

An Investigation of Seventeenth Century English Bookbinding Tools in Holme's *Academy of Armory*: or, How a Fear of Going to the Doctor, a Love of Sushi, and a Chance Encounter Led to the Rediscovery of the Only Known Images of 17th Century English Bookbinding Tools; with, a Consideration of 17th — 19th Century Reproduction European and American Folding Sticks, &c., &c.

Jeffrey S. Peachey

The Guild of Book Workers Standards of Excellence in Hand Bookbinding Seminar, 9 October 2021

OVERVIEW

- 35 Slides

A. How to approach bookbinding history?

B. Who was Randle Holme?

What is *The Academy of Armory*?

C. Explication of six tools in *The Academy*:

- Folder
- Beating hammer and stone
- Needle
- Sewing frame
- Press
- Plough

D. Demonstration of folding-sticks

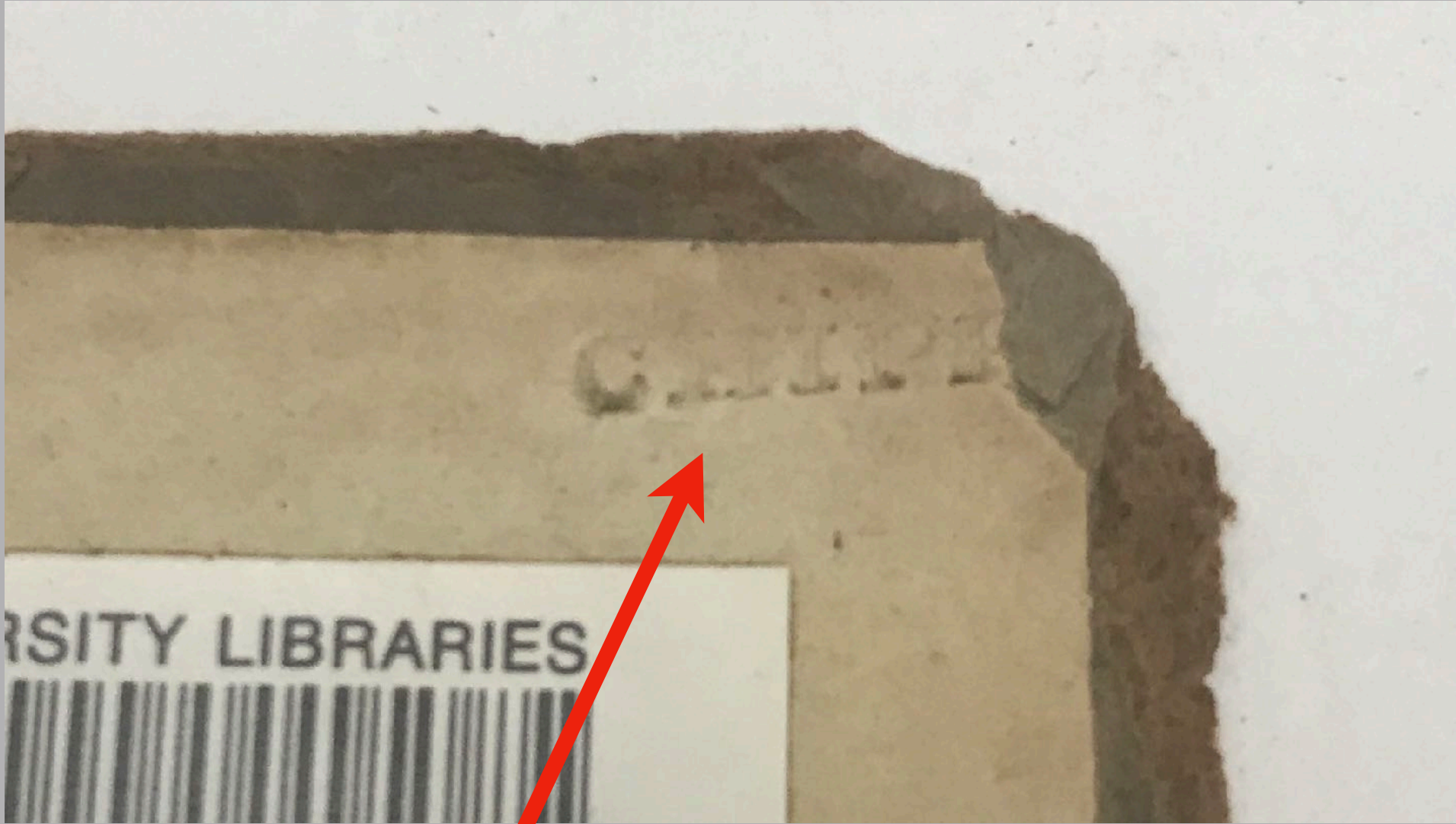
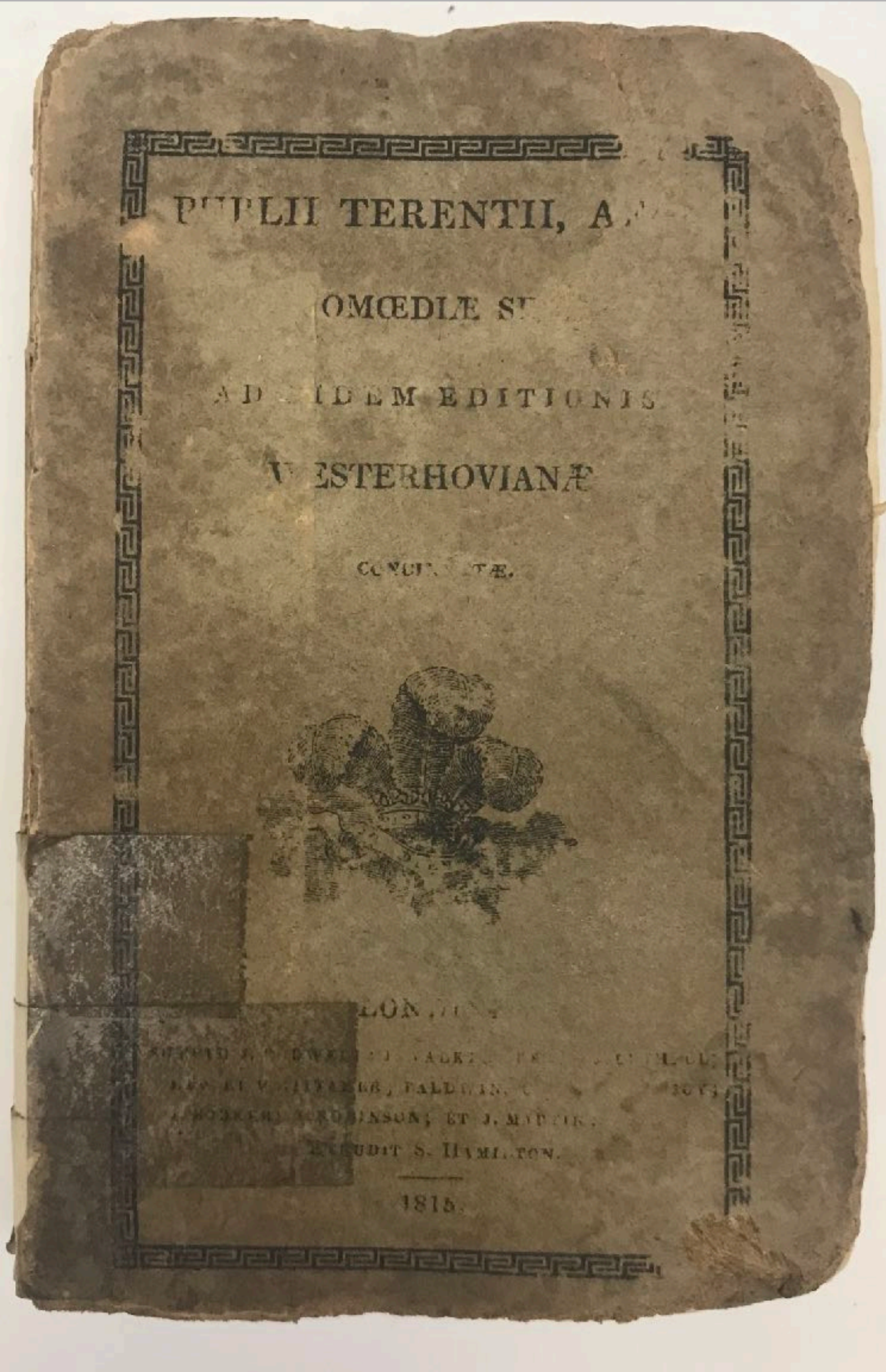
E. Demonstration of a hand exercise



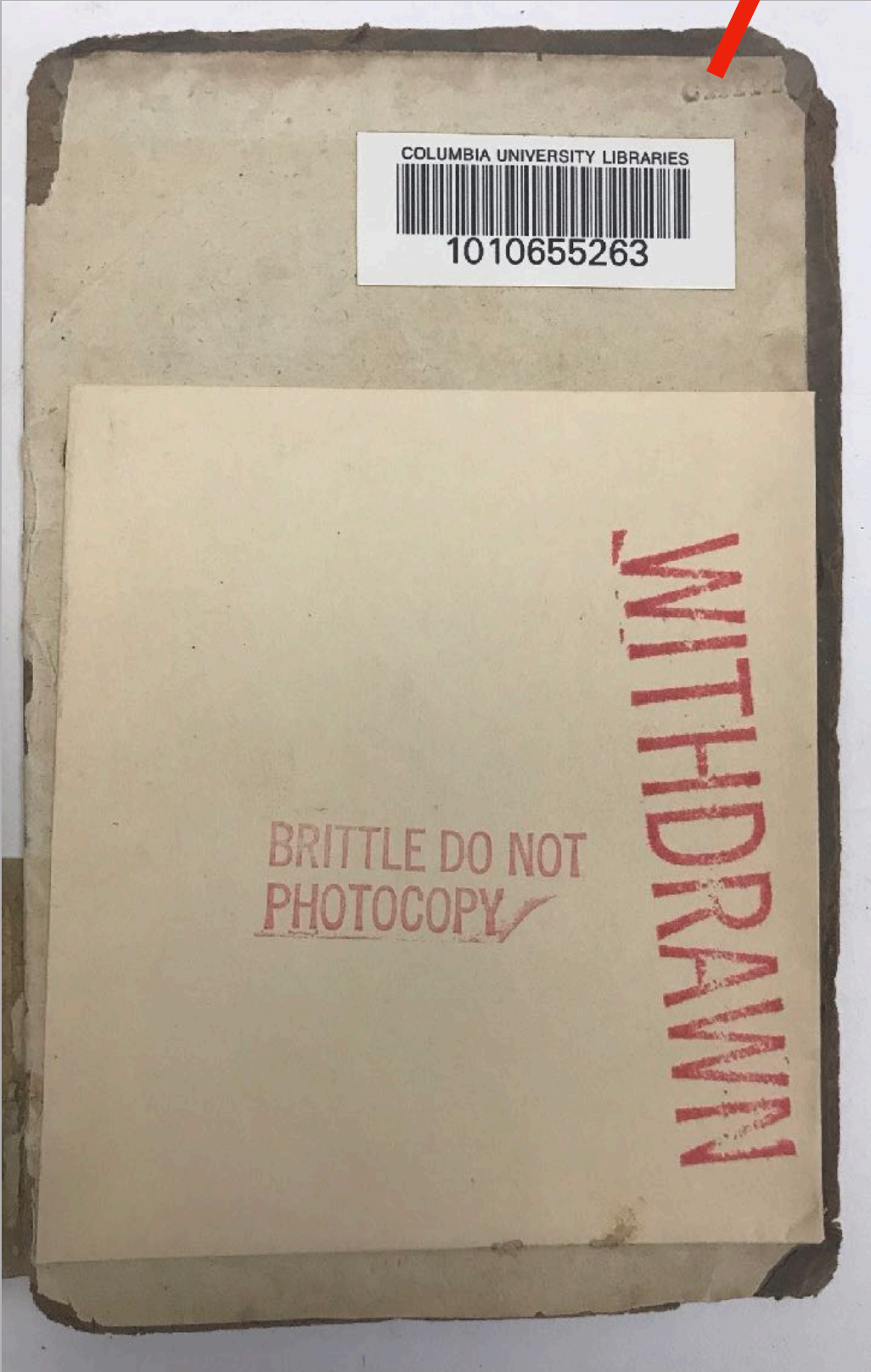
The Works of the Learned Sr. Thomas Brown, London, 1686

