

MECHANISMS

**THERE ARE FOUR MAIN
USES OF MACHINES:**

- 1 – TRANSFORM ENERGY**
- 2 – TRANSFER ENERGY**
- 3 – MULTIPLY AND/OR
CHANGE**
- 4 DIRECTION OF A FORCE**
 - MULTIPLY SPEED**

SIX SIMPLE MACHINES

1 – LEVERS

2 – PULLEYS

3 – WHEEL AND AXLE

4 – INCLINED PLANE AND WEDGES

5 – SCREWS

6 – GEARS

SIX SIMPLE MACHINES

1 – LEVERS

2 ~~PULLEYS~~

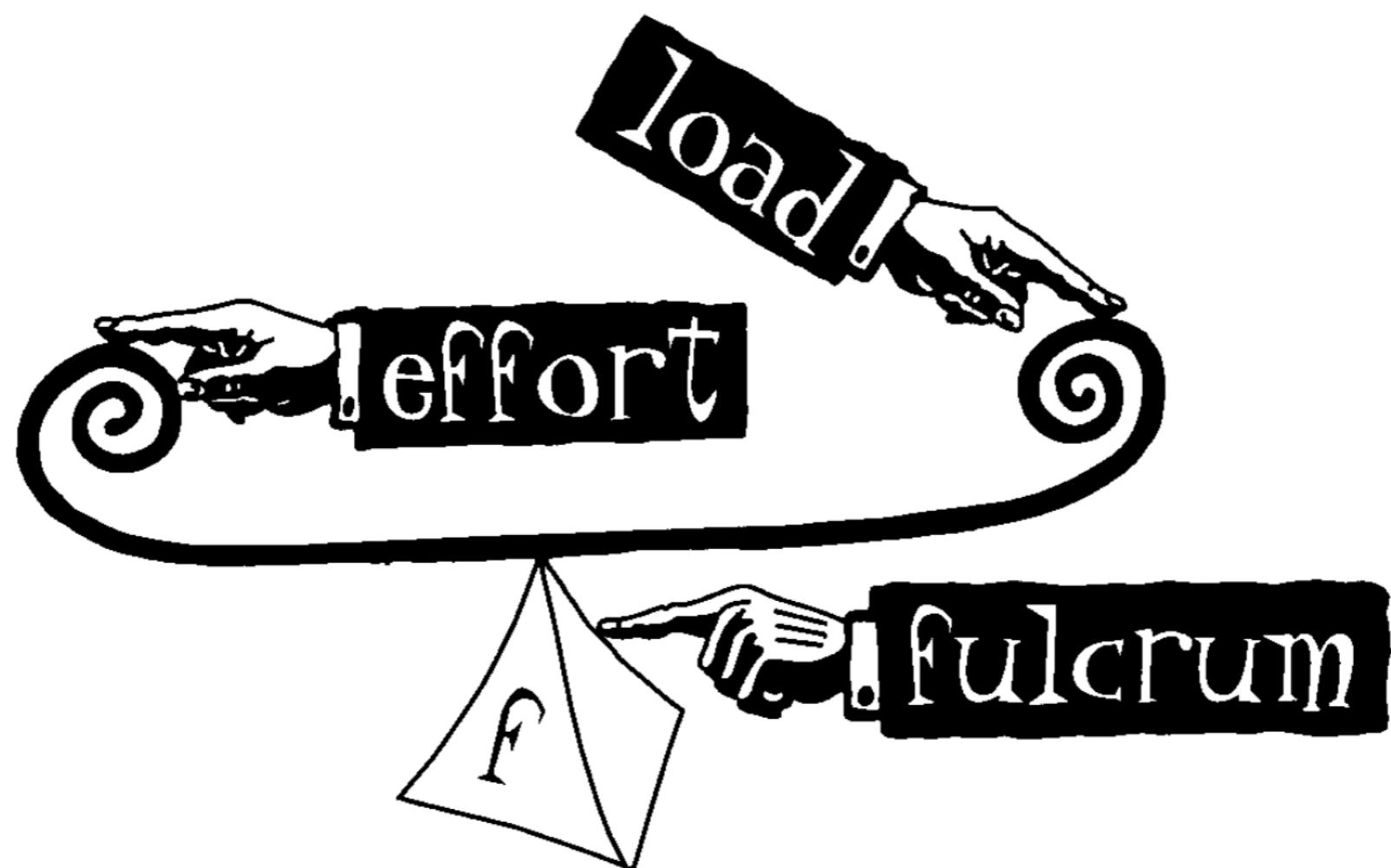
3 ~~WHEEL AND AXLE~~

4 ~~INCLINED PLANE AND WEDGES~~

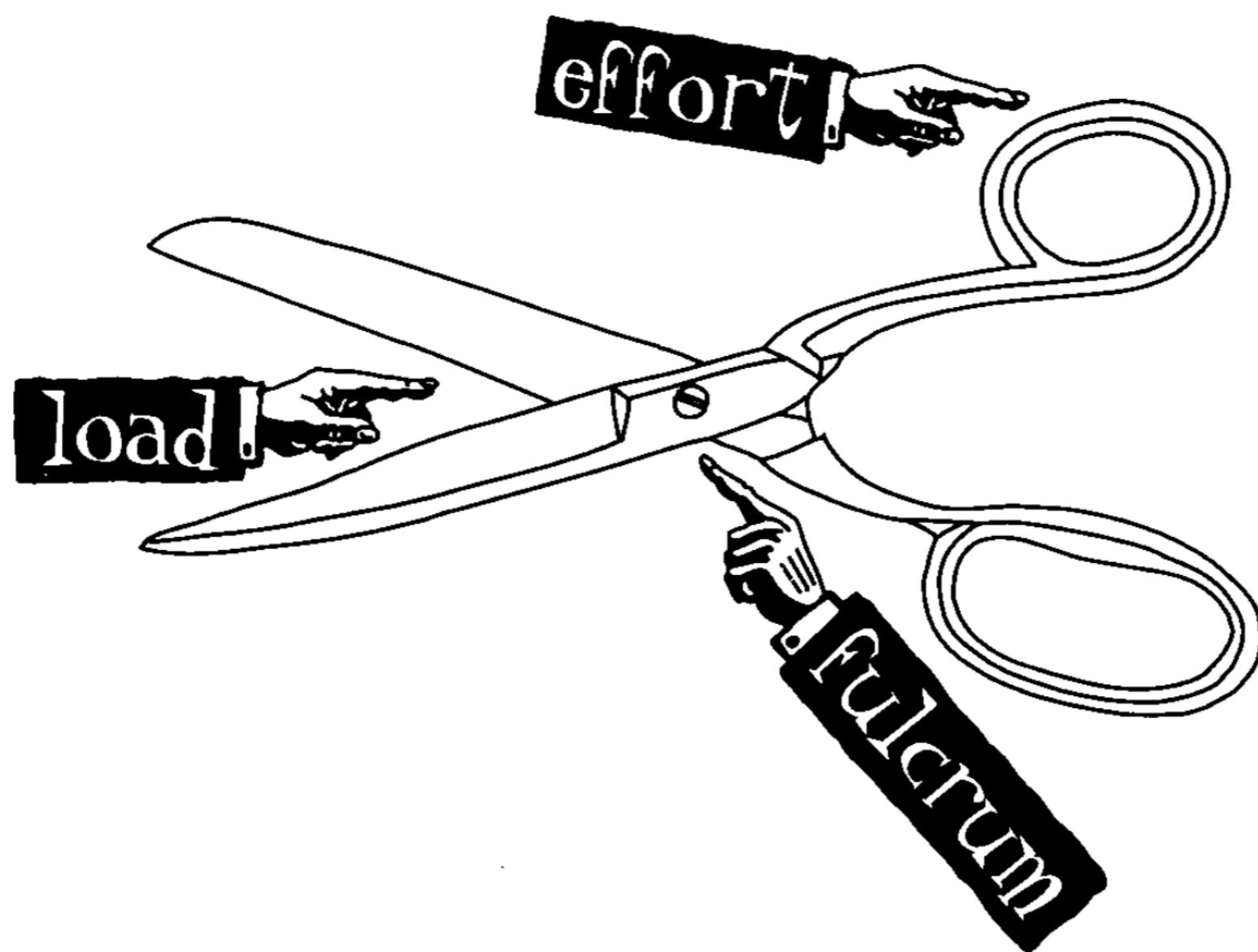
5 ~~SCREWS~~

6 – GEARS

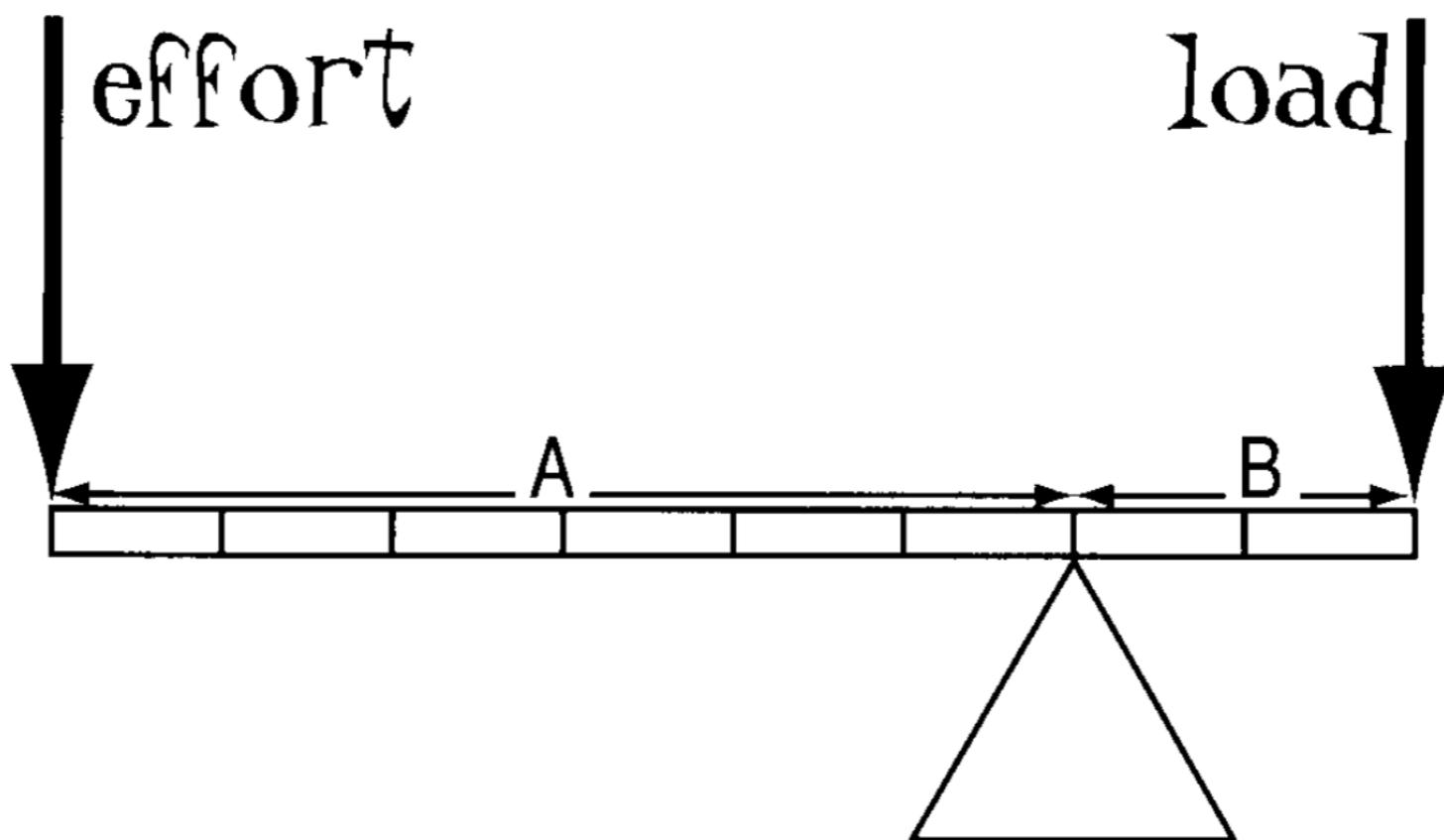
LEVER (First-Order)



LEVER (First-Order)



MECHANICAL ADVANTAGE

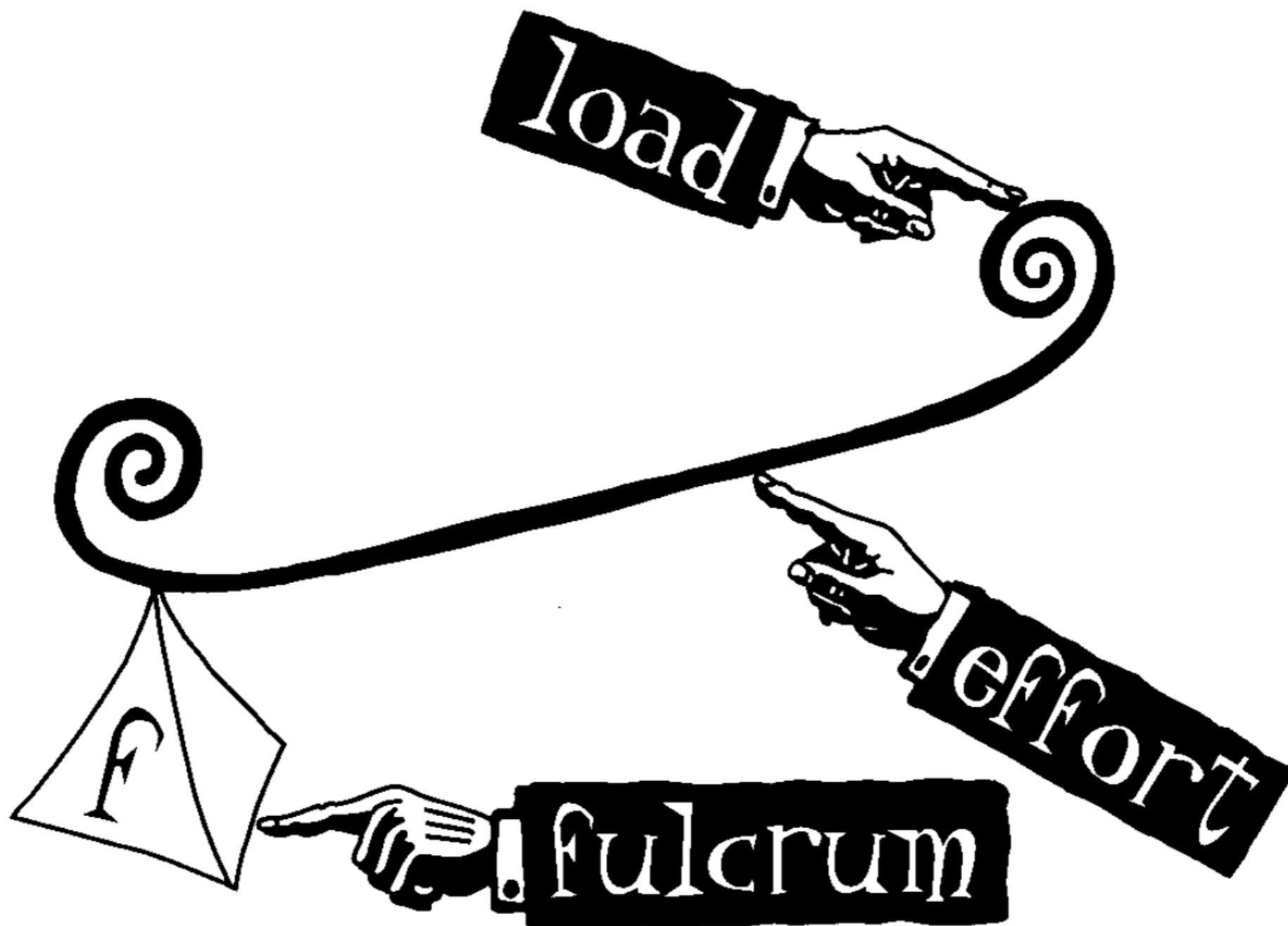


$$\text{MECHANICAL ADVANTAGE} = \frac{\text{LOAD}}{\text{EFFORT}}$$

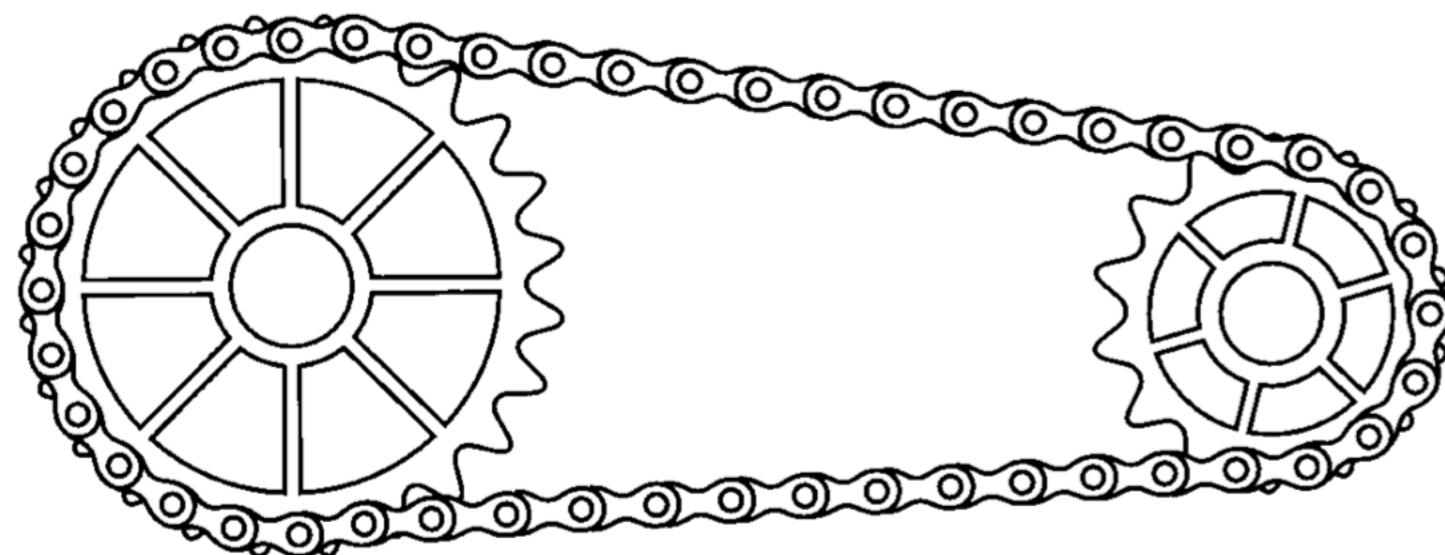
LEVER (Second- Order)



