

2022

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Recommended Citation

Wiegardt, Duane, "Watermarks of Portland State University's 1490 Codex" (2022). *Extra-Textual Elements*. 11.

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Spring 2022

Watermarks of Portland State University's 1490 Codex

Abstract: This paper and its accompanying research endeavored to locate, catalog, and identify as fully as possible the watermarks observed throughout Portland State University's (PSU) 1490 bound codex containing the *Fasciculus temporum omnes antiquorum cronicas complectens* (FT) and *Malleus Maleficarum* (MM). Dozens of watermarks of several categories have been located and cataloged. A listing of the marks found on each leaf of the FT and MM has been constructed for continued use by future researchers. Study of the watermarks also sheds light on the codex's binding.

Medieval paper was made from linen, hemp, or cotton ranked in quality from highest to lowest. Early papermakers added a 'sizing' agent of rice or wheat starch. (Albro) This practice moved to the use of gelatin from animal horn. These additives strengthened the paper, making it more durable and better for writing with pen or press. (Tomasso) It is unclear whether the paper used for printing the MM or FT was constructed in this way, but its age suggests that it was made of linen pulped paper, pressed, then dipped in gelatin, pressed once again, and hung to dry for several days dependent upon the temperature and relative humidity.

The thickness and tooth of many of the leaves of the codex is such that consistent quality was not observed. Several pages were either thinly crafted or worn nearly through, although no observable erasures or scoring were present outside the damage caused by woodboring insect larva. Many of the leaves in the latter half of the MM text are quite dense, with an observed pattern of four heavily toothed pages separated by two pages of less coarse texture. These were heavy, rough pages where impressions of the print type believed to have been made in the act of pressing the type to the page remain to this day.

Watermarks discovered within the two texts appear to be of six categories, suggesting six or more different paper sources with potentially overlapping paper suppliers. The *tête-boeuf*

(bull's head) with a snake wrapped around a staff and two letters (see Appendix images 1 and 2); a gothic capital letter 'P' with forked stem with trefoil or quatrefoil above (see Appendix image 3); and a six-petalled flower with stamin were previously cataloged by Christian Graham in his 2020 paper "Watermarks in the PSU Codex *Fasciculus temporum* and the Paper Trade." (Graham, p. 2-3). An example of a watermark not previously observed in the MM is a circle with four radiating lines forming an 'X'. The vertical line is crossed near the end opposite the circle, and the circle has a curved line across it, as if in a broad grin. The watermarks in six leaves of the FT are variations of this mark. This watermark is in the category of a moon as classed from the Piccard Watermark Collection. In total, at least 28 different watermarks have been observed and documented from the combined texts.

A striking watermark of the codex is the bull's head described as "one of the most widespread watermarks of the European Middle Ages" by Laura Lindenthal in her 2020 paper "Watermarks in the PSU *Malleus Maleficarum*." (Lindenthal, p. 4) This quoted observation is from *The Antiquary* by E.W. Allen (1873), a volume that may bear more fruit with further analysis. The two most common watermarks cataloged for this report are the bull's head and gothic 'P'. Eleven variations of the bull's head and thirteen variations of the gothic 'P' have been observed. The bull's head appears in seven similar examples in well-defined heads with trefoils, while two others are very crude and amateurish in comparison. The final two variant examples have a large '3' and an 'M' flanking the massive bull's head with a trefoil tipped staff protruding from between the horns, the staff being wrapped with a crowned snake (images 1 and 2). The primary differences in the variations of the gothic 'P' watermark are the shape and angle of the forked stem, the style of the upper portion of the 'P', and the styles of trefoil or quatrefoil. This

watermark is often found as a mirror image, with the ‘P’ appearing backward as viewed through the page from the recto side, as are all watermarks documented in this research.

The other marks could be described as reversible or not containing characteristic features, suggesting the mark is or isn’t in proper alignment save right side up or inverted, as is often the case and indicated on our spreadsheet. An abbreviated summary of the catalog is listed here.

Label	Number
Gothic ‘P’ (13 varieties)	34
Bull’s head (11 varieties)	20
Shield with / without Crown	18
Moon	9
Six-Petalled Flower	6

The collection of watermarks observed adorn 47 leaves of the FT and 41 of the MM leaves. The watermarks have mostly been located either slightly above or below the center of the page or within the right or (rarely) the left column of text and approximately centered. A significant observed exception can be found on many repaired pages of the FT. A partial bull’s head and letter happen to lie within the paper used to patch previously repaired pages (images 1 and 2). The date of the repair is unknown, but it is certainly interesting that the patch was made with paper that is presumed to be of similar age and origin though this paper may not be contemporary to the FT or MM at all.

