

Motion Picture Origins

Shadow Play



Motion Picture Origins

What do we need to make moving pictures work?

Two Necessary Illusions

1. **Persistence of vision** – The tendency of the retina to retain an image for a fraction of a second after the light source is gone.

Two Necessary Illusions

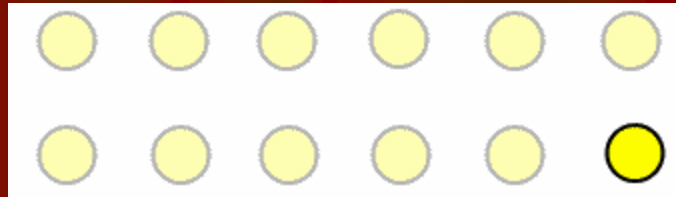
1. **Persistence of vision** – The tendency of the retina to retain an image for a fraction of a second after the light source is gone.
2. **Beta Movement** – The perception of sequential discrete images as a single moving image.*

* Sometimes referred to as the “phi phenomenon.”

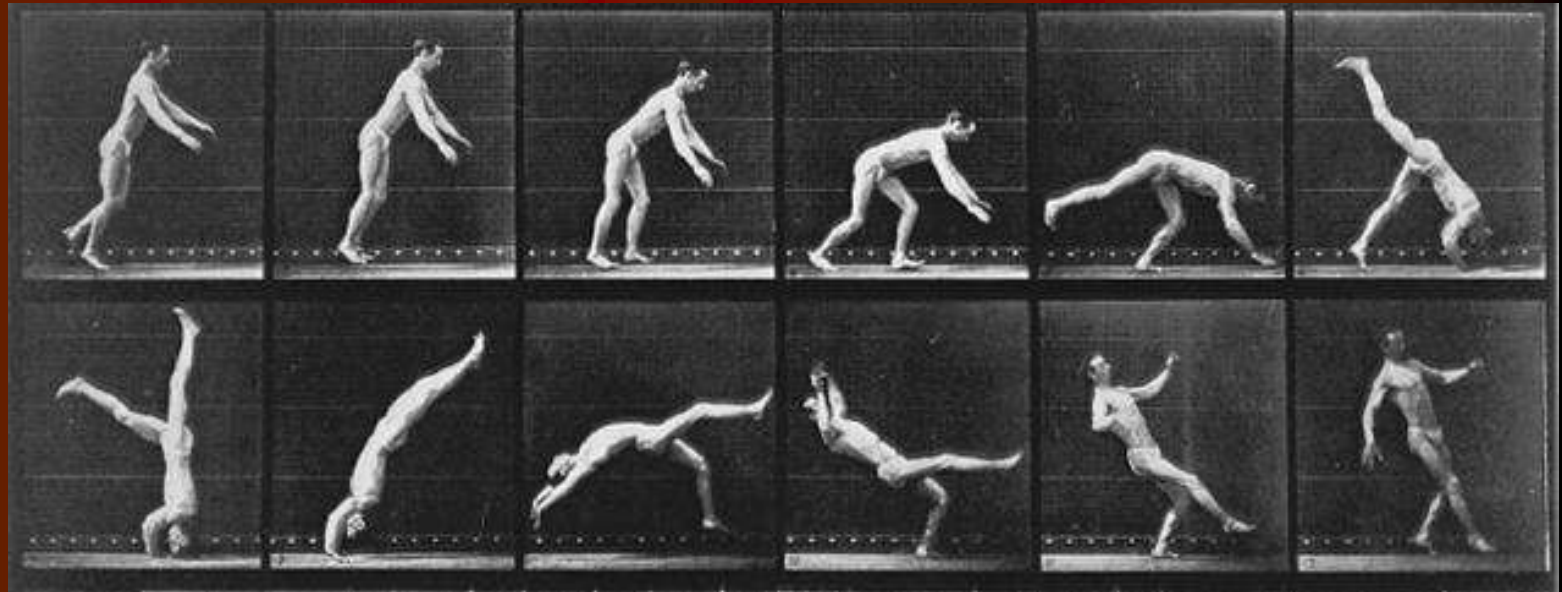
Beta Movement



Beta Movement



Sequential Photographs



Basic Requirements

- Illusion of motion

Basic Requirements

- Illusion of motion
- Projection

Basic Requirements

- Illusion of motion
- Projection
- Photography

Illusion of Motion

Mechanical Toys/Devices

Illusion of Motion

Mechanical Toys/Devices



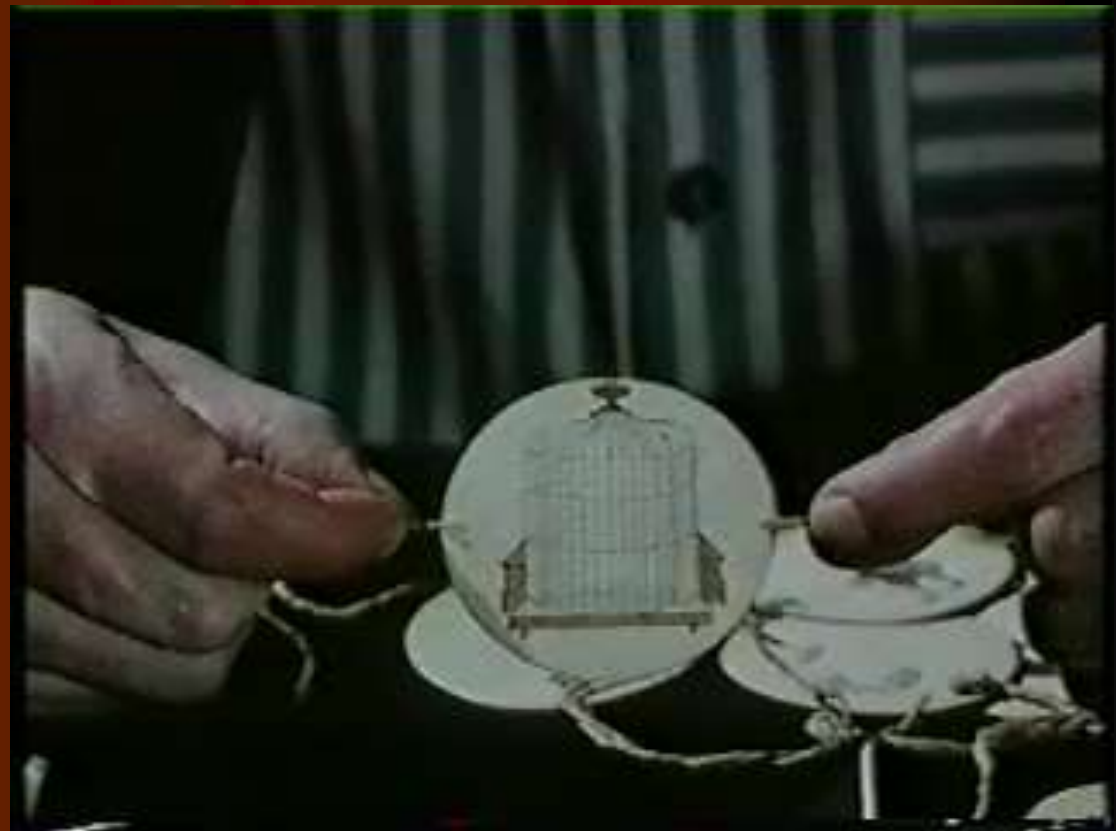
Illusion of Motion

Stroboscopic Toys

Illusion of Motion

Stroboscopic Toys

- Thaumatrope



Illusion of Motion

Stroboscopic Toys

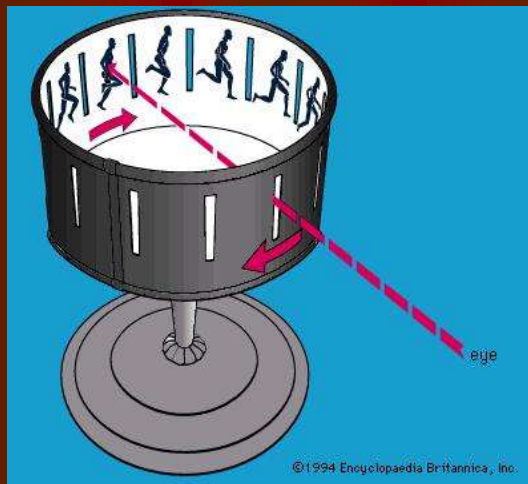
- Thaumatrope
- Phenakistoscope



