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(54) **ELECTRICAL CONSTRUCTION TOY SYSTEM**

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(57) **ABSTRACT**

An electrical construction toy system is comprised of 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 connection between blocks does not have to only be mechanical, but can be magnetic as well. The building blocks may provide electrical connections from the power block to one or more additional building blocks in varying directions. 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

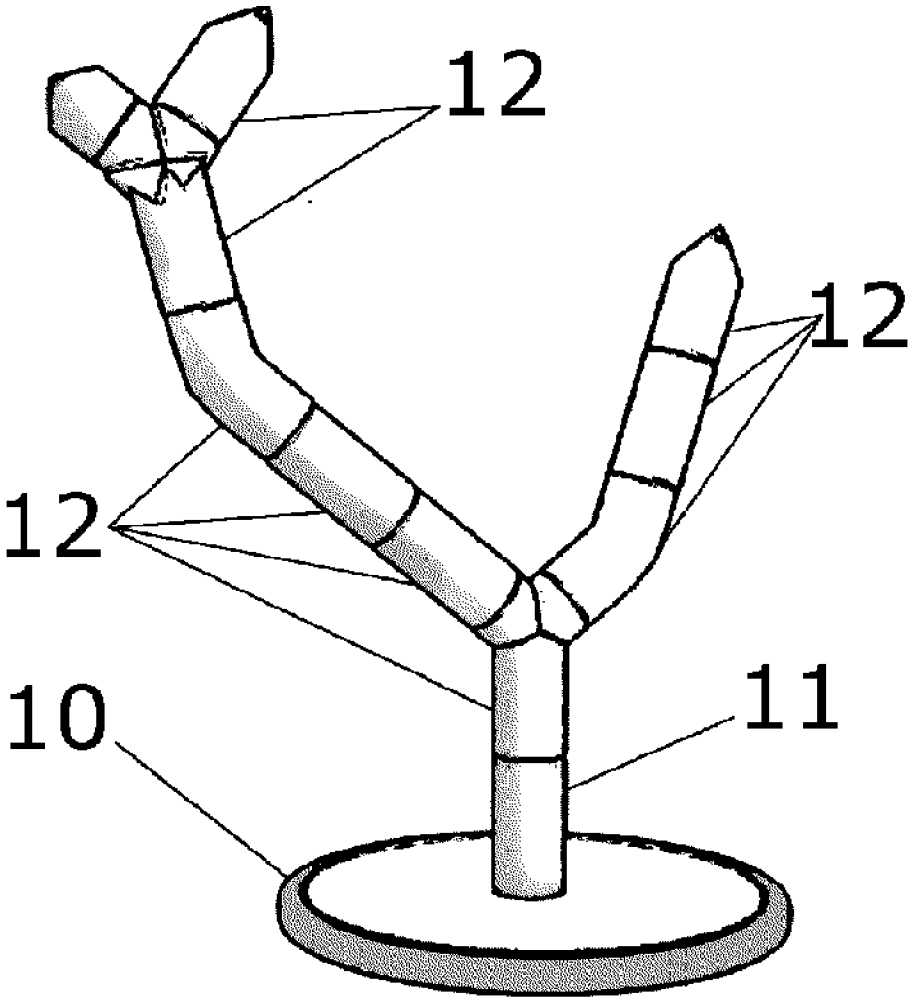


FIG.1

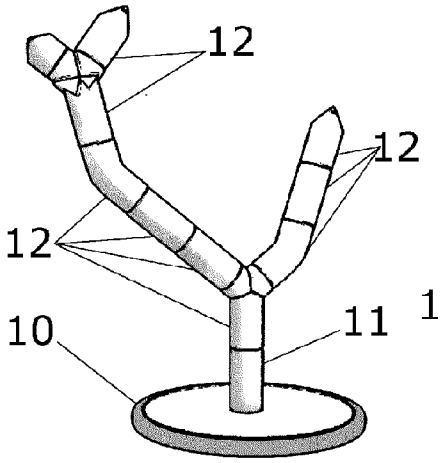
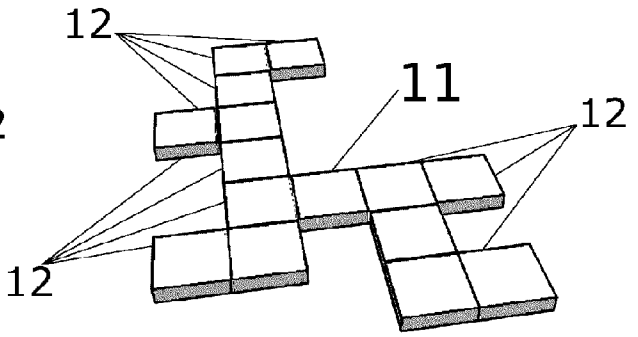


