



University of Pennsylvania  
**ScholarlyCommons**

---

Unique at Penn

The Kislak Center for Special Collections, Rare  
Books and Manuscripts

---

2-5-2013

## A Rocket Cat? Early Modern Explosives Treatises at Penn

Arthur Mitchell Fraas

*University of Pennsylvania*, [fraas@upenn.edu](mailto:fraas@upenn.edu)

Follow this and additional works at: <https://repository.upenn.edu/uniqueatpenn>

 Part of the [History Commons](#)

---

Fraas, Arthur Mitchell, "A Rocket Cat? Early Modern Explosives Treatises at Penn" (2013). *Unique at Penn*.  
6.

<https://repository.upenn.edu/uniqueatpenn/6>

Fraas, Mitch. "A Rocket Cat? Early Modern Explosives Treatises at Penn" Unique at Penn (Posted 5 February 2013):  
<http://uniqueatpenn.wordpress.com/2013/02/05/a-rocket-cat-early-modern-explosives-treatises-at-penn/>

This paper is posted at ScholarlyCommons. <https://repository.upenn.edu/uniqueatpenn/6>  
For more information, please contact [repository@pobox.upenn.edu](mailto:repository@pobox.upenn.edu).

---

## A Rocket Cat? Early Modern Explosives Treatises at Penn

### Abstract

Contextual essay on an early modern explosives and warfare treatise held at Penn and the origin of the so-called "rocket cat"

### Keywords

Rocket Cat, Manuscripts, Artillery, Book History

### Disciplines

History

### Comments

Fraas, Mitch. "A Rocket Cat? Early Modern Explosives Treatises at Penn" Unique at Penn (Posted 5 February 2013):

<http://uniqueatpenn.wordpress.com/2013/02/05/a-rocket-cat-early-modern-explosives-treatises-at-penn/>

Unique  
at penn

PENN Libraries  
blogs

Nothing can more effectually contribute  
to the Cultivation & Improvement of a Country, the  
Wisdom, Riches, & Strength, Virtue and Piety, the  
Welfare & Happiness of a People, than a proper Edu-  
cation of Youth, by forming their Manners, imbuing

05  
Tuesday  
FEB 2013

## A Rocket Cat? Early Modern Explosives Treatises at Penn

POSTED BY MITCH FRAAS IN POSTS

≈ 19 COMMENTS

I was puzzled when a friend asked me a few weeks ago if I'd seen the "rocket cat" illustrated in a Penn manuscript which had been featured on the book blog [BibliOdyssey](#) in November. The image, from what was described as a 1584 "Feuer Buech" manuscript, appeared to show a cat and a bird propelled by rockets towards a castle.

### Tags

LJS 442, Smith Folio  
TP272 .A7 1625, UPenn  
Ms. Codex 109

#### WELCOME

Welcome to Unique at Penn, part of the family of University of Pennsylvania Libraries blogs. Every week this space will feature descriptions and contextualization of items from the collections of the University of Pennsylvania Libraries. The site focuses on those materials held by Penn which are in some sense "unique" - drawn from both our special and circulating collections, whether a one-of-a-kind medieval manuscript or a twentieth-century popular novel with generations of student notes penciled inside.

#### RECENT POSTS

- A Founder's Book
- Reading Chaucer through Dryden's Eyes
- Fabulously Illustrated and Easy to Carry
- Always check the endpapers
- Indian diaries at Penn

#### ARCHIVES

- April 2014
- February 2014
- January 2014
- December 2013
- November 2013
- October 2013
- September 2013

Follow

Follow "Unique at Penn"

Get every new post delivered to your inbox.

Join 60 other followers

Powered by WordPress.com

- December 2012
- October 2012



— UPenn Ms. Codex 109, f137r.

I enthusiastically retweeted the image and began trying to figure out just what was going on in the manuscript [1]. Since then, the “rocket cat” has gone somewhat viral, appearing in [the Atlantic](#), [BoingBoing](#), and elsewhere. Given the illustration’s new-found fame I thought it would be worthwhile to provide a bit of context.

