Patent Station Activity

Directions:

1. Students are divided into four groups.
2. These four groups will rotate through four patent activity stations.
3. Students will participate in each station activity for 4 minutes.
4. At the end of the rotations students will briefly share their results as a class. This share session is facilitated by the teacher. Students may work in pairs or alone (Teacher preference).

Resources needed: Paper, pen, student access to internet

Note: Keep scrolling down!
Station 1: Patent Line Drawing

Directions: On a piece of paper, draw a technical line drawing (without using the internet) of the invention described below based on its 16 patent claims:

(Optional: Check out the article “Are Slinkys patentable?” via The Hill)

1. A toy consisting of a helical spring of natural frequency between [-] and 100 cycles per minute, adapted to walk and oscillate, in which the lateral force between turns is substantially zero in closed position when no external force is acting, and in the position of rest each coil contacts an adjacent one.

2. A helical spring toy adapted to walk and oscillate, consisting essentially of a helical spring having substantially no lateral force between turns in closed position when no external force is acting, in which in the position of rest each coil contacts an adjacent one, and in which the spring cross section is of a shape which has essential lower torsional stiffness for a given cross sectional area than a square, thus producing a low natural frequency

3. A toy consisting of a helical spring in which the force between turns is substantially zero in closed position when no external force is operating, in which in the position of rest each coil contacts an adjacent one, in which the spring cross section is of a shape which has essentially lower torsion stiffness for a given cross sectional area than a square, which when bent in the hands transfers turns bodily from a high end to a low end, and when started by a user on a suitable surface walks end over end downhill.

4. A toy comprising a helical spring adapted to walk and oscillate, in which the compression and tension between turns are substantially zero in closed position when no external force is acting, the radial cross sectional dimension is between 1.1 and 10 times the axial cross sectional dimension, the outside diameter is between 4 and 100 times the radial cross sectional dimension, the solid height is between one-half and 5 times the diameter, and the coil is capable of bridging an axial semi-circle without external force to hold it in position.

5. A helical spring toy adapted to walk and oscillate, consisting essentially of a spring having substantially no compression or tension between turns in closed position when no external force is acting, in which the spring radial cross sectional dimension is between 2 and 6 times the axial cross sectional dimension, the spring outside diameter is between 10 and 50 times the radial cross sectional dimension, the solid height is between A and one and one-half times the diameter and the coil bridges an axial semi-circle without external force holding it in place.

6. A helical spring toy adapted to walk and oscillate, consisting essentially of a spring having substantially no compression or tension between turns in closed position when
no external force is acting, having a radial cross sectional dimension approximately 4 times the axial cross sectional dimension of the coil material, having an outside diameter approximately 30 times the radial cross sectional dimension, having a solid height approximately equal to the outside diameter and bridging an axial semi-circle without external force holding it in place.

7. An amusement device comprising an amusement platform having an upper starting portion and a plurality of landing portions, in combination with a helical spring bent in an axial semicircle having its forwardmost turn resting on a landing portion and its rearward most turn resting on a starting portion, the spring having dimensions and energy relations which permit it to walk from the starting portion to the next landing portion and on to successive landing portions without application of force beyond an initial starting force and the action of gravity.

8. An amusement device comprising an amusement platform in the form of an inclined plane having an upper starting portion and a plurality of lower landing portions, in combination with a helical spring toy of natural frequency between 10 and 100 cycles per minute, in which the force between turns is substantially zero in closed position when no external force is acting, and which walks end over end down the inclined plane.

9. An amusement device comprising an amusement platform having an anti-slip surface and in the form of an inclined plane having an upper starting portion and a plurality of lower landing portions, in combination with a helical spring of natural frequency between 10 and 100 cycles per minute, in which the force between turns in closed-position is substantially zero when no external force is acting, and which walks end over end down the inclined plane.

10. An amusement device consisting of an amusement platform having a higher starting portion and a plurality of successively lower landing portions, in combination with a toy of helical spring form having substantially no compression or tension between turns in closed position when no external force is acting, having a radial cross sectional dimension between 1.1 and 10 times the axial cross sectional dimension, having an outside diameter between 4 and 100 times the radial cross sectional dimension and having a solid height between A and times the outside diameter, the spring bent in an axial semicircle extending from the starting portion to the next landing portion on the amusement platform, and capable of walking to the next landing portion in successive steps without further application of external force beyond the starting force and the action of gravity.

11. A helical spring toy having its turns of cross sectional dimensions which are substantially longer in the radial than in the axial dimension, curved in. generally axially semi-circular form with one end higher than the other and having the property of transferring turns bodily from the high side to the low side as the elevation of the successive sides changes.
12. A helical spring toy having substantially no compression or tension between turns in closed position when no external force is generating, the radial dimension of the coil section between 1.1 and ten times the axial dimension, the outside diameter of the coil being between 4 and 100 times the radial dimension of the coil section and the solid height being between /2 and 5 times the diameter, the coil being adapted when bent in an axial semi-circle to transfer turns bodily from one end to the other by mere raising and lowering the elevations of the respective ends.

13. An amusement device comprising an endless amusement platform having an upper starting portion and a plurality of landing portions, and means for continuously driving the amusement platform, in combination with a helical spring bent in an axial semi-circle having its forwardmost turn resting on a landing portion and its rearward most turn resting on a starting portion, the spring having dimensions and energy relations which permit it to walk from the starting portion to the next landing portion and on to successive landing portions without application of force beyond an initial starting force and the action of gravity.

14. An amusement device consisting of an endless amusement platform having a higher starting portion and a plurality of successively lower landing portions, and means for driving between 1.1 and 10 times the axial cross sectional dimension, having an outside diameter between 4 and 100 times the radial cross sectional dimension and having a solid height between /2 and 5 times the outside diameter, the spring bent in an axial semi-circle extending from the starting portion to the next landing portion on the amusement platform, and capable of walking to the next landing portion in successive steps without further application of external force beyond the starting force and the action of gravity.

15. An amusement device comprising an amusement platform in the form of an inclined plane having an upper starting portion and a plurality of lower landing portions, variable speed means for driving the inclined plane uphill in synchronism with the walking of a helical spring, in combination with a helical spring bent in an axial semi-circle having its forwardmost turn resting on a landing portion and its rearward most turn resting on a starting portion, the spring having dimensions and energy relations which permit it to walk from the starting portion to the next landing portion and onto successive landing portions without application of force beyond an initial starting force and the action of gravity.

16. An amusement device comprising an amusement platform of circular form inclined to the horizontal and having a confining edge, and means for whirling the platform, in combination with a helical spring bent in an axial semi-circle having its forwardmost turn resting on a landing portion and its rearward most turn resting on a starting portion, the spring having dimensions and energy relations which permit it to walk from the starting portion to the next landing portion and onto successive landing portions without application of force beyond an initial starting force and the action of gravity.
Station 2 - Silly Patent Research

*Directions:* Identify some outrageous or silly patents using “Google Patents” as a search engine.

List your findings with a brief description and the patent number in the space below.
Station 3 - Famous Inventors’ Research

*Directions*: Identify some famous people in history that hold patents using “Google” and “Google Patents” as search engines.

List your famous inventor’s name with a brief description of their invention along with the patent number in the space below.
Station 4 - Patent Graveyard Research

Directions: Identify some notable patents that have expired and individuals who have since taken advantage of the expiration to launch similar products. You may use “Google” and “Google Patents” to assist you in this research.

List your “expired” patents with a brief description of the invention along with the patent number in the space below.