Jeide, Matthew
Guzman 2025-2026
EDD, Period 1
9/11/2025

PLTW | Engineering

1.3 Patent Summary Sheet #1

Instructions

In your engineering notebook or on this form, document each patent you find related to the major project problem you have identified. Make sure to include your work below in MLA format and cite sources in APA. All summaries must be at least a paragraph (5 or more sentences). Copy this file three times to document each patent on a separate document.

Source (APA format):

Jichi, H. (2016). Themed building toy (U.S. Patent Application No. US20170144081A1). U.S. Patent and Trademark Office.
https://patents.google.com/patent/US20170144081A1

Patent Number: US20170144081A1

Patent Summary: A construction system with interconnecting members, rotator head device, twist-lock connectors, various themed “daisy” and “wedge” components. The application explicitly states its goal: “to encourage interest of young girls in the fields of science, technology, and engineering (‘STEM’).”

Patent Critique Summary: This design explicitly targets girls’ interest in STEM through thematic aesthetics. Its strength is addressing gender inclusivity directly, but a weakness is that “pinkification” of toys can reinforce stereotypes rather than dismantle them.

Images/sketches:

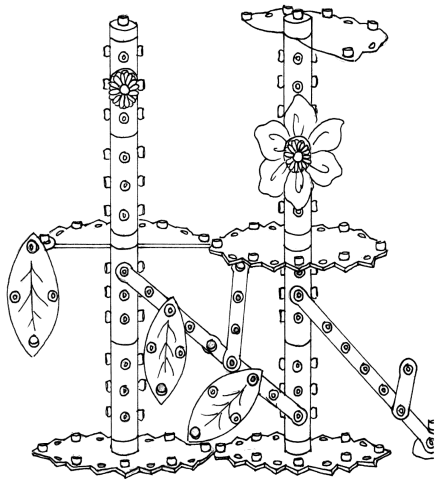


FIG. 2

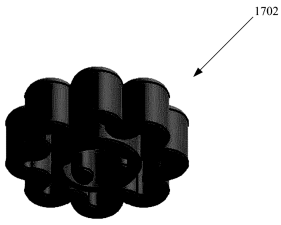


FIG. 17A

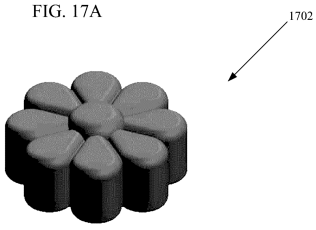


FIG. 17B

1.3 Patent Summary Sheet #2

Instructions

In your engineering notebook or on this form, document each patent you find related to the major project problem you have identified. Make sure to include your work below in MLA format and cite sources in APA. All summaries must be at least a paragraph (5 or more sentences). Copy this file three times to document each patent on a separate document.

Source (APA format):

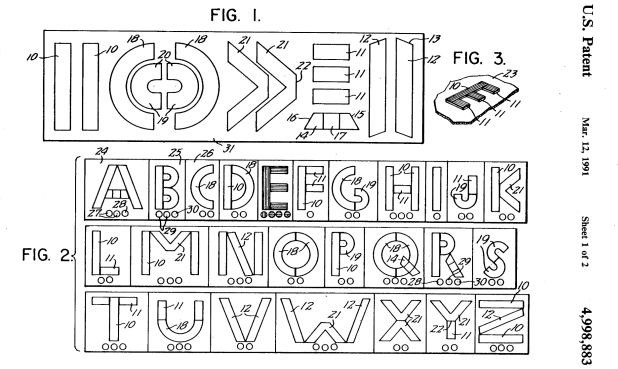
Brinkley, C. (1989). Educational toy for teaching construction and recognition of predetermined forms (U.S. Patent No. US4998883A). U.S. Patent and Trademark Office. https://patents.google.com/patent/US4998883A

