

# Proposal for the creation of a Protocol for the study of paper and its application in the investigation of the history of paper

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1. The necessity to create a basic protocol  
In this presentation, I will discuss two  
2. the use of this protocol on some elements  
concerning the characteristics of paper and  
ideals to draw conclusions on the diverse  
watermarks. With the consensus of the  
topics that articulate the history of paper  
international community of paper historians of paper

background

- I have worked with Ana M<sup>a</sup> Herrero, archivist of the City council of Oviedo, Asturias, Spain, for 15 years in the creation of a protocol. Initially we used the protocol created by IPH in 1992.
- We applied it to the paper used in Asturias previous to the XVI century. We presented the results at the National Congress of Historians of paper, Cuenca 1996, and at the International of IPH, Oporto 1998.
- The large number of items in this protocol -82- discouraged our colleagues from using it.
- Later on we created a simpler protocol.
- We presented it at the National Congress of Historians of paper, Sarrià of Ter 2003.
- At the moment it is part of the proposal for the creation of a corpus of Spanish Watermarks that Carmen Hidalgo directs; this project was presented at the National Congress, Paular 2007.

The application of this protocol to a period of a documental fund has allowed us to reach very valuable conclusions regarding the history of paper

# METHODOLOGY

- 1 - Protocol: Description of each type of paper
- 2 - System of watermark reproduction
- 3 - Diagrams illustrating the characteristics of paper
- 4 - Conclusions of the study

# METHODOLOGY

## 4. Conclusions of the study:

- **Dimensions of the sheet**
- **Characteristics of the form: number of chainlines, support chainline, distribution of the laid lines and chainlines**
- **Statistics of papers with watermarks**
- **Watermark types: simple / double**
- **Papermills and papermakers**
- **Search for a “standard” paper format**
- **Origin of paper: Spanish / not Spanish**
- **Watermark: classification according to the elements that it represents**

# DATA TO BE REGISTERED

## 1.- WATERMARK DATA

1.1. Watermark Number

1.2. Description

1.3. Dimensions (height / width) and distances from the watermark to the top and the bottom of the sheet

1.4. Paper with wires: distance in mm. between the watermark and the nearest chainline on the left and on the right, and number of chainlines on the sheet