FIG.2



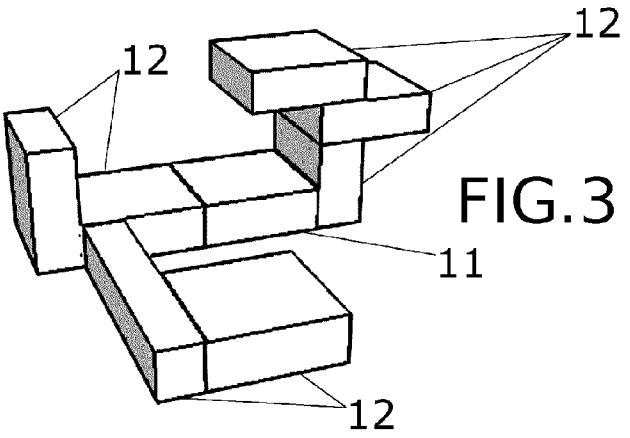
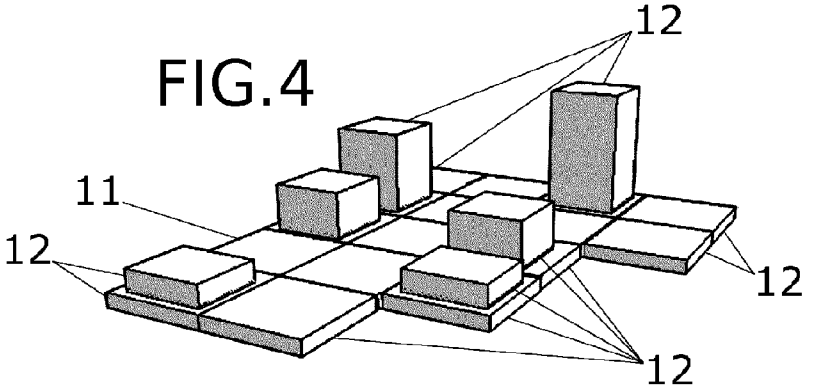


FIG.3

FIG.4



ELECTRICAL CONSTRUCTION TOY SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 61/946,323, filed Feb. 28, 2014, which is hereby incorporated by reference.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not Applicable

PARTIES TO A JOINT RESEARCH AGREEMENT

[0003] Not Applicable

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

[0004] Not Applicable

BACKGROUND OF THE INVENTION

[0005] 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

[0006] Accordingly, the invention is directed to an electrical construction toy system. The system 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 may 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.

[0007] 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 following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] 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.

[0009] FIG. **1** is a front perspective view of the first exemplary embodiment, displaying the base **10**, the power block **11**, and the building blocks **12**.

[0010] FIG. **2** is a top perspective view of the second exemplary embodiment, displaying the power block **11**, and the building blocks **12**.

[0011] FIG. **3** is a top perspective view of the third exemplary embodiment, displaying the power block **11**, and the building blocks **12**.

[0012] FIG. **4** is a front perspective view of the fourth exemplary embodiment, displaying the power block **11**, and the building blocks **12**.

DETAILED DESCRIPTION OF THE INVENTION

[0013] 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** having a large surface area and a detachable central power block **11**, which includes a battery or DC transformer from which electrical power is provided to building blocks **12** which modularly connect to the power block **11** and each other. The building blocks **12** may provide electrical connections from the power block **11** to one or more additional building blocks **12** in varying directions. The connection between blocks does not have to only be electrical, but can be magnetic as well. The connections between blocks may, generally, be of any mechanical type but are preferably not of a card-edge type and are preferably nearly flat on the connecting faces, as shown. In addition to mechanical connections, permanently magnetic elements, separate from or integrated with the electrically conductive elements, may provide connection between smooth surfaces. The connections conduct electricity and some building blocks **12** also provide powered effects, such as lighting, sound, and motion effects. In addition, there are several switch blocks that are configured so as to selectively conduct electricity to operate the lighting, sound, and motion by a wireless remote control.

[0014] 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 **12** which provide lighting effects are preferably translucent, with light-emitting diodes (LEDs) mounted internally. The other building blocks **12** and the power block **11** are preferably opaque. All of the building blocks **12** and the power block **11** are preferably manufactured in bright colors, such as red, yellow, green, and blue. The base **10** is preferably manufactured in a more neutral color, such as gray.

[0015] The first exemplary embodiment provides a construction play set which provides the appearance of a tree when assembled. The base **10** is preferably circular or elliptical. The power block **11** is preferably cylindrical. The building blocks **12** are preferably cylindrical, conical, cylindrical

sections, or conical sections. The building blocks **12** may connect to the power block **11** and to each other vertically.

[0016] The second exemplary embodiment provides a construction play set which provides a simple flat or two-dimensional appearance when assembled. The base **10** is preferably square or rectangular. The power block **11** and the building blocks **12** are preferably uniformly square with a low profile, or alternatively rectangular (in the claims, "rectangular" is understood as including square shapes, as squares are a subset of rectangles). The building blocks **12** may connect to the power block **11** and to each other horizontally.