APPROACHES TO BOOKBINDING HISTORY

1. Examine the books themselves



*Publii Terentii, Afri, Comœdiæ
Sex, Ad Fidem Editionis,
Londini, 1815.*

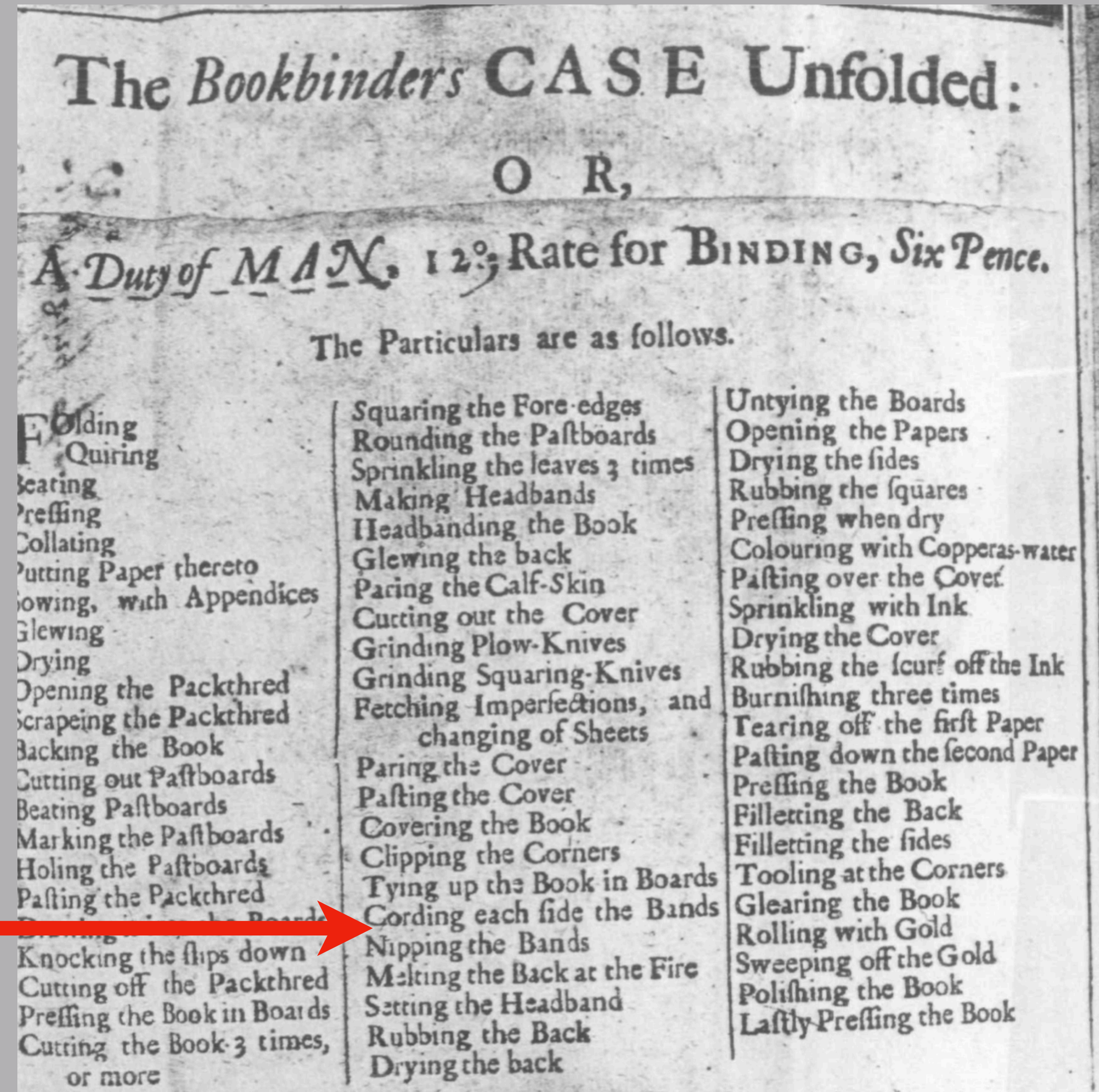


APPROACHES TO BOOKBINDING HISTORY

1. Examine the books themselves
2. Evaluate written contemporary accounts: catalogs, manuals, trade cards

"They then cord the book, or bind it firmly between two boards with a kind of whip-cord ... in the operation the work man arms his hands with leather ... and uses a pair of pincers to bring the thread nearer each band."

- Chamber's *Cyclopedia*, 1728



The Bookbinders Case Unfolded, ca. 1684 - 1695

APPROACHES TO BOOKBINDING HISTORY

1. Examine the books themselves
2. Evaluate written contemporary accounts: catalogs, manuals, trade cards
3. Consider pictorial representations

1.

2.



The Book of English Trades and Library of the Useful Arts. With Eighty-Six Wood-cuts. London: Printed for C. & J. Rivington, 1827.

APPROACHES TO BOOKBINDING HISTORY

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4. Use archaeological findings: ie. parts of books
5. **Make historical models**

These 5 aspects were first proposed by Eike Dürrfeld.

Eike Barbara Dürrfeld "Terra Incognita: Toward a Historiography of Book Fastenings and Book Furniture." *Book History*, vol. 3 (2000): 305-313.

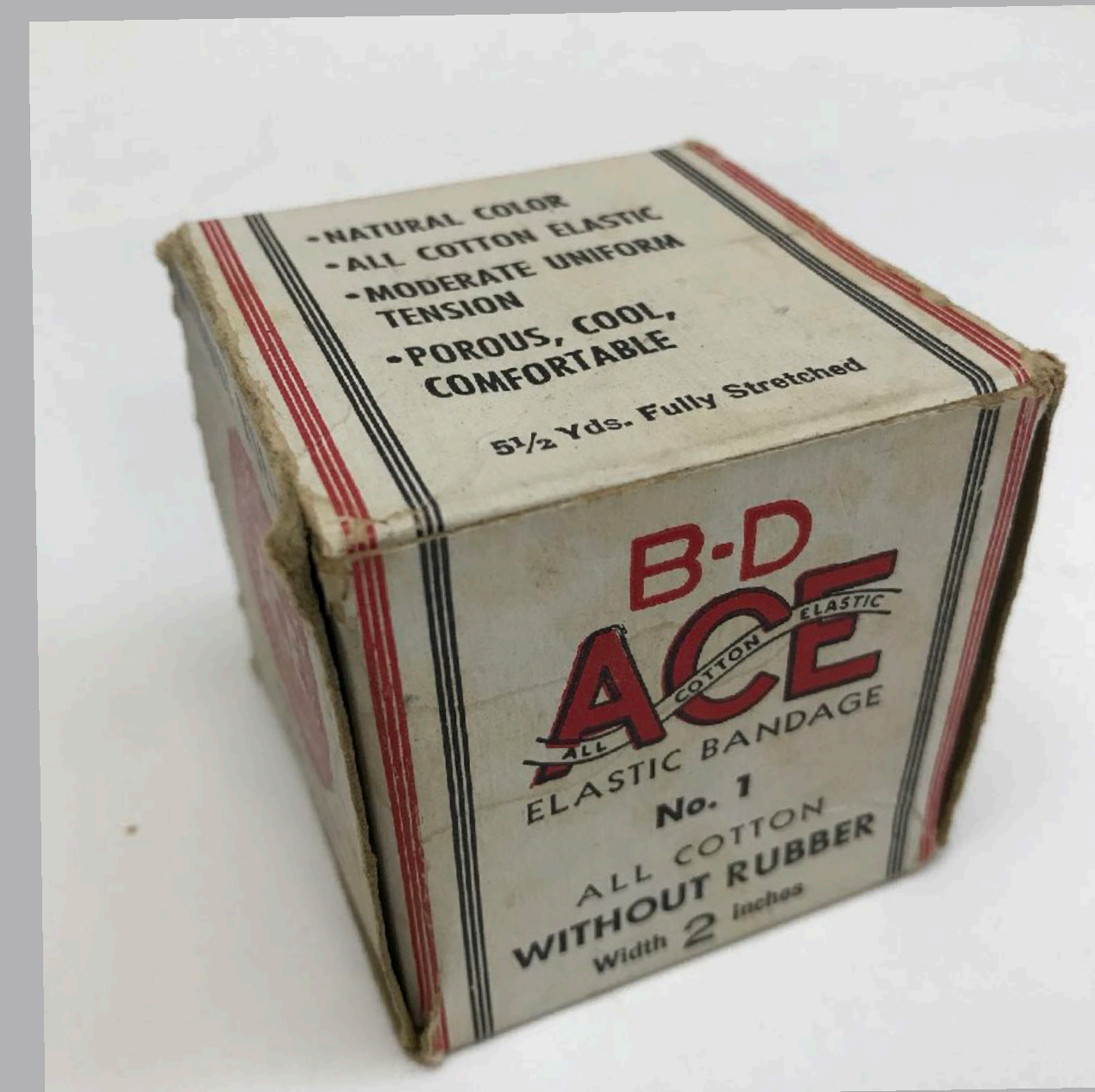


APPROACHES TO BOOKBINDING HISTORY

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I will add three more:

6. Interpret packaging of materials

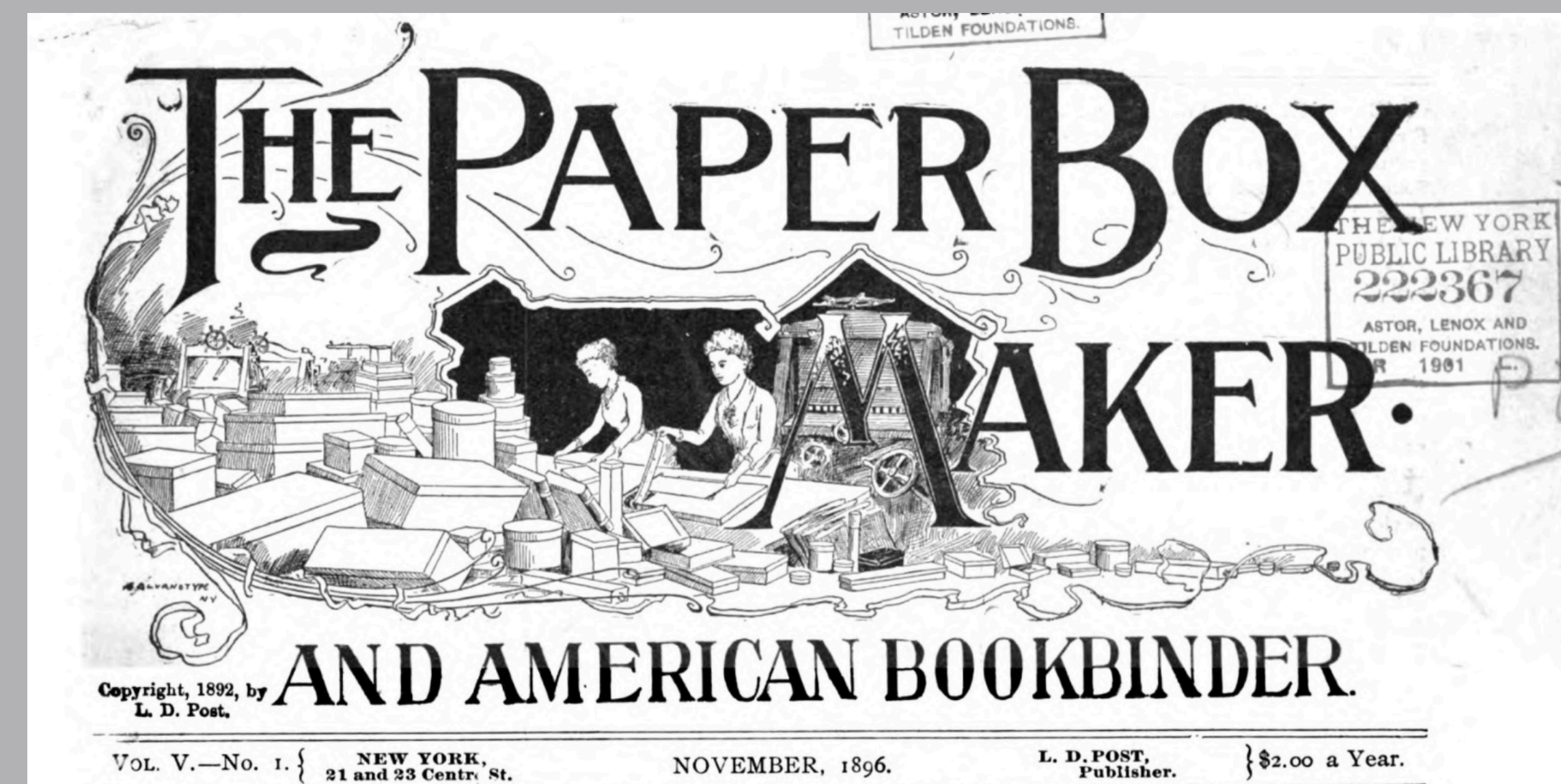


APPROACHES TO BOOKBINDING HISTORY

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7. Look at related trades ie. leatherworking, trunk manufacture, paper box making



Card Cutters' and Fine Paper Box Makers' Shears

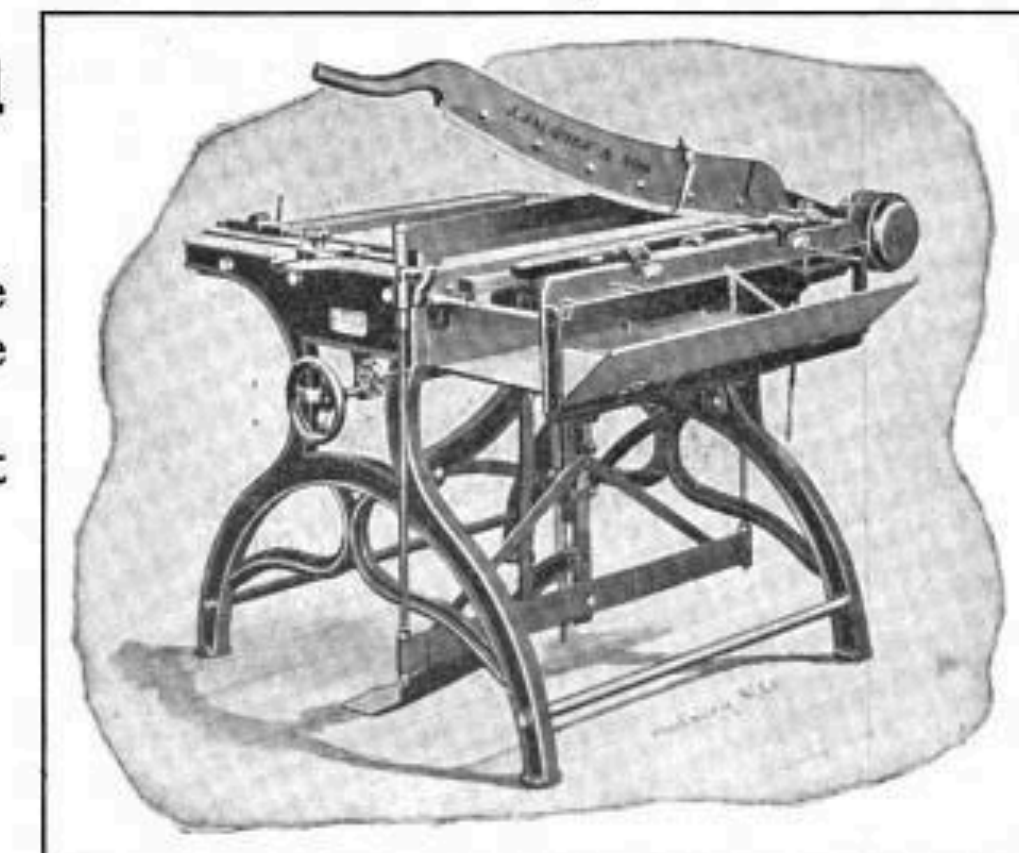
Manufactured by
JOHN JACQUES & SON, Worcester, Mass.