Illusion of Motion

Stroboscopic Toys

- Thaumatrope
- Phenakistoscope
- Zoetrope



Illusion of Motion

Stroboscopic Toys

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Illusion of Motion

Stroboscopic Toys

- Thaumatrope
- Phenakistoscope
- Zoetrope
- Praxinoscope



Basic Requirements



Illusion of motion

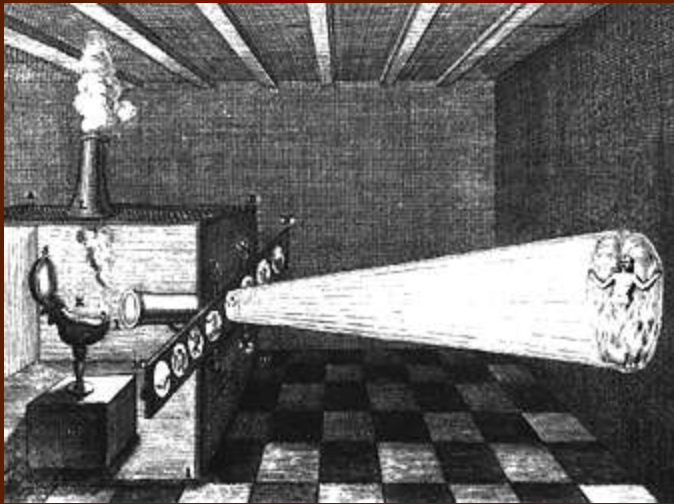
- Projection
- Photography

Projection

- Magic Lantern

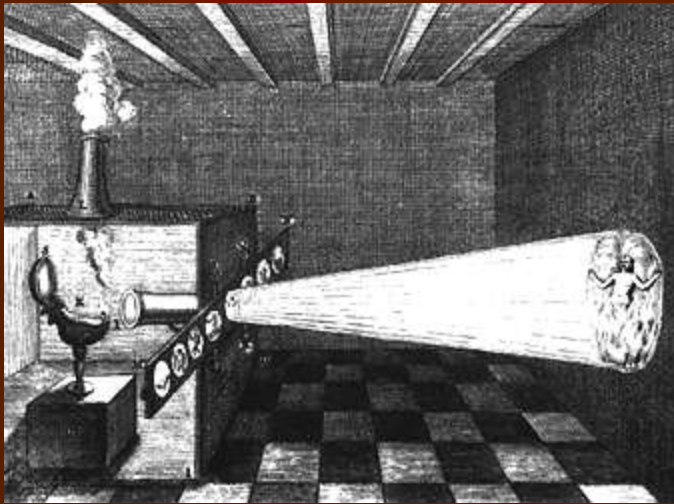
Athanasius Kircher

"Ars Magna Lucis et Umbrae" (1646)



Projection

- Magic Lantern
Athanasius Kircher
"Ars Magna Lucis et Umbrae" (1646)



