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Kokhan

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(54) **ELECTRICAL CONSTRUCTION TOY SYSTEM**

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Related U.S. Application Data

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A63H 33/04 (2006.01)
A63H 5/00 (2006.01)

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CPC *A63H 33/042* (2013.01); *A63H 5/00* (2013.01); *A63H 33/046* (2013.01)

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USPC 446/90, 91, 92, 93, 117, 118
See application file for complete search history.

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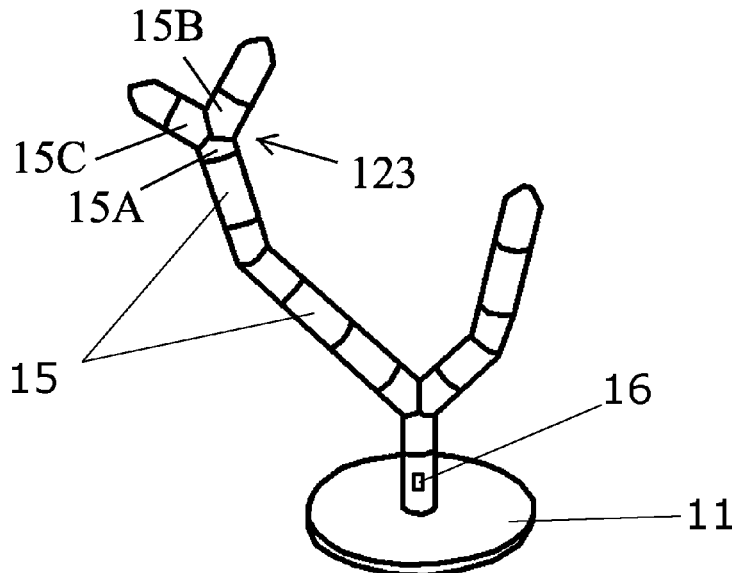
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(57) **ABSTRACT**

An electrical construction toy system is comprised of one or more base pieces and building blocks. At least one of the base pieces or building blocks providing a power source within the base piece or building block. The connection between base pieces and building blocks does not have to be mechanical, but can be magnetic as well. The connection between base pieces and building blocks further provides an electrical connection from which the power source may pass energy to one or more additional building blocks in varying directions. The connections conduct electricity and some building blocks or base pieces also provide powered effects, such as lighting, sound, and motion effects. In addition, there are several switch blocks to operate the lighting, sound, and motion by a wireless remote control.

4 Claims, 4 Drawing Sheets



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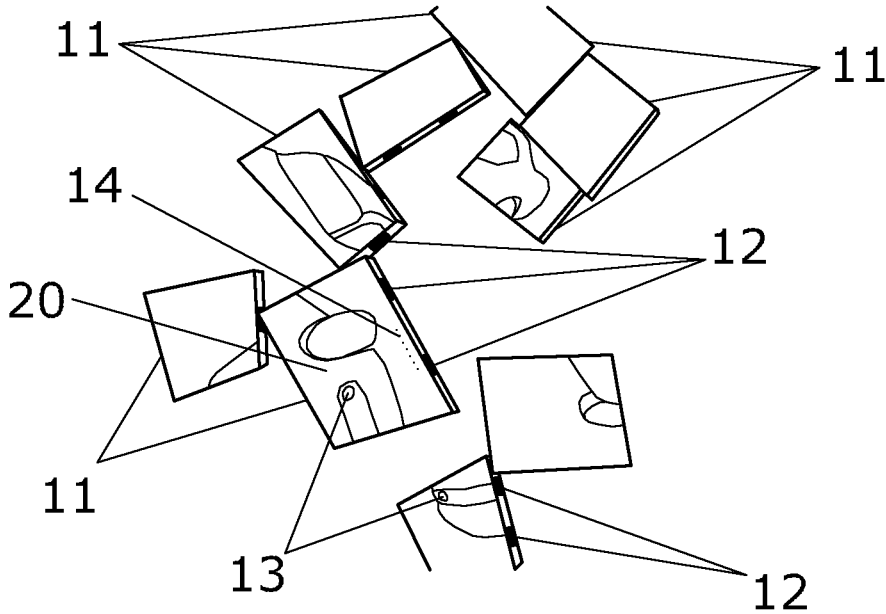