Cataloging the watermarks has been hampered by limited time and experience in locating the marks and properly photographing them. This has been partially alleviated by collaboration with Professor Paul Schweitzer-Martin of the Ludwig-Maximilians-Universität München. Schweitzer recommends a darker room and brighter light as permitted by PSU Library’s Special Collections staff. This has made a substantial difference in finding the watermarks. A backlit sheet of tempered glass with magnification and sufficient support for the codex would enable far

greater detail to be observed, potentially increasing the total number and possibly reducing the number of variants with better technological resources. The team has viewed all 101 leaves of the MM at least three times each, discovering unknown markings on every pass. The FT has been searched in greater detail, revealing 47 of its 96 leaves bearing watermarks. This number does not include the first 42 leaves of the FT that have been repaired. Many of these leaves have been repaired using the bull's head-snake paper as identified by either a portion of the watermark or by the chain line spacing.

Identifying the watermarks necessitates a slow hunt through multiple extensive databases such as *Wasserzeichen-Informationssystem* (www.wasserzeichen-online.de). The bull's head figures, the letters 'P', and the six-petalled flowers are well known. The bull's head, gothic 'P', and six-petalled flower watermarks had been in use by many paper makers for more than 100 years at the time the FT and MM were printed. The *Wasserzeichen-Informationssystem* lists over 36,000 variations of the bull's head alone. Professor Schweitzer-Martin offered that the bulls, P's, and flowers are common to Peter Drach's print shop, where PSU's copy of the MM originated. The moon and six-petalled flower are found in both texts. [*Editorial note: It is unclear whether variants of these designs or the same design is meant. -JSO*]

Watermarks of this time often appear as crude drawings without a consistent standard. Watermarks are applied by use of a wire bent into a characteristic shape to suit the paper maker. These wire forms of approximately 12-14 gage wire might easily be bent in daily use. The wire would likely have been of nonferrous material, as there is no visible evidence of oxidation, i.e. rust. There may be multiple similar wire shapes made for use by different workers simultaneously. The trefoil bull's head with staff and snake (see Appendix images 1 and 2) demonstrates this, as the snake head and bull's horns, while very similar, are in slightly different

positions. This may also account for the several variations of the gothic 'P' with trefoil found in both texts. The watermarks themselves are inconsistent in their application. Portions of the marks are not evident, with no clear reason for a missing corner, leg, or petal. A modern analogy might be the rubber stamp: if not applied evenly and square, the inked image does not completely transfer to the paper. All these factors create difficulty in precisely identifying individual watermarks or tying them to individual papermakers.

An observed characteristic of nearly all the leaves of the FT is the vertical lines that appear as watermarks, but are in fact visual/material remnants from the papermaking process. Nearly all the leaves of the FT display these lines, including the paper used for repairs. The number of lines varies from five to nine, spaced 36 to 26 millimeters apart. These are known as chain lines. They are formed because the mesh in the frame on which the pulp is collected to form the new paper sheet is supported by underwire, producing a ribbed look. The paper is then pressed flat to remove excess water and creases, leaving behind lines. The leaves of the MM text described earlier with an observed pattern of heavily toothed pages contain five chain lines, and the two pages of less coarse texture have eight chain lines.

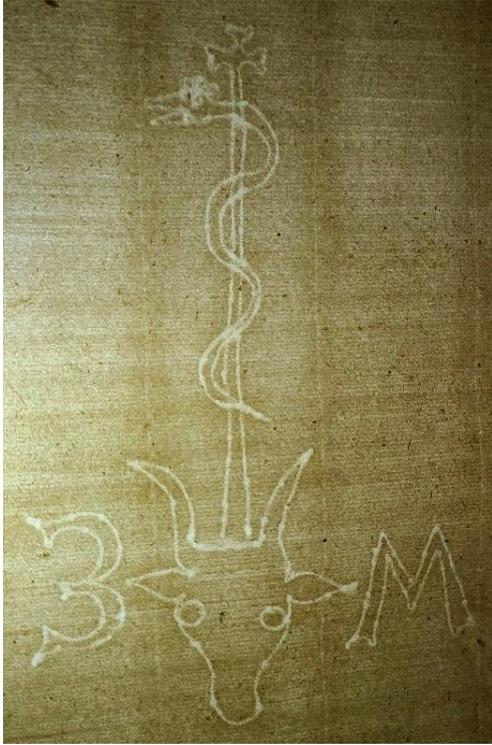
These chain lines may be linked to individual watermarks. The large bull's head with staff and snake is a five-chain sheet. This can be observed among the blank pages between the FT and MM as well as the dozens of repaired pages in the first half of the FT. While this is not conclusive of a connection between the watermark, the chain lines, and a particular papermaker, it is a representative link that can be used to further connect these elements of the codex. However, the design of the frame upon which the pulped slurry is applied to form a fresh sheet of paper may not be uniform within a papermaker's shop.