[0017] The third exemplary embodiment provides a construction play set which provides a three-dimensional appearance when assembled. The base **10** is preferably square or rectangular. The power block **11** and the building blocks **12** are preferably various high-profile square or rectangular shapes, but may include circular, semi-circular, triangular, or other simple geometric shapes. The building blocks **12** may connect to the power block **11** and to each other horizontally or vertically.

[0018] The fourth exemplary embodiment provides a construction play set which provides the appearance of a three-dimensional town, university campus, or other group of buildings when assembled. The base **10** is preferably square or rectangular. The power block **11** and some of the building blocks **12** are preferably square with a low profile, and connect with each other horizontally. Other building blocks **12** are preferably square or rectangular with a high profile, and connect vertically with the power block **11** and the low-profile building blocks **12**.

[0019] In each exemplary embodiment, the power block **11** contains one or more replaceable batteries of a standard type, such as AA-cell batteries. Due to the need for a stable and supportive structure, the first exemplary embodiment must be used with the base **10**. The second, third, and fourth exemplary embodiments may be used with or without the base **10**.

[0020] To use the first, second, third, and fourth exemplary embodiments, the user may place the base **10** on a flat, level surface and place the power block **11** on the base **10**. The user may then connect various building blocks **12** to the power block **11** as desired. As they are connected, the building blocks **12** which provide electrically powered features become activated by the flow of electric power.

[0021] The base **10**, the power block **11**, and the building blocks **12** 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.

[0022] 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:

(a) a flat base;

(b) a central power block;

(c) said central power block being removably affixable to said flat base;

(d) a plurality of blocks;

(e) said plurality of blocks being interconnectable with one another and with said central power block;

(f) said plurality of blocks being interconnectable mechanically or magnetically;

(g) said plurality of blocks and said central power block lacking card edge type connectors;

(h) said plurality of blocks being configured such that electricity is conducted from said central power block through all of said plurality of blocks;

(i) at least one of said plurality of blocks being configured for one of the group of emitting light, emitting sound, actuating motion, and selectively conducting or not conducting electricity.

2. The electrical construction toy system of claim **1** wherein at least one of those of said plurality of blocks that are configured for selectively conducting electricity is controlled remotely and wirelessly.

3. The electrical construction toy system of claim **1** wherein said plurality of blocks are magnetically interconnectable.

4. The electrical construction toy system of claim **1** wherein said central power block is cylindrical in shape, and wherein each of said plurality of blocks is of a shape selected from, the group of cylinders, cones, cylindrical sections, or conical sections.

5. The electrical construction toy system of claim **1** wherein each of said plurality of blocks is rectangular in shape, has a low profile, and is interconnectable only on its low profile edges.

6. The electrical construction toy system of claim **5** wherein each of said plurality of blocks is uniformly square.

7. The electrical construction toy system of claim **1** wherein each of said plurality of blocks is of a geometric shape, at least one of said plurality of blocks is rectangular in shape, and at least one of said plurality of blocks is interconnectable both vertically and horizontally.

8. The electrical construction toy system of claim **1** wherein at least one of said plurality of blocks is square, low profile, and interconnectable both horizontally and vertically; and wherein at least one of said plurality of blocks has a high profile and is interconnectable only vertically.

9. The electrical construction toy system of claim **2** wherein said plurality of blocks are magnetically interconnectable.

10. The electrical construction toy system of claim **4** wherein said plurality of blocks are magnetically interconnectable.

11. The electrical construction toy system of claim **5** wherein said plurality of blocks are magnetically interconnectable.

12. The electrical construction toy system of claim **6** wherein said plurality of blocks are magnetically interconnectable.

13. The electrical construction toy system of claim **7** wherein said plurality of blocks are magnetically interconnectable.

14. The electrical construction toy system of claim **8** wherein said plurality of blocks are magnetically interconnectable.

15. The electrical construction toy system of claim **4** wherein at least one of those of said plurality of blocks that are configured for selectively conducting electricity is controlled remotely and wirelessly.

16. The electrical construction toy system of claim **10** wherein at least one of those of said plurality of blocks that are configured for selectively conducting electricity is controlled remotely and wirelessly.

17. The electrical construction toy system of claim **11** wherein at least one of those of said plurality of blocks that are configured for selectively conducting electricity is controlled remotely and wirelessly.

18. The electrical construction toy system of claim **12** wherein at least one of those of said plurality of blocks that are configured for selectively conducting electricity is controlled remotely and wirelessly.

19. The electrical construction toy system of claim **13** wherein at least one of those of said plurality of blocks that are configured for selectively conducting electricity is controlled remotely and wirelessly.

20. The electrical construction toy system of claim **14** wherein at least one of those of said plurality of blocks that are configured for selectively conducting electricity is controlled remotely and wirelessly.

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