**Either Iron or Wood
Table**

Iron Table, 26 in. wide
Wood Table, 36 in. wide

**Automatic or Foot
Clamping as
Desired**

**Spring Gauge for
Narrow Cutting**



| SIZES | | PRICES |
|-----------|---|--------|
| 30 inches | - | \$110 |
| 33 " | - | 120 |
| 40 " | - | 135 |
| 45 " | - | 150 |


**Improved
Gauges**

Catalogue of Paper Box Machinery on Application

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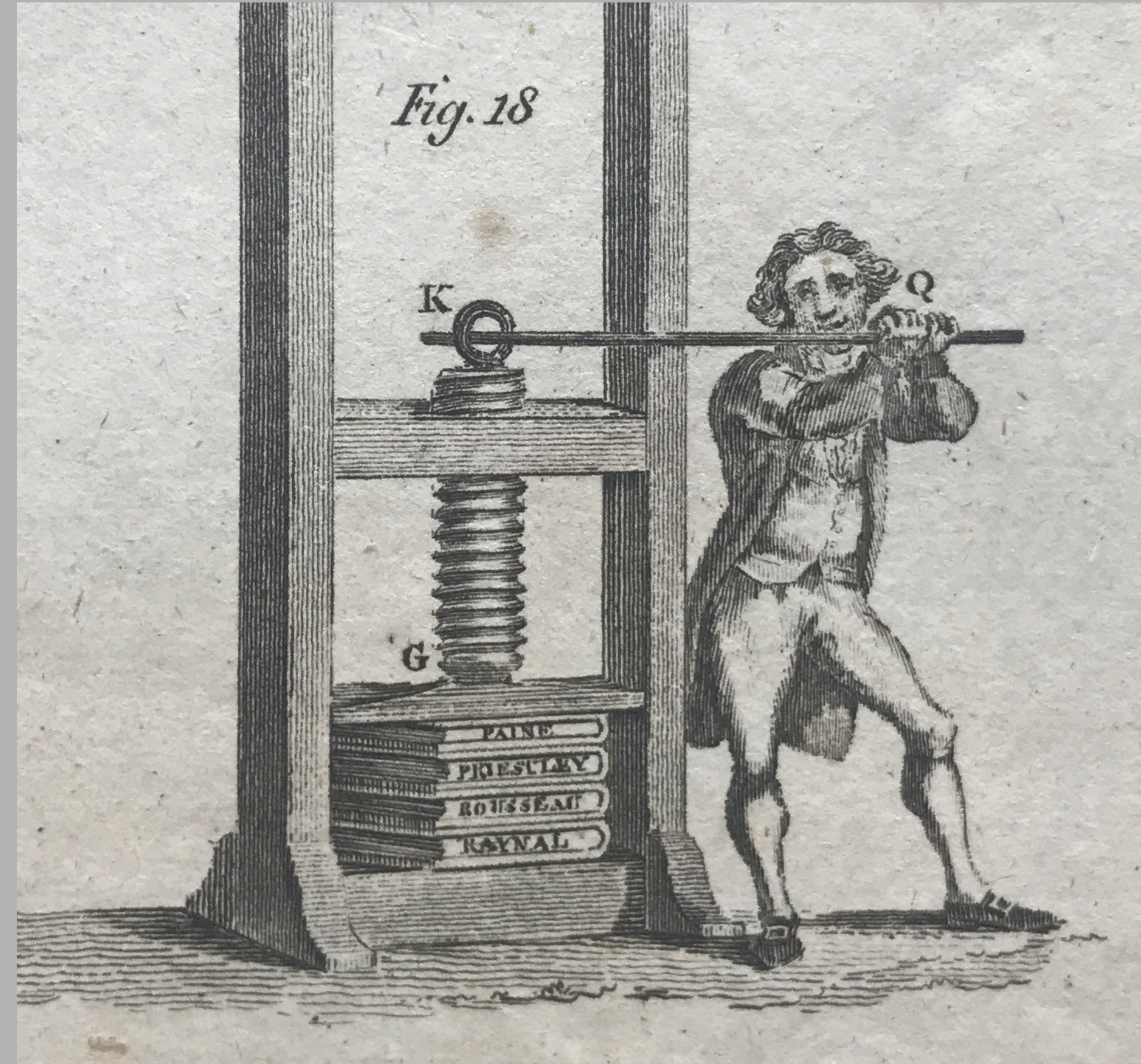
20th C. Hickock Beating Hammer

APPROACHES TO BOOKBINDING HISTORY

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7. Look at related trades ie. leatherworking, trunk manufacture, paper box making
8. **Examine and use historic bookbinding tools**
Including texts, visual resources, and making reproductions. A hybrid of #2 and #5?



Walker's *Elements of Geography*, 1798.

"Tools that once were the common stuff of everyday life are tools of a different sort to us ... they are tools we can use to understand the past." - James Gaynor



James M. Gaynor and Nancy L Hagedorn, *Tools: Working Wood in Eighteenth-Century America* (Williamsburg, Virginia: The Colonial Williamsburg Foundation, 1993), xiii.



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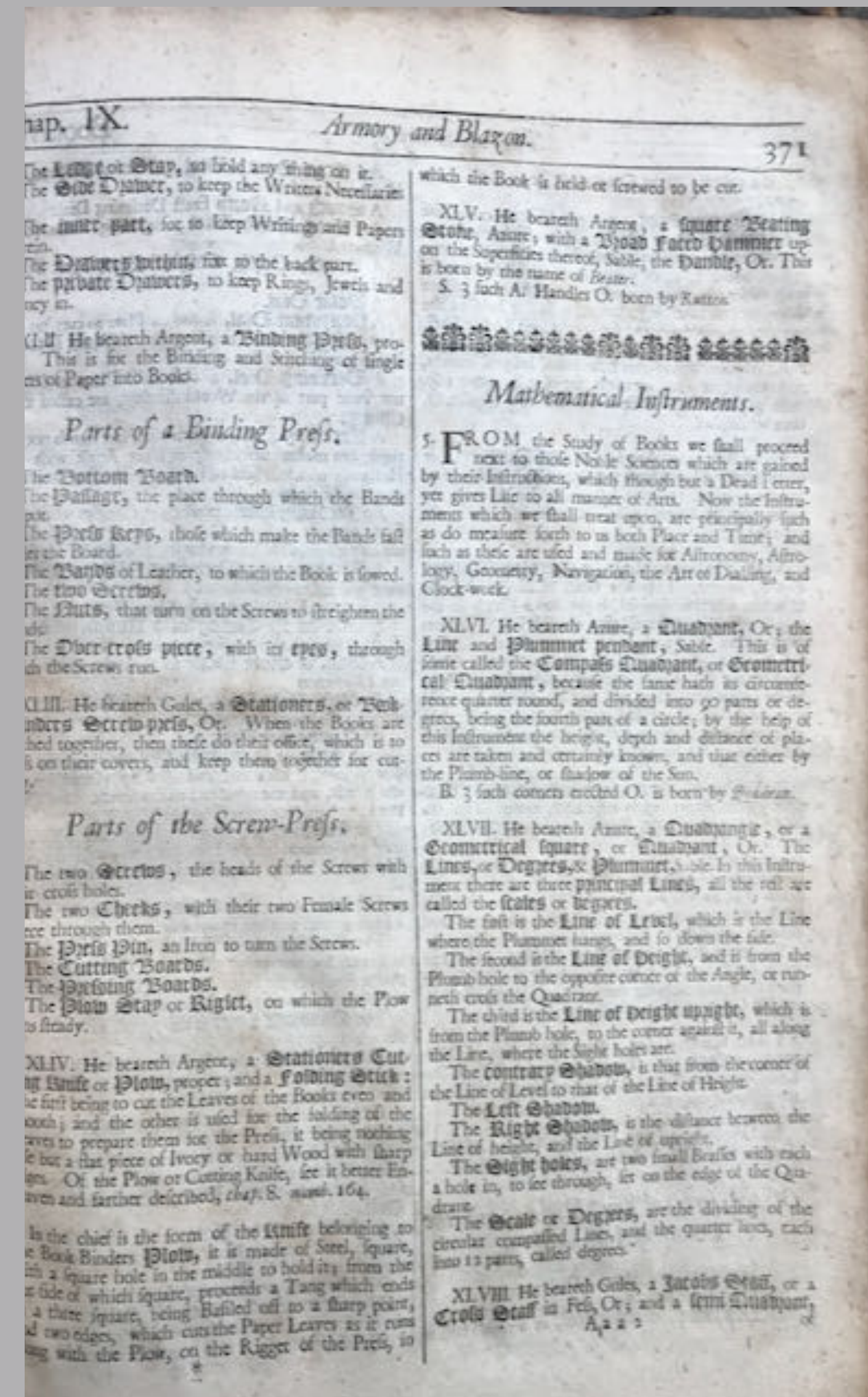
Caption



Caption

WHO WAS RANDLE HOLME III?

- 1627 - 1700
- Heraldic Painter, professional genalogist
- Received a sinecure in 1664 as a "sewer of the chamber of the extraordinary, in consideration of his losses." [!?]
- A sinecure is an official position that doesn't involve much real work



WHO WAS RANDLE HOLME III?

- Some of his pen and ink drawings (from 1649) for this book are in the British Library
- Was he also the engraver?

Holme ends his book writing he will not be able to "carry on so great a Work without Assistance, for the Times are so Hard, Trading so Dead, Money scarce, Paper wanting (else at Double, if not Trebble Rates to that I first began) Wages great...,"

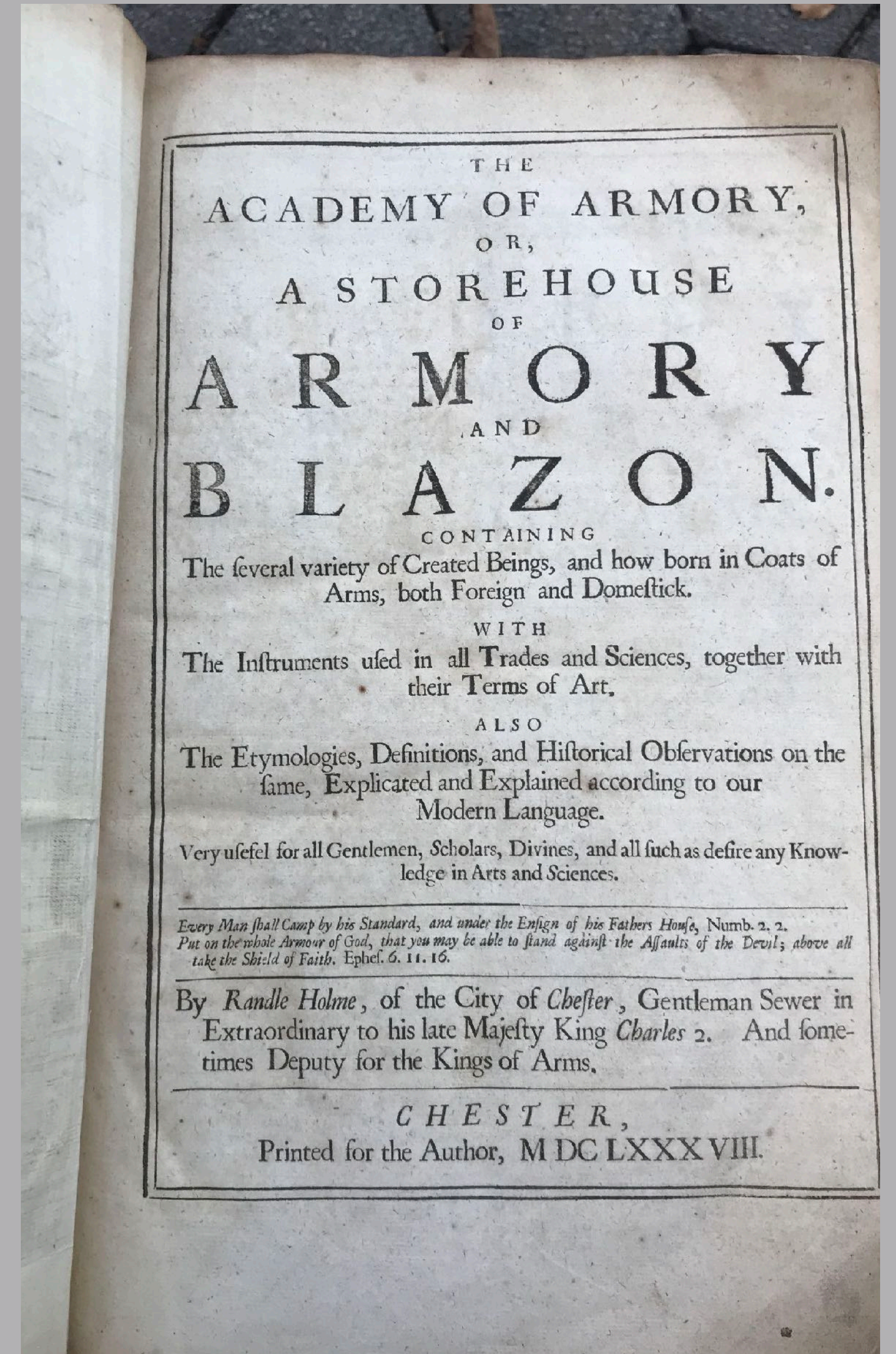
- Last Page of *Academy of Armory*, Randle Holme, 1688



https://www.bl.uk/britishlibrary/~media/bl/global/picturing%20places/harley_ms_2026.jpg