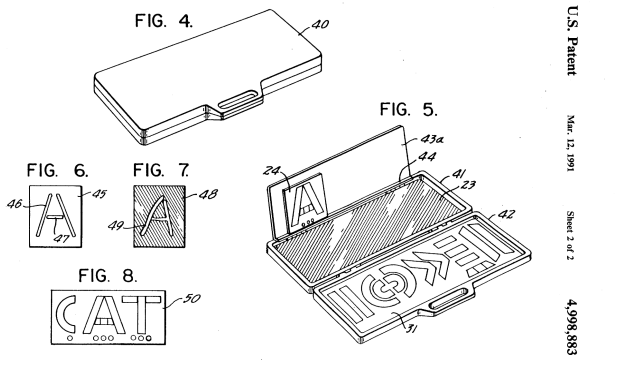
Patent Number: US4998883A

Patent Summary: A kit of elemental components of different shapes/colors that can be arranged to form letters or other predetermined forms. Includes illustration cards, dot codes showing how many pieces of each color are needed, possibly magnetic board.

Patent Critique Summary: This toy encourages early cognitive and spatial skills (letters, shapes, colors), which are foundational for STEM learning. However, it remains somewhat narrow in scope, focusing more on rote pattern recognition than higher-order problem-solving or engineering principles.

Images/sketches:





1.3 Patent Summary Sheet #3

Instructions

In your engineering notebook or on this form, document each patent you find related to the major project problem you have identified. Make sure to include your work below in MLA format and cite sources in APA. All summaries must be at least a paragraph (5 or more sentences). Copy this file three times to document each patent on a separate document.

Source (APA format):

Deng, S. (2019). Multi-dimensional building block toy component and set (U.S. Patent No. US-11273386-B2). U.S. Patent and Trademark Office.
https://patents.google.com/patent/US11273386B2

Patent Number: US-11273386-B2

Patent Summary: A building toy where blocks are multi-dimensional; they can be built freely on front and back sides. Enhances flexibility in building.

Patent Critique Summary: By allowing multi-directional building, this patent expands possibilities for design complexity, which aligns well with STEM engineering goals. However, the toy lacks a clear educational framework strategy; without guided learning activities, it risks being positioned as just another construction toy rather than an intentional STEM learning tool.

Images/sketches:

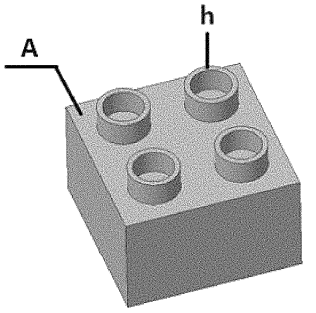


FIG. 1

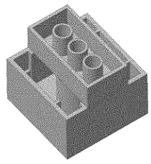


FIG. 6

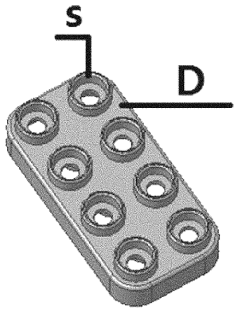


FIG. 9

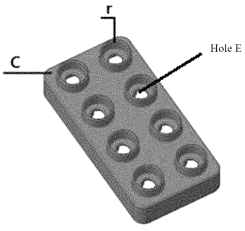


FIG. 7

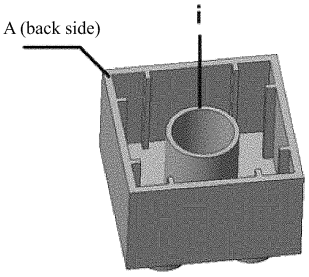


FIG. 2

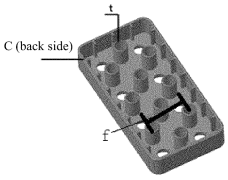


FIG. 8

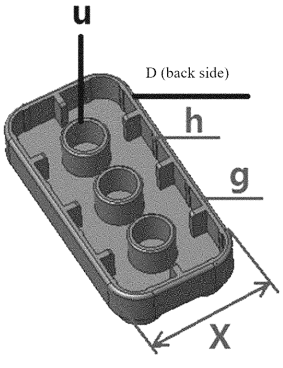


FIG. 10