

Mugshots and



Fingerprints:

BY CARTER HAILEY



Sleuthing Shakespearean Papers



I'm a book detective; my work might be described as a kind of CSI: Old Books. I look at the physical evidence in books to try to reconstruct details of their life history.

For the last several years most of my time as a Folger reader has been spent looking at Shakespeare quartos sideways. That's because I've been studying paper, and in quartos the watermarks appear in the gutter, divided between two leaves of the four-leaf gathering.

A fellow Folger scholar, code-named JoeLoe, likes to needle me that I might actually learn something if I turned the books right-side up; I simply smile and reply that, to

paraphrase Oscar Wilde: "We are all in the gutter, but some of us are looking at the watermarks."

Like most detectives, I have a small arsenal of forensic devices, both high-tech and low, which aid my investigations.

- ❖ In order to compare copies of a book to detect whether textual changes were made during the course of printing, I use a portable optical collator of my own design, which I call Hailey's COMET.
- ❖ For studying details of typography and illustrations, I have a digital microscope which plugs into a computer and can magnify up to 200x.
- ❖ And for examining paper I have a flat light pad that can be slipped between pages in order to illuminate watermarks.
- ❖ But my most important tool for studying paper is a clear, thin, plastic ruler with a metric scale.

INTERROGATING PAPER

Paper, at least in part because of its ubiquity, has proved effective in solving a number of difficult bibliographical cases, and has been particularly useful in exposing forgeries and deceptive dates. A classic example is the great bibliographic scholar W. W. Greg's 1908 demonstration that the Pavier quartos—a group of ten plays attributed to Shakespeare which are variously dated 1600, 1608, and 1619—had all been printed in the latter year.

Greg found that in a number of instances, paper bearing the same watermarks appeared in quartos with different title page dates, and he knew that this was impossible. He understood that hand-made printing paper was an industrial commodity produced on molds whose lifespan was no more than a year or so, and that paper was typically bought for a particular job or jobs

by publishers and/or printers and quickly consumed. From the watermark evidence, Greg knew that the earlier dates must be false.

The short lifespan of paper molds and the rapid consumption of paper by printer and publishers led me to believe that, given sufficient evidence, paper might be used more to date accurately early printed books which lack title-page dates. And there are a great many of them: at least 15% of the books printed in England between 1473 and 1640 are uncertainly dated. Such uncertainty constitutes a substantial gap in basic historical knowledge of printing in this period; knowing when a book was 'born' is crucial to establishing when it became culturally available to readers.

In order to demonstrate my hypothesis, I set myself the task of dating the only two early Shakespeare quartos which lack title-page dates: the fourth quarto of *Romeo and Juliet* and the fourth quarto of *Hamlet*, both published by John Smethwicke and published by William Stansby. (The *R&J* has been conjectured to date from 1622, the *Hamlet* from 1619-23.) The method is comparative. If I can find the same paper or papers used to print an undated book in a

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book which does bear a title-page date, I can be relatively certain that they were issued no more than one year apart.

But to interrogate paper effectively, the filigranologist (from the



Making Paper: An illustration from Hartman Schopper's *Panoplia omnium illiberalium mechanicarum*, [1568].

French for watermark) must be able to identify it positively, to know with certainty that a given paper came from a particular paper mold and not from one of many others that might bear similar watermarks.

BREAKING THE MOLD

Paper molds were made and used in pairs, with the "same" designs sewn to each of the two molds. Since these designs were handcrafted of bent wires, they are never precisely alike, and thus can be distinguished. (Watermark twins are fraternal or sororal, not identical.) But a picture of a watermark is not in itself sufficient, both because watermarks frequently deteriorate and change

their shape over the life of a paper mold, and because manufacturers often repeated the 'same' design in series of molds.

In order to achieve certainty of recognition, I developed the 'mugshot and fingerprint' method. The 'mugshot' is a reproduction of the watermark, in my case a careful drawing. To explain the fingerprint requires a brief description of the paper mold itself.

