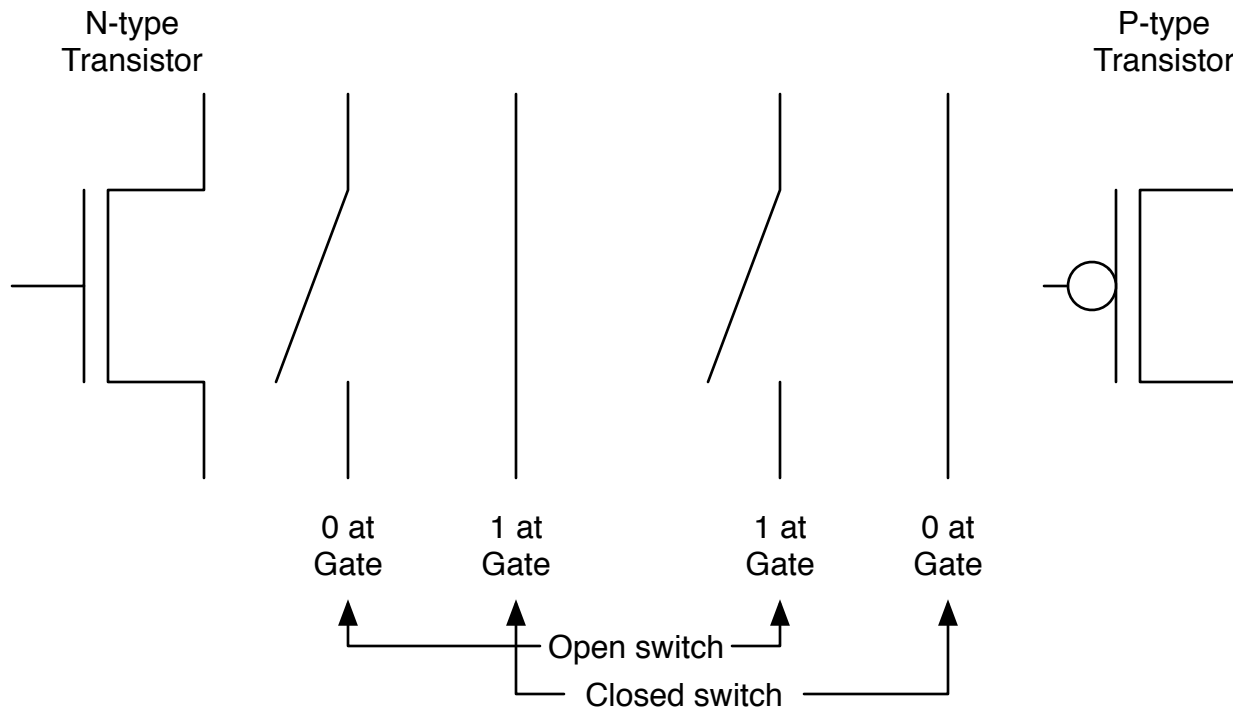The Amazing Field Effect Transistor:

MOS = Metal Oxide Semiconductor

Source
(Conductor)

Gate
(Conductor)

Drain
(Conductor)

N/P-type
Dopant

Gate
Insulator
(Silicon dioxide)

P/N-type
Dopant

Body
(Silicon)