Continuous paper: distances to the left and right borders

## **DATA TO BE REGISTERED**

### **2.- THE SHEET AND THE FORM:**

2.1. Location of the watermark on the document

2.2. State of the sheet

2.3. Paper with wires: support chainlines and chainline carrier

2.4. Paper type: with wire, vellum or continuous

2.5. Paper with wire: total number of chainlines on the sheet and number of laid lines for each 20 mm

2.6. Dimensions of the sheet

## **DATA TO BE REGISTERED**

### **3.- DOCUMENTAL DATA:**

3.1. Dates of the document and place of production

3.2. If it is sealed paper

3.3. Institution in which it is kept

3.4. Signature

3.5. Title. If it is a printed work, name of the author, printer, engraver, etc.

## **DATA TO BE REGISTERED**

4.- OTHER DOCUMENTS WITH THE SAME OR SIMILAR  
WATERMARK

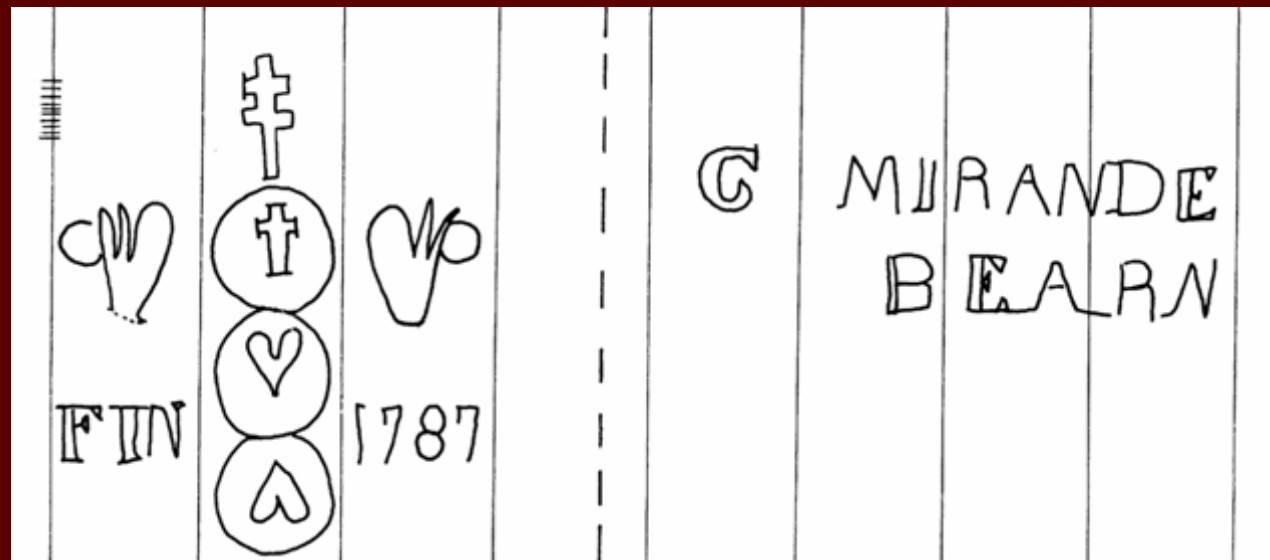
5.- NAMES OF THE PAPERMAKER AND THE  
PAPERMILL AND THEIR LOCALIZATION

6. - BIBLIOGRAPHICAL SOURCES

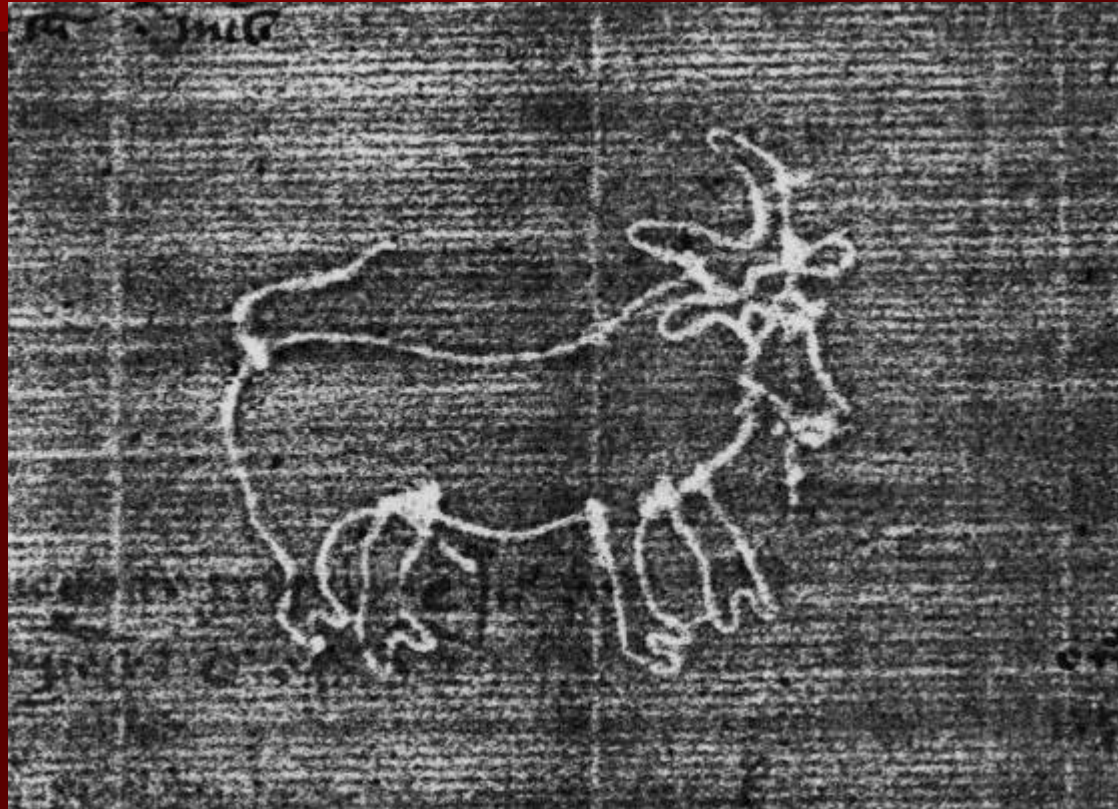
7. – REPRODUCTION WATERMARK

## METHODS OF REPRODUCTION

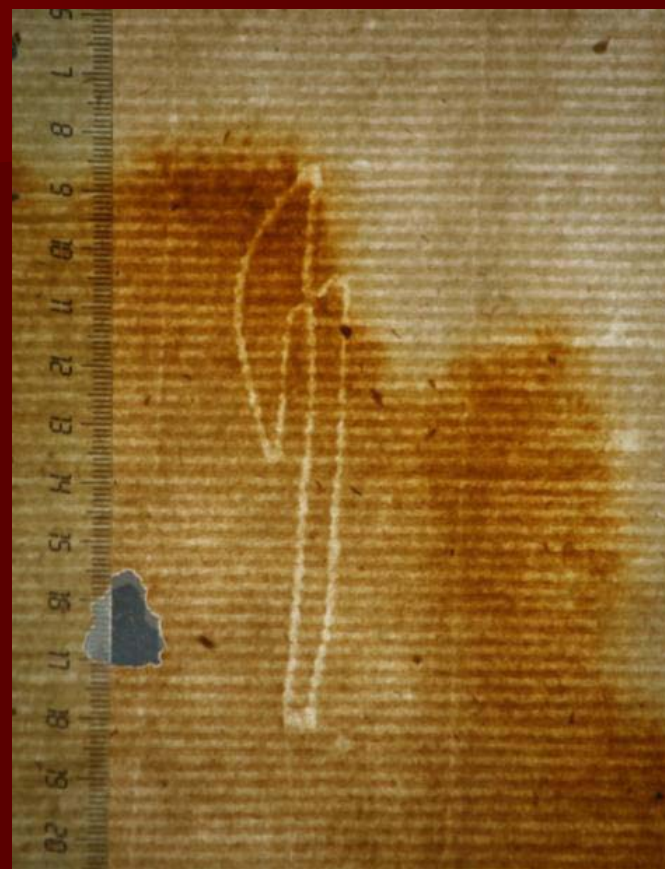
## 7.1. REPRODUCTION BY TRACING



## 7.2. PHOTOGRAPHS: TRANSPARENCY, DIGITAL AND CONTACT



**TRANSPARENCY**



**DIGITAL**



**CONTACT**

### 7.3. REPRODUCTION BY RUBBING



## 7.4. SCAN

## 7.5. RADIOGRAPHIC METHODS :

- BETA RADIOGRAPHY
- ELECTRON RADIOGRAPHY
- SOFT X-RAY RADIOGRAPHY

# EXAMPLES OF APPLICATION

I will begin by talking about our experience with the section of the Minute Books of the City Council of Oviedo that cover the period from 1498 to 1862

The selected examples are the Minute books covering the years 1789 to 1830

I will present you two technical files and  
the results after the application of the  
obtained data

# SNAKE

## 1.- Watermark R-1.407.

Description: Snake crowned *tortillante*, with open mouth, extended tongue and the body divided into strips.

Characteristics: Height: 64 mm. Width: 20 mm.

Distance to the bottom of the sheet: 119 mm; to the top: 124 mm.

Distance to the left chainline: 5 mm; to the right: 5 mm.