FIG. 1

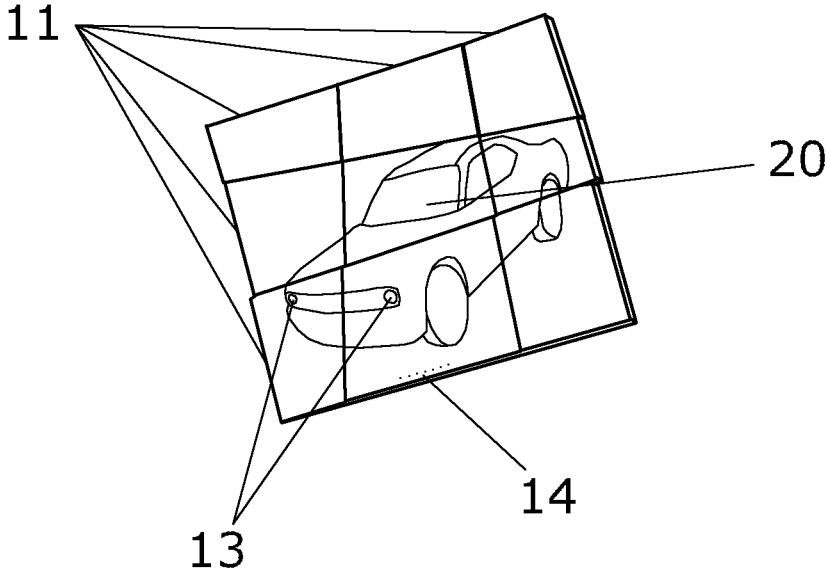


FIG. 2

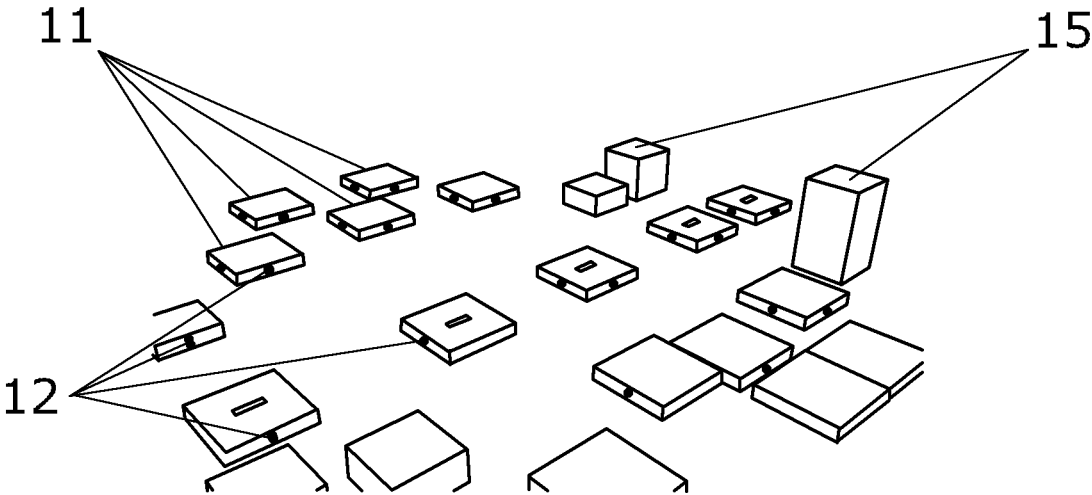


FIG. 3

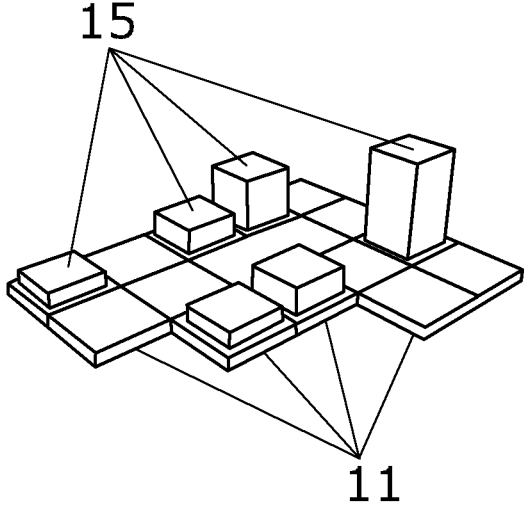


FIG. 4

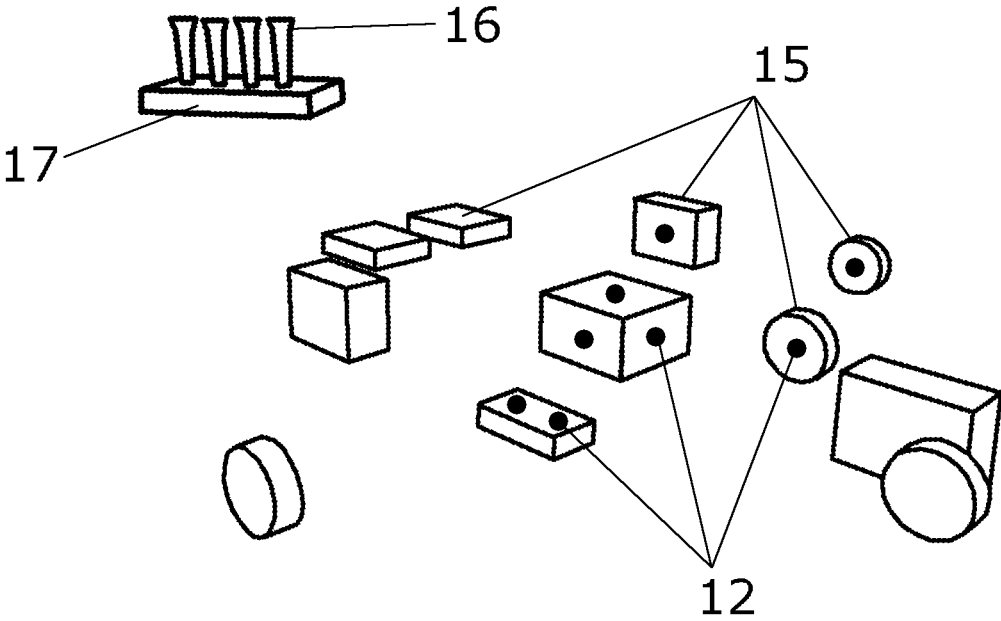


FIG. 5

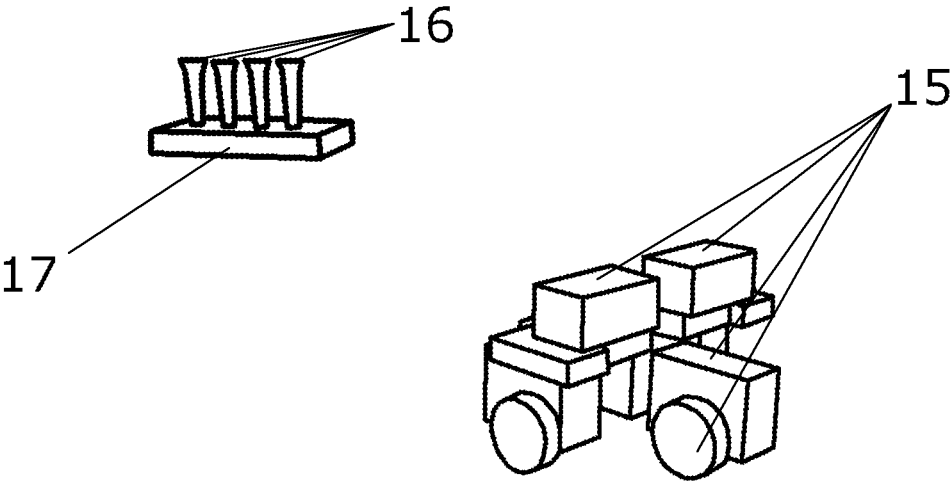


FIG. 6

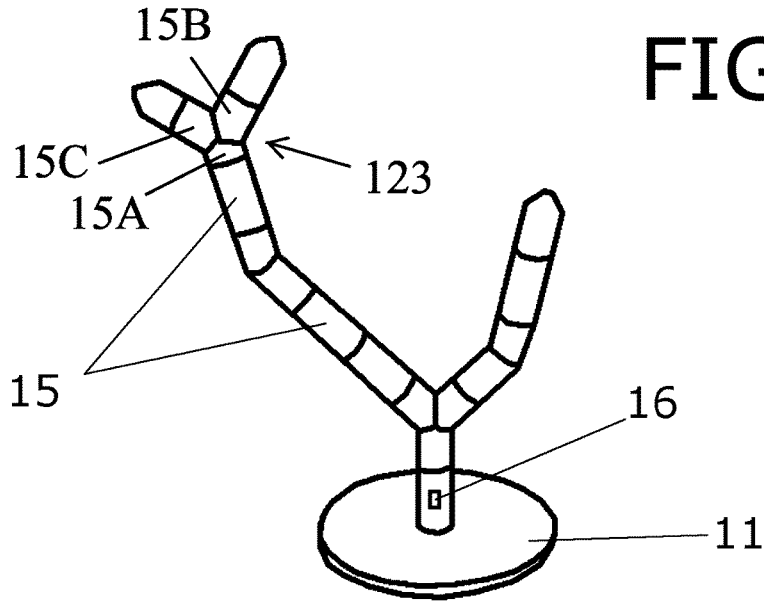
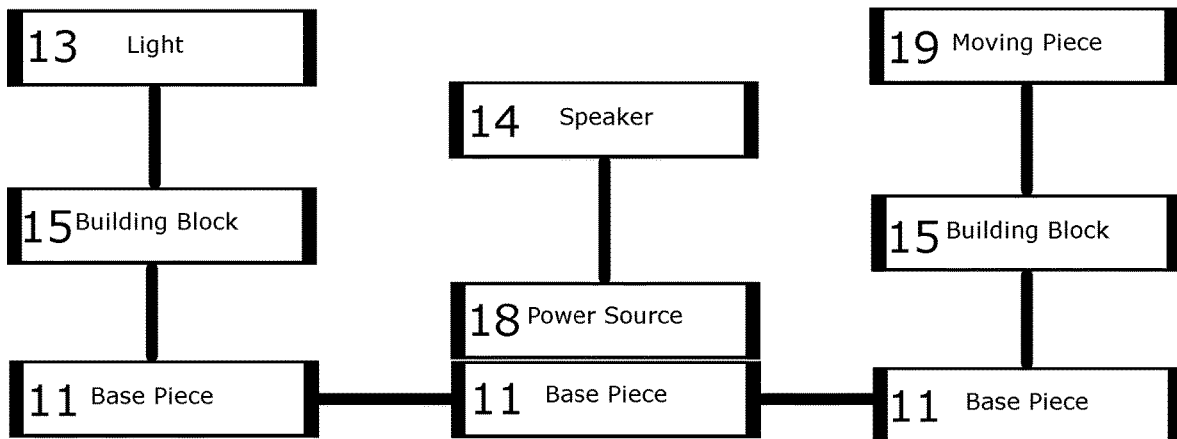


FIG. 7

FIG. 8



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**ELECTRICAL CONSTRUCTION TOY
SYSTEM****CROSS-REFERENCE TO RELATED
APPLICATIONS**

This Application claims the benefit of U.S. patent application Ser. No. 14/636,027 filed Mar. 2, 2015 which claimed the benefit of U.S. Provisional Application No. 61/946,323, filed Feb. 28, 2014, which are hereby incorporated by reference.

**STATEMENT REGARDING FEDERALLY
SPONSORED RESEARCH OR DEVELOPMENT**

Not Applicable

**PARTIES TO A JOINT RESEARCH
AGREEMENT**

Not Applicable

**REFERENCE TO SEQUENCE LISTING, A
TABLE, OR A COMPUTER PROGRAM LISTING
COMPACT DISK APPENDIX**

Not Applicable

BACKGROUND OF THE INVENTION