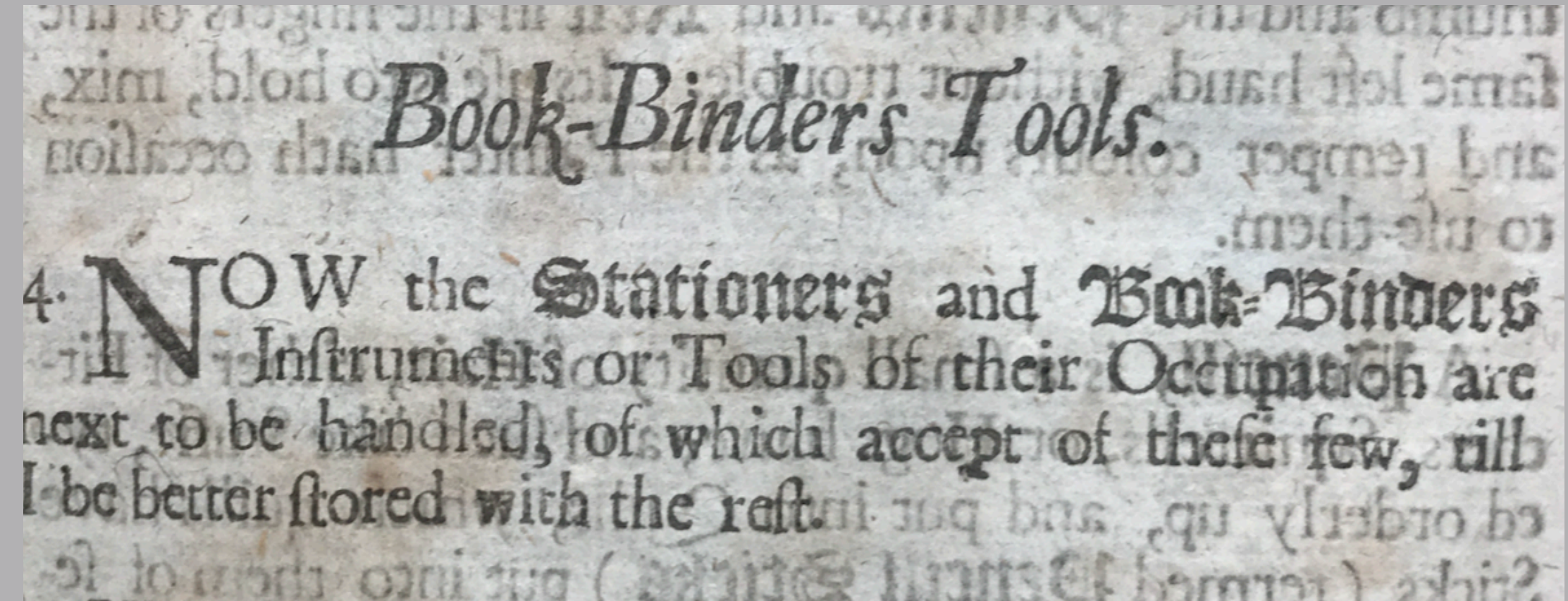
WHAT IS THE *ACADEMY OF ARMORY*?

- Published in 1688, contains the only known images of English Bookbinding tools from the 17th century.
- Not in the standard bibliopgraphy of bookbinding books, Pollard and Potter. Pollard, Graham and Esther Potter. *Early Bookbinding Manuals: An Annotated List of Technical Accounts of Bookbinding to 1840*. Oxford: Oxford Bibliographical Society, 1984.
- 502 pages of text, over 2500 small, roughly 1 inch square intaglio images.
- Heraldry started 12th century. The clarity of the visual information was intended to differentiate opponents on a battlefield



WHAT IS THE *ACADEMY OF ARMORY*?

- Arranged into three books: the first concerns heraldry, the second the natural world, and the third the liberal sciences and mechanical arts.
- A fourth book published posthumously in 1905.
- In heraldry, Armory encompasses the design and transmission of images (ie. to make a shield or coat of arms)
- Scholars of the history of fashion consider the book a reliable record of the times.
- Woodworking scholars question if he had firsthand knowledge same info in Moxon's 1677 *Mechanik Exercises*
- Holme examined bookbinding tools according to the introduction.



Book-Binders Tools

"Now the Stationers and Book-Binders Instruments or Tools of their Occupation are next to be handled, of which accept of these few, till I be better stored with the rest."

WHAT IS THE *ACADEMY OF ARMORY*?

The engraved title page serves as a literal visual reminder that *The Academy of Armory* is used as a building block in the construction of Heraldic symbols, like books are metaphorical building blocks for the production and transfer of knowledge.

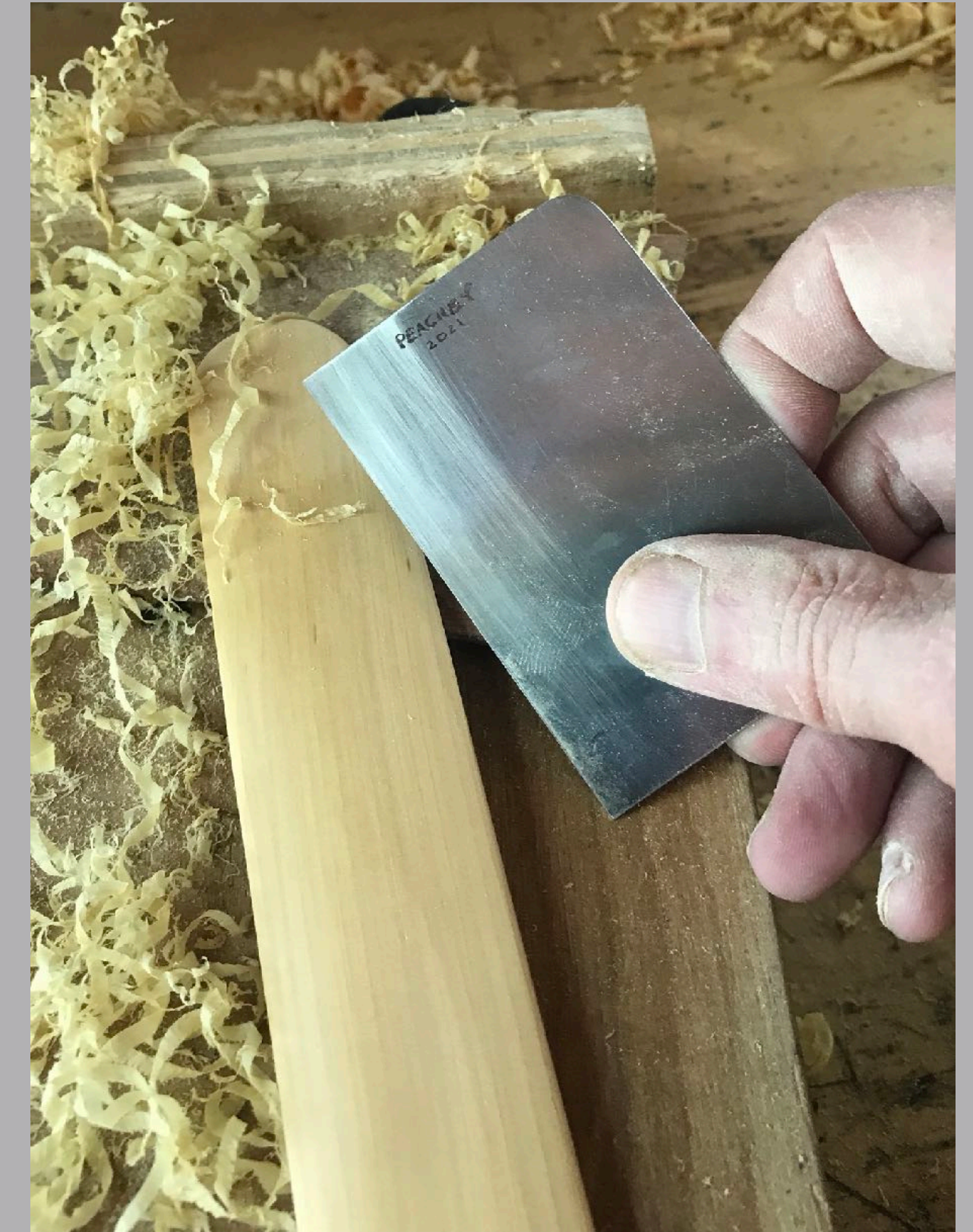
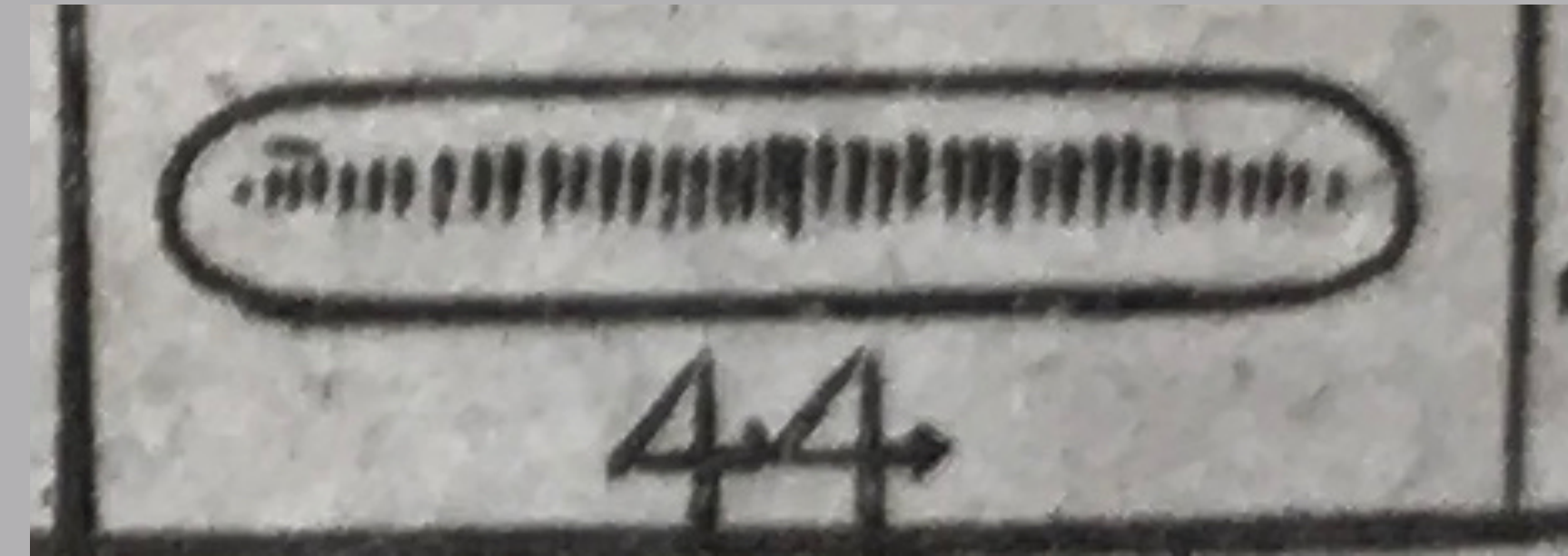


First Engraved title page



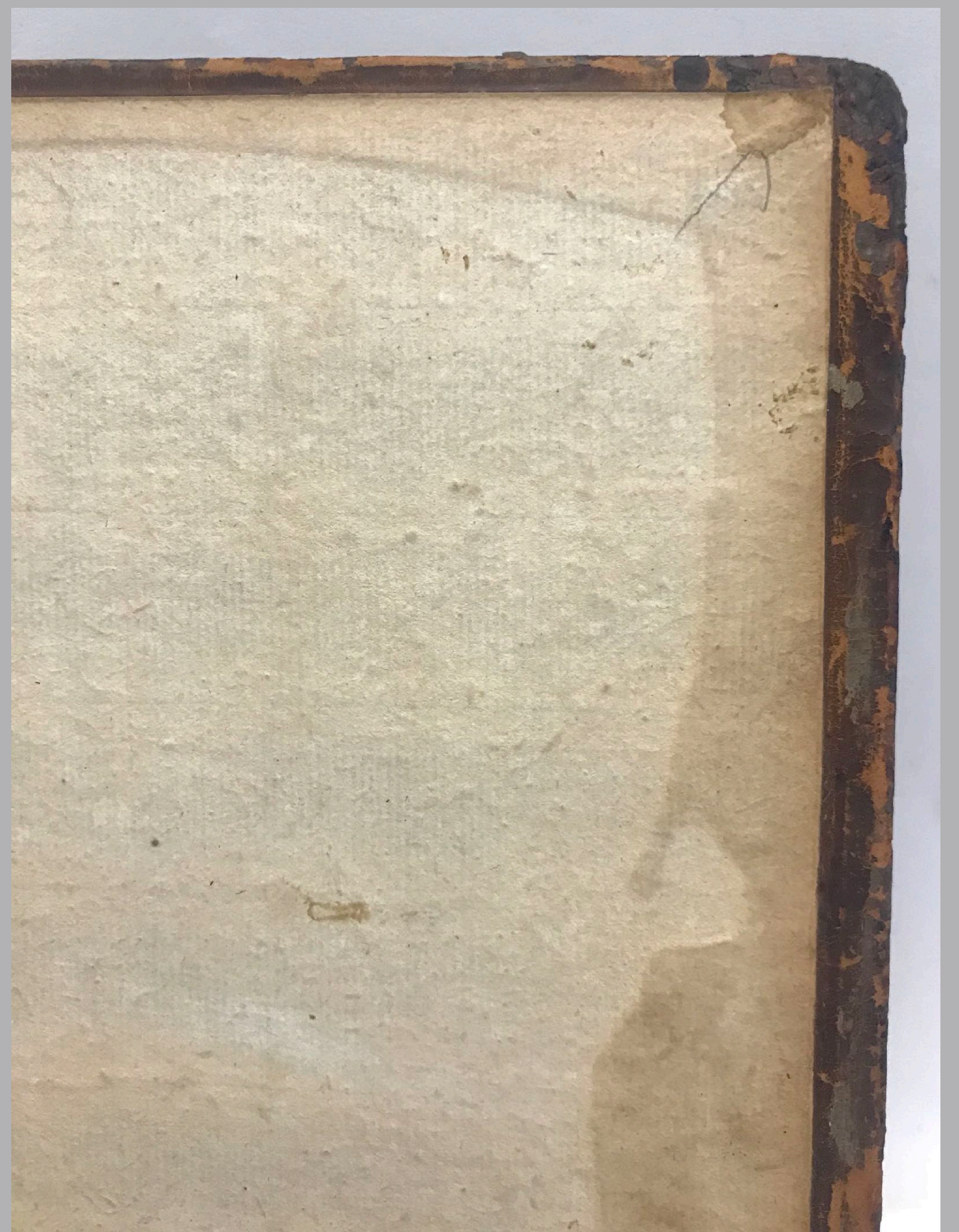
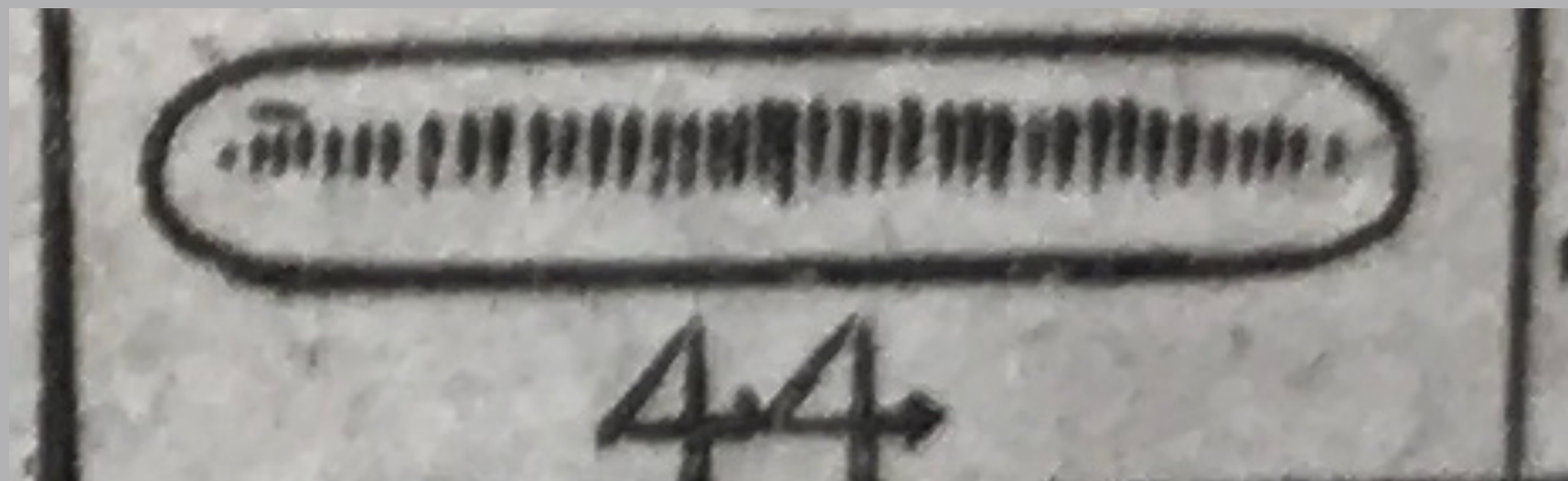
THE FOLDER

