



Mandalatrope

I have invented a device that allows the viewing of Spectral Images of graphical or three-dimensional objects, by multiple persons simultaneously. This Spectral Image Viewer uses the principle of the Roget Palisade Illusion and is a major development based on the Traditional Zoetrope.

Professor George C. Hall



Description of the Roget Palisade Illusion

In the simplest of terms, the Roget Palisade Illusion is the distortion that is seen when looking through a picket fence at a passing wagon wheel.

Example of a typical "Actual" object



"Spectral" image that the moving actual object will produce



Using the terms from William Carpenter's seminal 1868 paper, "On the Zoetrope and its Antecedents", the wagon wheel itself is the "Actual" object, and the illusion image is the "Spectral Image". The picket fence is the "Palisade", and the spaces between the pickets are apertures that interrupt the vision, creating the illusion. Two types of motion are required, the "Rotatory" turning of the wheel, and the "Progressive" motion as the wheel moves parallel to the picket fence.

Will Rogers once said;

"It ain't what we don't know that gets us into trouble, it's what we know for sure that just ain't so".

The Roget Palisade Illusion deserves much more research and experimentation, because, computer demonstrations notwithstanding, basically nothing new has been tried since 1868.

One way that research and experiments with the Roget Palisade Illusion have fallen short, is in failing to establish a constant value against which to measure the two major variables. Those variables, of course, are rotatory and progressive motion. By basing my invention on the traditional Zoetrope, I am able to establish the Constant Frequency of 13 apertures per revolution of the palisade or aperture drum.

My Spectral Image Viewer differs in two ways from the traditional Zoetrope. First, the apertures run full length, from top to bottom of the drum, rather than stopping halfway, which is the case with the Traditional Zoetrope. Second, there is an additional floor or platen, above the floor of the aperture drum, that is controlled by an axle, concentric to the one used by the aperture drum. That additional floor is independently operated by a hand crank or variable speed motor.



This view shows the concentric axle and drive mechanism for operating the independent floor at the bottom of the aperture or palisade drum.

The full length apertures allow for viewing the entire independently operated floor at one time, rather than just the half furthest from the viewer left unmasked by the Zoetrope strip. The independently operated floor allows observations as to what speed, direction, and ratios of rotatory and progressive motion will produce various effects in the Spectral Images that are viewed.

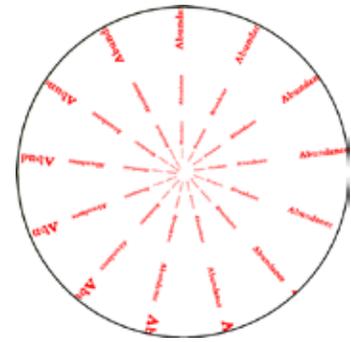


Actual image



When the drum and floor rotate in the same direction, the Spectral Image is concave, as seen on the left. When the drum and floor counter-rotate, the Spectral Image is convex, as seen on the right.

A second failure of previous experiments with the Roget Palisade Illusion is that they have been confined to a simple spoked wheel as the actual object, moving parallel to the palisade, and they are only being viewed straight on, looking at the end of the horizontal axle. The result is a flat two-dimensional Spectral Image. My Spectral Image Viewer allows the Roget Palisade Illusion to be seen from an angle, and reveals not only the curvature effect normally reported, but also a distinct 3-D Effect that changes from concave to convex, depending on the directions of rotatory and progressive motion.



By analyzing original traditional Zoetrope floors, I have been able to produce graphics with images that are not limited to the simple spokes of a wheel. By making spokes and spirals of words, I can send thought messages toward the viewer, or to the center of the Spectral Image. Since the ratios between rotatory and progressive movement can be varied beyond the 1:1 that the traditional Zoetrope is limited to, the direction and speed of movement of the images is no longer confined to the rigidity of the *Rules of Zoetropical Motion*.*

* **Zoetropical Motion;** This is how images on Zoetrope strips as well as Zoetrope floors move. When the number of images and slots are the same, the images can move in place, but will not rotate in the drum. Fewer images than slots will cause the images to move the opposite direction the drum spins but faster. More images than slots will cause the images to move the same direction the drum spins but slower. The further away that the number of images are from the number of slots, the more extreme the speed of motion.



Of particular interest is finding the precise ratios between progressive and rotary motion that produce a null point of no apparent motion in the Spectral Image. It was discovered that an image of one Crop Circle will appear to come to rest at three different such ratios. Concentric rings of images on Spiritual Mandalas will move in different directions or stand still as the ratios change. The platen, or independently operated floor in my invention, is large and sturdy enough to accommodate 3-D objects up to 12 inches in diameter, thus revealing Spectral Images produced by many diverse specimens beyond two-dimensional graphics. Additional experiments have involved LED lights triggered by magnetic reed switches placed around the aperture drum and similarly triggered MIDI signals that produce synthesized sounds. In short, there is an artistic world here that has not been explored.

I call my Spectral Image Viewer, “Mandalatropé”. The name was coined because of research on the subject of the Tibetan Prayer Wheel and how the Illusion of Motion can be used in a hypnotic sense, to distract the conscious mind, while messages of Affirmation can flow to and from the sub-conscious. In collaboration with others who are metaphysically minded, one machine with Sanskrit graphics of Tibetan Mantras was presented to the Dalai Lama.

What we know for sure about the Roget Palisade Illusion is that, after 150 years, there needs to be more research and experiments.