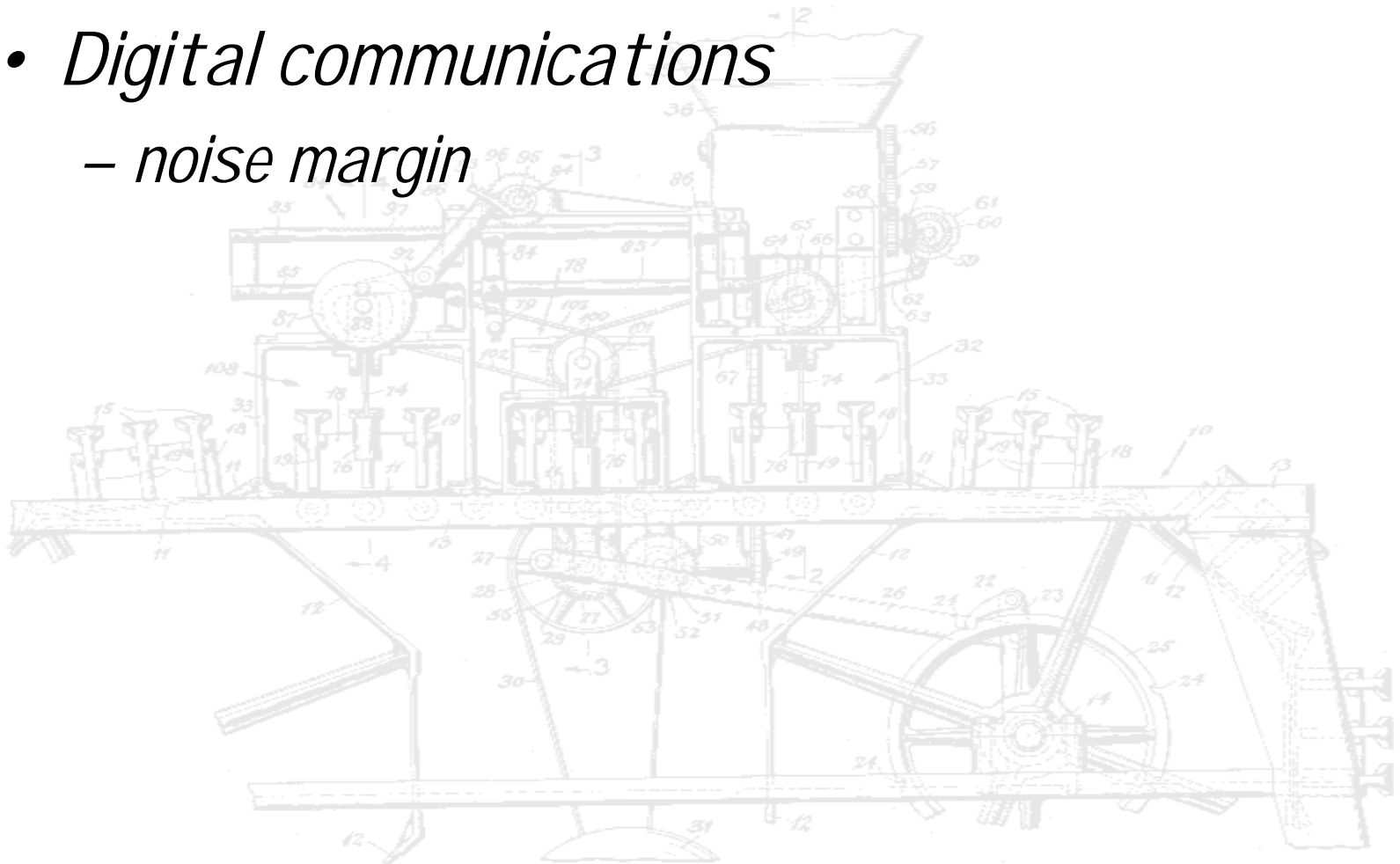


# FACTORY COMMUNICATIONS

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