

# Journal of the Patent and Trademark Resource Center Association

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Volume 30

Article 3

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5-15-2020

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### Recommended Citation

Borrego, Paulina (2020) "Quirky Patent Coloring Books: An outreach project focused on changing the patent culture one patent coloring book at a time," *Journal of the Patent and Trademark Resource Center Association*: Vol. 30 , Article 3.

Available at: <https://tigerprints.clemson.edu/jptrca/vol30/iss1/3>

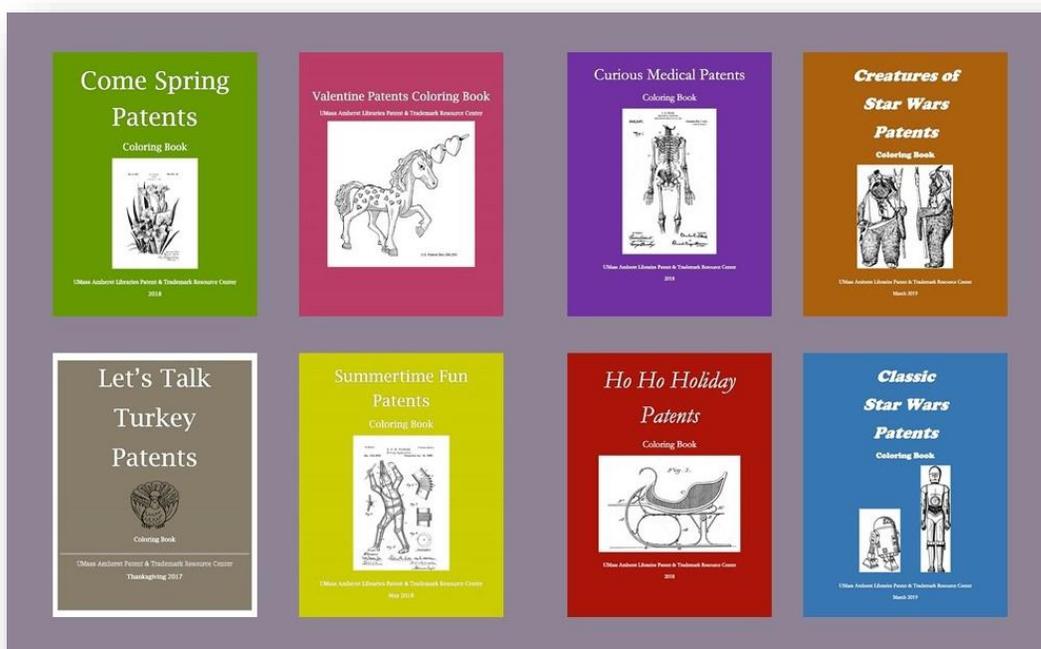
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## Quirky Patent Coloring Books: An outreach project focused on changing the patent culture one patent coloring book at a time

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### Introduction

The Patent and Trademark Resource Center (PTRC) has a presence in over 80 locations in the United States and represents a unique body of information. Despite this, the majority of the public has little contact with the United States Patent & Trademark Office as it grants U.S. patents and registers trademarks. The general public might know of specific inventions in history, such as the light bulb, the telephone, or the iPad, but not realize how often in

their daily lives they encounter something that has been patented. To most, patents today are associated with big business and big money. Long gone is the independent inventor tinkering to create a mechanical gizmo in a garage laboratory, according to a Harvard Business Review article.<sup>1</sup> This change in patenting history, from independent inventors to corporate inventor-employees, became the new standard in the 1940s. It seems that patents have become more sophisticated, longer in length, and more technical overall, distancing them even further from the public view and understanding.

<sup>1</sup> Akcigit, U., Grigsby, J., & Nicholas, T. (2017, -03-06T14:00:04Z). When America was most innovative, and why. Harvard Business Review, Retrieved from