19th century version of the Magic Lantern

Projection

- Magic Lantern

Athanasius Kircher

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Projection

- Magic Lantern

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Basic Requirements



Illusion of motion



Projection

- Photography

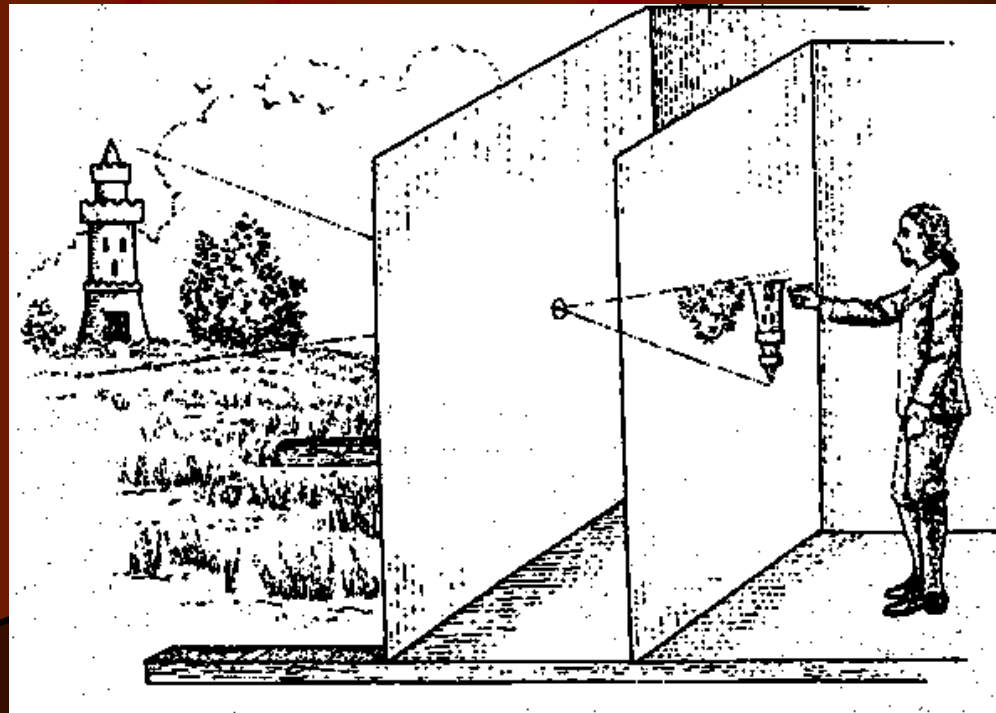
Photography

- Camera Obscura

“Dark Room”

Described by Leonardo da Vinci in 1490

Term was first used by Johannes Kepler in the early 17th century



Photography

- Joseph Nicephore Niepce

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First fixed (permanent) photographic image (1826)

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Daguerreotype (1839)

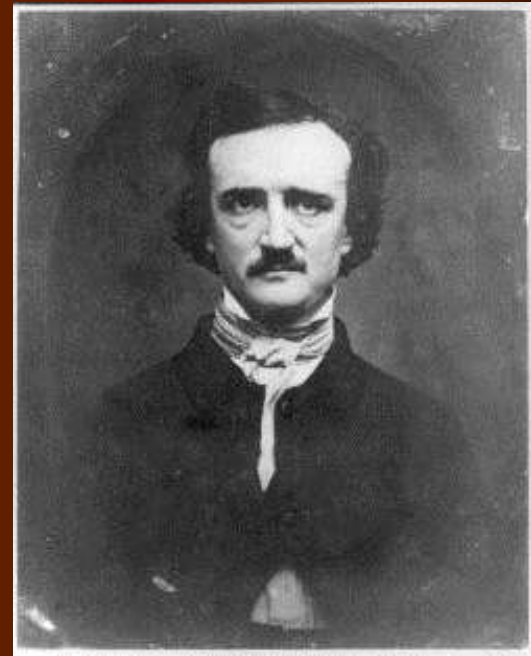
Photography

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First fixed (permanent) photographic image (1826)

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Daguerreotype (1839)