The invention relates generally to children's toys and games, and in particular to an electrical construction toy system. The enduring popularity of construction toys, such as Legos™ and Lincoln Logs™, attests to the fact that children like to put things together. Other types of toys and games offer a wide variety of electrically powered features such as lights, sounds, and motion. Parents would welcome a new type of toy which combines construction activities with these electrically powered features. An electrical construction toy system, which provides an assortment of colored building blocks with electrically powered features, would resolve these problems.

SUMMARY OF THE INVENTION

Accordingly, the invention is directed to an electrical construction toy system. One embodiment comprises a flat base having a large surface area and a detachable central power block, which includes a battery or DC transformer from which electrical power is provided to building blocks which modularly connect to the power block and each other. The building blocks provide electrical connections from the power block to one or more additional building blocks in varying directions. The connection between blocks does not have to only be electrical, but can be magnetic as well. This will provide the easiest connection, especially in the second exemplary embodiment. The connections conduct electricity and some building blocks also provide powered effects, such as lighting, sound, and motion effects. In addition, there are several switch blocks to operate the lighting, sound, and motion by a wireless remote control.

Additional features and advantages of the invention will be set forth in the description which follows, and will be apparent from the description, or may be learned by practice of the invention. The foregoing general description and the

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following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings are included to provide a further understanding of the invention and are incorporated into and constitute a part of the specification. They illustrate four embodiments of the invention and, together with the description, serve to explain the principles of the invention.