The illustration above comes from [UPenn Ms. Codex 109](#) which came to the library as part of the [Edgar Fahs Smith history of chemistry collection](#). This manuscript is one of [several at Penn](#) dealing with the early history of gunpowder, artillery, and explosives. Based on the title I assumed it was one of the many manuscript copies of the famous c.1420 *Feuerwerkbuch* which provides instructions to artillery masters on how to construct weapons, aim guns, and manufacture various explosives [2]. So where does the explosive cat fit in? I looked through both the printed German text of the *Feuerwerkbuch* and the English translation in vain – “explosive fire balls” and “fire arrows” are covered in the text but no fire cats. Along the way I also discovered that another of Penn’s manuscripts had an almost identical illustration:

- September 2012
- August 2012
- July 2012
- June 2012
- May 2012

□ AUTHORS

[adminuatpa](#)

[Alexander Devine](#)

[Dianne Mitchell](#)

[Jacqueline Burek](#)

[Regan Kladstrup](#)

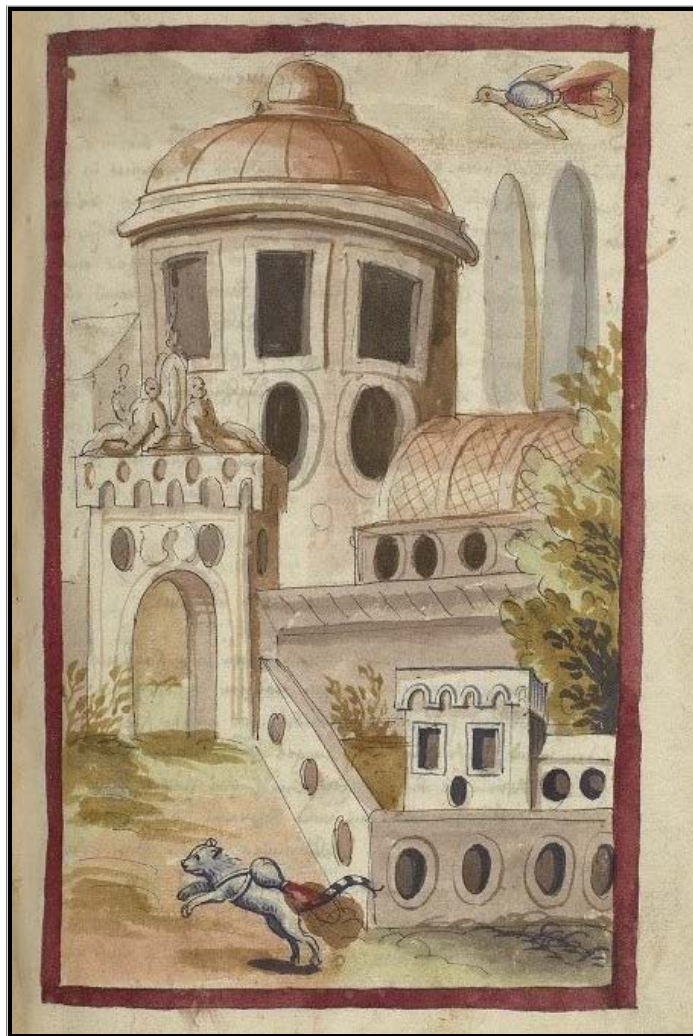
[Marissa Nicosia](#)

[Mitch Fraas](#)

[Michael P. Williams](#)

[Richard Griscom](#)

[Nancy Shawcross](#)



— LJS 442:Book of instruction for a cannon master, f.60r

In this case, a c.1590 “Book of instruction for a cannon master.” Clearly these fiery animals were more than just the fancy of one manuscript illustrator. Further, the text accompanying the illustration in both Codex 109 and LJS 442 did not match anything I could trace in editions of the Feuerwerkbuch. Fortunately, in the torrent of tweets about the rocket cat, one came in [citing](#) yet another example of the illustration, this time from a manuscript at the Universitätsbibliothek Heidelberg.

## Pushkar Sohoni

### LINKS

- Penn's Apps on Tap
- Penn's Rare Books Cataloging Blog
- Penn Libraries Catalog (New Franklin)
- Penn's Rare Book and Manuscript Library
- DigitalPenn
- Penn in Hand
- Schoenberg Database of Manuscripts

### LATEST FROM PENNRARE

- Leonard B. Meyer papers, 1935-2008 May 6, 2014
- The Joseph G. Rosengarten collection April 30, 2014
- Old Friends Reunited April 24, 2014

### SUBSCRIBE TO UNIQUE AT PENN





– Universitätsbibliothek Heidelberg, Cod. Pal. germ. 128, f.74r

Heidelberg has cataloged their manuscript as the “Buch von den probierten Künsten” of Franz Helm. Though drawing on the Feuerwerkbuch, this text dates from a century later (c. 1530) and includes large new sections on siege warfare and different types of explosive weapons. In fact, the Penn collection includes an identified copy of Helm’s treatise, though unillustrated (LJS 254). Thanks to a recent critical edition of the work I was able to confirm that the text of both LJS 442 and Codex 109 were indeed from the *Buch von den probierten Künsten* [3].