The mold is a rectangular wooden frame with a series of wooden ribs parallel to the shorter sides and spaced at more or less regular intervals. Perpendicular to the ribs, a closely spaced grid of *laid* wires is linked together by twists of the *chain* or sewing wires which run parallel to and just

The Hinman Collator

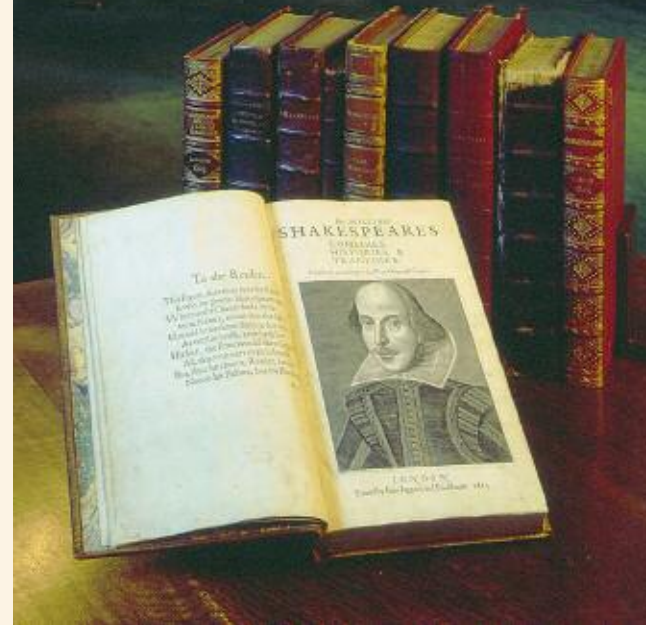
Other scholarly inventions at the Folger

When Charlton Hinman arrived at the Folger as a research fellow in 1941, scholars had made little progress in collating, or comparing, the First Folios assembled there. The copies of this first collection of Shakespeare's plays differ slightly from each other because the pages were proofread and corrected during printing; once tabulated, the inconsistencies were expected to be of great interest. But finding them was very time-consuming. Hinman had barely started before he left to spend four years in naval intelligence during World War II.

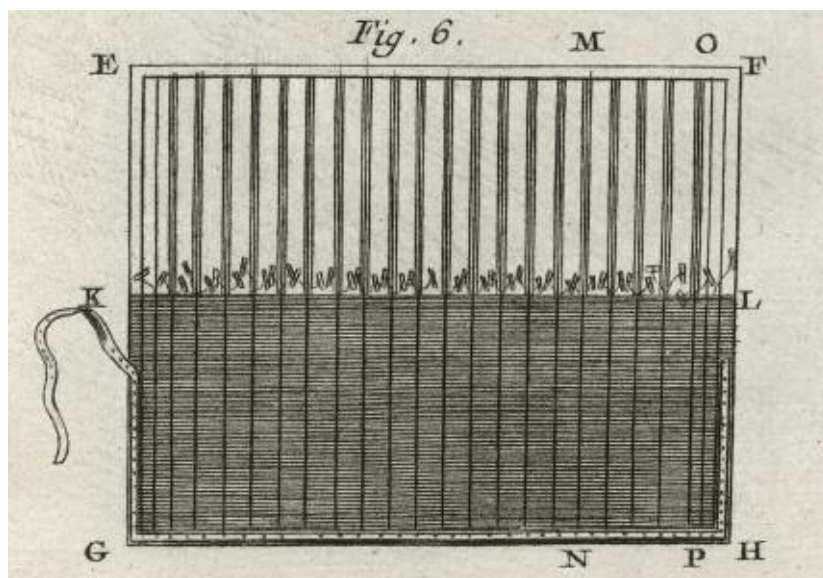
As Hinman later recalled, the war gave him the answer, when he learned of a machine built to compare before-and-after pictures of bomb targets. On his return, he spent the years from 1946 to 1952, with a two-year absence in Korea,

developing a similar device called the Hinman collator. (Folger librarian Giles Dawson kept the work going while Hinman was gone.) To use the collator, an operator set two First Folios in place, then looked through an eyepiece to see them superimposed, then each alone. As the view blinked back and forth, even a broken comma wriggled noticeably. Hinman found he could collate as many as 180 folio pages in under five hours. In the next decade, he analyzed more than fifty Folger folios, a pair at a time.