FIG. 1 is a top view of the first exemplary embodiment disassembled, comprising a plurality of building block base pieces 11, means of connecting 12 the building blocks, lights 13, and speakers 14.

FIG. 2 is a top view of the first exemplary embodiment assembled, comprising a plurality of building blocks 11, lights 13, and speakers 14.

FIG. 3 is a perspective view of the second exemplary embodiment disassembled, comprising a plurality of building block base pieces 11, means of connecting 12 the building blocks, and building blocks 15.

FIG. 4 is a perspective view of the second exemplary embodiment assembled, comprising a plurality of building block base pieces 11, means of connecting 12 the building blocks, and building blocks 15.

FIG. 5 is a perspective view of the third exemplary embodiment disassembled, comprising a plurality of building blocks 15, and a remote 17.

FIG. 6 is a perspective view of the third exemplary embodiment assembled, comprising a plurality of building blocks 15, and a remote 17.

FIG. 7 is a perspective view of the fourth exemplary embodiment assembled, comprising a base piece 11, building blocks 15, a switch 16.

FIG. 8 is a system diagram showing the base piece 11 having a power source 18, means of connecting 12, building blocks 15, lights 13, speakers 14, and moving pieces 19.

**DETAILED DESCRIPTION OF THE
INVENTION**

Referring now to the invention in more detail, the invention is directed to an electrical construction toy system. The system comprises a flat base 10 being made of one or more building block base pieces 11. The flat base 10 has a large surface area and a power source 18. The system also provides building blocks 15. The power source 18 may include a battery or DC transformer from which electrical power is provided. Each base piece 11 provides means of connecting 12 to other base pieces 11 or building blocks 15. The means of connecting 12 maybe magnets, clips, or pegs (11 or 15). The means of connecting 12 further provides electrical connections between the base pieces 11 and/or building blocks 15 such that power passes between the base pieces 11 and/or building blocks 15 from the power source 18. Some base pieces 11 and building blocks 15 also provide powered effects, such as lights 13, sound from speakers 14, and motion effects in moving pieces 19. In addition, the system may provide switches 16 or remotes 17 to operate the lights 13, speakers 14, and moving pieces 19.

The various embodiments of the invention are intended to employ the features of the invention in construction play sets with differing appearances. Each of the embodiments is intended for distribution to children of differing age groups, and the age groups of distribution of the various embodiments may overlap or coincide. The building blocks 15

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which provide lights **13** are preferably translucent, with light-emitting diodes (LEDs) mounted internally. The other building blocks **15** and the base pieces **11** are preferably opaque. All of the building blocks **15** and the base pieces **11** are preferably manufactured in bright colors, such as red, yellow, green, and blue.

The first exemplary embodiment provides a construction play set which provides a simple flat or two-dimensional appearance when assembled. The base pieces **11** are preferably square or rectangular, but may be provided in various shapes. The base pieces **11** may provide a specific image **20** or pattern on the top surface such that when all the base pieces **11** are assembled the image **20** is completed, similar to how a puzzle functions. When all the base pieces **11** are assembled in the appropriate way such that the image **20** is completed the means of connecting **12** between the base pieces **11** supply power to each other from the power source **18** by completing a circuit through the base pieces **11**. The completed circuit activates any lights **13**, speakers **14**, or moving pieces **19** which are part of the base pieces **11**.

The second exemplary embodiment is similar to the first exemplary embodiment except that it further provides the appearance of a three-dimensional town, university campus, or other group of buildings when assembled. The flat base **10** is formed by connecting a plurality of base pieces **11**. The power source **18** is preferably provided within one of the plurality of base pieces **11**. The system further provides one or more building blocks **15** which are preferably shaped like buildings. In the second exemplary embodiment, the base pieces provide means of connecting **12** on their side surfaces such that the base pieces **11** connect to form the flat base **10** and complete the circuit from the power source **18**. One or more base pieces **11** further provide means of connecting **12** on their top surfaces such that one or more building blocks **15** can be placed on top of the base pieces **11**. These connections provide power from the power source **18** to the base pieces **11** and building blocks **15**. As in the first exemplary embodiment, the base pieces **11** and building blocks **15** may provide lights **13**, speakers **14**, or moving parts **19** such that when the base pieces **11** or building blocks **15** are connected to the power source (directly or indirectly) the lights **13**, speakers **14**, and moving parts **19** are activated.

