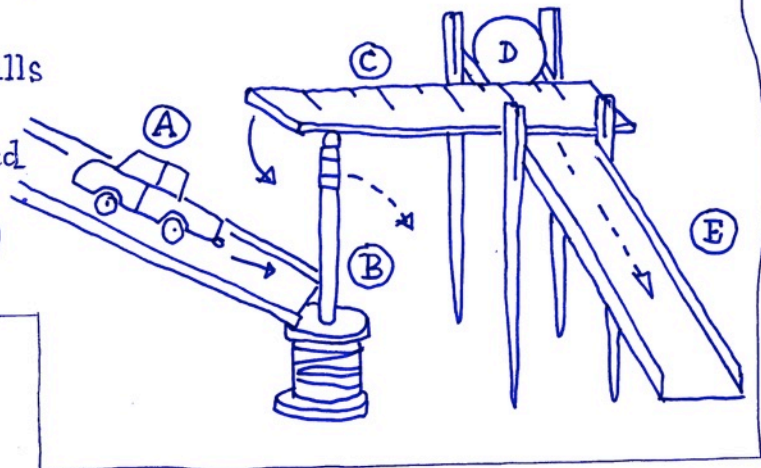
6. Transitions & Triggers

How one section/action/movement starts off the next ?

I call these transitions, triggers or releases.

There are a lot of inventive ways. The falling tower and gate is relatively simple:

- Ⓐ Toy car rolls down car track ramp
- Ⓑ Pencil in cotton reel tower, hit by car, falls
- Ⓒ Ruler was held up by pencil, falls
- Ⓓ Ball was held by ruler gate, released
- Ⓔ Ball rolls down car track ramp (ramp held up by taped on chopsticks)



look at this on youtube : [Rube Goldberg Tips and Tricks Simple Trigger - #2](#)