The results, published in 1963 in *The Printing and Proof-reading of the First Folio of Shakespeare*, were unexpected. Hinman found few substantive differences among the First Folios. Instead, he used thousands of small changes in the type itself to piece together just how the books



had been printed, including the sequence in which pages were set and the characteristics of those who set them. The extent of that achievement, wrote the editor of *Shakespeare Quarterly* on Hinman's death in 1977, "is difficult to describe with any adjective other than 'monumental.' "



Drawing of a paper mold. from Louis-Jacques Goussier. *Encyclopedie...*, 1762-1772, detail from plate IX. Note that the sewing together of the horizontal wires creates the vertical chain lines which are used to 'fingerprint' paper.

above the supporting ribs, and are fastened to them at intervals of about 10 millimeters. It is the impression of these sewing wires

which forms the "chain lines" that are visible in the finished sheet. Since the spacing between chain lines is rarely regular, chain space

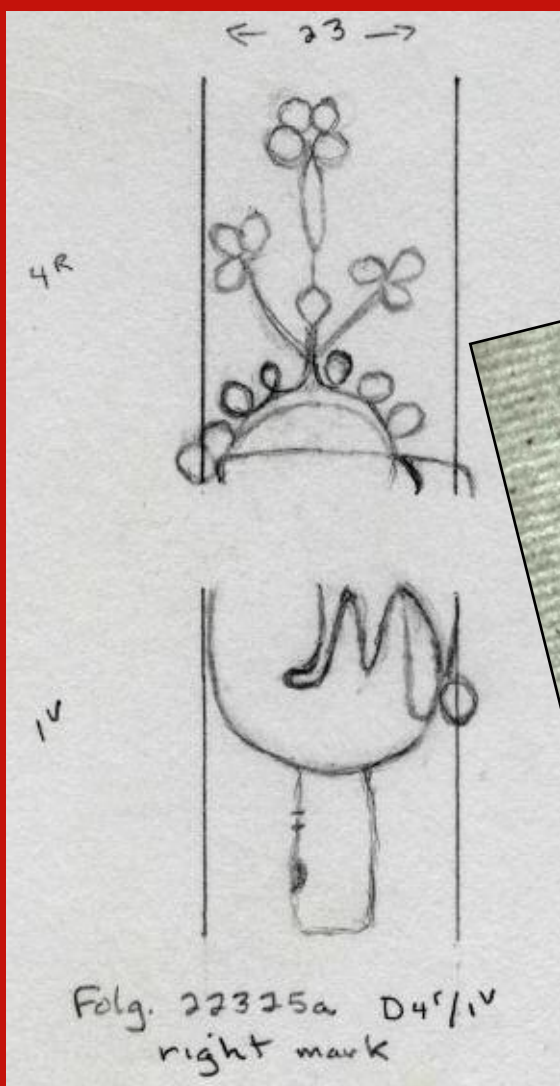
models—produced by carefully measuring, recording, and ordering of chain spaces to reflect their original arrangement across the length of the sheet—serve as a 'fingerprint' for the mold. (That's where my plastic ruler comes in handy.)

Chain space models are (nearly) as characteristic as fingerprints because there is usually a distinctive pattern in the sequence of narrower and wider spaces that can serve as a genetic marker. Since chain lines result from the impression of fine wires which are secured to the supporting wooden ribs, they are less apt to shift position or deteriorate, and are thus more stable over the life of the mold than are watermarks.

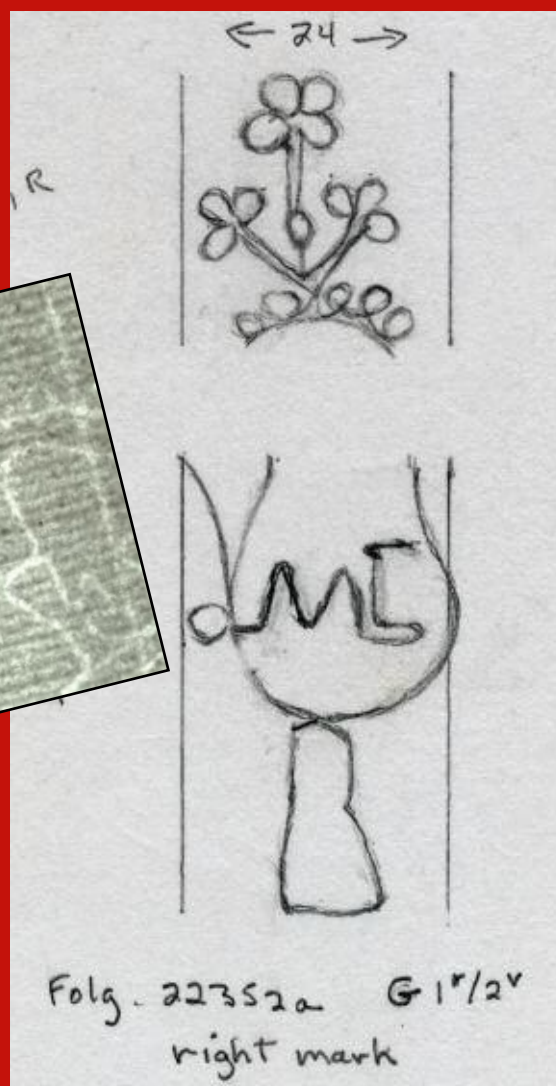
By combining the evidence of chain-space models with careful sketches of the visible portions