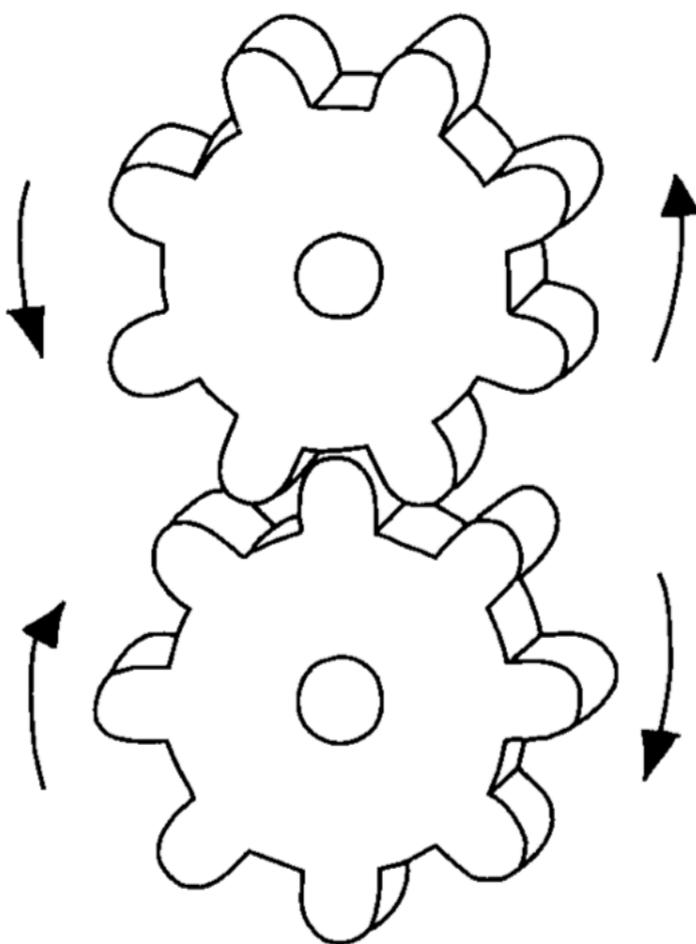
LEVER (Third-Order)



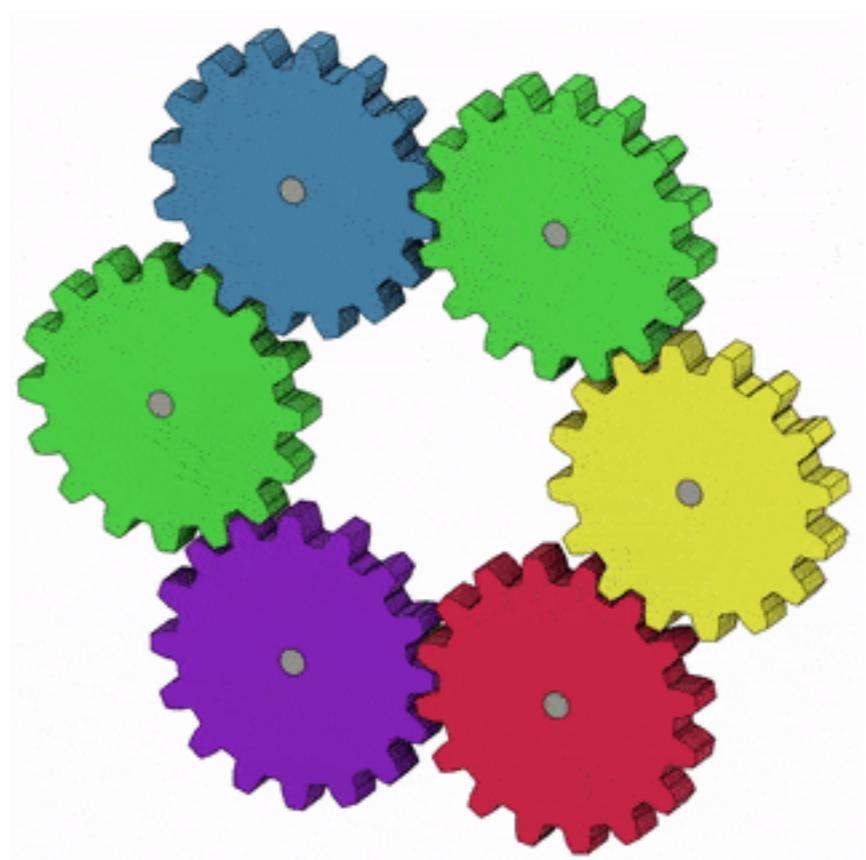
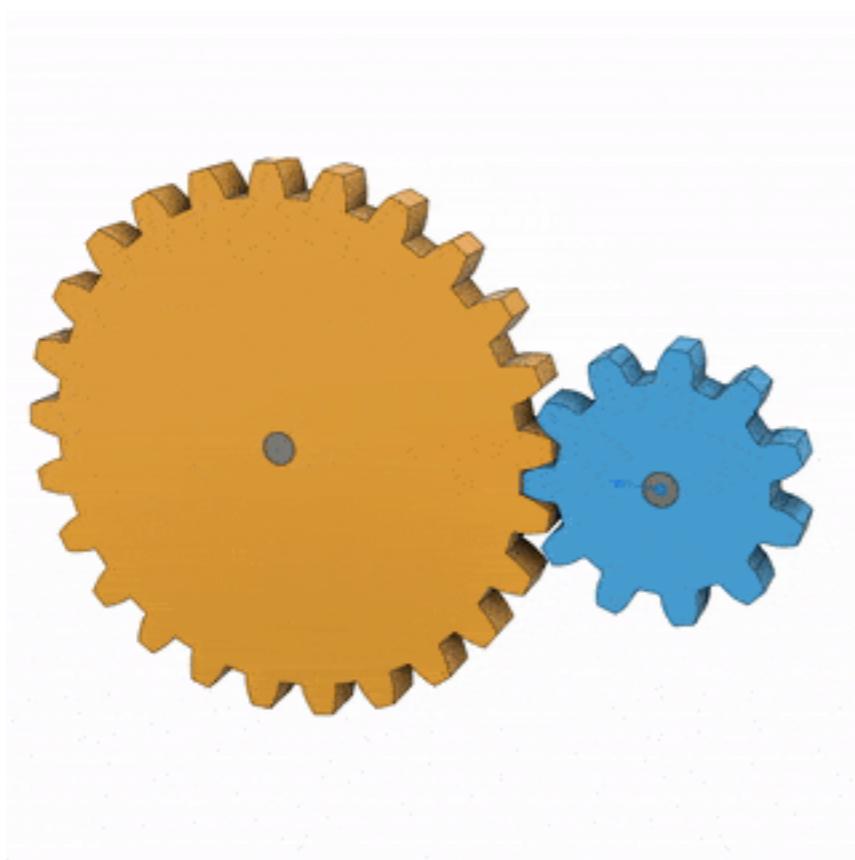
GEARS (Positive Drive)



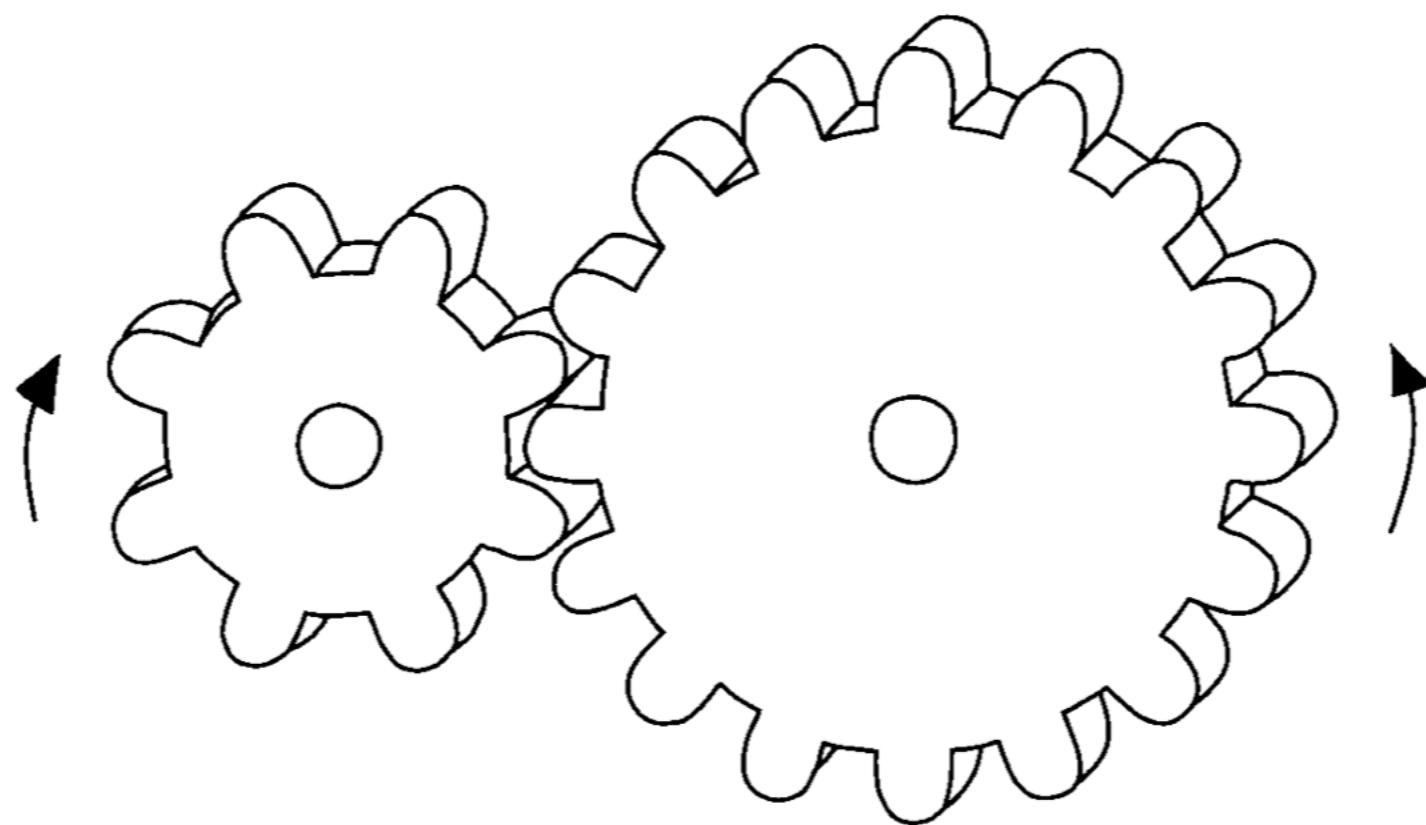
GEARS (Spur)

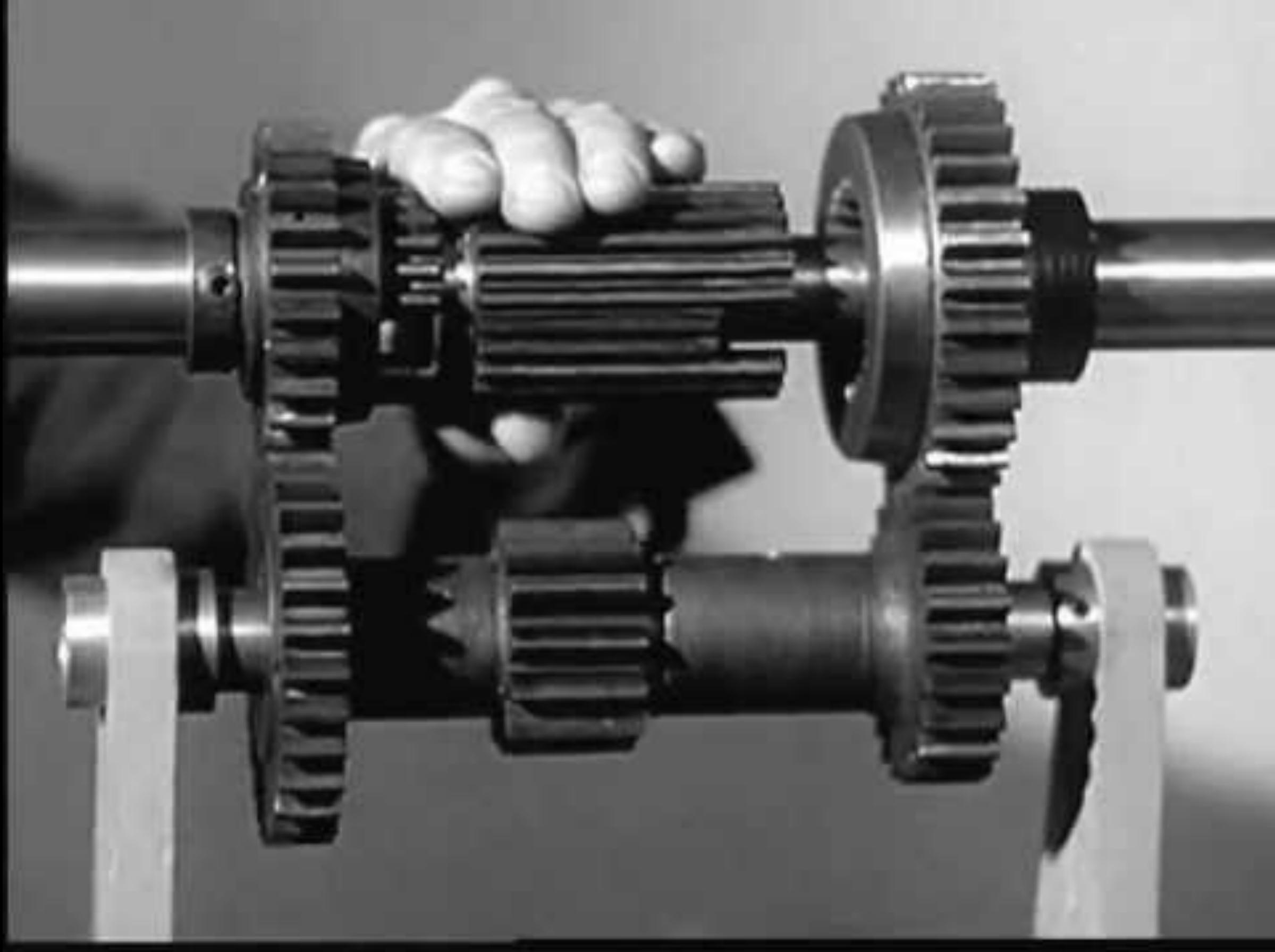


GEARS (Spur)