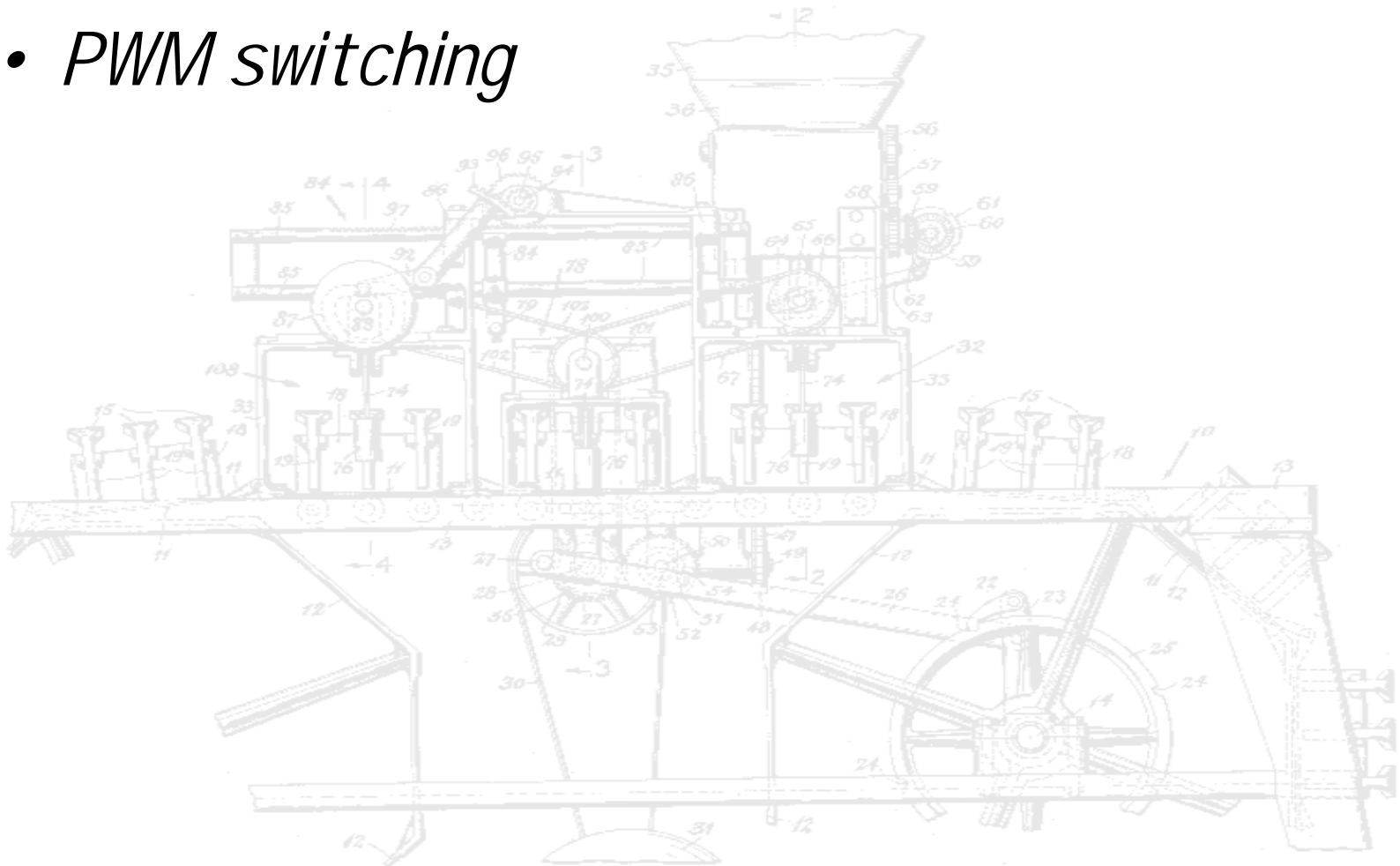
- *Discrete signals*
- *Analog signals*
- *Digital communications*
  - *noise margin*