Mugshots and Fingerprints from the Fourth Quarto of *Romeo and Juliet*

BPOT: MLa



BPOT: MLb



Enlargement of Watermark Drawing, provided by Carter Hailey

The 'mugshot' is a reproduction of the watermark, in my case a careful drawing. I then develop chain space models—produced by carefully measuring, recording, and ordering of chain spaces to reflect their original arrangement across the length of the sheet—to serve as a 'fingerprint' for the paper mold. —Carter Hailey

Composite Chainspace Models:

BPOT: MLa 8 exemplars; average chainspace width: 22.12; wirelines: 31

3 | 21 | 23 | 22.5 | 21.5 | 21 | 23.5 | 22 | 24 | 7}{8.5 | 22 | 21.5 | 23 | 20.5 | 23 | 22 | 21.5 | 21.5 | 4

BPOT: MLb 7 exemplars; average chainspace width: 22.20; wirelines 31

2 | 22.5 | 21 | 24.5 | 20.5 | 22.5 | 22 | 22 | 22 | 9}{8 | 24 | 21 | 22.5 | 21 | 24.5 | 21 | 20.5 | 23 | 2

of quarto watermarks, I am able confidently to make identifications, pair twins, and distinguish similar sets of marks from each other.

THE TRUTH REVEALED

To solve the problem of the dates of the Q4s of *R&J* and *Hamlet* I first drew the watermarks and developed chain space models, using the Folger copies. (See Illustration for the *R&J* mugshots and fingerprints.) I then began to search for matching papers in the many sixteenth-century imprints owned by the Folger. This may seem to be a quixotic pursuit, but there is a method to my madness. The logical place to begin is with

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imprints from the same printer and publisher which were printed on or near the conjectured dates of publication of the target imprint.

On consecutive January days, in the warmth of the Folger's Old Reading Room, I found what I was looking for—matching papers for both of the undated Shakespearean

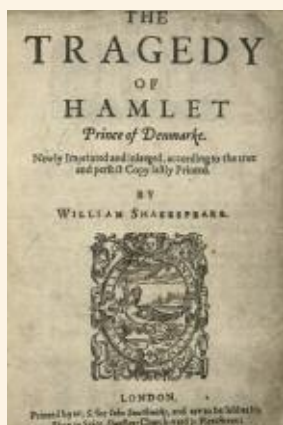
quartos in dated imprints from the Smethwick/Stansby partnership. In the 'A' gathering—and only that gathering—of Euphues Golden Legacie, dated 1623, I found the same POT: ML watermark that appears throughout the Q4 *Romeo and Juliet* (see illustration). There had been just enough paper left over from the Shakespeare quarto to print the beginning of *Euphues*.

The Q4 *Hamlet*, on the other hand, is printed on a mixed stock of two different papers bearing grape watermarks. After a bit of sleuthing, I identified the precise mixture in an unassuming little quarto called *Usurie arraigned and condemned*, dated 1625. This discovery was particularly significant since it proved that the text of Q4 *Hamlet* could not have influenced the First Folio (1623), as some scholars have conjectured.

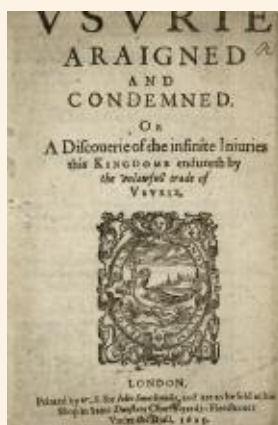
So, if you see someone armed with a clear plastic ruler and peering intently into the gutters of an old quarto, don't be alarmed: it may be a book detective stalking the wild filigrane or tracking down a fugitive watermark. ■



Title page of the Fourth Quarto of *Romeo and Juliet*



Hailey's "mugshot and fingerprint" method, with the help of a 1625 quarto called *Usurie arraigned and condemned*, has also helped him date the Fourth Quarto of *Hamlet*.



Learn more about Carter Hailey's discoveries about the Fourth Quarto of *Hamlet* in an upcoming issue of *Shakespeare Quarterly*.

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