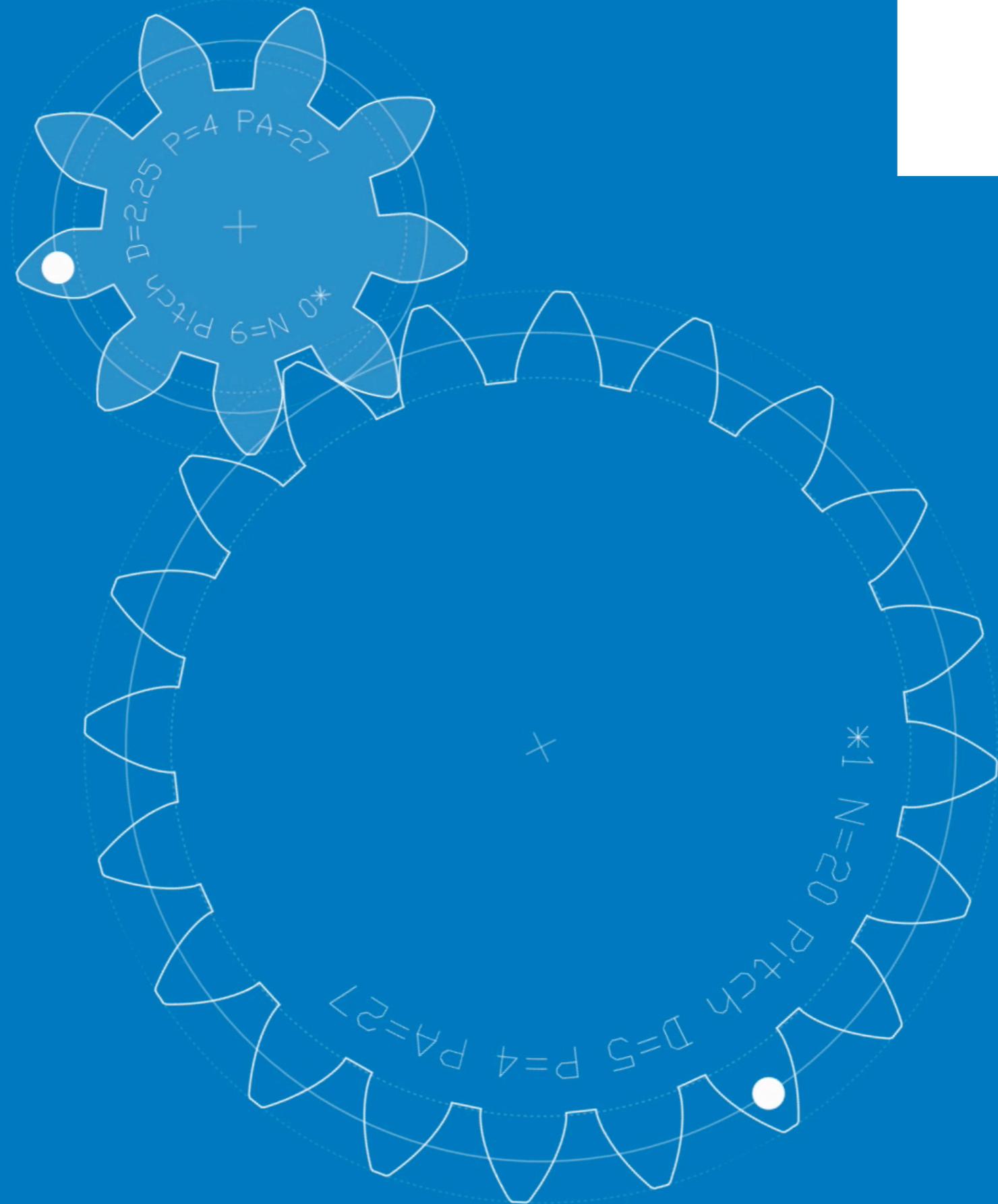
GEARS (Spur)





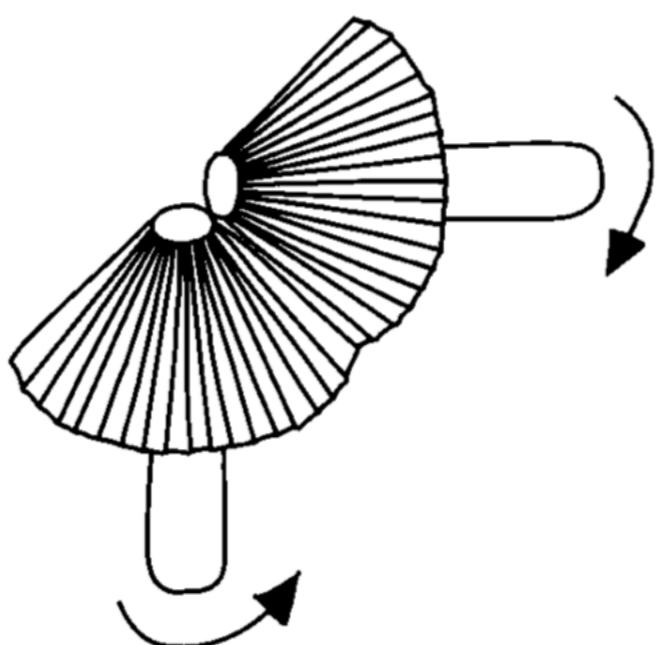
Spinning Levers
1936

GEARS (Spur)

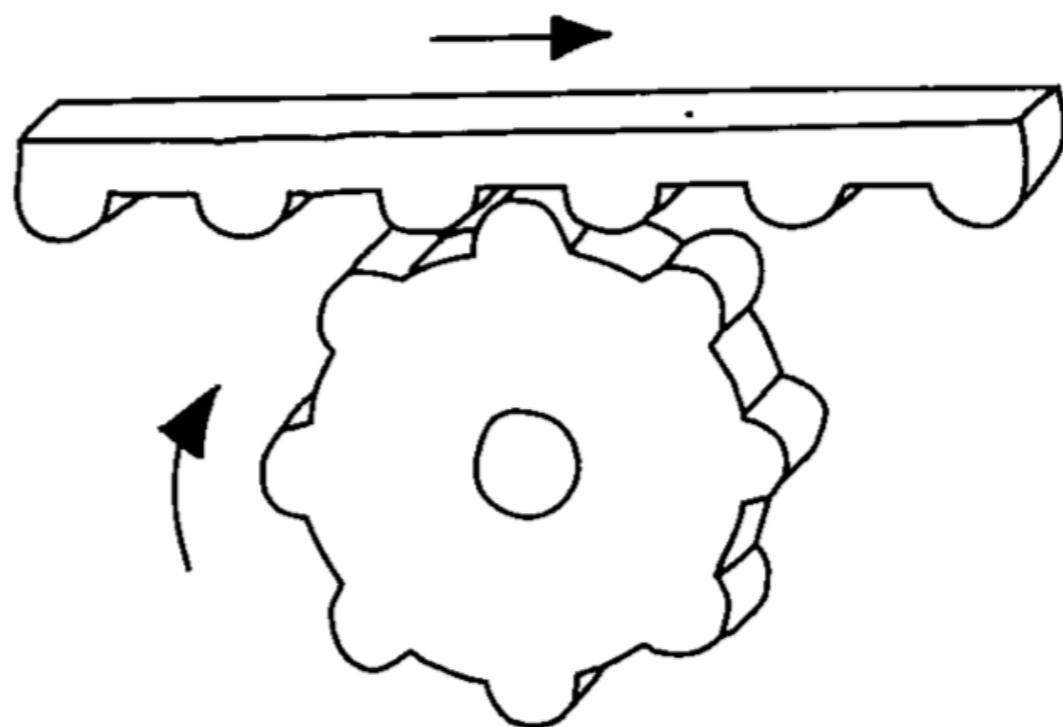


GEARS

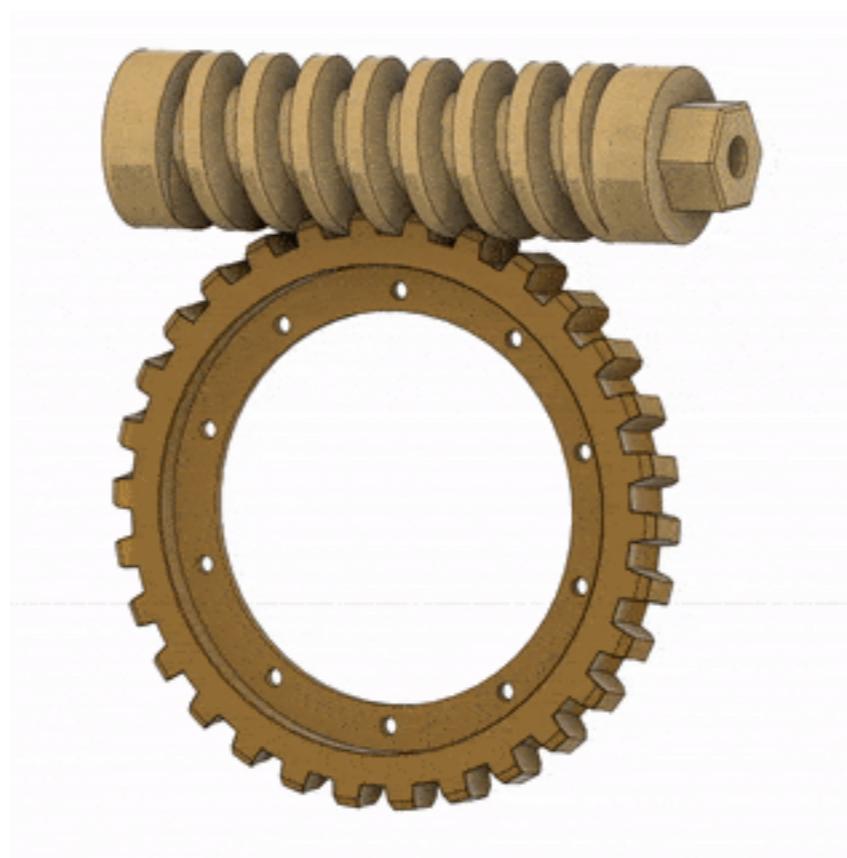
(Bevel Gear)

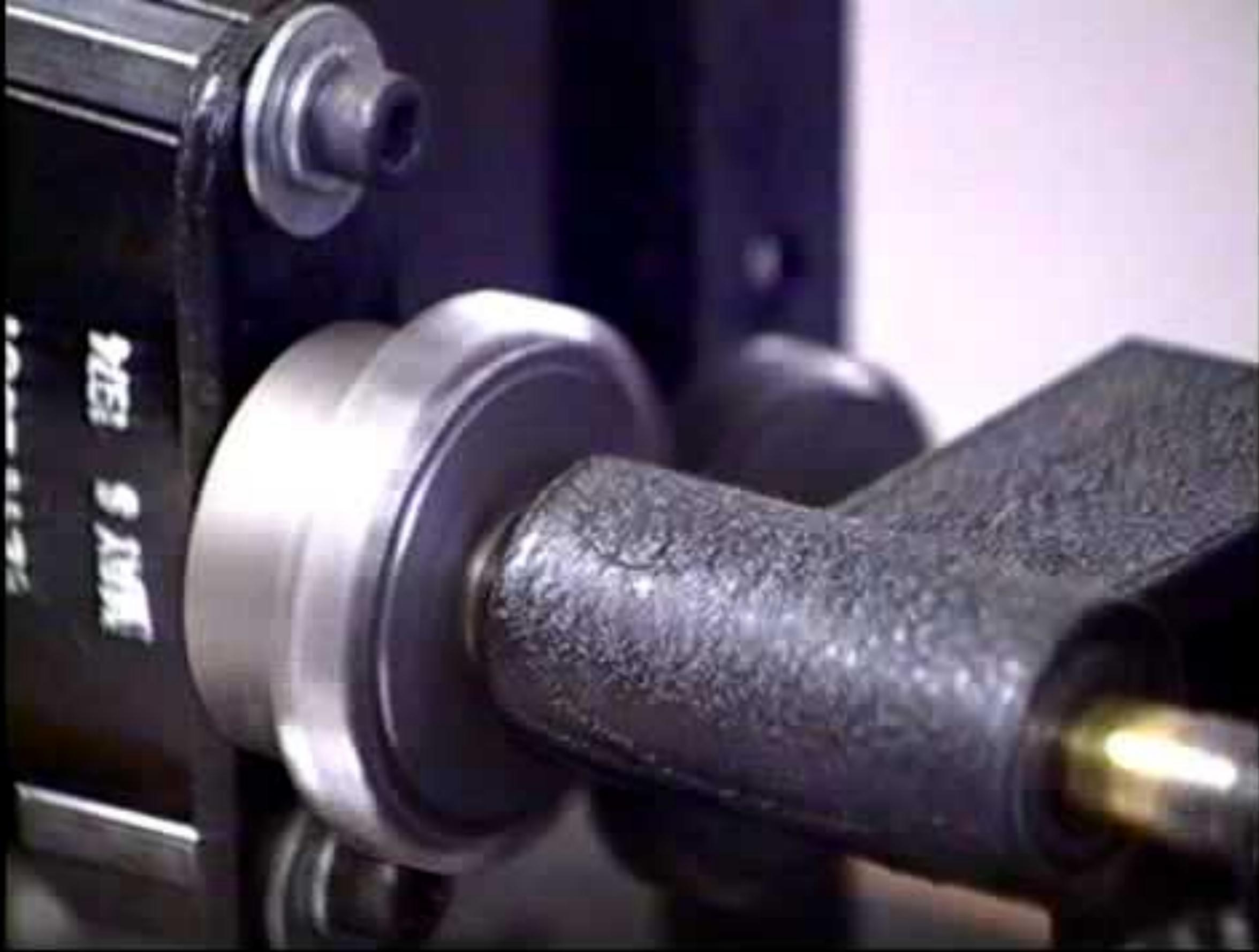


GEARS **(Rack-and-** **Pinion)**



GEARS (Worm)

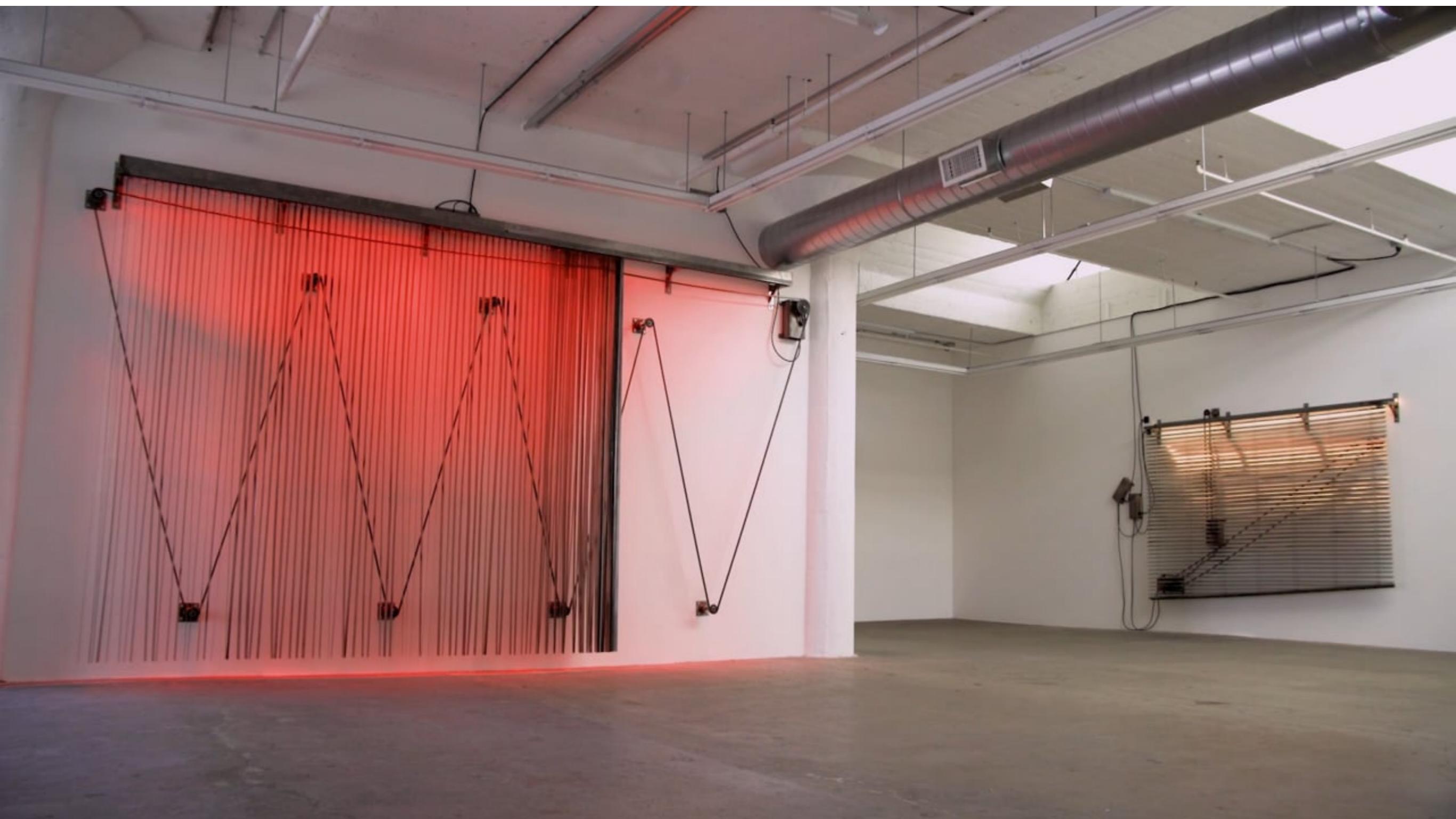




Machine with Concrete

Arthur Ganson

19??

