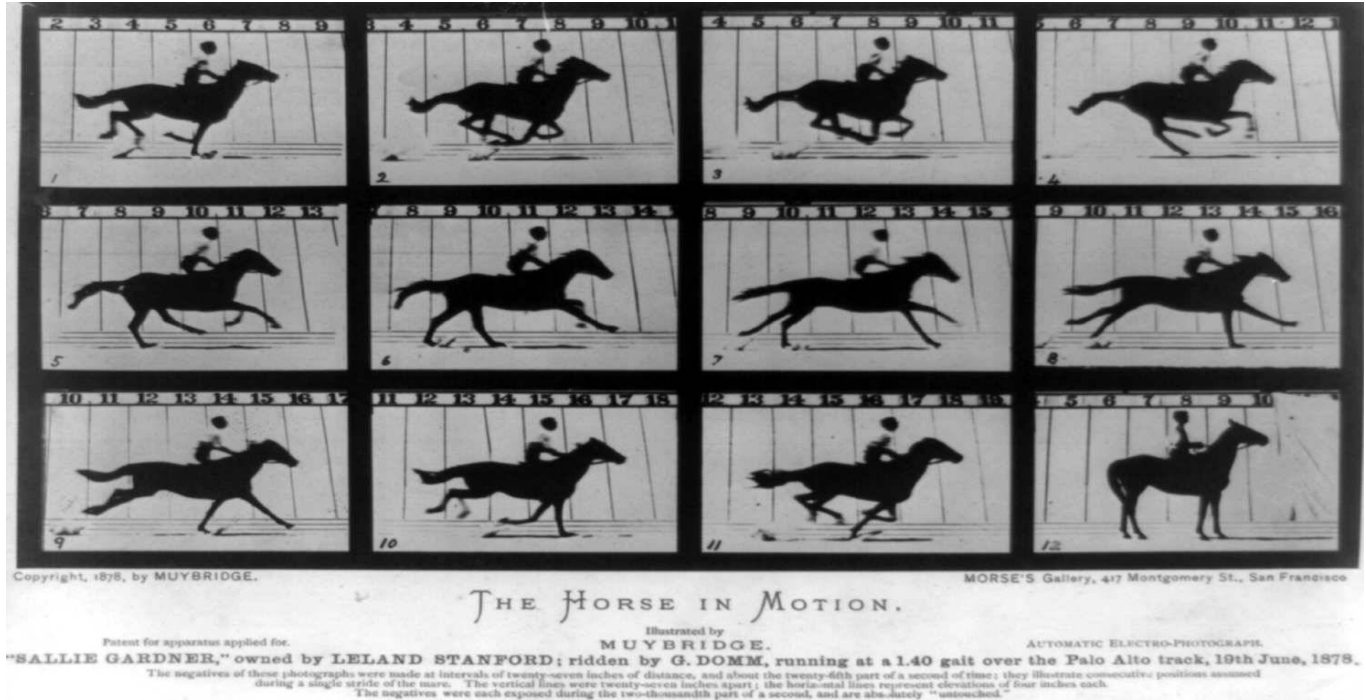


Persistence of Vision



Persistence of Vision is the ability of the mind to interpret a fast succession (series) of still images as a moving image. In the early days of Motion Picture production, it was decided that 16 still frames per second would give the appearance to the viewer of a moving image - speeds as low as 10 frames per second would still give the illusion of motion, but would have a jerky, strobe effect, like stick figure flip-books.

Most early films were shot at 16 frames per second. With the advent (start) of sound pictures, the frame rate was increased to 24 frames per second to better accommodate the audio track. As a result, many early silent films were accidentally screened at 24 frames per second giving them the sped up look that

many of us associate with early silent films. (I'll show you some in class.)

<http://viewpure.com/5taGClULpqA>

The images were shot in 1878 in an early attempt to study the way horses run. The little video (see link) has the 10 images played one after the other at a rate of 16 frames per second. As you can see, the horse appears to be running smoothly even though you are actually just looking at the 10 still images being shown in rapid succession (on a loop).

All modern forms of moving image technology still rely on these principles. Most films are still shot at 24 frames per second (fps). Some are shot at 30 frames per second. There is a growing belief that showing movies at 48 frames per second will give a more realistic experience to the viewer. The 2013 film "The Hobbit" Directed by Peter Jackson was the first major motion picture to be shot and released in 48fps.

Persistence of Vision is the basis for many "special optical effects" commonly used in the motion picture industry. Cell animation, and stop motion animation are both fine examples. Each uses individually shot still frames that, when shown at 24 frames per second, give the viewer the illusion of smooth, fluid motion. Time-lapse photography also uses the principles of Persistence of Vision. Time-lapse is created by shooting still frames at a slow interval, and then playing them back at a higher frame rate.