- Holme's print is 3 x 18 mm, a 1:6 aspect ratio
- Historically folders average: 1 - 1.25 x 6 - 9"
- Thickness?
- Historic materials: hardwood (beech, box, pear), bone, horn and ivory



THE FOLDER

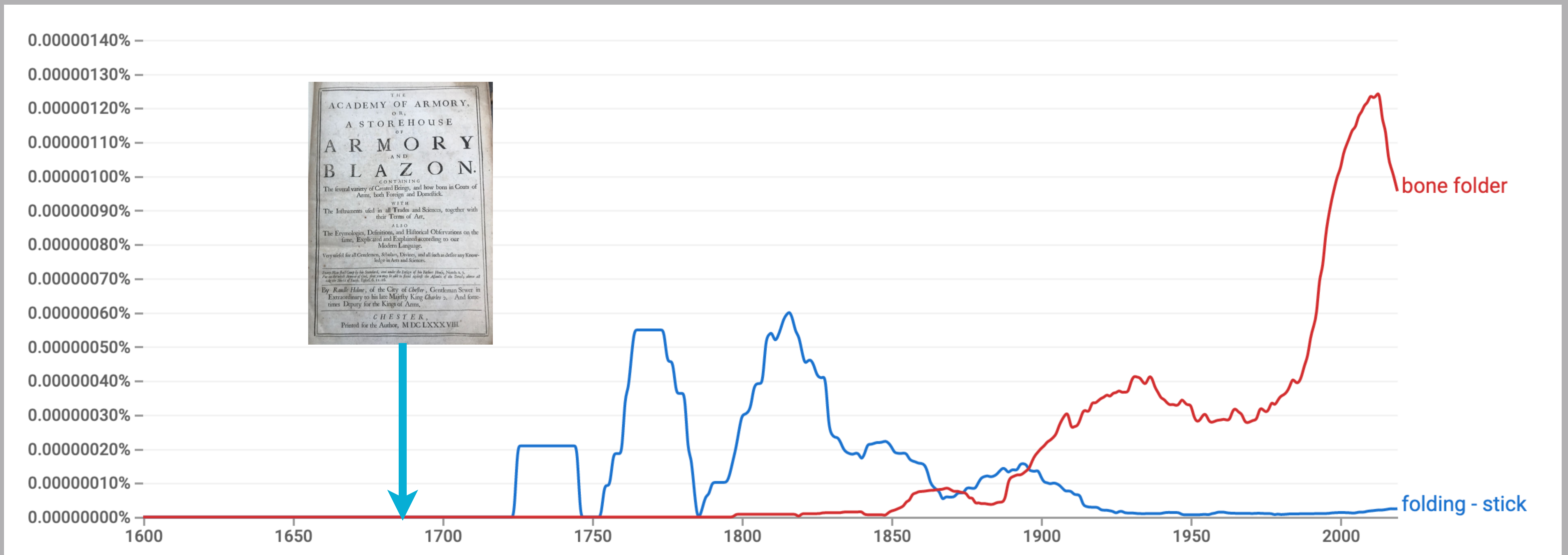
- "...it being nothing else but a flat piece of ivory or hard wood with sharp edges" - Holme
- De Bray (1658) and De Haas (1806) mention the folder is the first tool needed for bookbinding.*
- Folding, pressing, marking, consolidation, general 'smushing', smoothing, compressing the spine when sewing, truing bands, turning-in, headcaps



* Thanks to Cor Knops for this info and the translation.

THE FOLDER

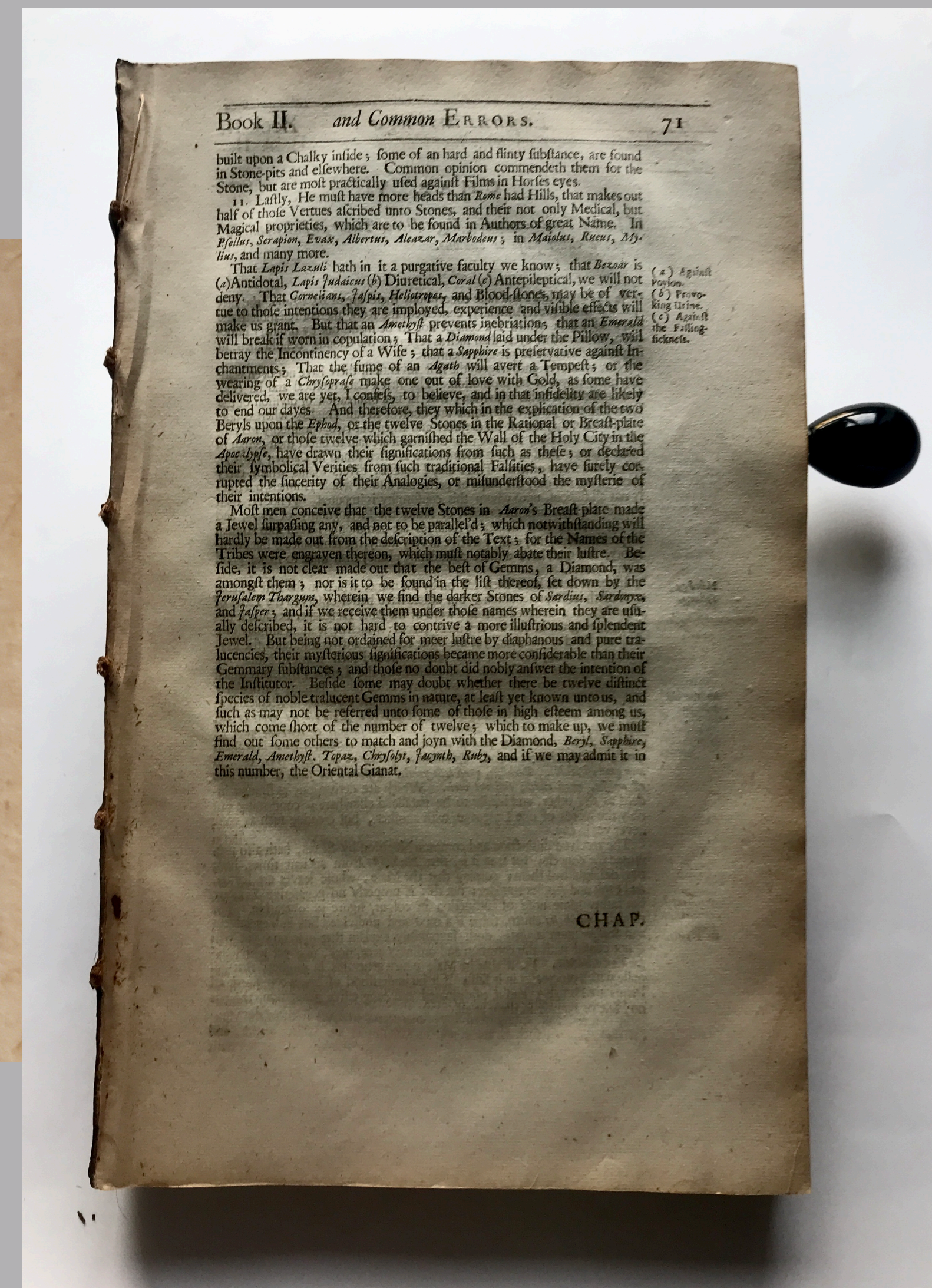
- aka. folding stick, bone folder
- "The first operation is to fold the sheets ... [with] a *folding-stick*..."
 - Chambers' 1728 *Cyclopedia*



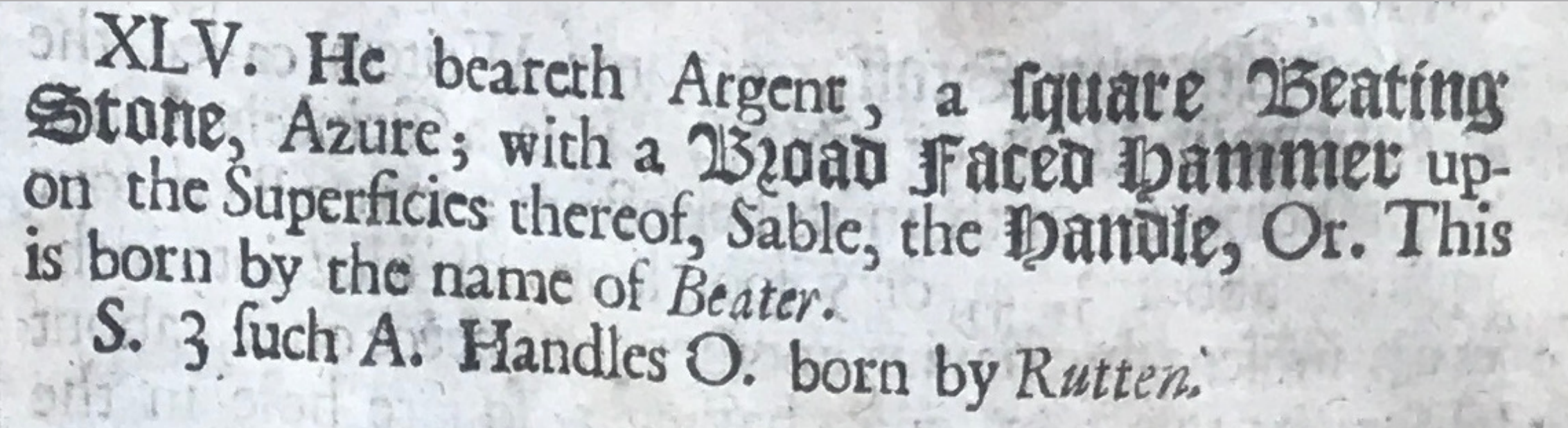
https://books.google.com/ngrams/graph?content=folding-stick%2Cbone+folder&year_start=1600&year_end=2019&corpus=26&smoothing=10

THE BEATING HAMMER AND STONE

- Hammer: 10lbs and up
- Stone: Big
- More Info: Peachey, Jeffrey S. “Beating, Rolling and Pressing: The Compression of Signatures in Bookbinding Prior to Sewing” in *Suave Mechanicals: Essays in the History of Bookbinding, Volume 1*, edited by. Julia Miller. Ann Arbor: The Legacy Press, 2013. 316-381.



THE BEATING HAMMER AND STONE



The beating stone is painted in Azure (blue)

The beating hammer head is painted in Sable (black)

The handle is Or (gold / yellow)

| Heraldic tinctures (excluding furs) | | | | | | | | | | | |
|-------------------------------------|-------------------|--------------|-------------|------------|--------------|-----------------|-------------|-------------------|---------------|---------------|---------------|
| Class | | Metals | | Colours | | | | Stains | | | |
| Name | | Argent | Or | Gules | Sable | Azure | Vert | Purple | Murrey | Sanguine | Tenné |
| | | | | | | | | | | | |
| Non-heraldic equivalent | | Silver/White | Gold/Yellow | Red | Black | Blue | Green | Purple | Mulberry | Blood red | Tawny |
| Monochromatic designations | Hatching | | | | | | | | | | |
| | Tricking abbr. | ar. | o. | gu. | s., sa. | as., bl., b. | vt., v. | purp., pu., p. | m. | ⚔ | ⚔ |
| Poetic designations | Heavenly body | Moon, ☾ | Sun, ☉ | Mars, ♂ | Saturn, ♄ | Jupiter, ♃ | Venus, ♀ | Mercury, ☿ | Dragon's Tail | Dragon's Tail | Dragon's Head |
| | Jewel | Pearl | Topaz | Ruby | Diamond | Sapphire | Emerald | Amethyst | Sardonyx | Sardonyx | Jacinth |

THE NEEDLE



The Needle Maker.

Sorts of Needles.

Pearl Needle, is the least size of Needles.

The first, second and third sort of Needles, according to their sizes; so numbred till you come to ten.

Ordinary Needles.