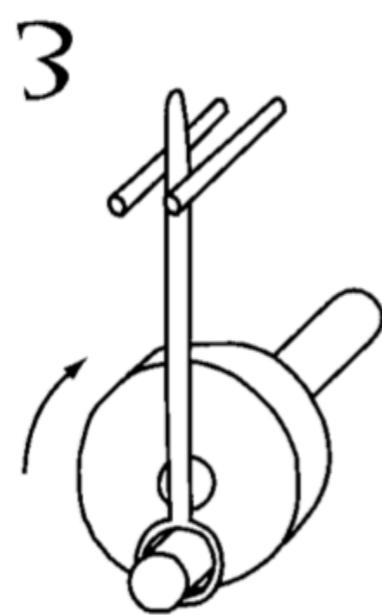
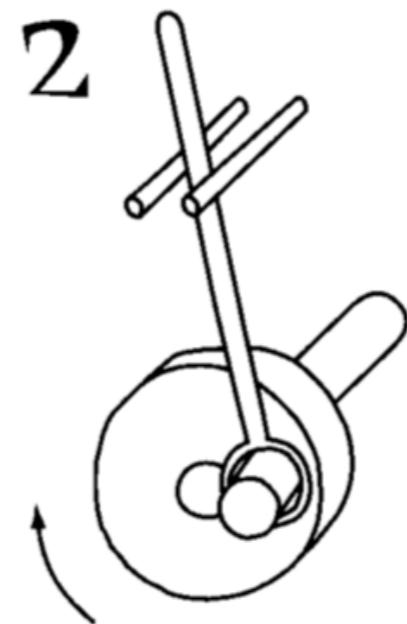
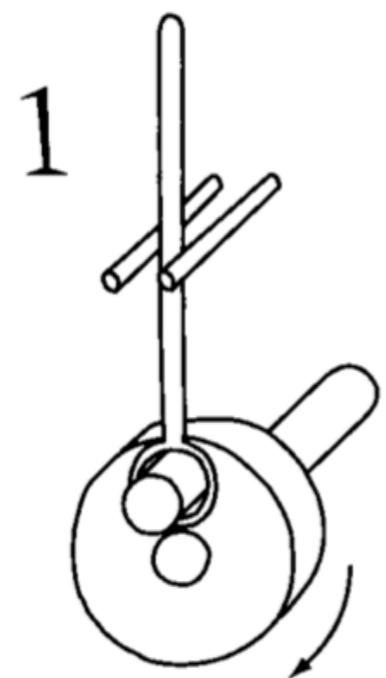


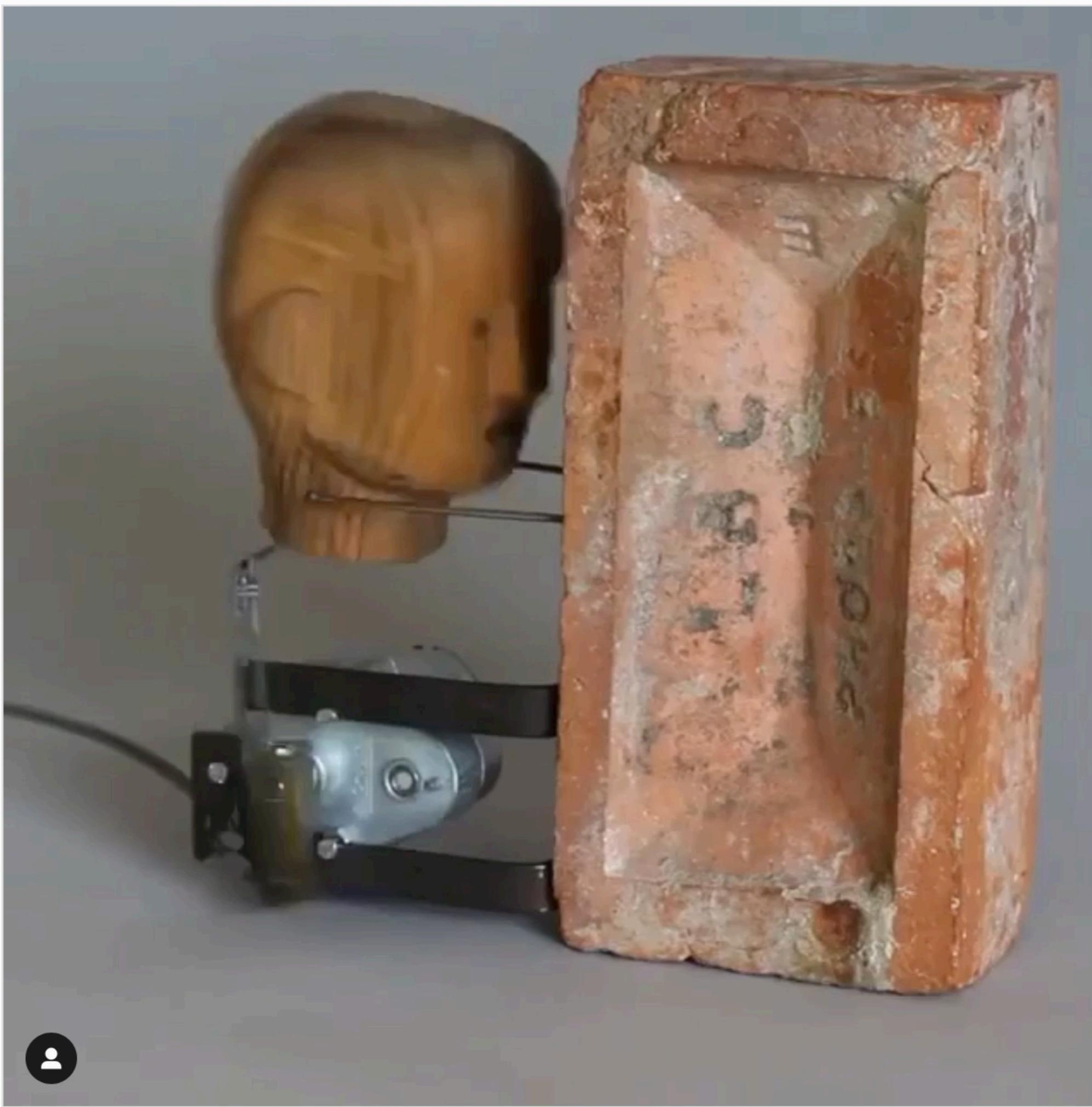
Five More Minutes Please

Stephen Neidich

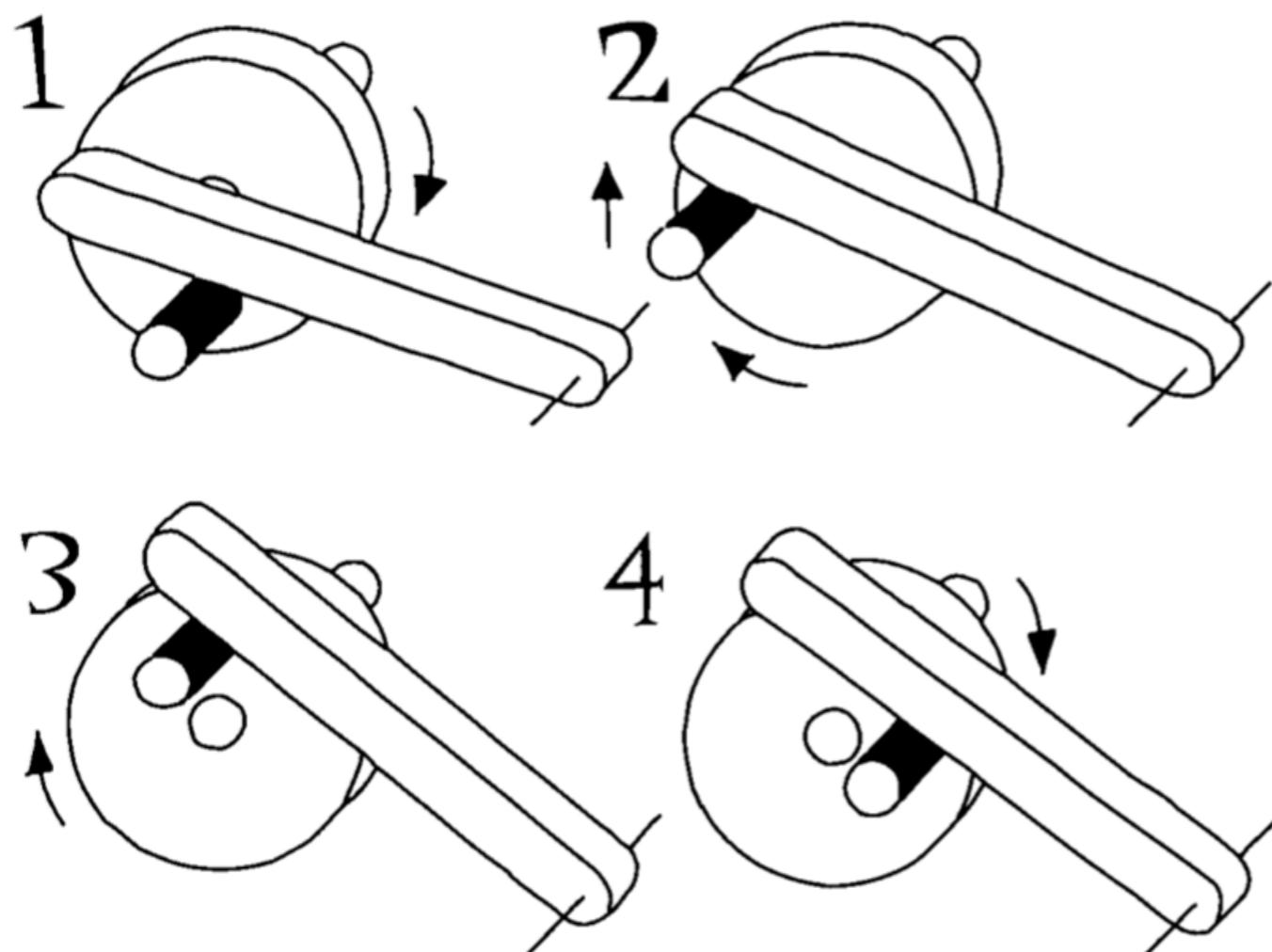
2021

CRANKS





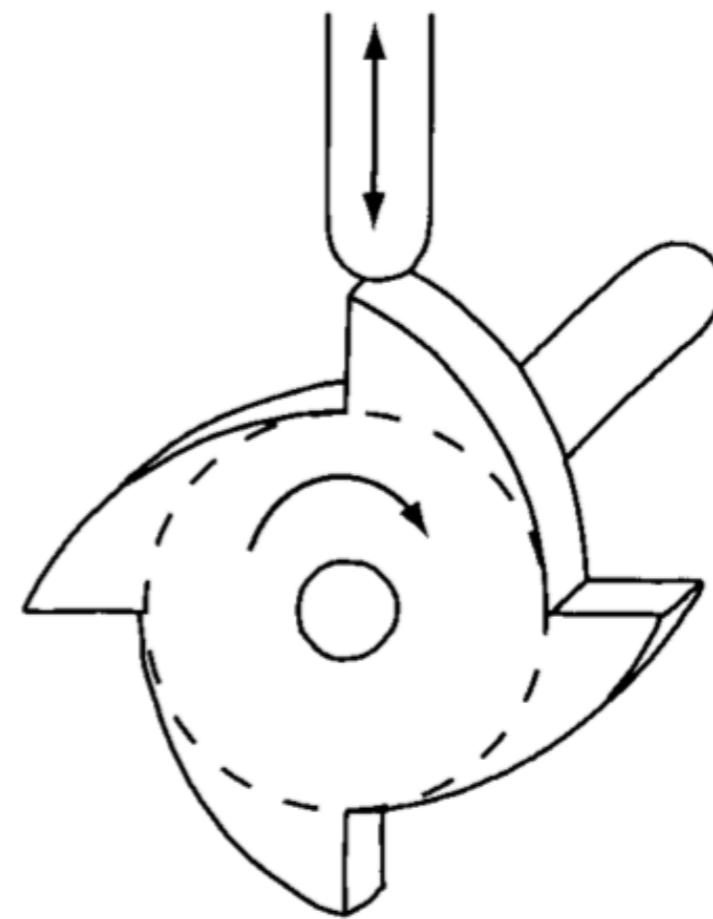
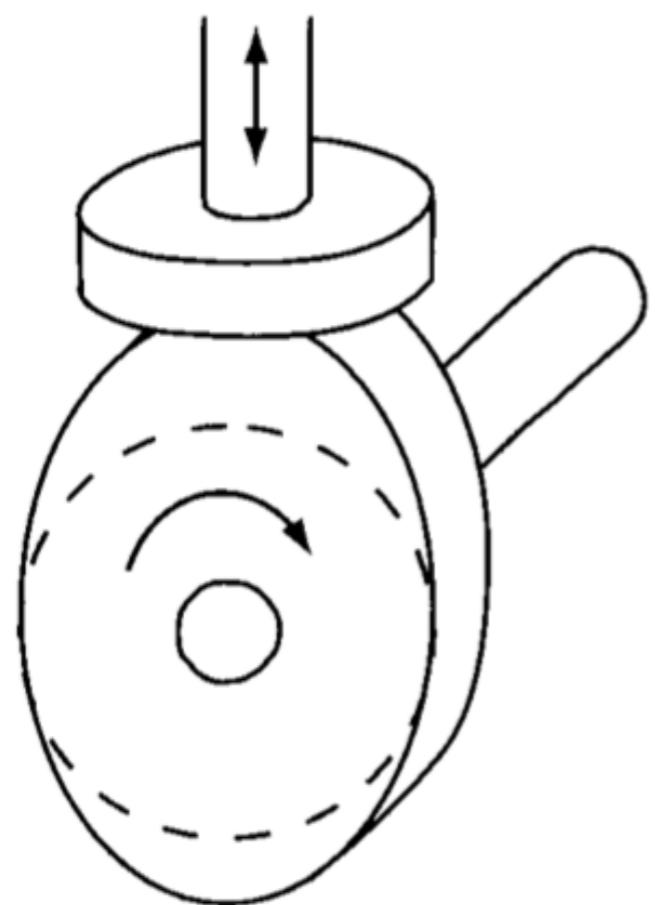
CRANKS