Nearly half the pages of the FT bear evidence of being repaired in the upper right (recto) corner. These repairs appear to have been made using the same paper found elsewhere in the volume, as evidenced by the partial watermarks or the chain line spacing (images 4-6). For example, the partial 'M' watermark (image 6) is found on blank pages between the FT and MM containing the bull's head. This suggests that the binder of the codex (identified by Allison Kirkpatrick [2022] as Nicolas von Havelberg of Erfurt) may have been the one to conduct repairs of the FT, using sheets of paper found in the shop at the time. These sheets were then used in the binding process surrounding the two texts. The paper's source may then be linked to the binder and then to a potential customer by future researchers.

Many questions remain to be answered. Were paper supply or printer budget constraints the reasons for the presence of so many differing watermarks? Were these printed texts a low priority, and thus did not warrant a singular concerted effort by the print shop? Only about 50 sheets of paper were used in printing each text, but the paper used appears to be from many different makers. (Five sheets of paper equaled the value of one parchment skin in the late fourteenth century, according to Albro.) How can the inconsistencies in paper qualities be explained? What can be further learned from this codex of late fifteenth-century printing practices? We are left with as many questions as answers at this point in the research surrounding PSU's 1490 codex.

Appendix

Trefoil Bull with staff and snake (image 1)



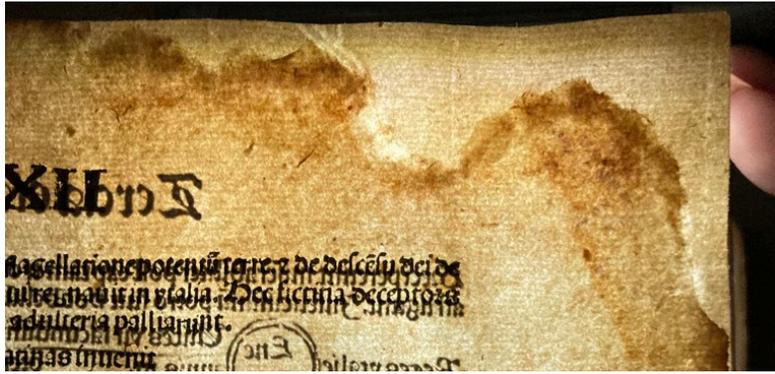
Trefoil Bull with staff and snake (image 2)



Trefoil Gothic P (image 3)



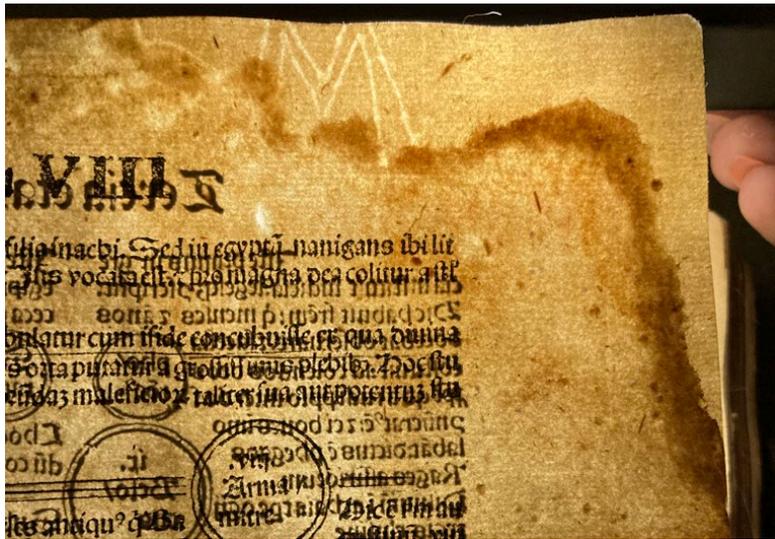
Repaired page of FT with watermark (Image 4)



Repaired page of FT with watermark (Image 5)



Repaired page of FT with watermark (Image 6)



Works Cited

- Albro, Sylvia Rodgers. "City of Papermaking in Medieval and Renaissance Italy," presented at the Library of Congress. 2017. <https://www.youtube.com/watch?v=T4SYBy8O9to>
- Allen, E. W., ed. *The Antiquary*. Vols. 3-4. London: Frederick William Monk, 1873.
- Graham, Christian. "Watermarks in the PSU Codex *Fasciculus temporum* and the Paper Trade." PDXScholar, 2020.
- Lindenthal, Laura. "Watermarks in the PSU *Malleus Maleficarum*." PDXScholar, 2020.
- Piccard, Gerhard. "Piccard Watermark Collection." Stuttgart State Archives. www.piccard-online.de/einfueh.php#_4
- Tomasso, Ray. "Papermaking and the History of Paper." 2011. <https://www.youtube.com/watch?v=JPqjLzAnSIM>
- "Wasserzeichen Informationssystem." German Research Foundation (DFG). www.wasserzeichen-online.de/wzis/index.php