The third exemplary embodiment is similar to the first two exemplary embodiments except that it does not provide base pieces **11**. Rather, the third exemplary embodiment provides only building blocks **15** which may come in any shape or size. The building blocks provide means of connecting **12** such that the building blocks may be attached to each other to form different shapes such as a vehicle, building, animal, or any other shape. At least one building block **15** provides a power source **18** which provides power to all the building blocks **15** connected via the means of connecting **12**. As in the previous two embodiments, the building blocks may provide lights **13**, speakers **14**, or moving parts **19** such that the lights **13**, speakers **14**, and moving parts **19** are activated when power is supplied to them. The third exemplary embodiment further provides a remote **17** which provides one or more switches **16**. The switches **16** are configured to wirelessly activate power sources **18** within the building blocks **15**. The remote **17** may provide more than one switch **16** which each activate a different power source **18**. One power source **18** may provide power to lights **13**, while another power source **18** may provide power to moving parts **19**.

The fourth exemplary embodiment provides a construction play set which provides the appearance of a tree when assembled. The base **10** is preferably circular or elliptical

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and made of one or more base pieces **11** providing a power source **18**. The building blocks **15** are preferably cylindrical or conical in shape. The building blocks **15** may connect to the flat base **10** and to each other using the previously discussed means of connecting **12**. These connections form a circuit through which power may pass. As in the previous embodiments, the building blocks **15** may provide lights **13**, speakers **14**, or moving parts **19** which are activated when power is supplied. In FIG. 7, a first building block of conical shape **15A**, a second building block of conical shape **15B** and a third building block of conical shape **15C** are directly connected at a branching location **123** of the tree.

To use the first, second, third, and fourth exemplary embodiments, the user connects the base pieces **11** and building blocks **15** via the connecting means **12**. The power source **18** (located within one or more of the base pieces **11** or building blocks **15**) then provides power to the other base pieces **11** and building blocks **15** as the power passes through the connecting means **12** between each base piece **11** and building block **15**. Any lights **13**, speakers **14**, and moving parts **19** which are a part of any of the base pieces **11** or building blocks **15** are then activated by the power.

The base pieces **11** and the building blocks **15** are preferably manufactured from rigid, durable materials which are easily cleaned, such as wood, plastic, or acrylic polymer. Components, component sizes, and materials listed above are preferable, but artisans will recognize that alternate components and materials could be selected without altering the scope of the invention.

While the foregoing written description of the invention enables one of ordinary skill to make and use what is presently considered to be the best mode thereof, those of ordinary skill in the art will understand and appreciate the existence of variations, combinations, and equivalents of the specific embodiment, method, and examples herein. The invention should, therefore, not be limited by the above described embodiment, method, and examples, but by all embodiments and methods within the scope and spirit of the invention.

I claim:

1. An electrical construction toy system, comprising:
 - one or more base pieces;
 - a power source embedded within at least one of said one or more base pieces;
 - one or more building blocks; and
 - one or more powered effects;
 wherein the electrical construction toy system is characterized by:
 - a disassembled condition in which
 - the one or more base pieces are separated from one another; and
 - the one or more building blocks are separated from one another; and
 - an assembled condition in which
 - the one or more base pieces are connected in a pre-determined order so that a flat base is formed; the one or more building blocks are connected;
 - a subset of the one or more building blocks are connected to a top surface of the flat base; and
 - an electrical connection is provided so that power from the power source activates the one or more powered effects;
 wherein said one or more building blocks are of cylindrical or conical shapes such that when connected the electrical construction toy system is of a shape of a tree with a plurality of branches.

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2. The electrical construction toy system of claim 1, wherein said one or more powered effects are lights, speakers, or moving parts.

3. The electrical construction toy system of claim 1, wherein the one or more base pieces are made of wood and wherein the one or more building blocks are made of wood.

4. An electrical construction toy system, comprising:
one or more base pieces;
a power source embedded within at least one of said one or more base pieces;
one or more building blocks; and
one or more powered effects;

wherein the electrical construction toy system is characterized by:

a disassembled condition in which
the one or more base pieces are separated from one another; and
the one or more building blocks are separated from one another; and

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an assembled condition in which
the one or more base pieces are connected in a pre-determined order so that a flat base is formed; the one or more building blocks are connected; a subset of the one or more building blocks are connected to a top surface of the flat base; and an electrical connection is provided so that power from the power source activates the one or more powered effects;

wherein said one or more building blocks are of cylindrical or conical shapes such that when connected the electrical construction toy system is of a shape of a tree with a plurality of branches; wherein a first building block of conical shape, a second building block of conical shape and a third building block of conical shape are directly connected at a branching location of the tree.

* * * * *