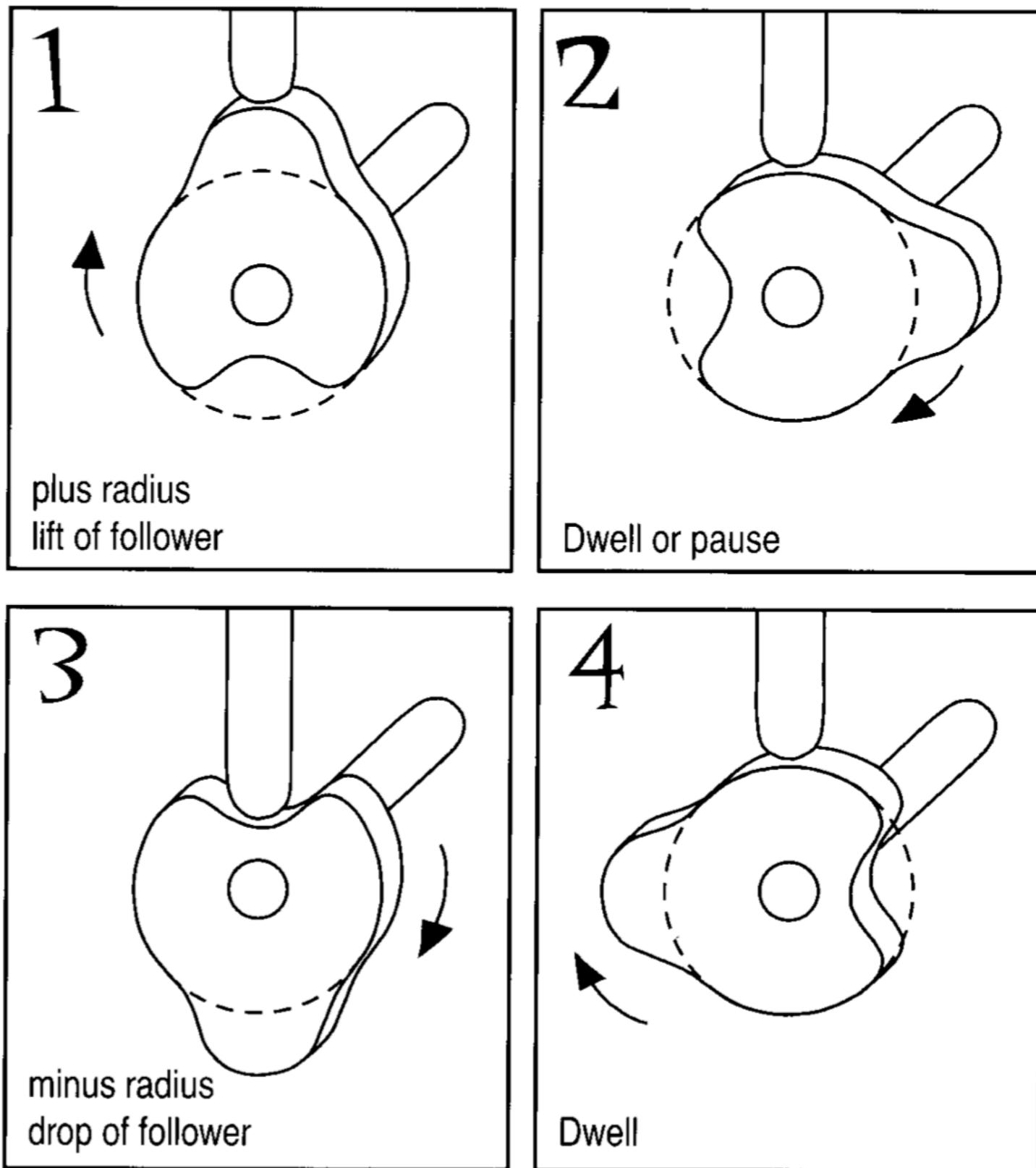


Mr. 808
Sonicrobots
2016

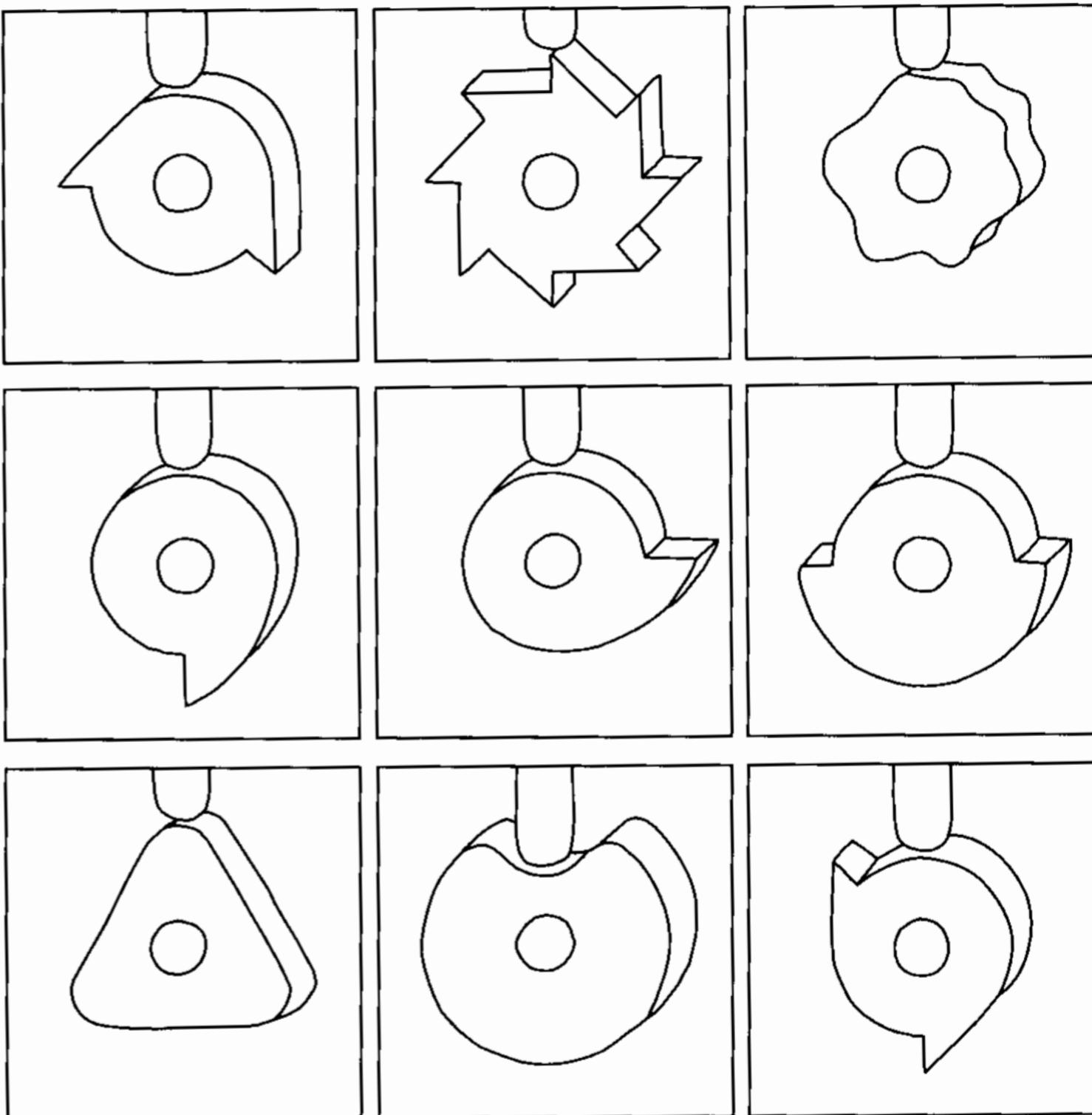
CAMS



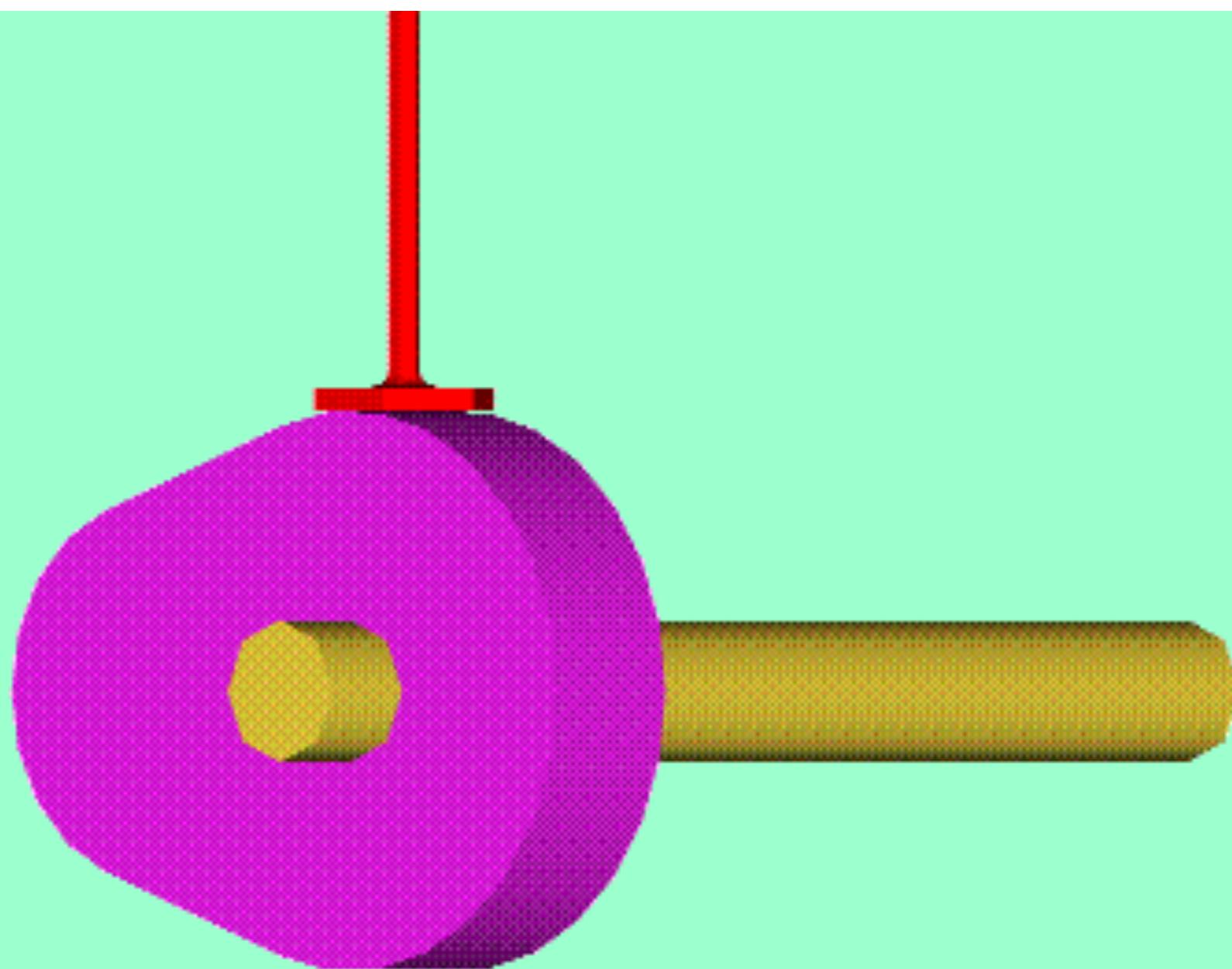
CAMS



CAMS



CAMS



CAMS



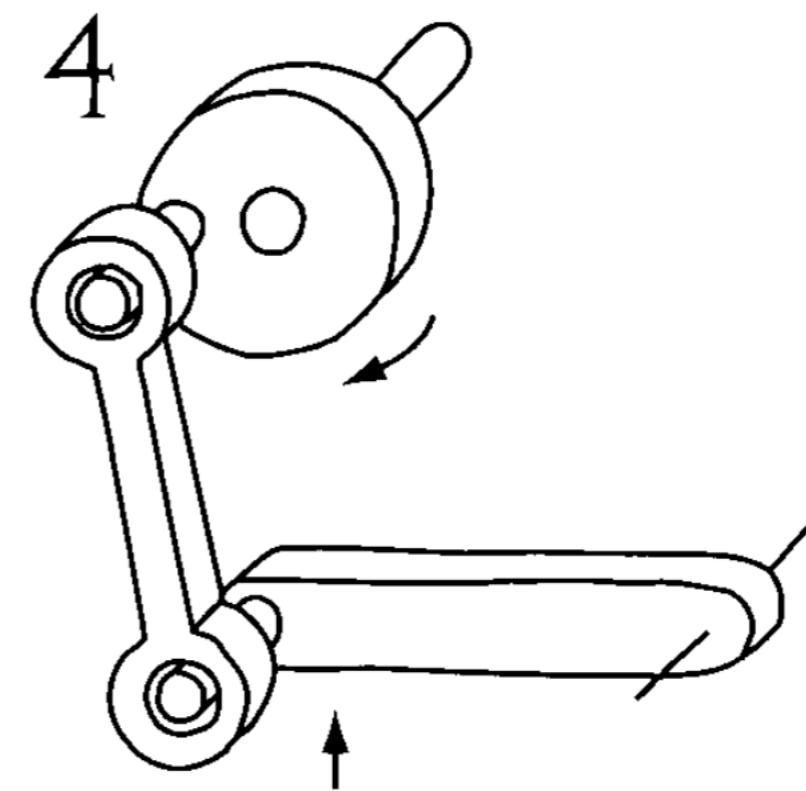
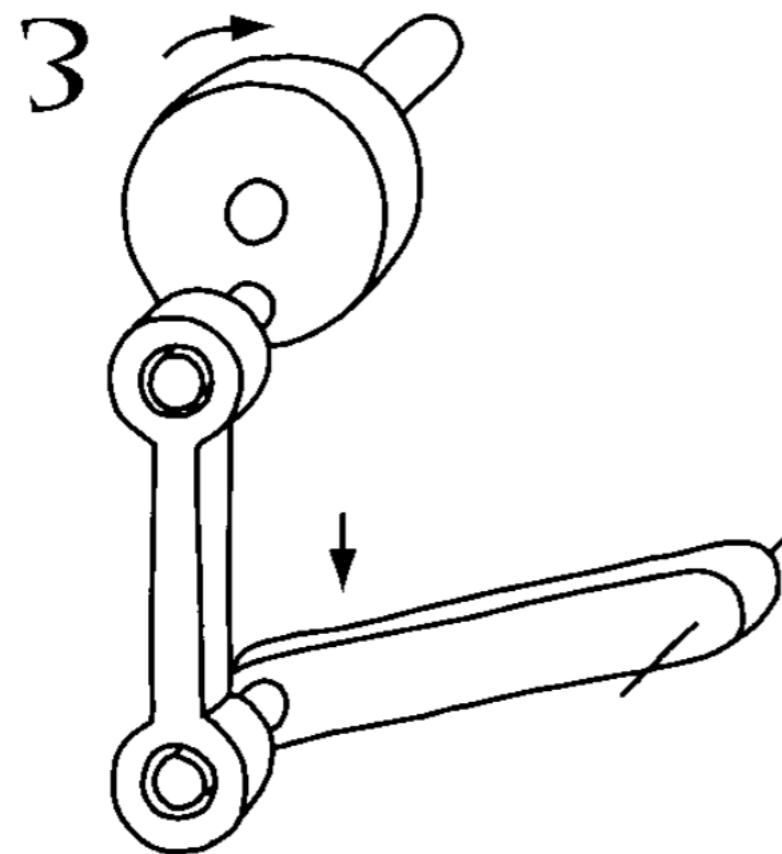
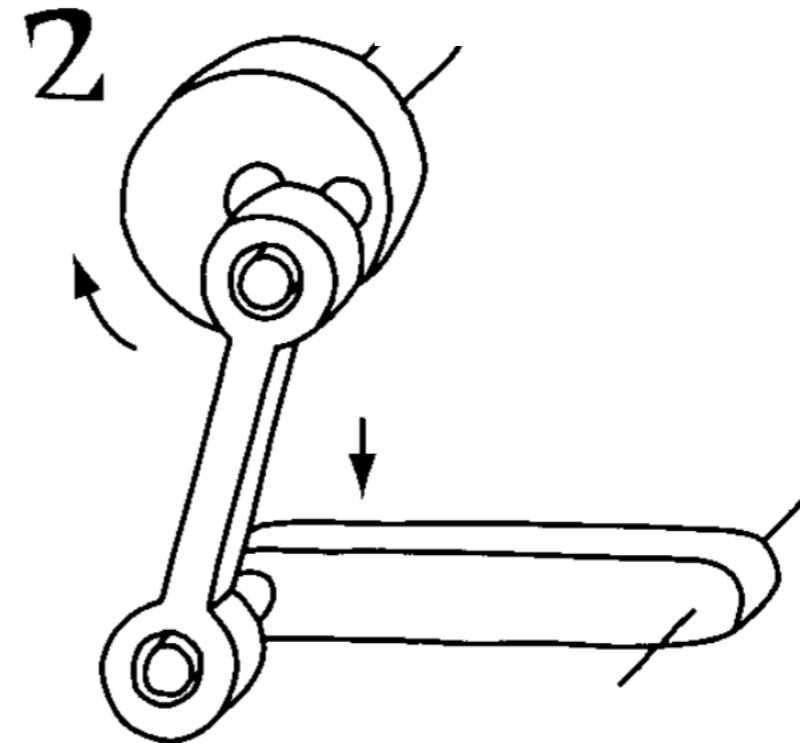
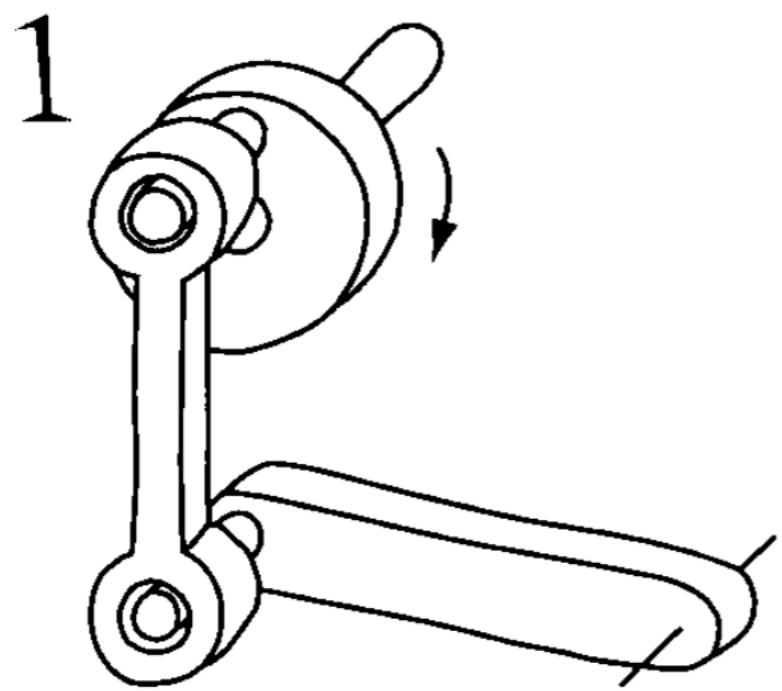