Daguerreotype of
Edgar Allan Poe

Basic Requirements



Illusion of motion



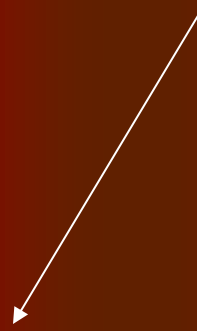
Projection



Photography

Motion

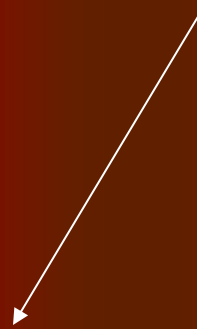
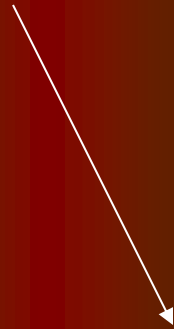
Projection



Projected Motion

Motion

Projection

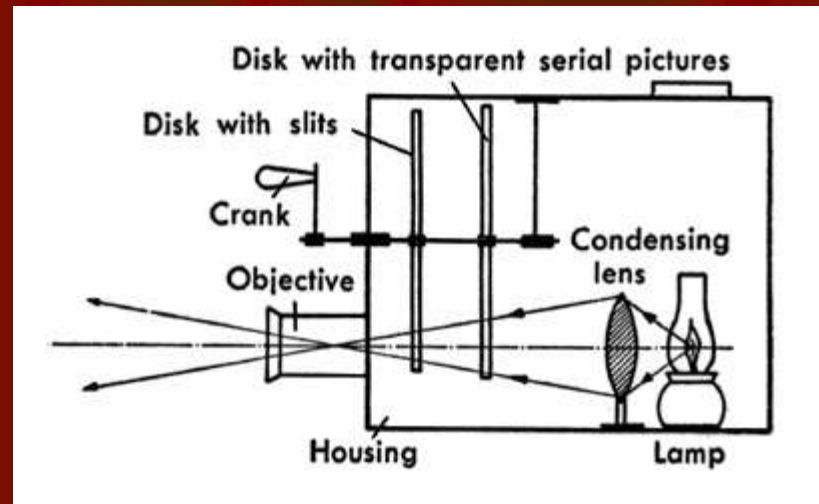


Projected Motion

Franz von Uchatius

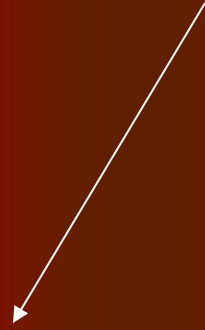
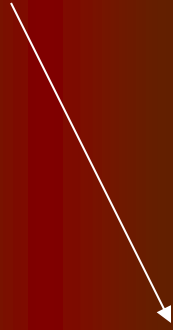
"Lantern Wheel of Light" (1845)

Franz von Uchatius "Lantern Wheel of Light" (1845)



Motion

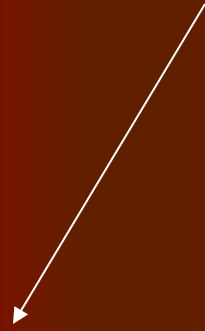
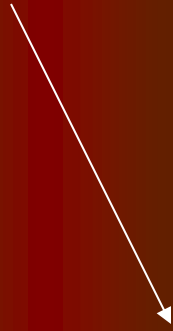
Photography