<https://hbr.org/2017/03/when-america-was-most-innovative-and-why>

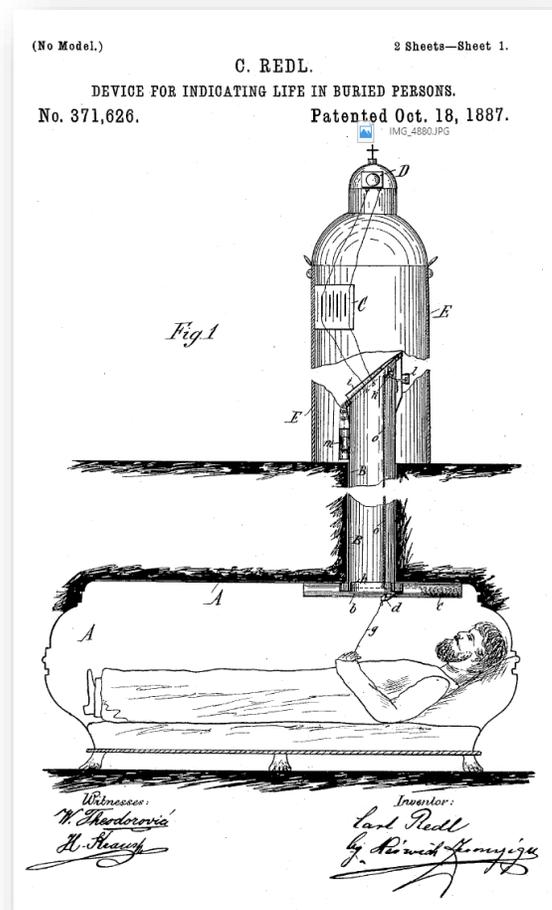
My goal for this project was to bring patents back into public view and engage "regular people" in the patent conversation. To find a way to bridge the gap between the very technical patents of today, usually prepared by corporate employees, and those single inventors of today. Not everyone might be able to understand the technology-rich patents of today. Still, they can marvel at quirky patent images, giving them something to relate to, re-establish long lost connections, and possibly dream of a patent of their own. Patents are more than great ideas, they are a story of people, creativity, and hope for a better future.

## How it started

In February of 2016, the National Archives released a coloring book filled with sixteen images from vintage patents (<https://archivesaotus.files.wordpress.com/2016/02/patentscoloringbook.pdf>). The coloring book was well received and renewed interest in patent drawings from those young and old. These images were illustrations of the inventiveness and beauty contained in patents and patent drawings. A bulletin board display outside the entrance to the Science and Engineering Library was created to highlight this collection. Printed copies of the coloring book were placed on the bulletin board ledge for passers-by to take and flew off the shelves. The demand was steady.

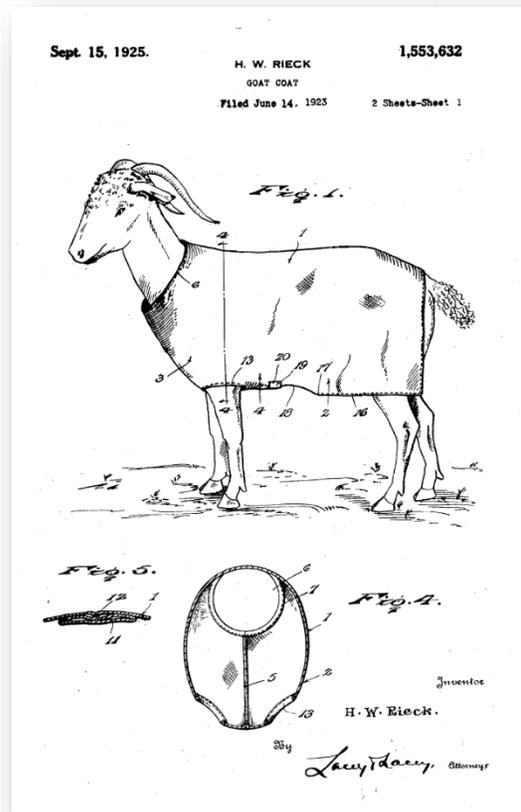
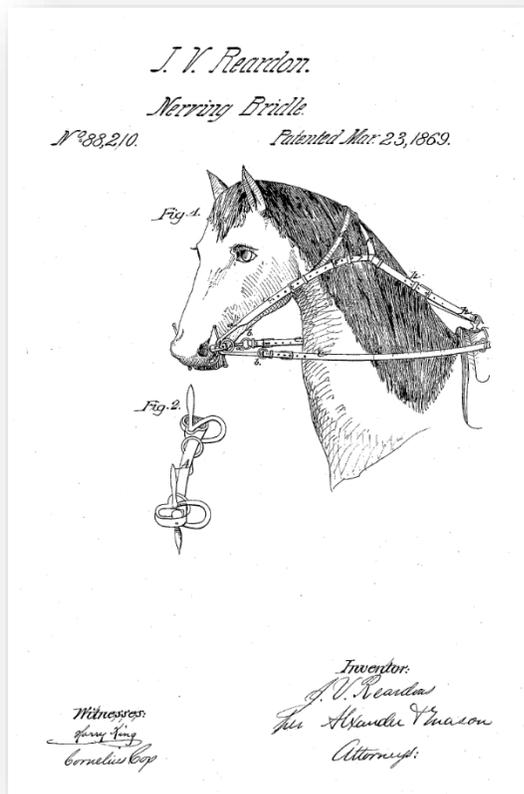
The National Archives patents display soon expanded to include another similar bulletin board display of Chemistry and Polymer Science faculty patents from the University of Massachusetts Amherst. Both bulletin board displays had printed copies made available for the taking. The two displays had me thinking about how to bridge the gap from one type of patent collection to the other, and how I might help.