Hamster Powered Drawing Machine

Neil Mendoza

2016

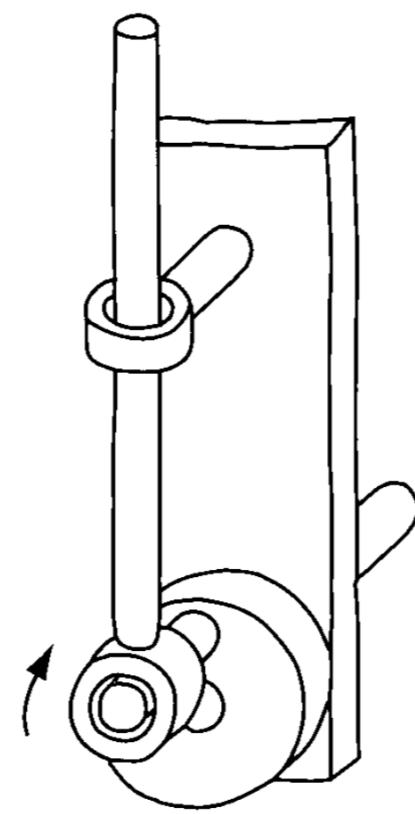
LINKAGES



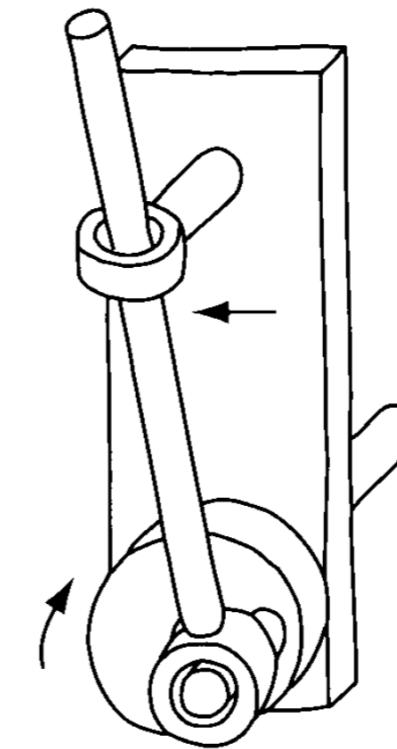
LINKAGES

(Crank Slider)

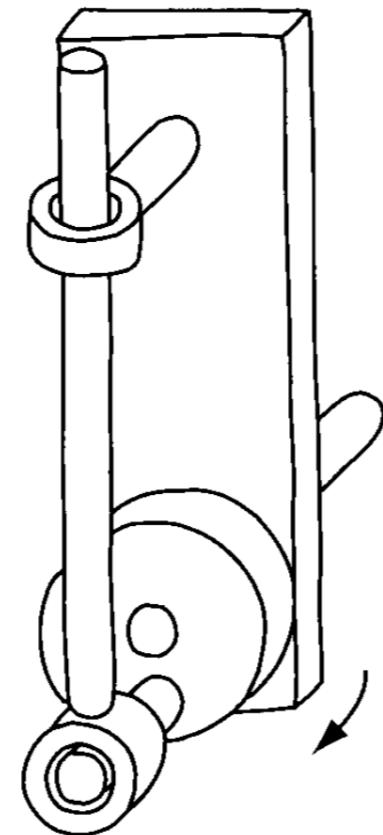
1



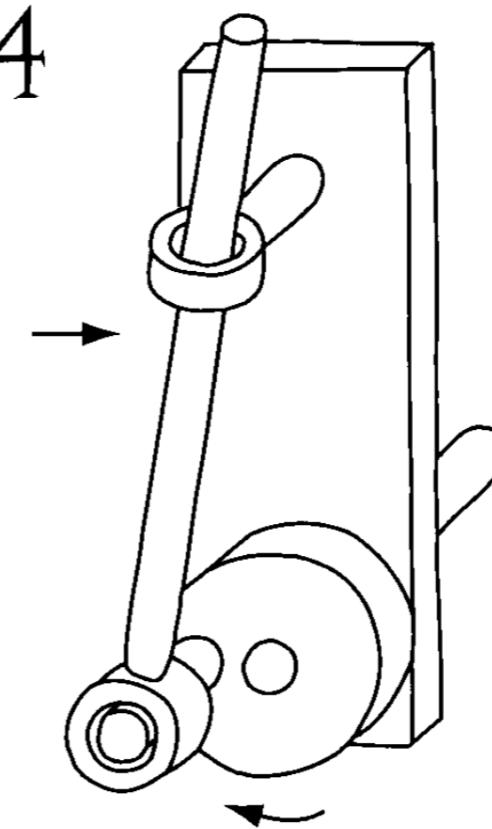
2



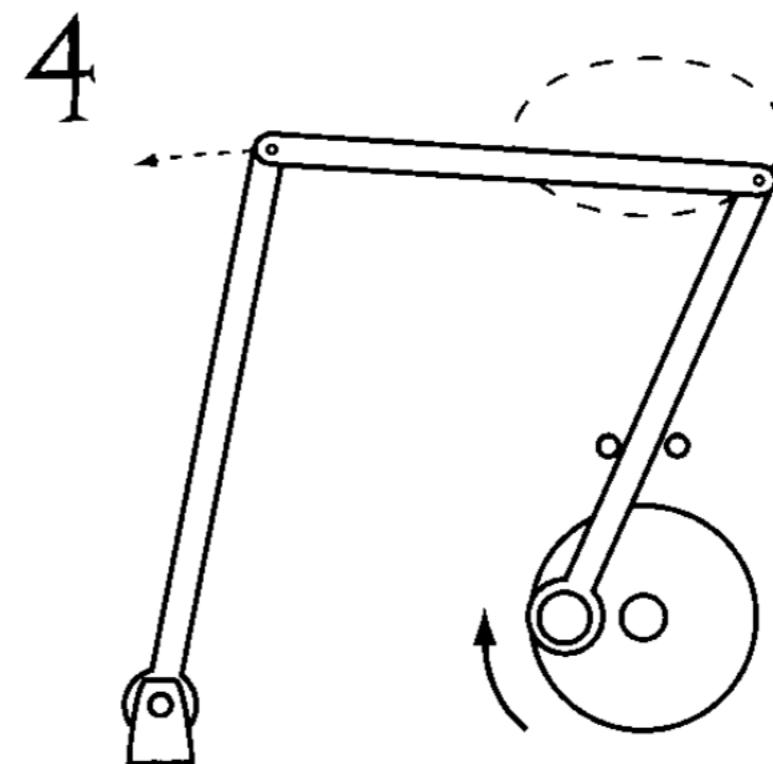
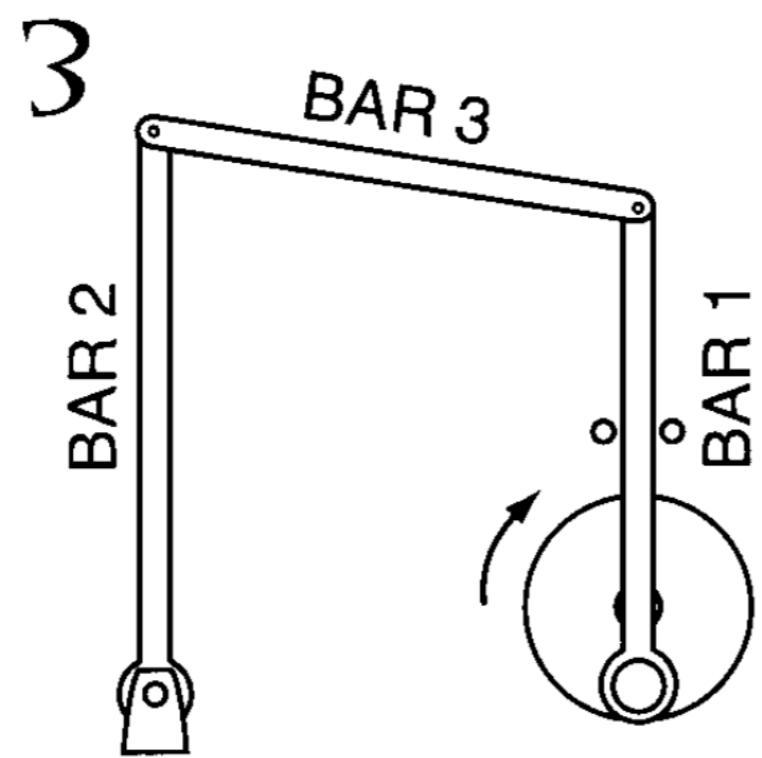
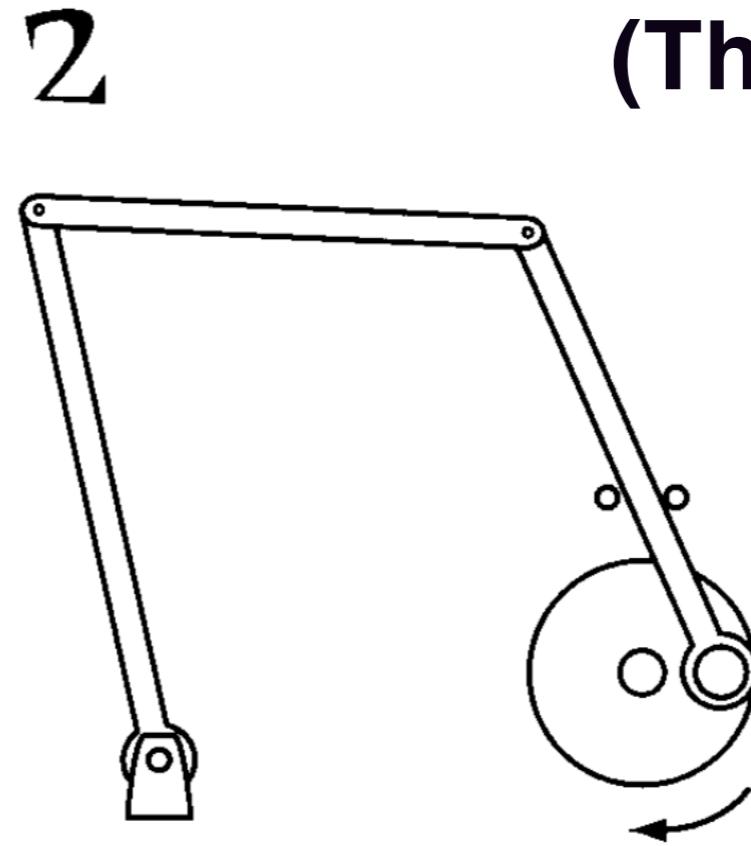
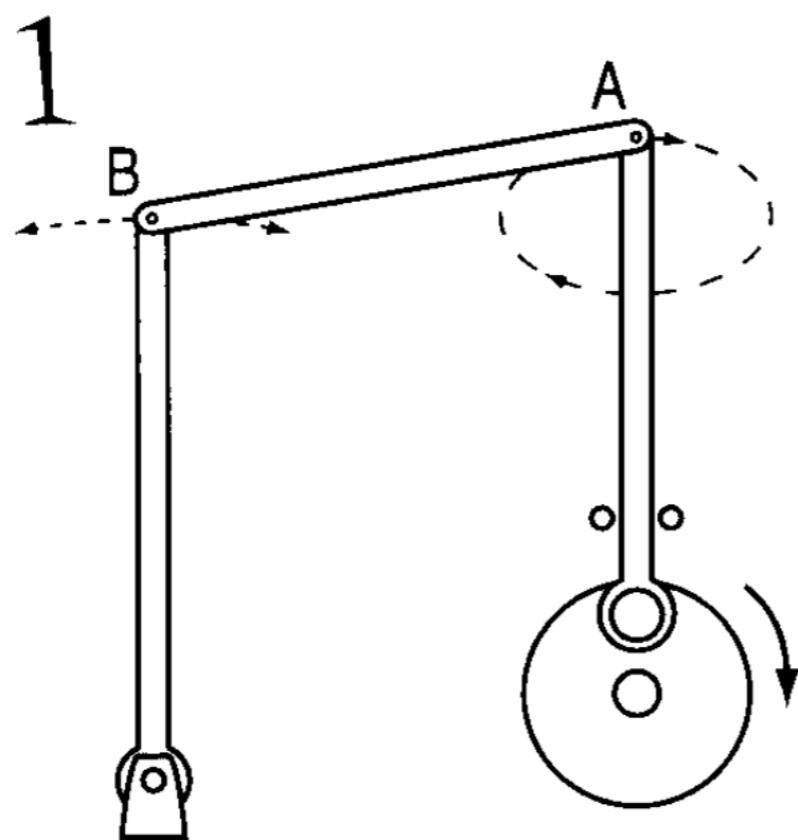
3



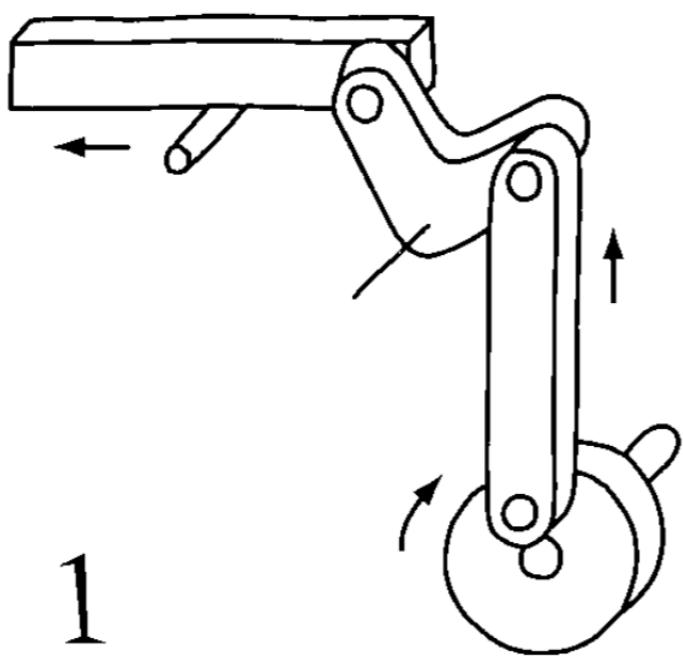
4



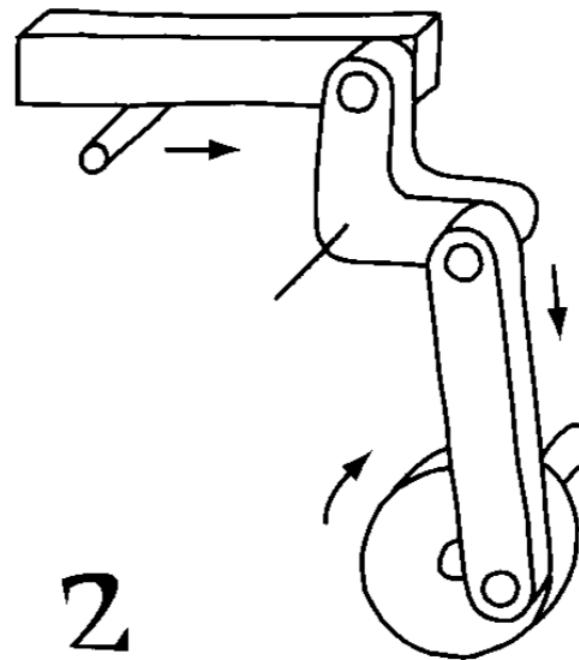
LINKAGES (Three Bar)