“Moving” Photographs

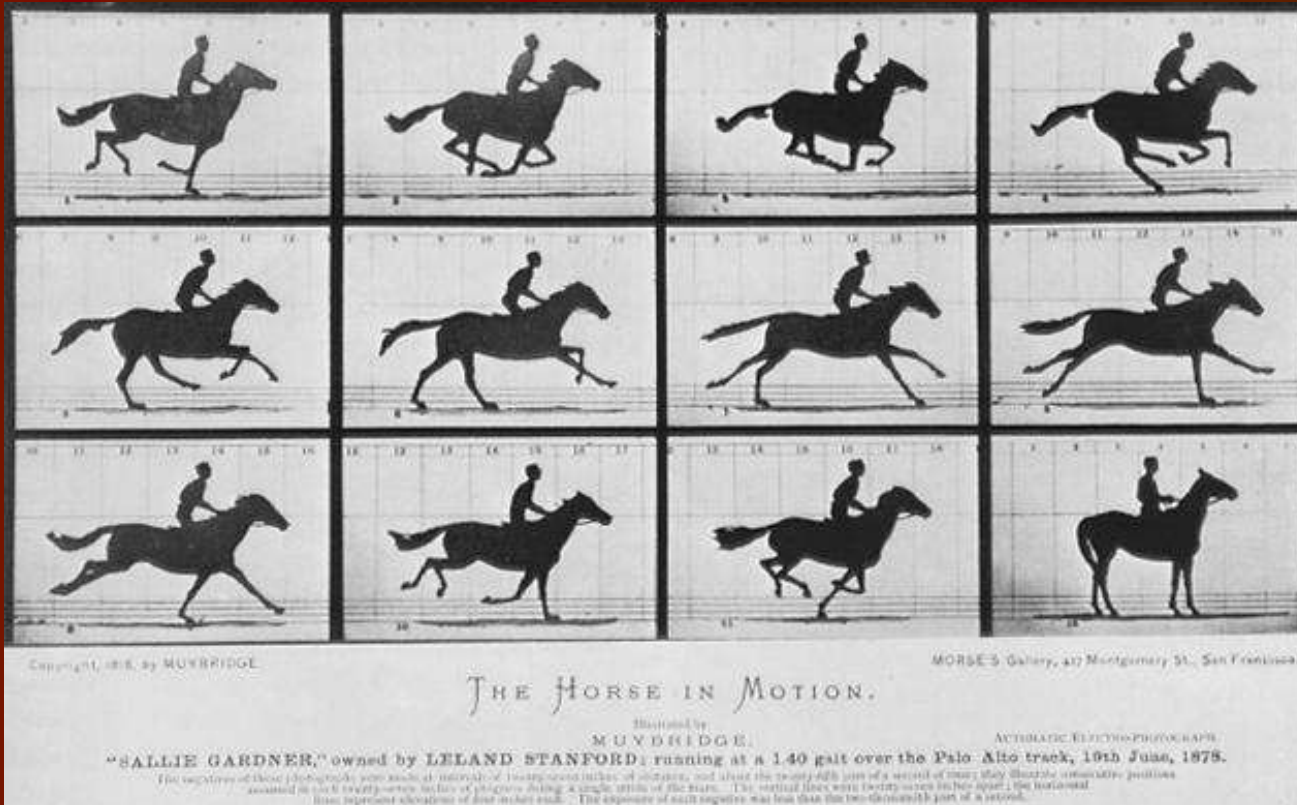
Motion

Photography



“Moving” Photographs
Eadweard Muybridge

"Moving" Photographs Eadweard Muybridge



1872

“Moving” Photographs Eadweard Muybridge



Basic Requirements



Illusion of motion



Projection



Photography

Basic Requirements

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 Photography

•Flexible film stock

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- John Wesley Hyatt
Developed celluloid (1869)

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Develops transparent, flexible film using celluloid (1887)

Filed for patent, but patent not granted until 1898

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Developed celluloid (1869)
- Hannibal Goodwin
Develops transparent, flexible film using celluloid (1887)
Filed for patent, but patent not granted until 1898
- George Eastman
Introduces and markets celluloid film (1889)

Projection

Magic Lantern

Stroboscopic Toys

Thaumatrope, Zoetrope, etc.

Photography

Niepce, Daguerre

Projection of
Apparent Motion

Uchatius

Multiple Sequential
Photographs

Muybridge

Celluloid
Film

Eastman

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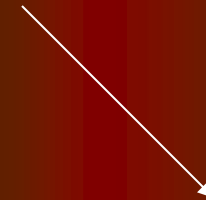
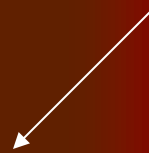
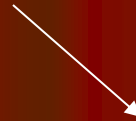
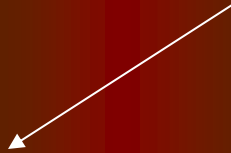
Muybridge

Celluloid
Film

Eastman

Motion Pictures

Edison



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Louis & Auguste Lumiere