At the same time, or maybe because of it, I was helping several community patrons with their historical patent searching and tried to make a patent coloring book of my own. In helping the community patrons, I had been coming across some wonderful "historic" patent images. Halloween was approaching, and I had just learned of patent U.S. 371,626 "Device for indicating life in buried persons." This strange patent piqued my curiosity to find other ghoulish patents for a Spooky Patent Coloring Book.



This coloring book project began by making a list of items one might find at Halloween, looking up the historic United States Patent Classification Code (U.S.P.C.) of each item and using the United States Patent and Trademark Office (U.S.P.T.O.) Database to find suitable patents. After a time-consuming search, given the *clicking through-and-back*, many patents came to light that contained unique images. After downloading the entire patent, I then used Adobe Acrobat Pro to extract the desired image page.

In an effort to keep the project manageable to both produce and distribute, only around a dozen patent images, in date order, were chosen. To accompany the group, I made a list of patents selected, displaying the patent number, title of the invention, and the patent issue date. I also decided to use this as an educational opportunity for people curious about patents and wrote a brief introductory paragraph to accompany the patent coloring images.



Since then, I have made a collection of around a dozen patent coloring books based on various themes ranging from Halloween to *Star Wars* ([https://works.bepress.com/paulina\\_borrego/](https://works.bepress.com/paulina_borrego/)). Keeping a printed collection in the PTRC kiosk in my library attracts patrons to the area. Alongside the coloring books are some remaining crayons from Finals Fun Week for those who want to color. When I attend any event that involves the PTRC, I bring a small selection of the coloring books with me to hand out and solicit interest.

## What is quirky?

Most definitions of the term “quirky” include the terms peculiar, unexpected, or unconventional. At the heart of the definitions is some sense of being outside a set of predefined boundaries.

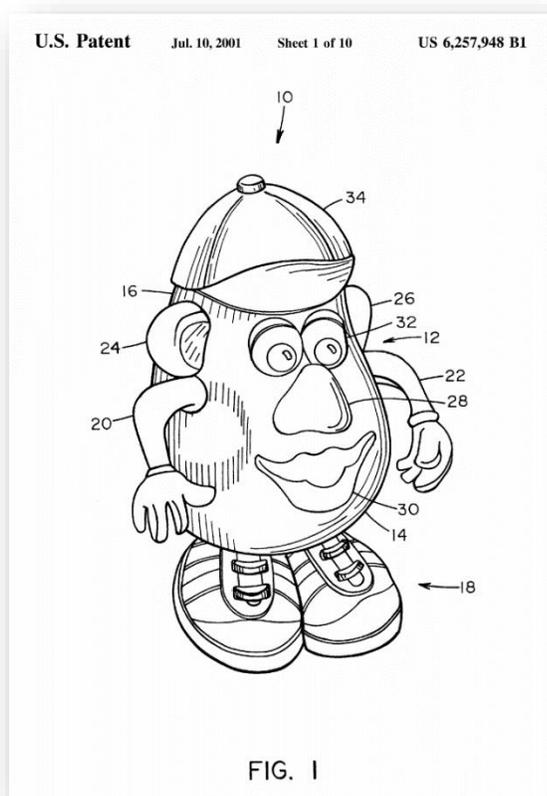
For patent searching, quirky may be defined as an image out of line with other images from the same classification code. The quirky image may depict a distinctive feature, an alternate view, or sometimes something totally different. It may be that the example

image within a specific class is different from all the others, such as this image of a goat found under the classification 54/79.1 Harness for working animal/blanket or garment, where the vast majority of the other images are of horses or dogs. (U.S. 1,553,632 “Goat Coat”)

Historic patent images are more often open to “quirkiness” due to their hand-drawn nature and, therefore, interpretation by the artist. Embellishments may be included that add some quirky characteristics such as eyelashes on a horse. (U.S. 88,210 “Nerving Bridle”)

Of course, some images are quirky just due to the subject matter of the invention. Mr. Potato Head (U.S. Trademark Reg. No. 0606072), simply by definition, is quirky. (U.S. 6,257,948 “Talking toy with attachable encoded appendages”)

All this makes a patent searcher wonder if quirkiness can be defined and, in turn, if a computer program could be written to discover quirky images. Could a computer use machine language to search a body of patent images within a class, and learn to flag images that do not conform to the assigned definition?



I surmise this type of machine learning is used today by credit card companies to monitor purchases, then flag items out of some set learned parameters. Could this same type of machine learning be used to find quirky patents? I hope that Artificial Intelligence will one day explore this question.

## Making a Quirky Patent Coloring Book: A how-to

### 1. Selecting a theme

With over 10 million U.S. patents, there is almost an unlimited number of patent coloring book themes from which to choose. Since historic patents often have more quirkiness due to the hand-drawn images, topics that include both older and newer patents may be best for this project. Themes can revolve around a particular type of invention or classification. Themes also may be drawn from Holidays, a historical time, or any themed collection one could imagine.