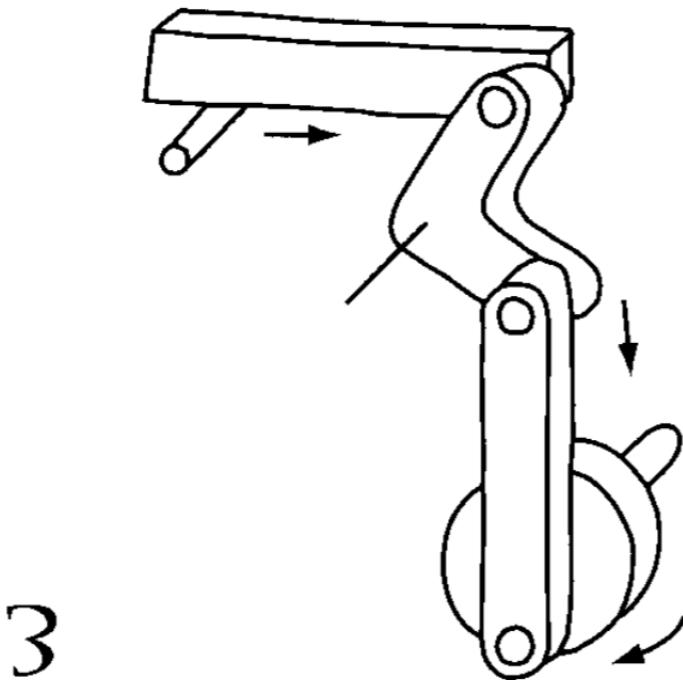
LINKAGES (Bell Crank)



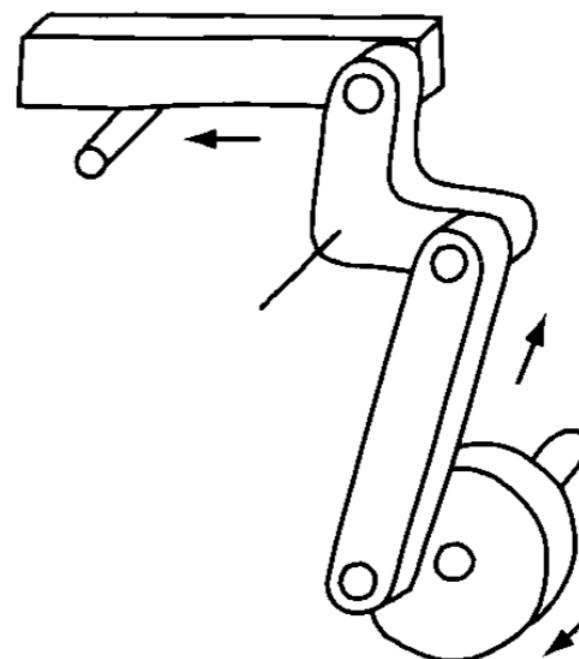
1



2



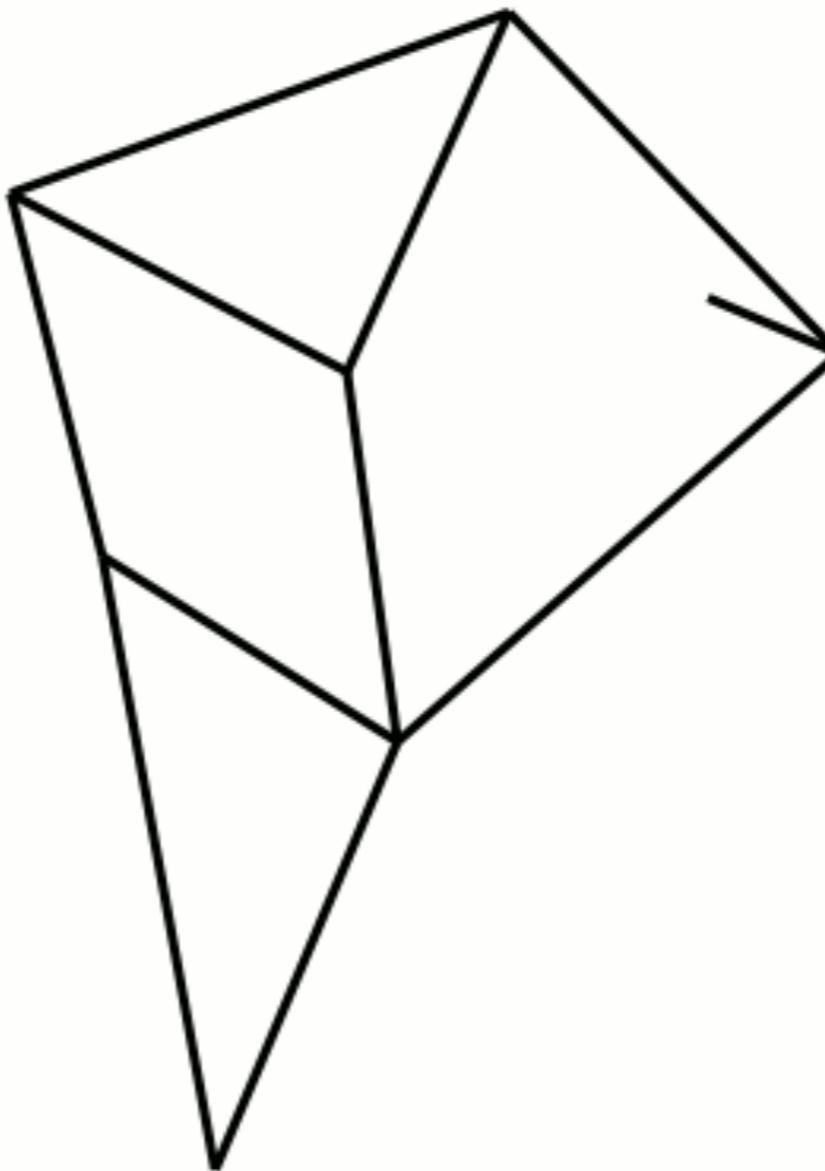
3



4

LINKAGES

(Jansen)