Bush Lane Needles.

Glovers Needles have square points.

Book Binders Needles are long and round point.

Sow-Gelders Needles are flat pointed.

Chyrurgions Needles are the same, flat pointed.

Pack Needles, crooked at the point, and some flat, others three square; others with a Back and Edge (like a Knife) at point.

THE NEEDLE



Humphrey Smith, *An Account of the Nature and Guilt*, London, 1701.

THE "BINDING PRESS", or Sewing Press or Frame

- Spacing and tension of sewing supports
- Keeps them parallel
- Speeds sewing. Most sewing 2-on at this time
- Speed of sewing multiple books



THE "BINDING PRESS"

XLII He beareth Argent, a Binding Press, proper. This is for the Binding and Stitching of single Sheets of Paper into Books.

Parts of a Binding Press.

The Bottom Board.

The Passage, the place through which the Bands are put.

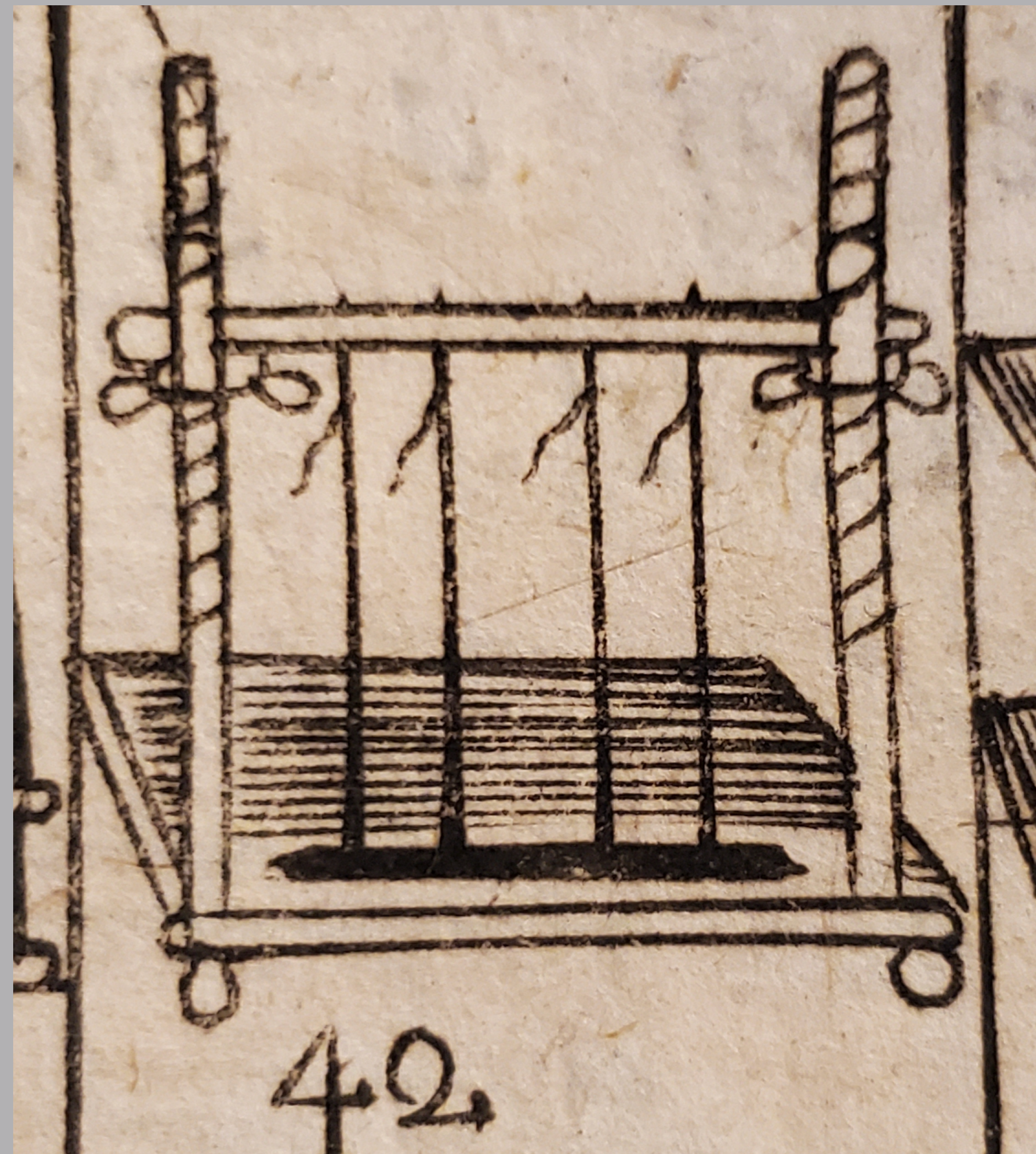
The Press Keys, those which make the Bands fast under the Board.

The Bands of Leather, to which the Book is sowed.

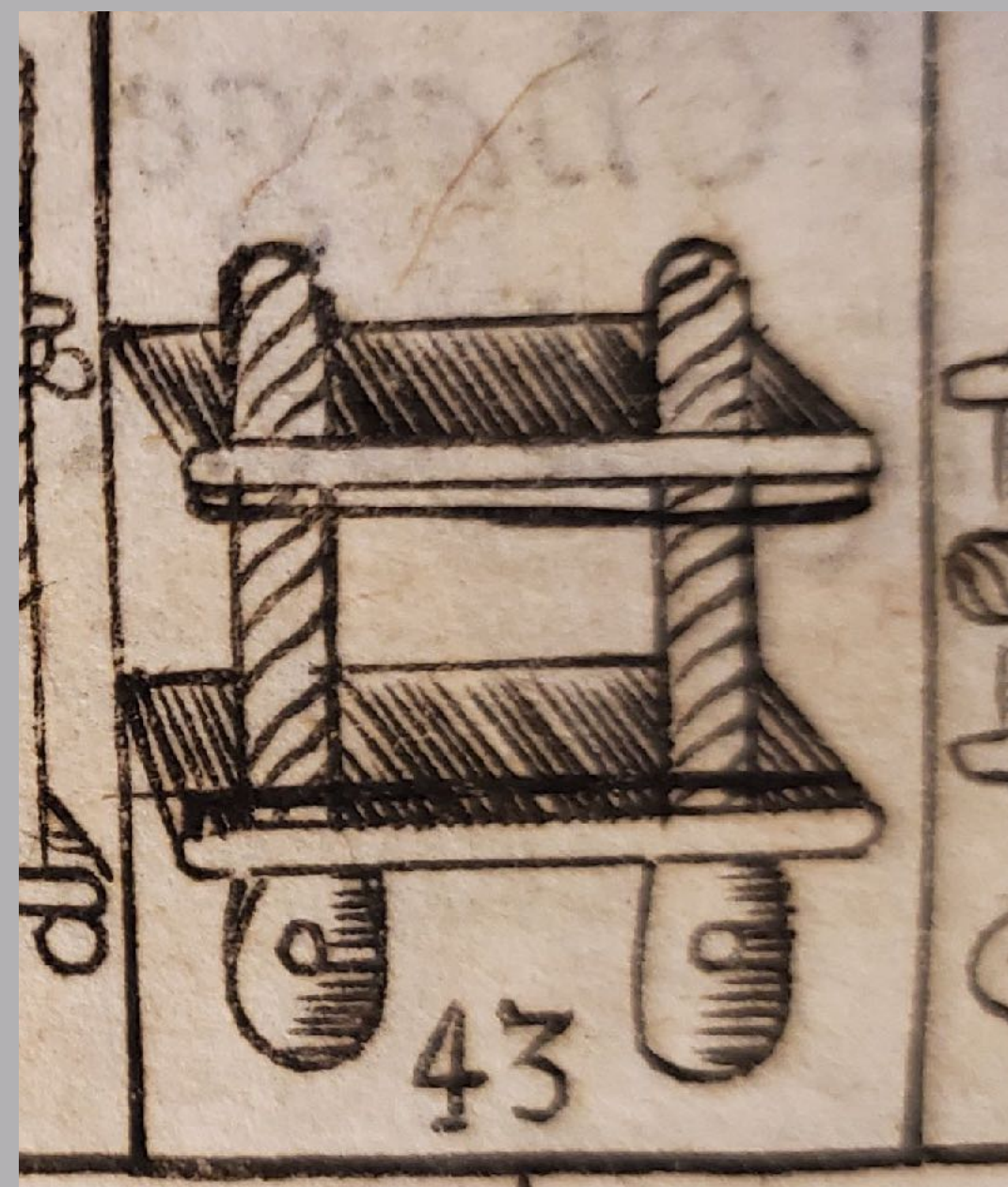
The two Screws.

The Nuts, that turn on the Screws to streighten the Bands.

The Over-cross piece, with its eyes, through which the Screws run.



THE SCREW PRESS: Two Images



XLIII. He beareth Gules, a Stationers, or Book-Binders Screw-press, Or. When the Books are stitched together, then these do their office, which is to press on their covers, and keep them together for cutting.

Parts of the Screw-Press.

The two **Screws**, the heads of the Screws with their cross holes.

The two **Cheeks**, with their two Female Screws apiece through them.

The **Press Pin**, an Iron to turn the Screws.

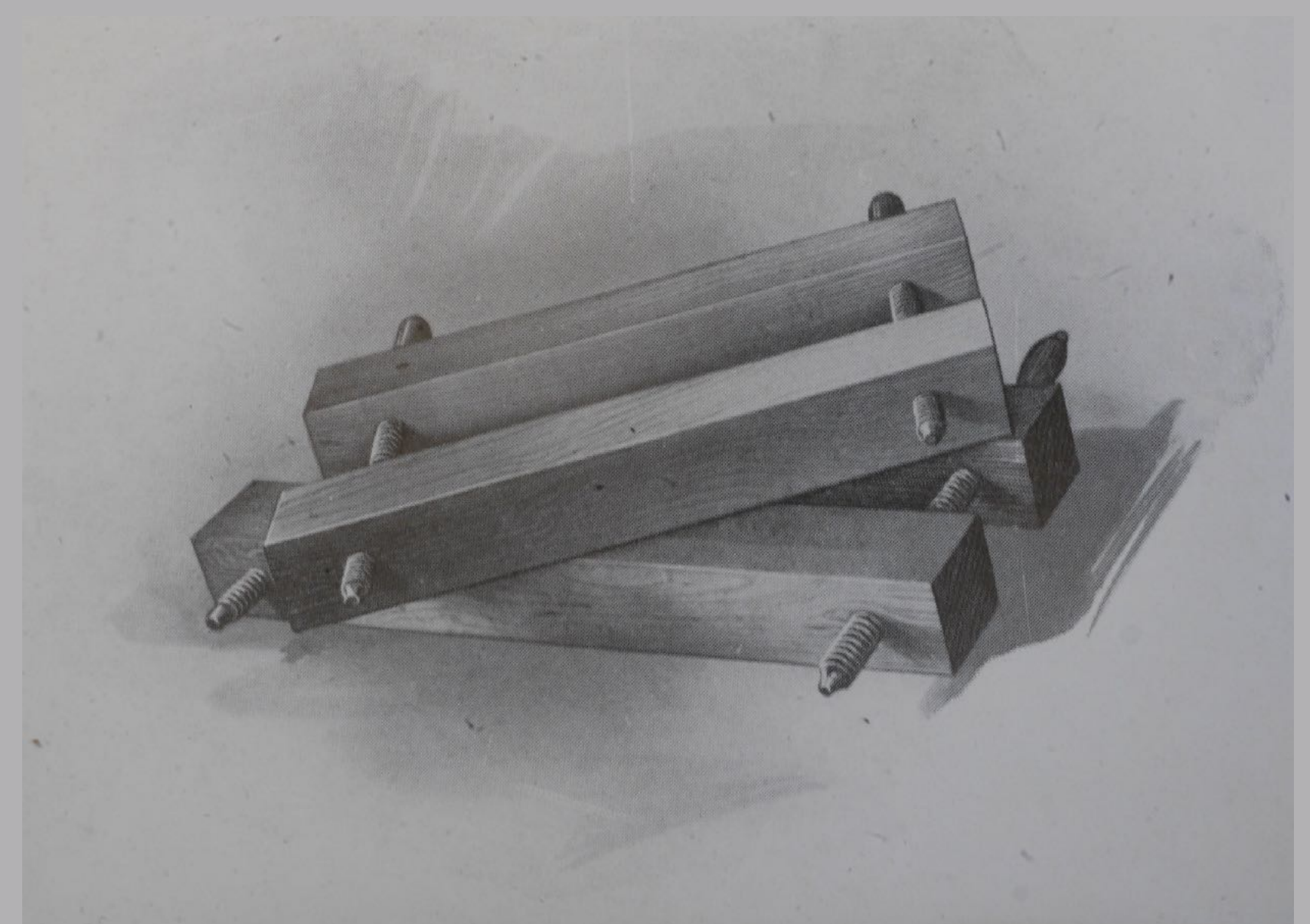
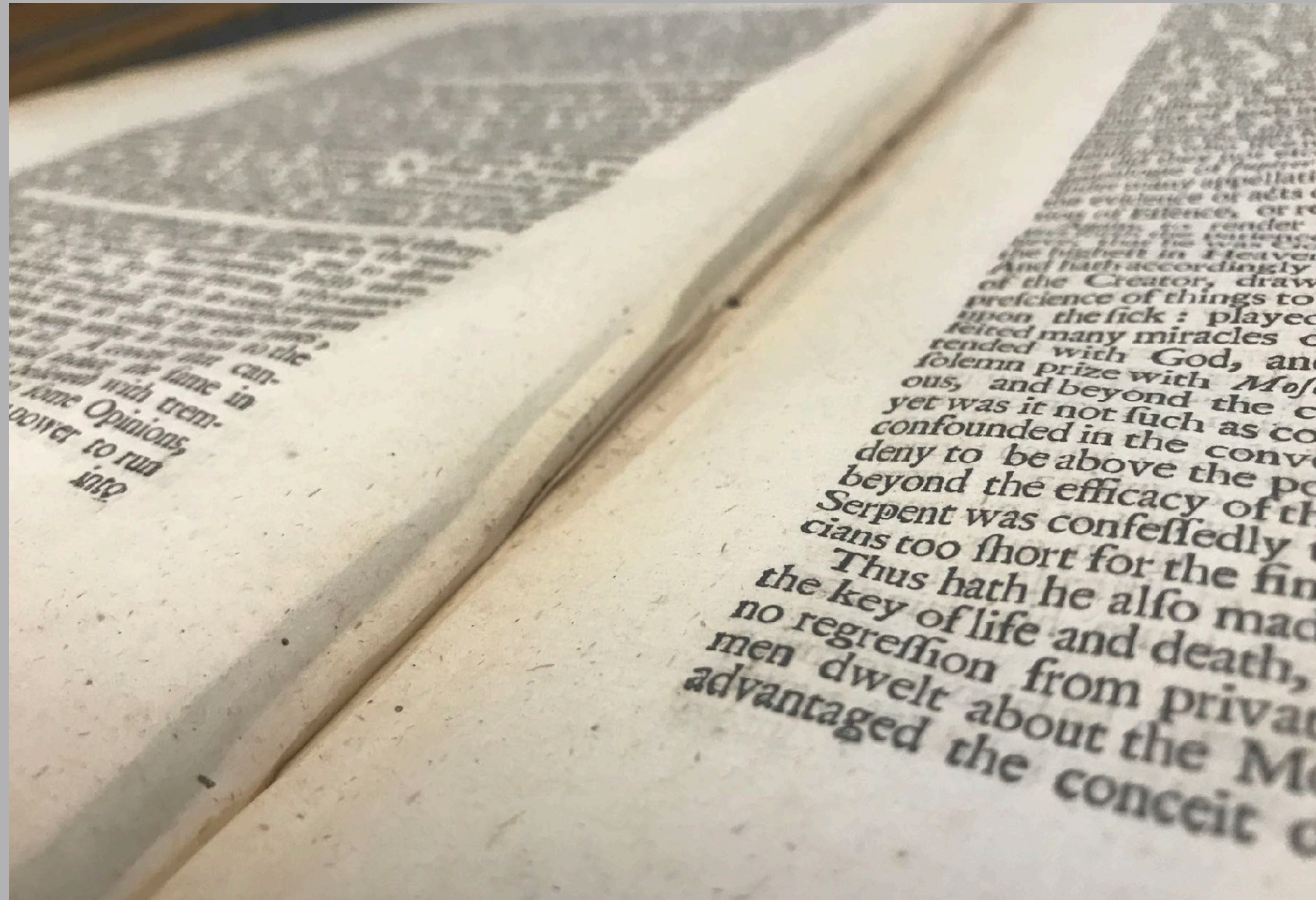
The **Cutting Boards**.