### 2. Gathering patent images

Many different patent search tools are available, and an essential element is to find a search tool you feel comfortable using. A varied collection of search tools may be best, relying on the USPTO database for U.S.P.C. classification searches, and the Google Patents website ([patents.google.com](https://patents.google.com)) for natural language searching. The goal will be to create a body of patents with unique and stimulating images to illustrate your chosen theme.

Using Google Patents for patent images can be useful, especially now with the added time-saving feature of the patent image showcased alongside the patent title and brief description. Hovering over the patent image magnifies the image, an improvement over the former iteration that required clicking through to view the patent image for inspection. Another useful feature may be the  $\Sigma$  Sigma feature, which identifies and displays patents possessing similarities.

Other tools include searching for patent blogs that address a collection of patents with a particular focus that includes the patent listing. Also, another simple trick can be to use Google to search for a theme such as "bicycle patents" and display the image results. A quick scan might find patent images that have been part of some other output on the web.

### 3. Creating the finished project

Once all the patents for a particular theme are collected, Adobe Acrobat Pro will extract the selected patent image page from the full patent. Patent images are combined into one PDF document.

Clean-up of the image can be done using the Adobe Acrobat editor function, removing erroneous marks from machine scanning. If the patent image is altered in any way, it should be noted for the viewer.

Once the collection of patent images is complete, a coloring book title and image is chosen for the cover. I organize the patent images in chronological order, regardless of the type of patent or patent application. It is helpful to include the list of patents in the collection and write a general introduction to teach those new to patents. When printing out the patent coloring book, it is best to print the patent images single-sided for optimum coloring.

## Creating a quirky patent coloring book as a group exercise

Creating a patent coloring book as a group exercise can be a great way to teach patent searching skills, expose students to different patent searching systems, and motivate students to engage with patents. This past year I executed this collaborative patent coloring book exercise with two different groups. At the New England Science Boot Camp for Librarians in June, I worked with boot camp attendees to gather patents of their choice around the themes of science, boots, and camping (Science Boot Camp). After a short introduction to patents and patent searching, I then had them find appropriate patents. The patents found and selected were uploaded to a shared patent folder for each patent theme. Attendees noted which image they preferred for the collaborative coloring book. I collected the patent images, made a list of patents contained in the patent coloring book, and acknowledged each librarian contributor.

In the fall of 2019, the same type of exercise was employed with an economics class as they learned about the role of patents in innovation. After introducing the topic of patents and patent searching, I asked each student to explore a patent from a favorite childhood toy. This time students emailed me the PDF of the patent denoting which image they preferred, combined the images, and created the coloring book. The students granted permission to their acknowledgment in the listing of patents prior to printing of the new coloring book.

## Millennium Falcon: Buyer beware

Patent posters inevitably arise while patent searching on the internet, especially if one does a Google image search for a particular theme of patents. Many internet sites use public domain patent images as a commodity and sell poster-sized copies of blueprints and designs. While some might assume these images are authentic due to the poster having a patent number and issue date, this is not always the case.

Researching patent images for a *Star Wars* Patents Coloring book, I came across a patent poster for the Millennium Falcon, a fictional spacecraft from the movie series *Star Wars*. I had spent a great deal of time patent searching through the various *Star Wars* patents by inventor, assignee, and classification, so I

was confused as to how I could have missed this Millennium Falcon patent. Curious, I looked up the patent number printed on the patent poster. I was surprised to see the result. It was not the Millennium Falcon but a completely different patent. Any cognizant patent searcher would then turn to the issue date printed on the poster and search the patent database results for the supplied date of issue. This tactic also failed. I went so far as to write to numerous patent image poster producers to inquire about the "authenticity" of the patent image, patent number, and issue date. In one case, I was informed they had produced the Millennium Falcon patent poster design layout for a customer who wanted any patent number or issue date on the patent poster.

## Closing thoughts

As PTRC librarians, we often do presentations and workshops on patents and patent searching. Why not use this opportunity to make a quirky patent coloring book? All it takes is a little forethought to turn a patent searching workshop into a collaborative patent coloring book exercise. Attendees choose a theme, then use this theme when patent searching to identify a collection of patent images. Of course, this exercise lends itself more to the historical patent searches and those patents that have interesting drawings.

Patent coloring books may be quirky, but they are a great way to draw attention to patents, invite people into the conversation, and broaden the awareness of patents. While the majority of the public may not encounter patents per se, our everyday lives are influenced by the inventions of yesterday and today. A simple patent coloring book invites people into the patent conversation using quirky images, leading them to explore the world of patents and our cultural history of inventions.