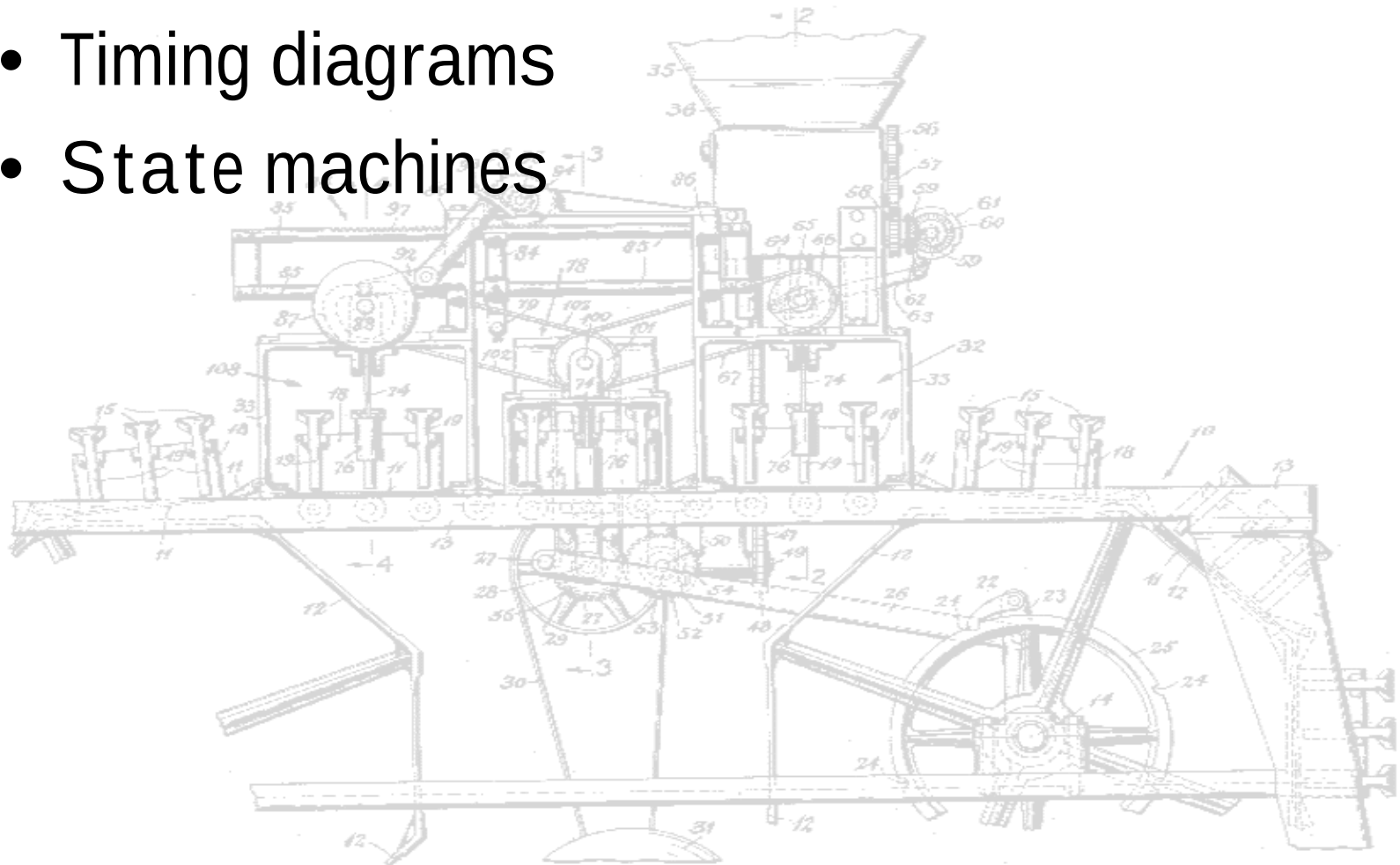


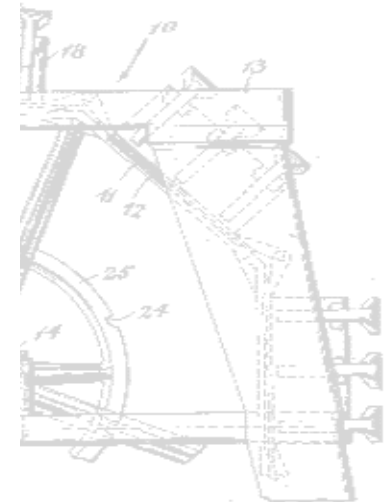
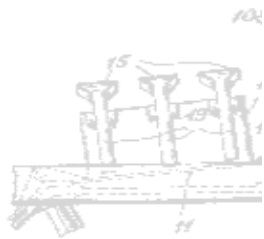
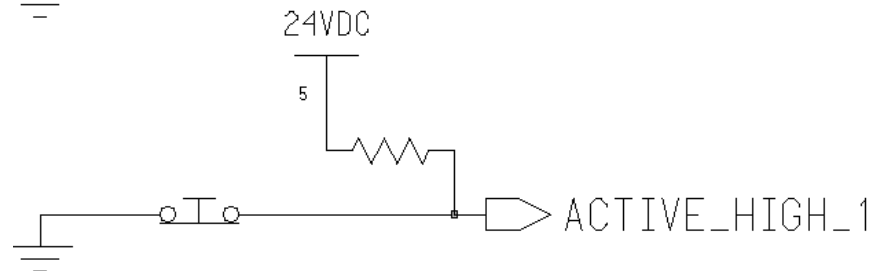
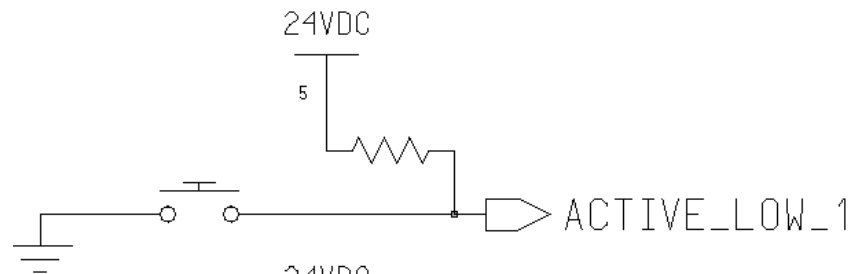
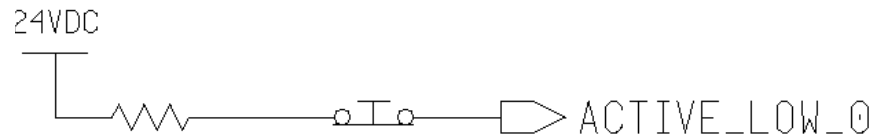
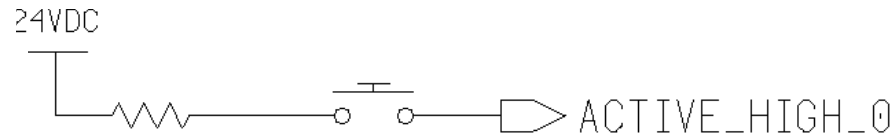
ELECTRIC LOGIC CONTROL

- Input and Output
- Ladder diagrams
- Timing diagrams
- State machines



I/O ACTIVITY LEVELS

- Active High - active level is logic 1 (+V)
- Active Low - active level is logic 0 (GND)