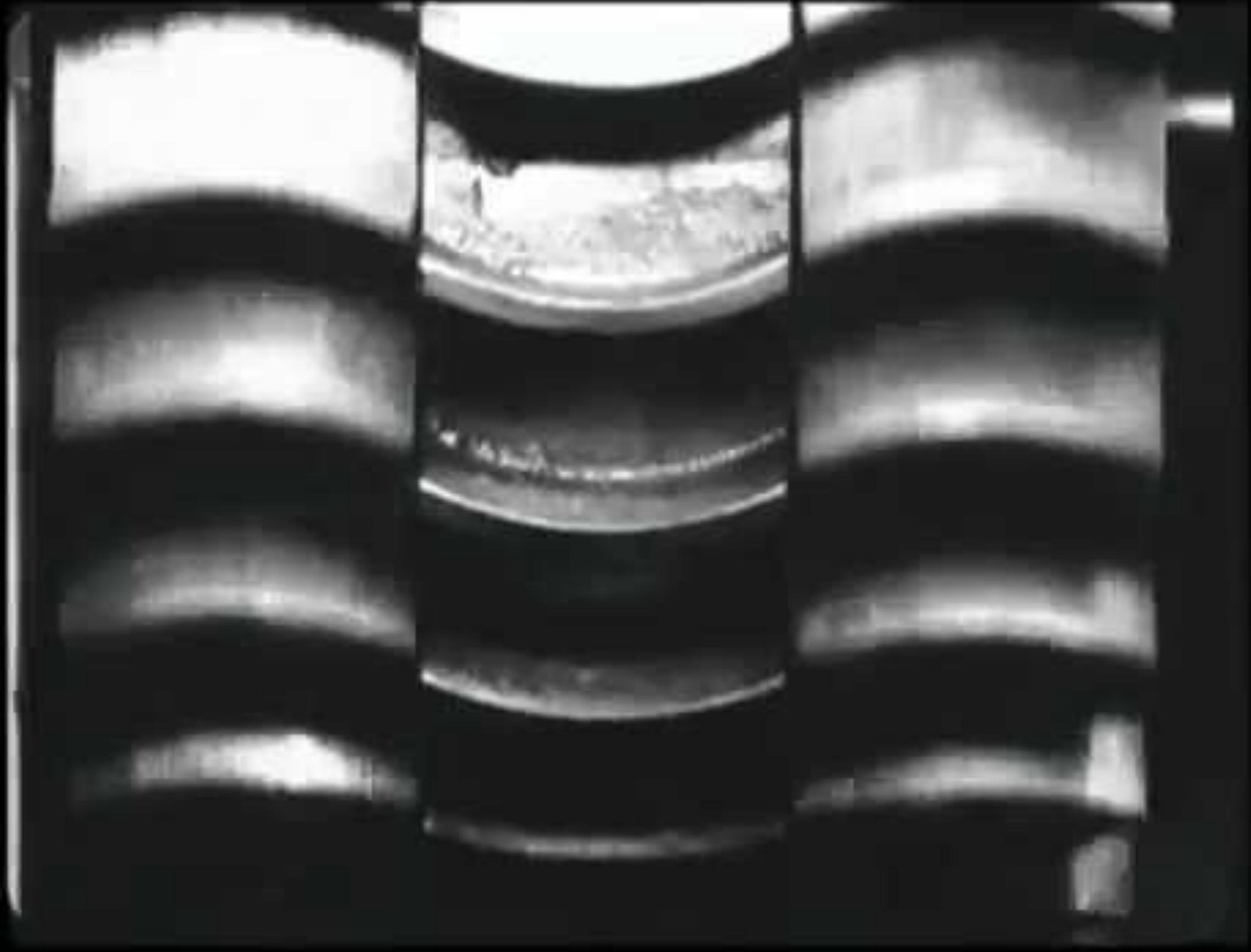
Strandbeest

Theo Jansen



Motors

Lolo and Sosaku



Mechanical Principles

Ralph Steiner

1933



Rotozaza II

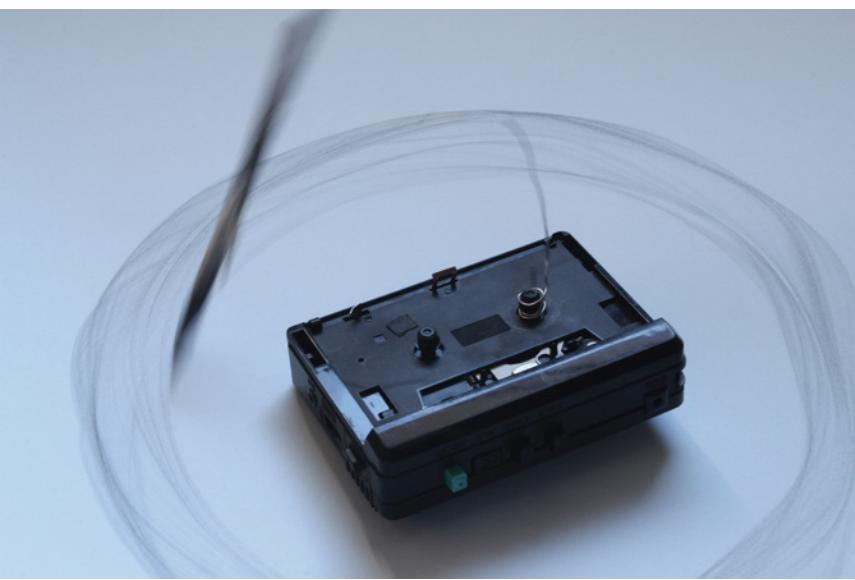
Jean Tinguely

1967

DRAWING MACHINES



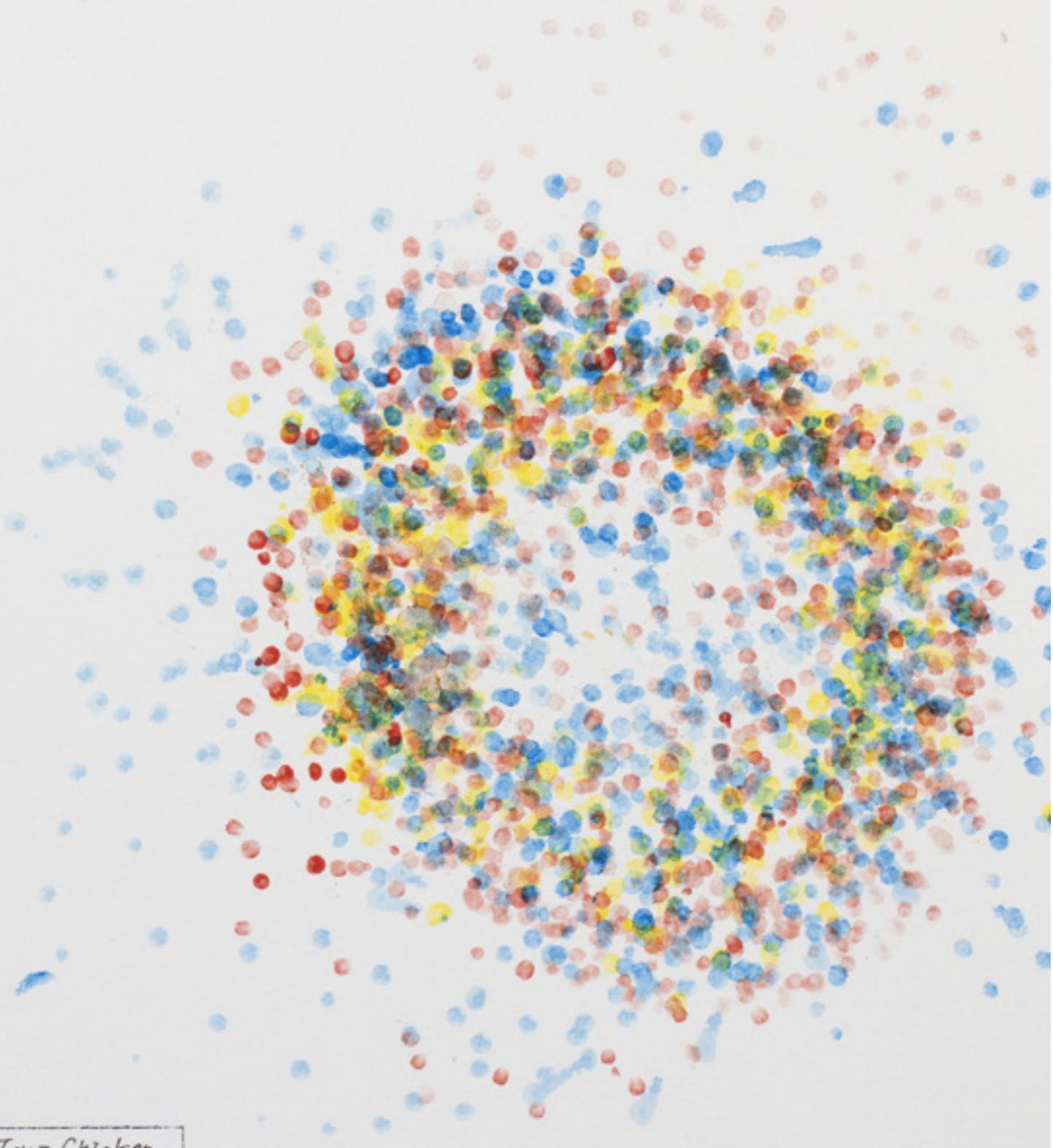
Wind Machine



Autonomous Machines
Echo Yang

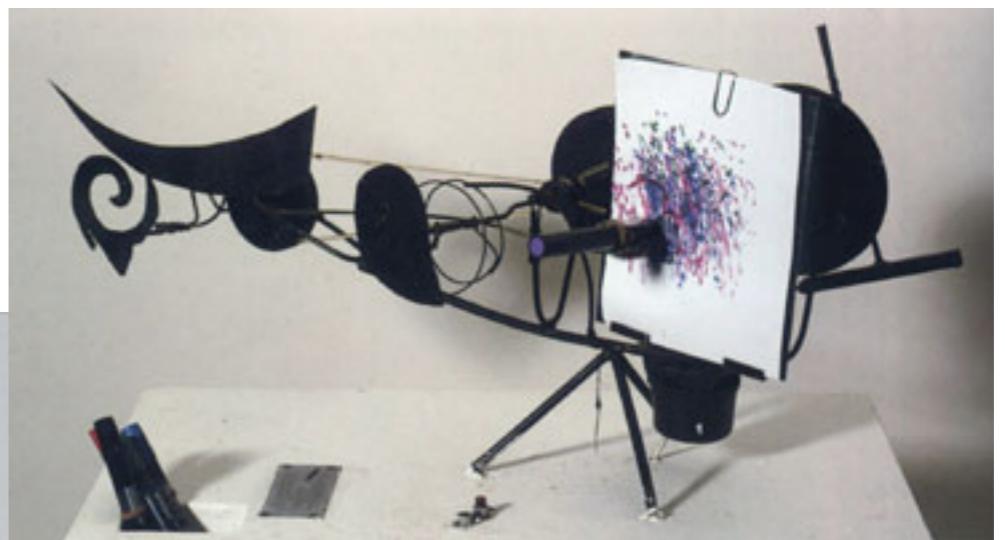


Drawn by Wind Up Alarm Clock
Material Pen
No. Acoo9

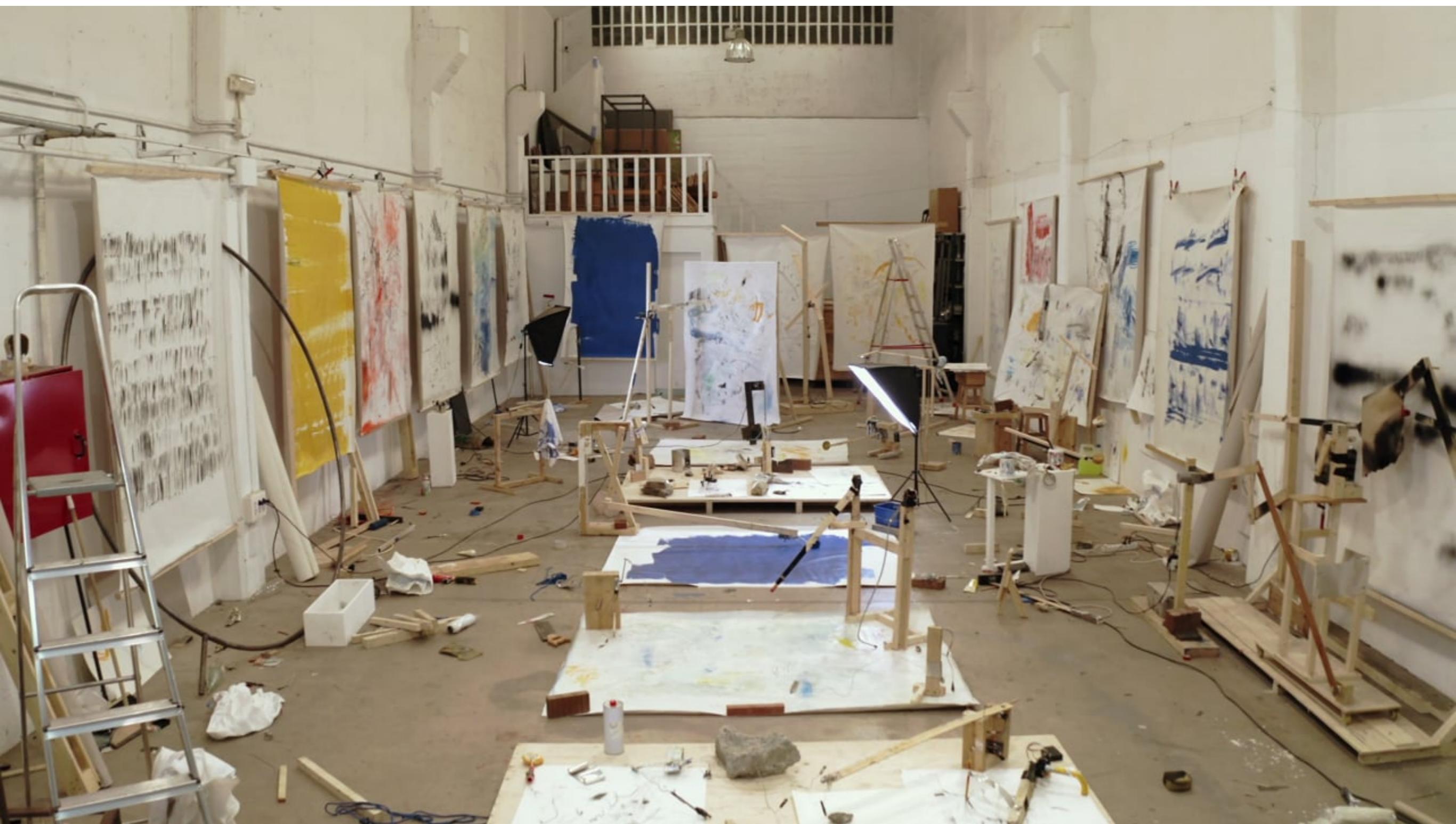


Autonomous Machines
Echo Yang

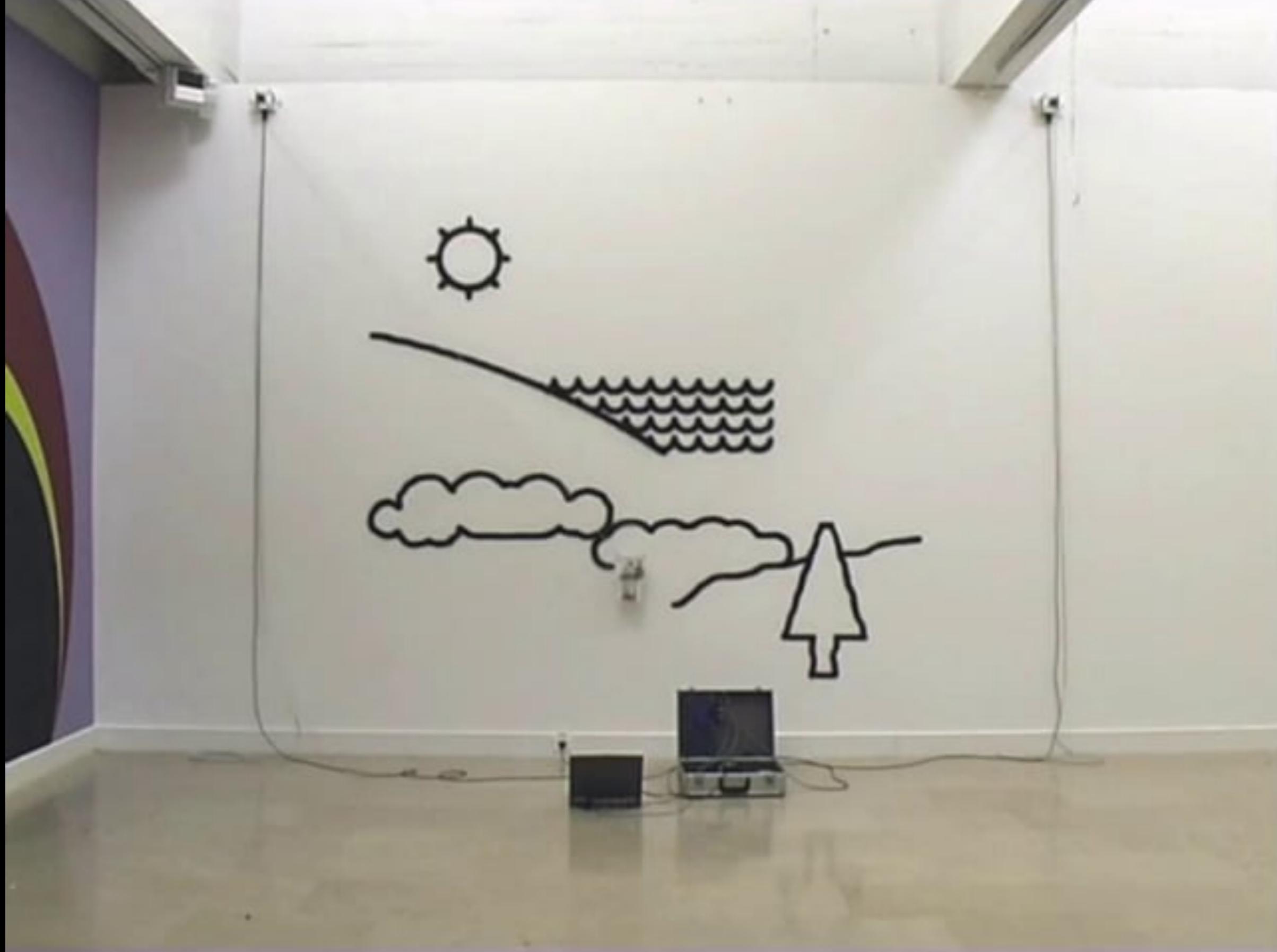
Drawn by	Tia Toy - Chicken
Material	Watercolor
	Cotton Swab.
No.	TTC 002



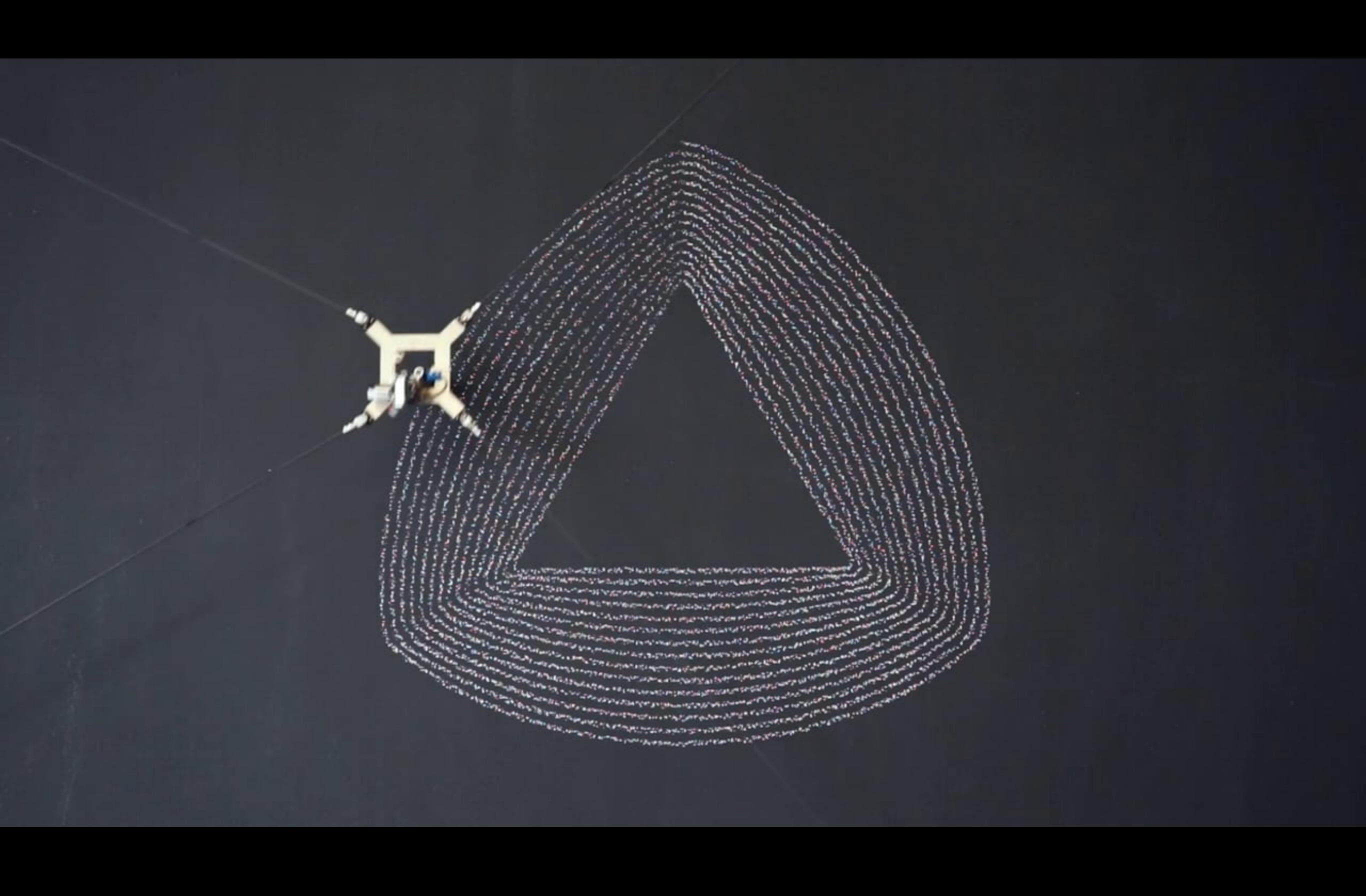
Jean Tinguely's
Drawing Machines



Painting Machines
Lolo and Sosaku

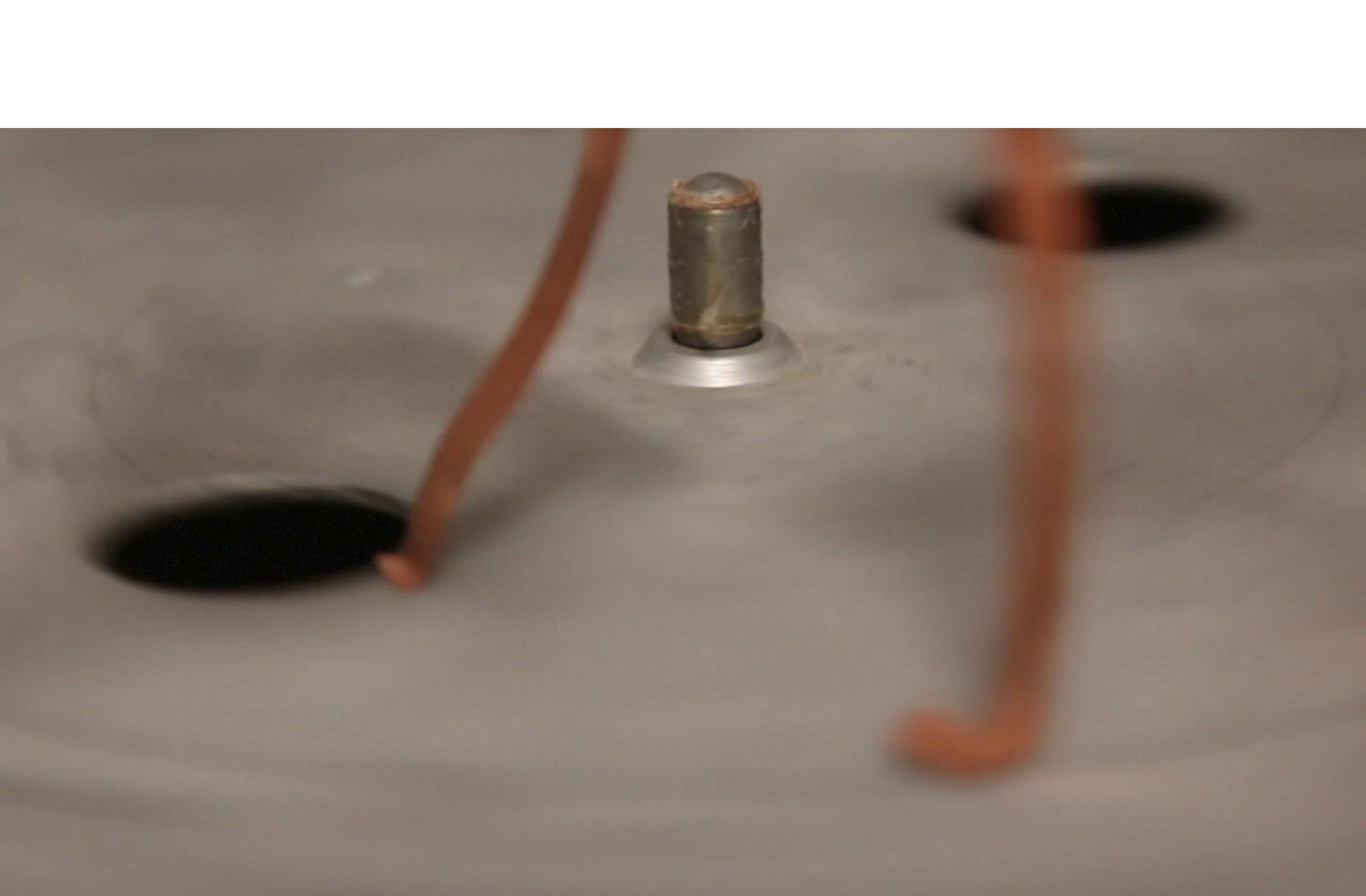


Hektor
Jürg Lehni
2003



Otto
Jürg Lehni
2014

SOUND MACHINES



O Grivo

O Grivo