The **Pressing Boards**.

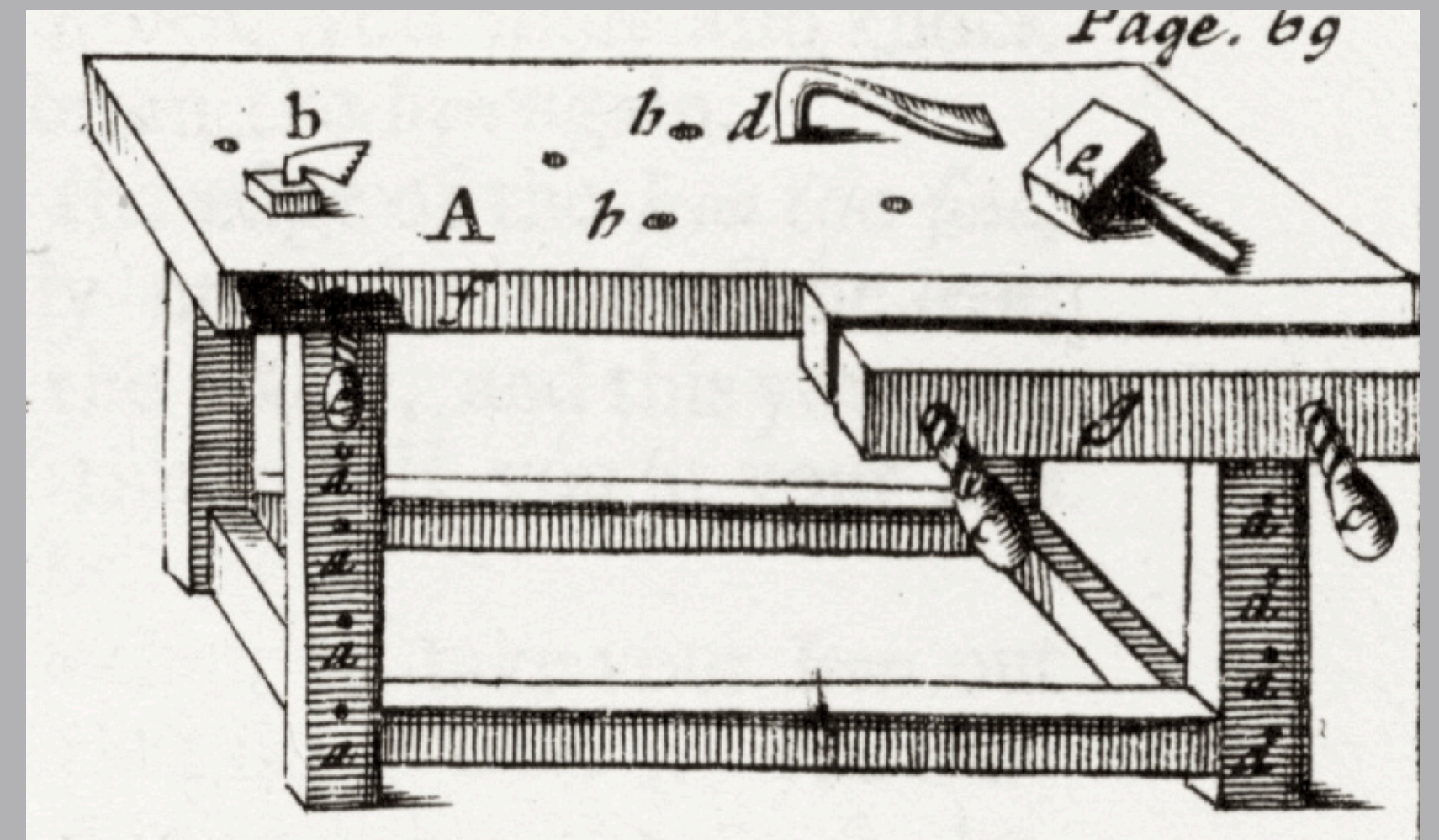
The **Plow Stay** or **Riglet**, on which the Plow runs steady.

THE PRESS

- A lying press?
- Today has guide bars and holes for press pin
- Hickock finishing presses up to 31" between screws



Hickok Binders' Machinery and Bookbinders' Tools. Catalog No. 85. Harrisburg, PA: The W.O. Hickok Manufacturing Co., [1930s?]



Moxton, *Mechanic Exercises*, 1703.

THE PLOUGH

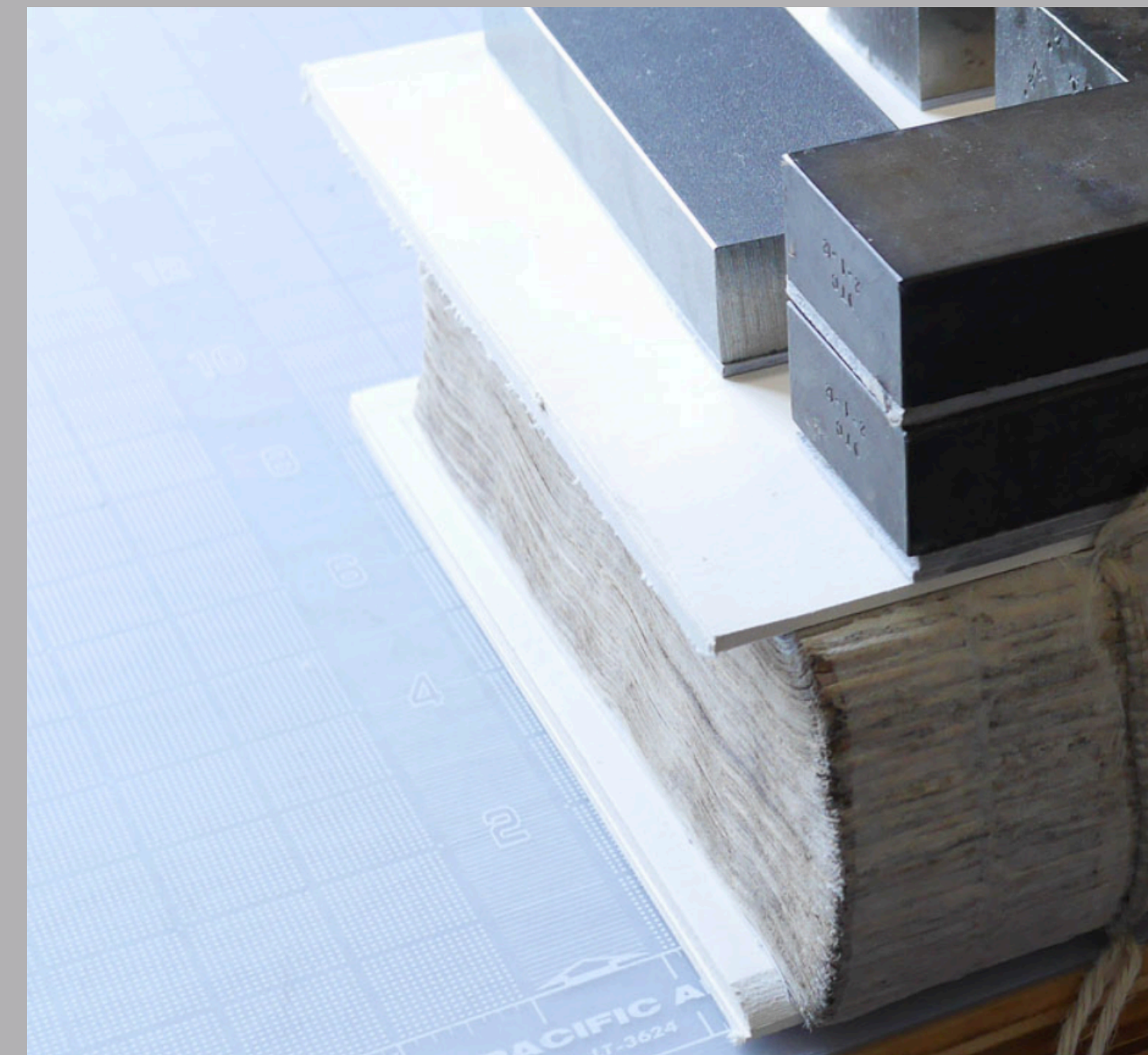


CLXIV. In the chief of this quarter is the figure of a **Draw Knife**, an Instrument used by both Carpenter and Turner; it is a Knife with two handles turned down to the edge, much like in form to Wet Glovers **Fleshing Knives**, when they use it, one end of the work is set against a Wall, and the other to his Breast, and then with both hands draws Chips off the work till it be brought to their shape, and then smooth it.

*

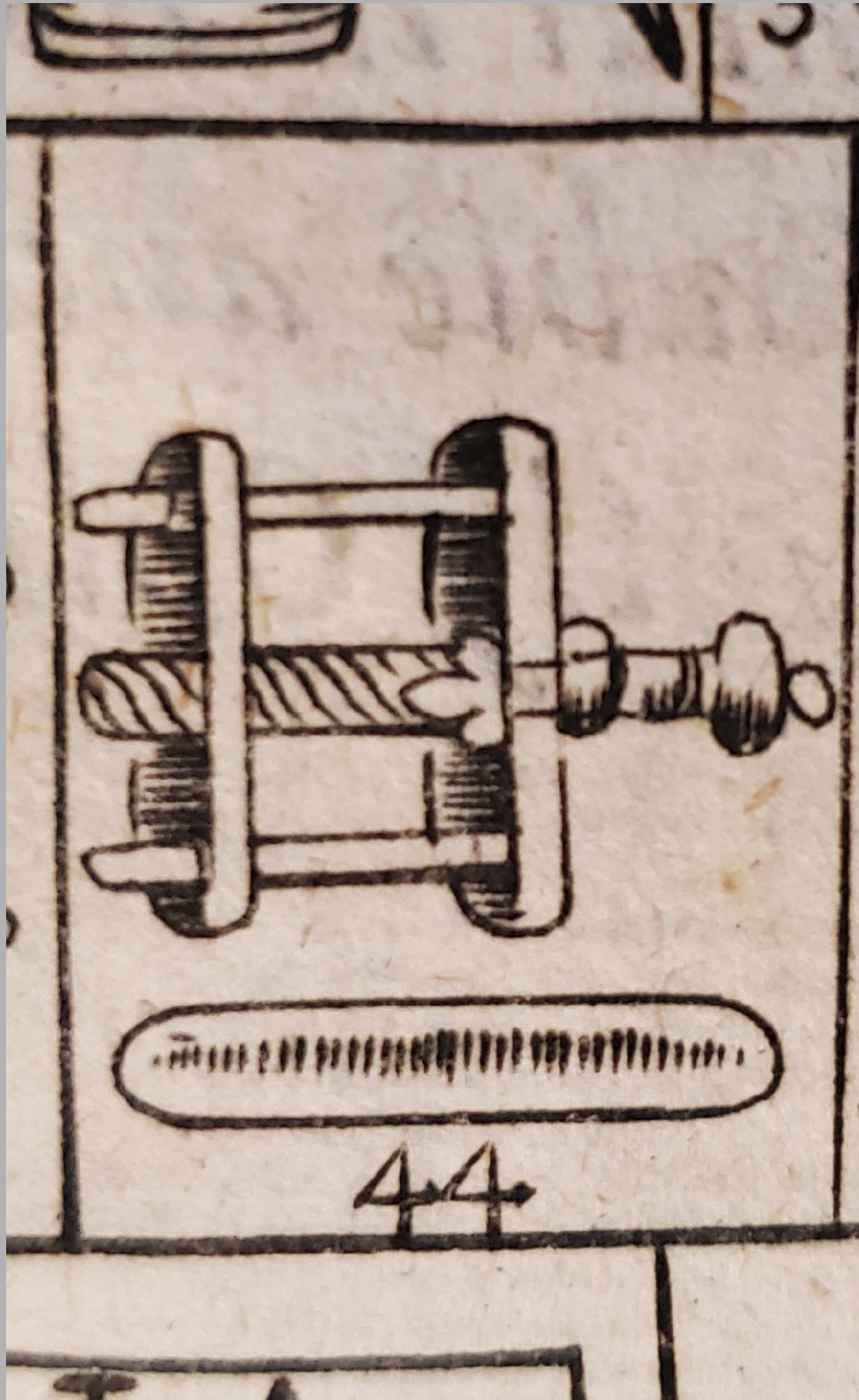


Holm's original pen and ink drawing.
British Library. https://www.bl.uk/britishlibrary/~media/bl/global/picturing%20places/harley_ms_2026.jpg