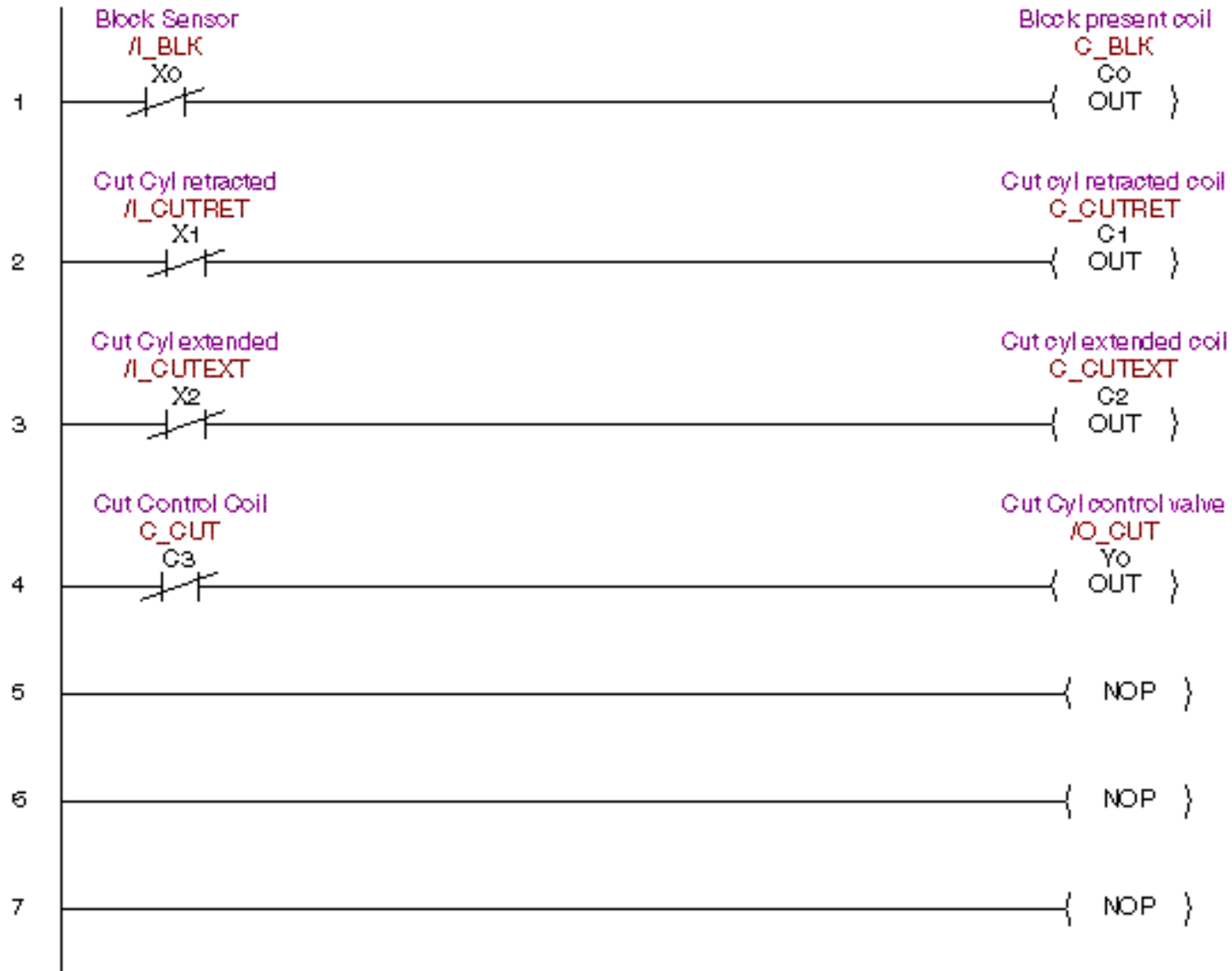


LADDER DIAGRAMS

4/5/01

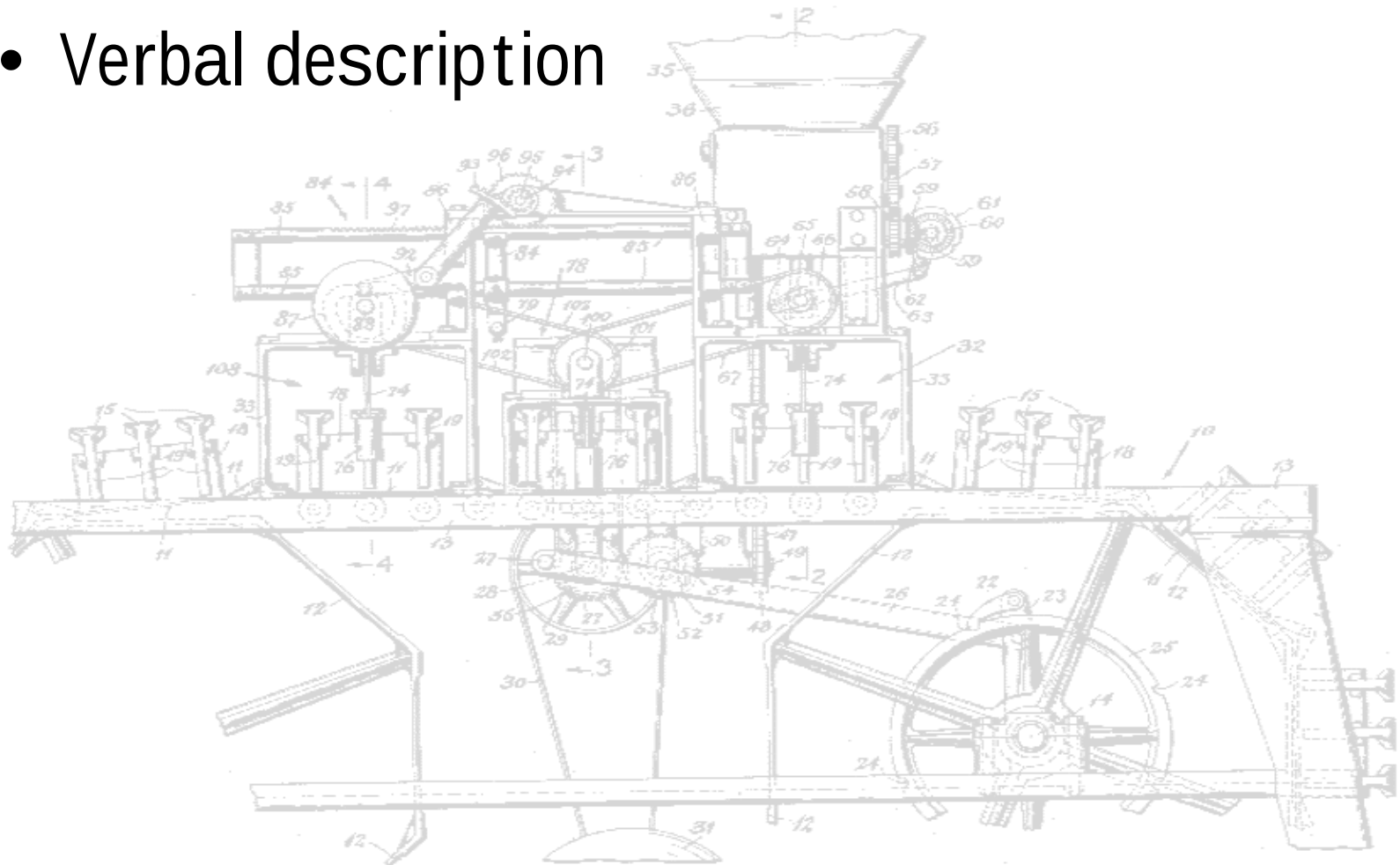
05

ENG P480Examples

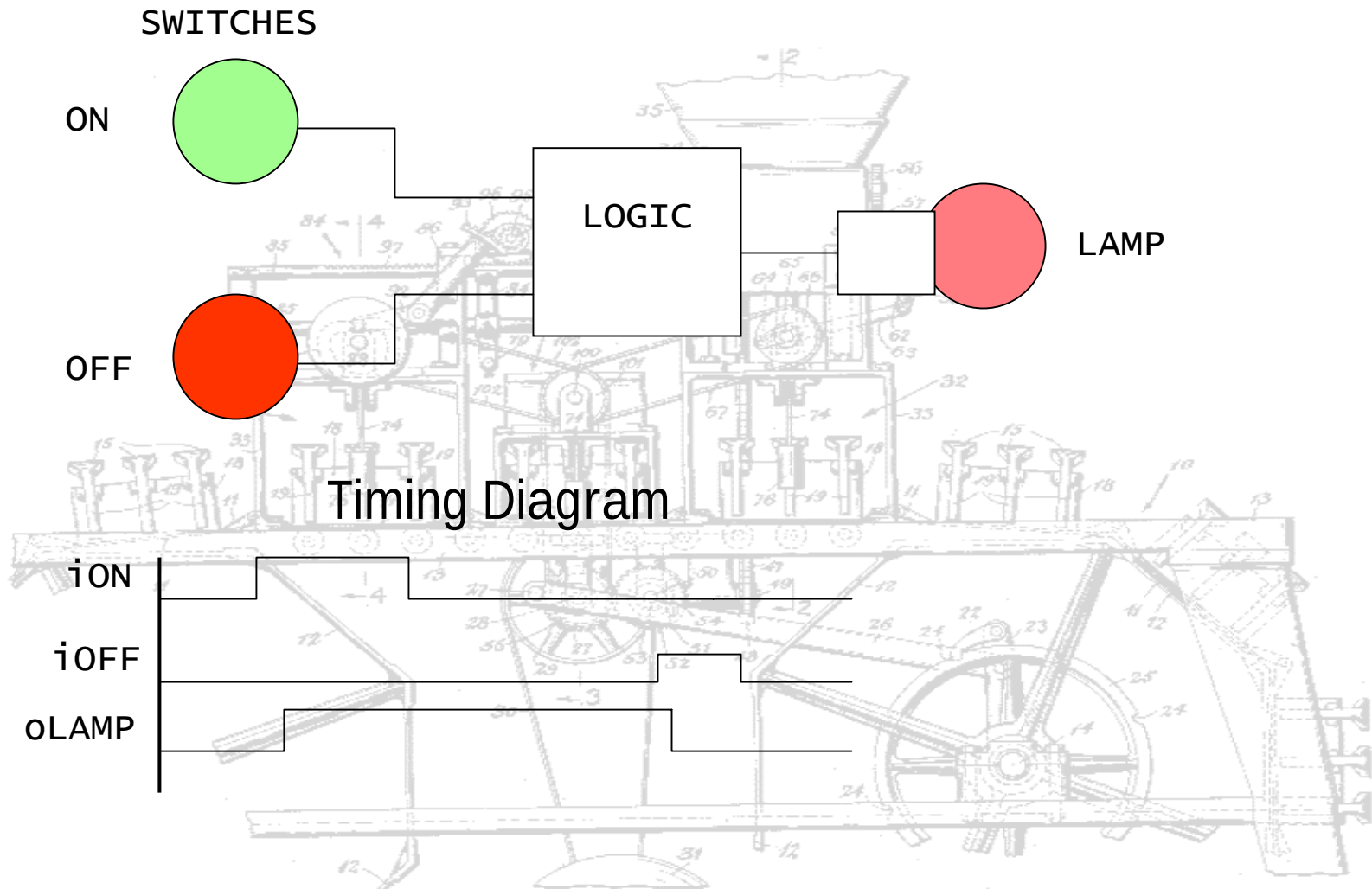


STATE MACHINES

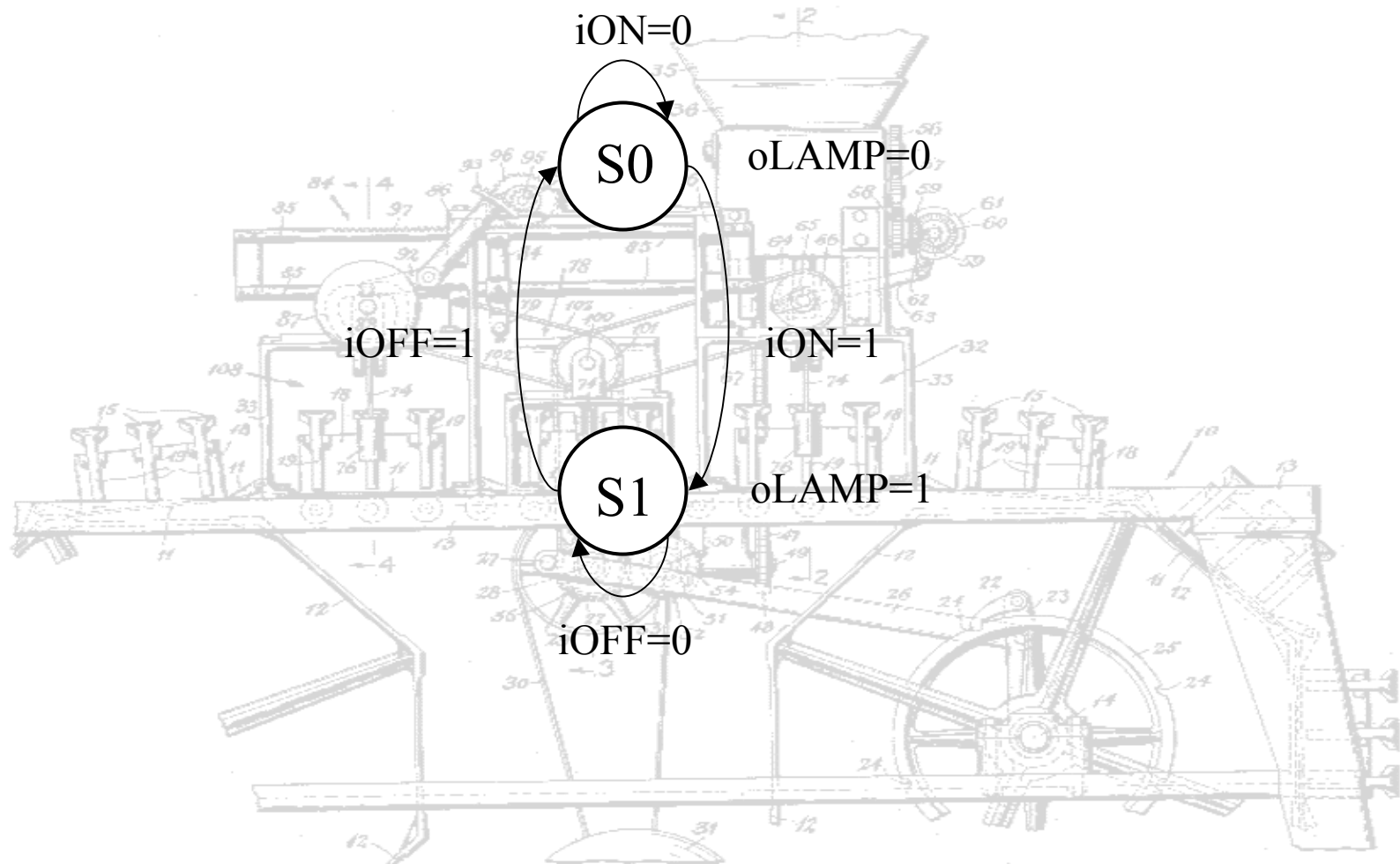
- Flow charts
- State diagrams
- Verbal description



THE SIMPLEST STATE MACHINE



THE SIMPLEST STATE MACHINE



STATE TRANSITION TABLE

iON	iOFF	Current	Next
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	0

STATE LOGIC EQUATIONS

oLAMP = Current State

$$\text{oLAMP} = \text{/iON} \cdot \text{/iOFF} \cdot \text{oLAMP}$$

$$+ \text{iON} \cdot \text{/iOFF} \cdot \text{/oLAMP}$$

$$+ \text{iON} \cdot \text{/iOFF} \cdot \text{oLAMP}$$

$$= \text{iON} \cdot \text{/iOFF} \cdot (\text{/oLAMP} + \text{oLAMP})$$

$$+ \text{/iOFF} \cdot \text{oLAMP} \cdot (\text{/iON} + \text{iON})$$

$$\wedge \text{oLAMP} = \text{iON} \cdot \text{/iOFF} + \text{/iOFF} \cdot \text{oLAMP}$$

LADDER DIAGRAM

24VDC

GND