# NOISE SOURCES

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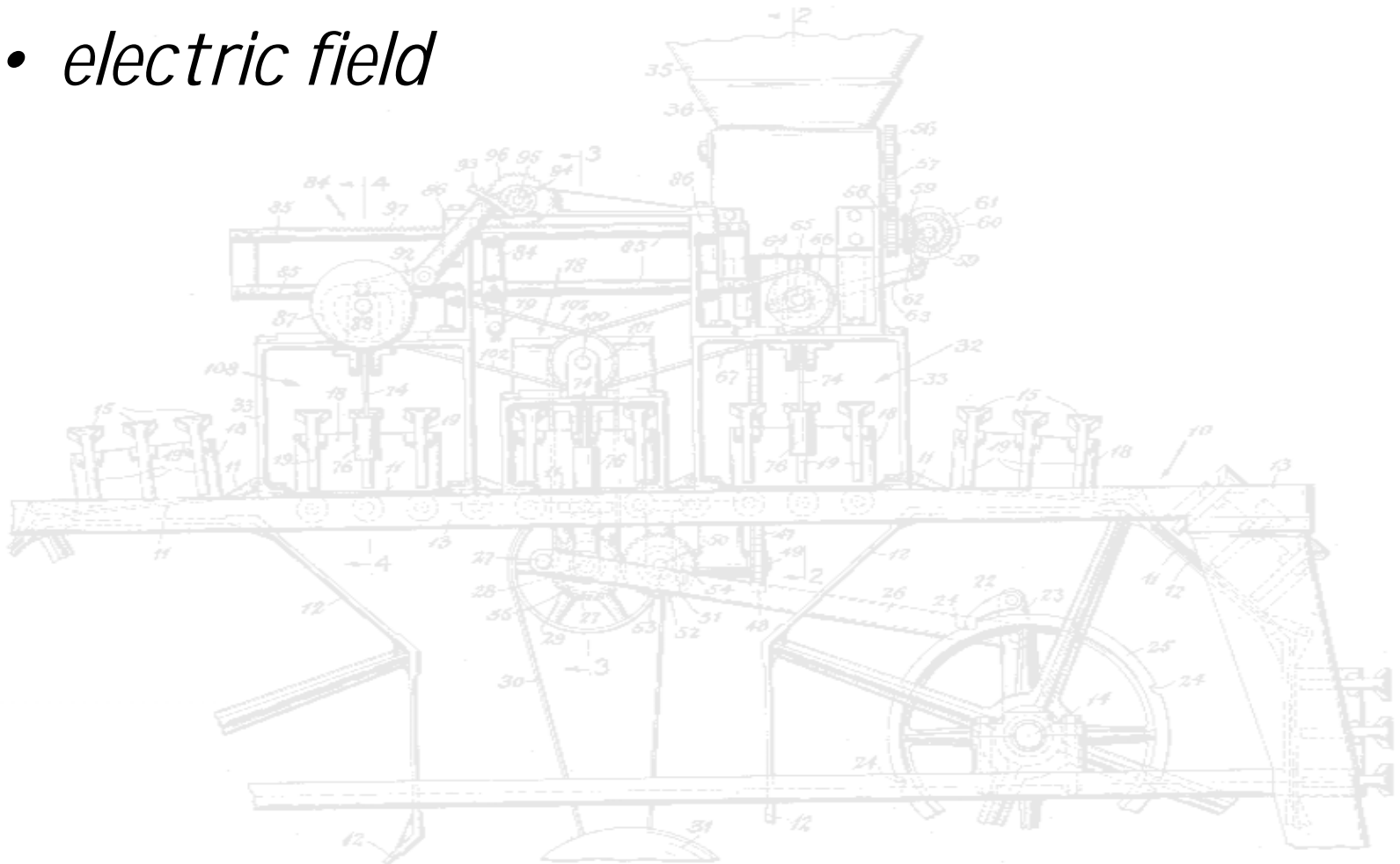
- *brush noise*
- *relay arcing*
- *PWM switching*



# NOISE COUPLING

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- *common-impedance*
- *magnetic field*
- *electric field*



# WIRING METHODS

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- *individual wire*
- *twisted pair*
- *coaxial*
- *shielding and grounding*