Franz Helm of Cologne was an artillery master in the service of various German princes and likely served in campaigns against Turkish forces during the mid-16th century. His treatise circulated widely in manuscript but was not published until 1625. Remarkably, that print edition of his work (a copy of which is [here at Penn](#)) also includes an image of the cat and bird:



– *Armamentarium principale oder Kriegsmunition und Artillerie-Buch* (Frankfurt a.M., 1625), p.48

So what does Helm actually say about these explosive animals? Are there rockets involved at all? In the text accompanying the images is a section entitled “To set fire to a castle or city which you can’t get at otherwise” [4]. This section details how to use doves and cats loaded with flammable devices

to set fire to enemy positions. On cats the text paints a grisly picture of attaching lit sacks of incendiaries onto the animals to have them return to their homes and set fire to them. In my awkward translation:

“Create a small sack like a fire-arrow ... if you would like to get at a town or castle, seek to obtain a cat from that place. And bind the sack to the back of the cat, ignite it, let it glow well and thereafter let the cat go, so it runs to the nearest castle or town, and out of fear it thinks to hide itself where it ends up in barn hay or straw it will be ignited.” [5]

There’s no way to know if Helm himself ever employed this method of pyrotechnic warfare but strangely enough the idea of using cats and birds in just this way appears in historical texts from many disparate regions of the world. In a magisterial article on the subject, the Finnish scholar Pentti Aalto cites examples of incendiary-bearing cats and birds from a 3rd c. BCE Sanskrit text, the Russian Primary Chronicle, early Scandinavian sources, and an early modern history of Genghis Khan [6].

Though not actually depicting ‘rockets’ of any kind, these images help demonstrate the enormous demand for manuals on gunnery and explosives in the early modern period as well as the robust world of 16th c. manuscript copying and the persistence of illustrations and manuscript forms into print.

[UPDATE: Alexis Madrigal does a great job summarizing this piece over [at the Atlantic!](#) Thanks!]

[UPDATE - March 2014: See additional coverage at [Atlas Obscura](#), the [Associated Press](#) and now a wonderful essay from Ben Breen at [the Appendix.](#)]

----

[1] For a storified account of these tweets see <http://storify.com/MitchFraas/cat-with-jetpack>

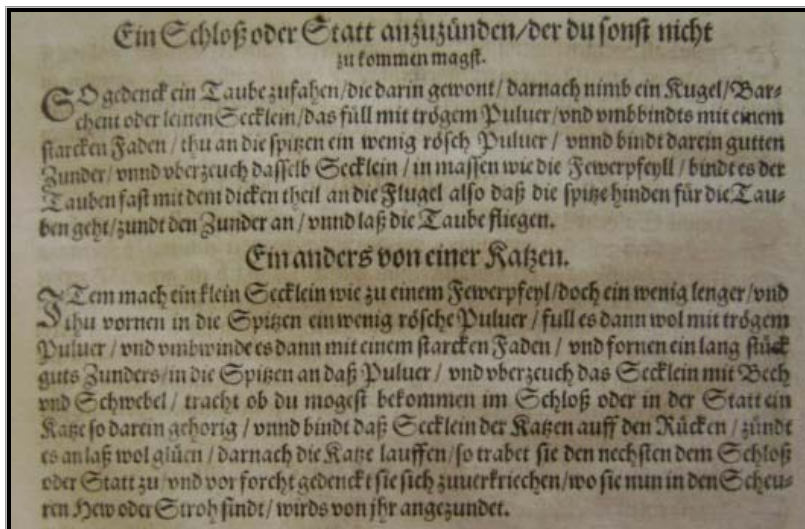
[2] For a facsimile of the first printed edition of the Feuerwerkbuch (Augsburg, 1529) along with a transcription in modern German see [Hassenstein, \*Das Feuerwerkbuch von 1420\*, \(Munich, 1941\)](#). For an English translation of the manuscript text of the Feuerwerkbuch with notes see Gerald W. Kramer and Klaus Leibnitz, “The Firework Book: Gunpowder in Medieval Germany,” *The Journal of the Arms & Armour Society* 17.1 (March 2001), p. 1-88.

