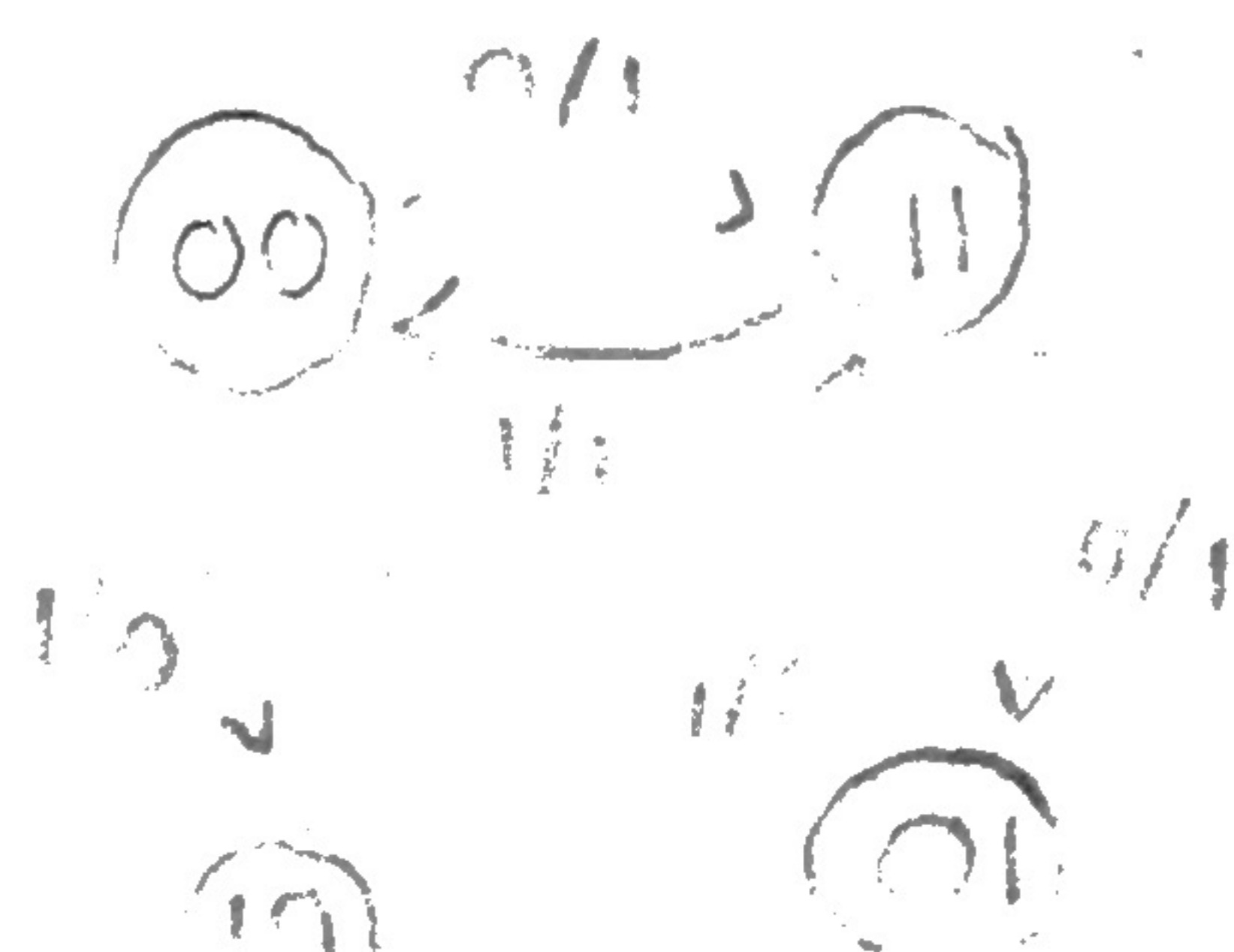


3.) Simplest circuit possible using JK Flip-Flops

Q	Q <sub>n</sub>	J	K
0	0	0	X
0	1	1	X
1	0	X	1
1	1	X	0

Q	J	K	Q <sub>n</sub>
00	00	11	
00	01	10	
01	10	00	
11			

A <sub>0</sub> B <sub>0</sub>	In	A <sub>1</sub> B <sub>1</sub>	Out	J <sub>A</sub>	K <sub>A</sub>	J <sub>B</sub>	K <sub>B</sub>
00	0	11	1	1	X	1	X
00	1	10	0	1	X	0	X
01	X	00	0	0	X	X	1
10	0	10	0	X	0	0	X
10	1	11	0	X	0	1	X
11	0	01	1	X	1	X	0
11	1	00	1	X	1	X	1



A <sub>0</sub> B <sub>0</sub>	0	1
0	1	0
1	0	1

$out = \bar{A}_0\bar{B}_0 + A_0B_0$

A <sub>0</sub> B <sub>0</sub>	00	01	11	10
0	1	0	X	X
1	1	0	X	X

$$J_A = \bar{B}_0$$

A <sub>0</sub> B <sub>0</sub>	00	01	11	10
0	X	X	1	0
1	X	X	1	0

$$K_A = B_0$$

1<sup>st</sup> Flip Flop JK

A <sub>0</sub> B <sub>0</sub>	00	01	11	10
0	1	X	X	0
1	0	X	X	1

$$J_B = \bar{In}\bar{A}_0 + InA_0$$

A <sub>0</sub> B <sub>0</sub>	00	01	11	10
0	X	1	0	X
1	X	1	1	X

$$K_B = \bar{A}_0 + In$$

Circuit w/ JK FlipFlops