Electrical
Flow

N-type
Transistor

P-type
Transistor

0 at
Gate

1 at
Gate

1 at
Gate

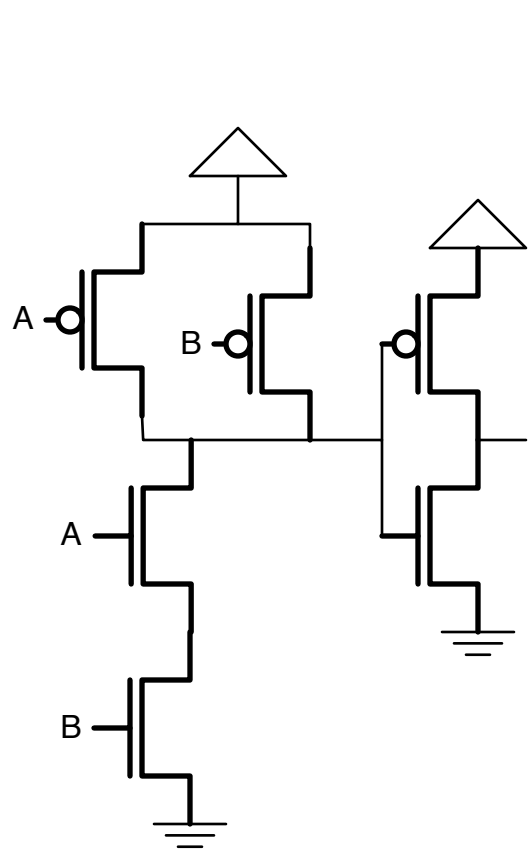0 at
Gate

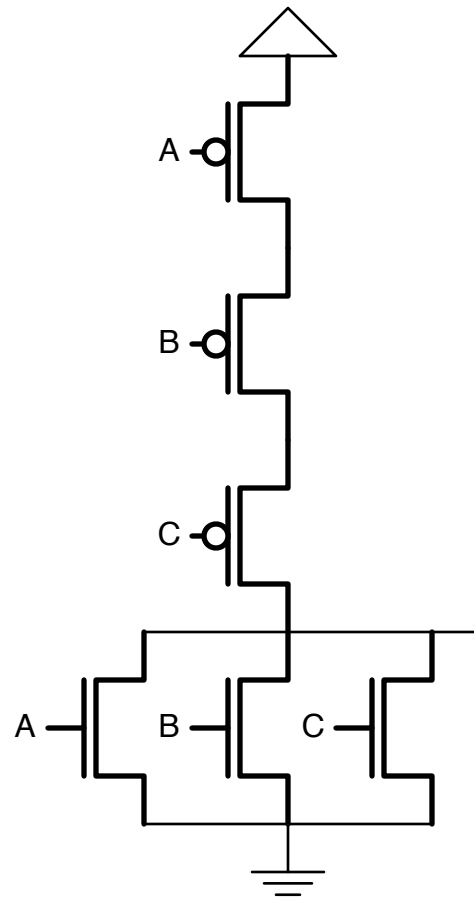Open switch

Closed switch
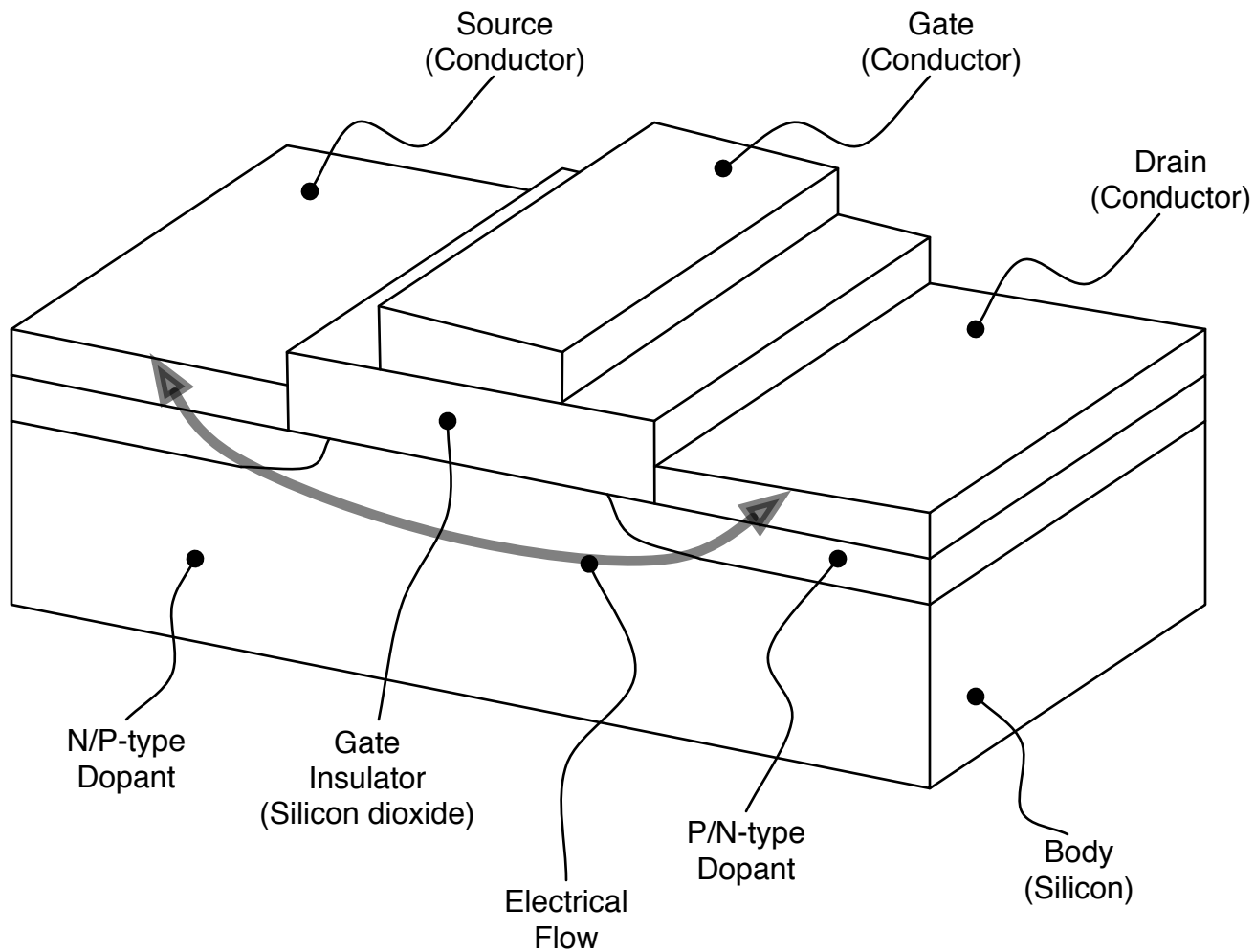
CMOS = Complementary Metal Oxide Semiconductor
"Complementary" refers to the "matched" pairs of P- and N-type transistors
These circuits are in the *static CMOS* style