Dante's *Divine Comedy*, 1477

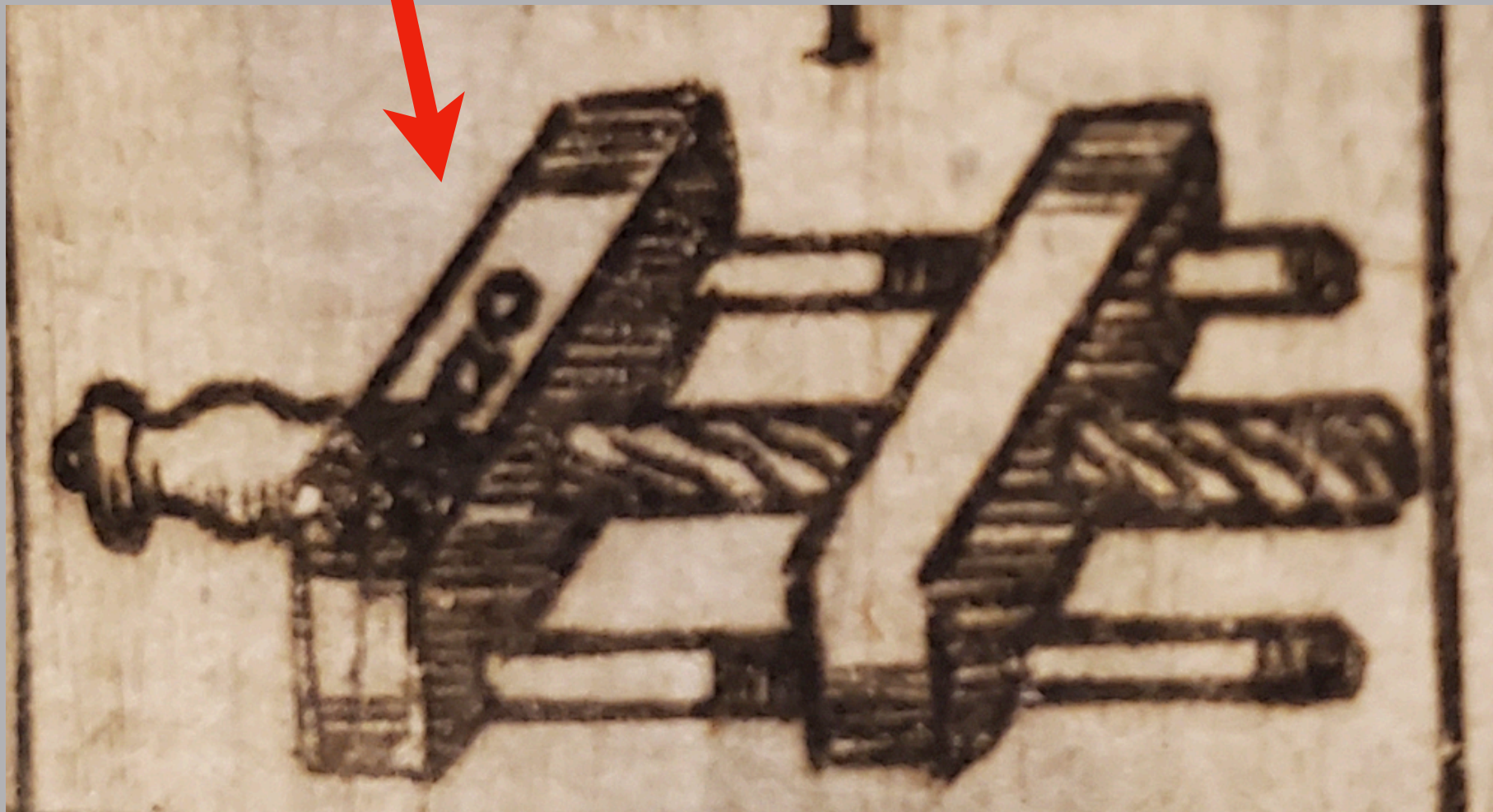
THE PLOUGH



In the chief is the form of the ~~Knife~~ belonging to the Book-Binders **Plow**, it is made of Steel, square, with a square hole in the middle to hold it; from the out-side of which square, proceeds a Tang which ends in a three square, being Basiled off to a sharp point, and two edges, which cuts the Paper Leaves as it runs along with the Plow, on the Rigger of the Press, in *

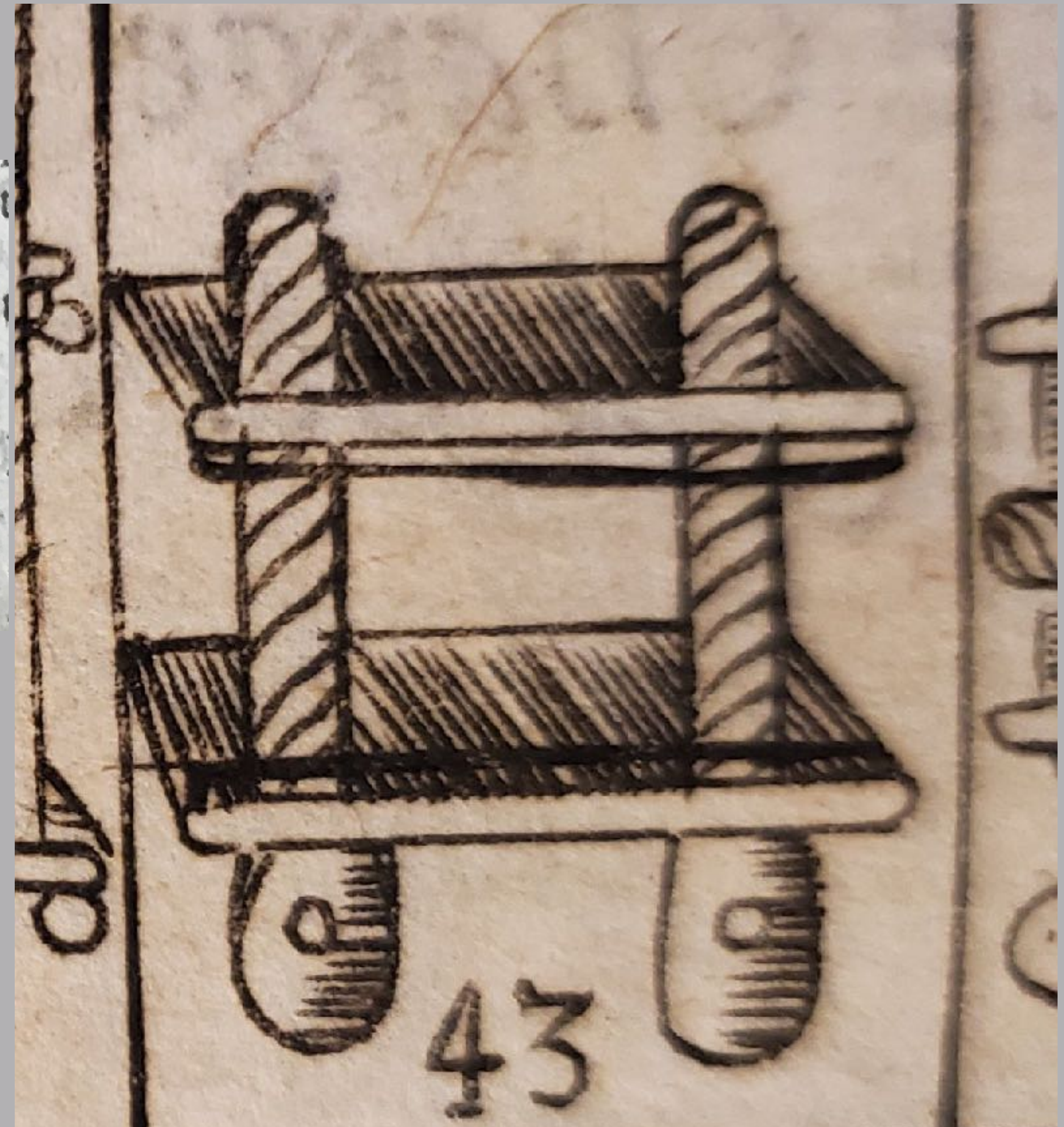
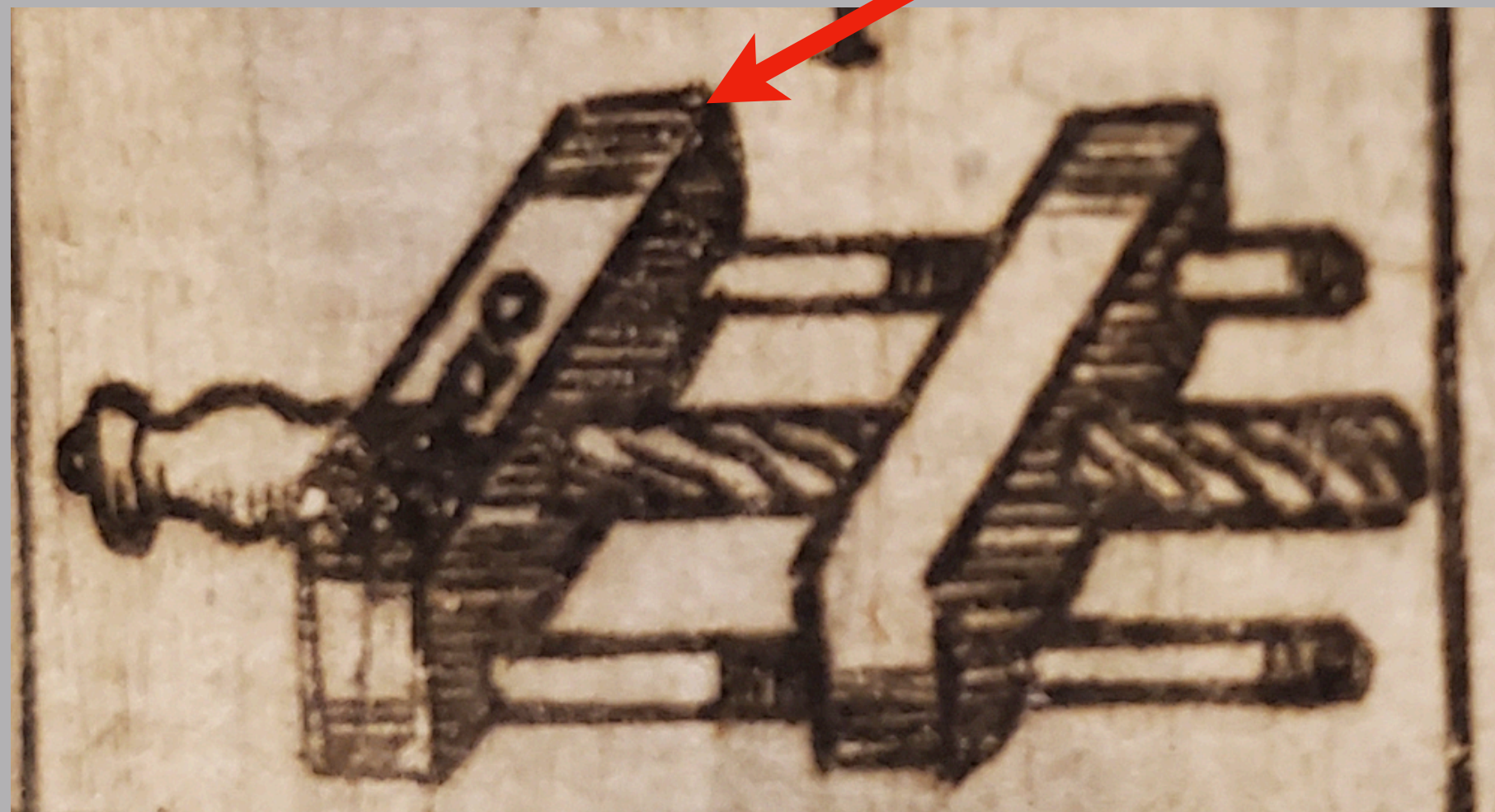


20th C. Hickock Plough



THE PLOUGH

XLIV. He beareth Argent, a Stationers Cutting Knife or Plow, proper; and a Folding Stick. The first being to cut the Leaves of the Books even and smooth; and the other is used for the folding of the Leaves to prepare them for the Press, it being nothing else but a flat piece of Ivory or hard Wood with sharp edges. Of the Plow or Cutting Knife, see it better Engraven and farther described, *chap. 8. numb. 164.*



THE PLOUGH

- Key identification: straight cuts across the shoulders
- The smoothest edges of any cutting method
- Could have a knife just used, like the Ely edge knife?



CONCLUSION

- *The Academy of Armory* is the most important source of information about seventeenth century English bookbinding tools, and contains the only images.
- Analyzing the tools and equipment of bookbinding is one way of understanding how books were made, which is one of the foundations of bibliography.
- Bookbinders and book conservators are well equipped to interpret tool evidence for other scholars.
- Books are increasingly valued not just as carriers of textual information, but as material objects documenting the technology of information preservation and transfer.



Thanks to Joel Moskowitz, Tom Conroy, Andrew Honey, Cor Knops, Elissa O'Loughlin, and Peter Verheyen. Especially Jennifer Pellecchia and all the officers of the Guild of Book Workers for the difficult job in creating this online version of Standards.

The Academy of Armory is from the Joel Moskowitz collection.

All other tools and books from
The Peachey Bookbinding Collection

For more information about Holme and 17th c. English bookbinding tools,
see my forthcoming article in *The New Bookbinder* 41, 2021.