[3] [Rainer Lang, \*Franz Helm und sein “Buch von den probierten Künsten\* \(Wiesbaden, 2001\)](#).

[4] In the early modern German text: “Ein Schloß, oder stadt anzünden der du sonst nicht zu kommen magst.”

[5] Many thanks to Brigitte Burris for her help with the text – all errors are mine of course! The Heidelberg manuscript (the most legible) reads: “Mach ein

klein secklein wie zu einem fewer pfeyl...tracht ob du mogest Bekhomen im schloss oder statt, ein katzen so darein gehörig, unnd bind das secklein der katzen auff den Rucke, zunde es an lass wol gluen, unnd darnach die katzen Lauffen, So tracht sie dennegsten, dem schloss oder statt zw, und vor forcht gedenckt sie sich zuuerfriechn, wo sie in scheweren hew oder stroe findt, wurtt es von ir angezundet." The printed text from the 1625 edition (p.49) is pictured below:



[6] Pentii Aalto, "Kautilya on Siegecraft," *Annales Academiae Scientiarum Fennicae* (Series B) 223 (1983), pp. 11-21. The extract from the Russian Primary Chronicle describing the actions of Olga of Kiev (c.945 CE) is particularly striking:

"Olga requested three pigeons and three sparrows from each household. Upon their receipt, her men attached rags dipped in sulphur to the feet of each bird. When the birds returned to their nests, they lit the city on fire and the Derevlans perished in their homes. Olga's vengeance was now complete." *The Russian Primary chronicle : Laurentian text*, (Mediaeval Academy of America, 1953), p.81.

Twitter
  Facebook
 [SHARE THIS:](#)

Loading...

**RELATED**

**Poems from UPenn Ms. Codex 1552: Before and After Manuscript**  
In "Posts"

**The Records of the Asylum for Orphan Girls (Part I)**  
In "Posts"

**Always check the endpapers**  
In "Posts"



**About Mitch Fraas**

Mitch Fraas is the Scholar in Residence at the Kislak Center for Special Collections, Rare Books and Manuscripts at the University of Pennsylvania Libraries. He is also



the interim director of the Penn digital humanities forum. At Penn, Mitch works on a variety of projects cutting across general and special collections, with a special focus on digital humanities. He holds doctoral and master's degrees in history from Duke University and earned his bachelor's degree at Boston College. His doctoral dissertation examined the legal culture of British India in the 17th and 18th centuries, arguing for the existence of a unified early modern British imperial legal culture whether in Philadelphia, Bombay, or London.

[View all posts by Mitch Fraas »](#)

[◀ Previous post](#)

[Next post ▶](#)

# 19

## THOUGHTS ON "A ROCKET CAT? EARLY MODERN EXPLOSIVES TREATISES AT PENN"

Pingback: [Bind the Sack to the Back of the Cat « Gerry Canavan](#)



**jadesandwich** *said:*

February 5, 2013 at 11:40 pm

It's Samson all over again. Except, you know, with cats and birds and stuff.

[REPLY](#)

Pingback: [Orgy Mansions and Rocket Cats » blog.jenphalian.com](#)



**wendylynnclark** *said:*

February 7, 2013 at 6:15 pm

I learned about this from the book *Greek Fire, Poison Arrows, and Scorpion Bombs* by Adrienne Meyer. Interesting stuff!

[REPLY](#)



**Shannon** *said:*

February 7, 2013 at 7:06 pm

So is that where SNL got the idea? <http://www.nbc.com/saturday-night-live/video/action-cats/n10236/>

[REPLY](#)

Pingback: [Ancient Manuscripts Go Social | U Penn Social Book](#)



**Mary Gu** *said:*

February 19, 2013 at 3:20 pm

Reblogged this on [What exit are we supposed to take?](#) and commented:  
Not actually relevant to GIS, but amusing nonetheless!

[REPLY](#)



**Ted Mielczarek (@TedMielczarek)** *said:*

February 20, 2013 at 4:45 pm

Interesting, a similar concept was prototyped by the US Military to use against Japan, attaching bombs to bats:

[http://en.wikipedia.org/wiki/Bat\\_bomb](http://en.wikipedia.org/wiki/Bat_bomb)

Funny how ideas can keep cropping up!

**REPLY**



Heather Wolfe *said:*

February 22, 2013 at 3:22 pm

Thought you'd be interested in our "rocket" cat and bird at the Folger Shakespeare Library: <http://luna.folger.edu/luna/servlet/s/t876v2>. We clearly need to get to work on improving our catalog record! Thank you!