A — Output

Inverter

A=0   A=0   A=1   A=1
B=0   B=1   B=0   B=1

A
B

Output
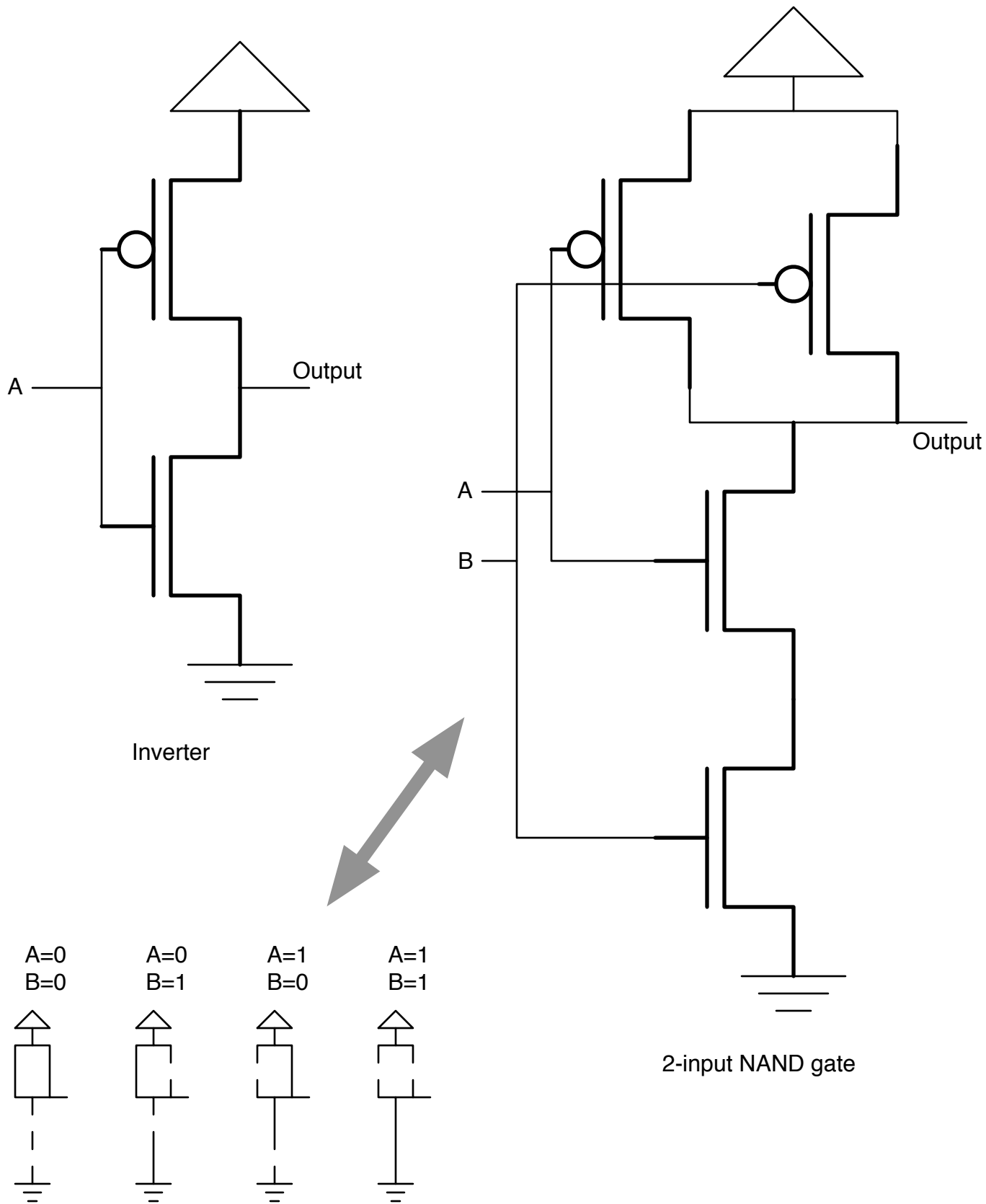
2-input NAND gate

2-input AND gate

3-input NOR gate