**REPLY**



Mitch Fraas *said:*

February 22, 2013 at 3:54 pm

Thanks Heather – that's the most elegant one yet!

**REPLY**



midgardarts *said:*

March 6, 2013 at 4:41 pm

Reblogged this on [Pen, Book, Sword](#) and commented:

I don't endorse the militarization of cats but I note that said cats don't seem to upset with the circumstances. Perhaps this records a brief and terrifying moment of military ascendancy amongst European felines in the late 16th century, now largely lost to history.

**REPLY**



Museum Plantin-Moretus, Antwerp *said:*

March 9, 2013 at 3:29 pm

We discovered a 1536-1538 version of this manuscript in our collection as well. The drawing is not quite as elegant, though, but the text is similar.

We made a post about it on our Facebook-page, and naturally we also pointed to this blog, where we got the information first.

See:

<http://www.facebook.com/Museum.Plantin.Moretus.Prentenkabinet#!/photo.php?fbid=548570595164176>

**REPLY**

Pingback: [Carnavalesque #93 Pre-Modern History with Added Cats | The Renaissance Mathematicus](#)



Angie *said:*

May 29, 2013 at 4:44 pm

Just discovered this blog and so far this is one of my favorite posts. Really well written and so interesting! (Terribly inhumane, of course.)

**REPLY**



Ceri the Duck *said:*

March 5, 2014 at 3:43 pm

Possibly the most influential psychologist of the 20th Century had a very similar idea, codenamed 'Project Pigeon'.

<http://www.military-history.org/articles/pigeon-guided-missiles.htm>

**REPLY**



**Mitch Fraas** said:

March 6, 2014 at 4:50 pm

Many thanks to all those who have commented or contributed. Special thanks to Stephen Haw who pointed me to an 11th c. Chinese manual with fire birds and [oxen](#). Also H. Stiles who cites the 11th c. [Saga of Harald Hardrade](#) and the use of fire birds in Sicily.

**REPLY**



**nickpelling** said:

March 11, 2014 at 9:19 pm

I'm surprised nobody has yet mentioned the rocket-powered rabbit on a skateboard on folio 37r of Giovanni da Fontana's (1420) "Bellicorum Instrumentorum Liber". There's a lo-res scan of it at the bottom of this web-page I put up a few years ago: <http://www.ciphermysteries.com/2008/12/06/review-of-le-macchine-cifrate-di-giovanni-fontana>

I would have thought that is more likely than anything else so far noted here to be the direct antecedent of the rocket cat meme.

**REPLY**



**Mitch Fraas** said:

March 11, 2014 at 9:30 pm

Thank you so much for that reference Nick. I can't say I'd seen the juxtaposition of fire bird and fire rabbit before! For those who want to check out a high-res image of the page Nick mentions see [http://daten.digitale-sammlungen.de/~db/0001/bsb00013084/image\\_78](http://daten.digitale-sammlungen.de/~db/0001/bsb00013084/image_78)

**REPLY**



**Nick Girard** said:

March 23, 2014 at 12:40 am

Back from an hour of reading the preview on this engaging military history of the Mongol's and associated tribes.

[http://books.google.com/books?id=ePqHOJs0YU0C&pg=PA1&lpg=PA1&dq=onan+river&source=bl&ots=ApOz8-o-J7&sig=5rZ4KX5gL7DqK2rwu8AnPepFwpc&hl=en&sa=X&ei=VBsuU\\_2JEJfeoASdr4HoCA&ved=0CFwQ6AEwBQ#v=onepage&q=cats&f=false](http://books.google.com/books?id=ePqHOJs0YU0C&pg=PA1&lpg=PA1&dq=onan+river&source=bl&ots=ApOz8-o-J7&sig=5rZ4KX5gL7DqK2rwu8AnPepFwpc&hl=en&sa=X&ei=VBsuU_2JEJfeoASdr4HoCA&ved=0CFwQ6AEwBQ#v=onepage&q=cats&f=false)

Here's some measure of a source for Genghis Khan's use of the strategy.

**REPLY**

**LEAVE A REPLY**

Enter your comment here...

*The conclusions and views presented on posts within "Unique at Penn" reflect those of their writers and do not represent the official position of the University of Pennsylvania or the University of Pennsylvania Libraries.*

[Blog at WordPress.com.](#) Customized Chateau Theme.