Nº of chainlines to the left of the watermark: 4.

## 2.- Pages: 5v - 4r.

Cut borders.

Support Chainlines

Nº of chainlines: 16.

Nº of laid lines in 20 mm: 20.

Dimensions: 307 x 432 mm.

# SNAKE

3- Documental data: 1550, Sahagún. AMO. Donaciones, Confirmaciones y Privilegios C-18-12, ff. 4-5.

4 - Other documents in which we find this watermark:

- year 1512-1518, Valladolid. Bofarull (1959) fil. 579. Convergent Watermark.
- year 1548, Lugo. Basanta (1996) fil. 91. Apparent Watermark.
- year 1550, Valladolid. Briquet (1923) fil. 13.766. Apparent Watermark.
- year 1550, Oviedo. AMO. C-18-12, ff. 3-6. Identical Watermark.
- year 1550, Santiago. Basanta (1996) fil. 306. Apparent Watermark.
- year 1553, Santiago. Basanta (1996) fil. 243. Convergent Watermark.
- year 1548, s.l. Basanta (1996) fil. 672. Convergent Watermark.
- year 1553, Valladolid. Bofarull (1959) fil. 585. Apparent Watermark.
- year 1566, Malines, Belgium. Briquet (1923) fil. 13.799. Watermark convergent.

# SNAKE

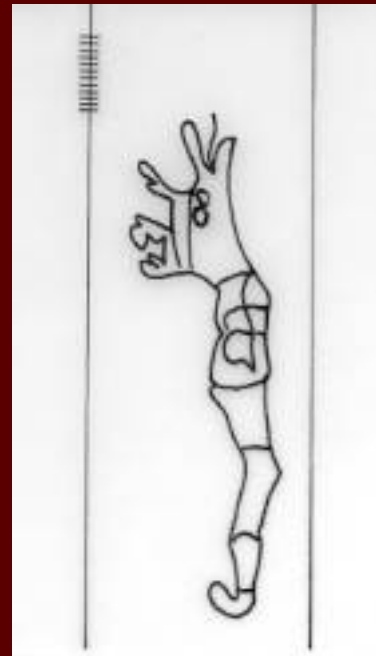
## 6 – Bibliographical References:

BASANTA (1996) T° I: pp. 169, 198, 280, 312, 433 and 439, fil. 243, 306 and 91. T° II: pp. 424 and 453, fil. 672.

BOFARULL (1959) p. 31, fil. 579 and 585.

BRIQUET (1923) pp. 676-683, fil. 13.762, 13.766-13.767, 13.770 and 13.799.

## 7- Reproduction Watermark



# OLIVA

## 1.- Watermark R-1.071.

Description: F de OLIVA under a cannon with ammunition.

Characteristics: Height: 56 mm. Width: 79 mm

Distance to the bottom of the sheet: 122 mm; to the top: 119mm.

Distance to the left border: 154 mm; to the right: 64

## 2.- Pages: 666r-667v.

Cut borders.

Paper vellum.

Dimensions: 297 x 410 mm.

## 3.- Documental data: 1825, Oviedo. AMO. Reales Órdenes E-5, p. 666-667.

# OLIVA

## 4.- Other documents in which we find this Watermark:

- year 1825, Oviedo. E-5 ff. 620-621
- year 1825, Oviedo. E-5 ff. 686-687.

## 5.- Data of the papermaker:

Josep and Manuel Oliva. Town: Rojals, Tarragona.

## 6.- Bibliographical References :

DÍAZ-MIRANDA and HERRERO (2001) pp. 249-250 and fil. 18c.

GAYOSO (1994) T. I P. 176.

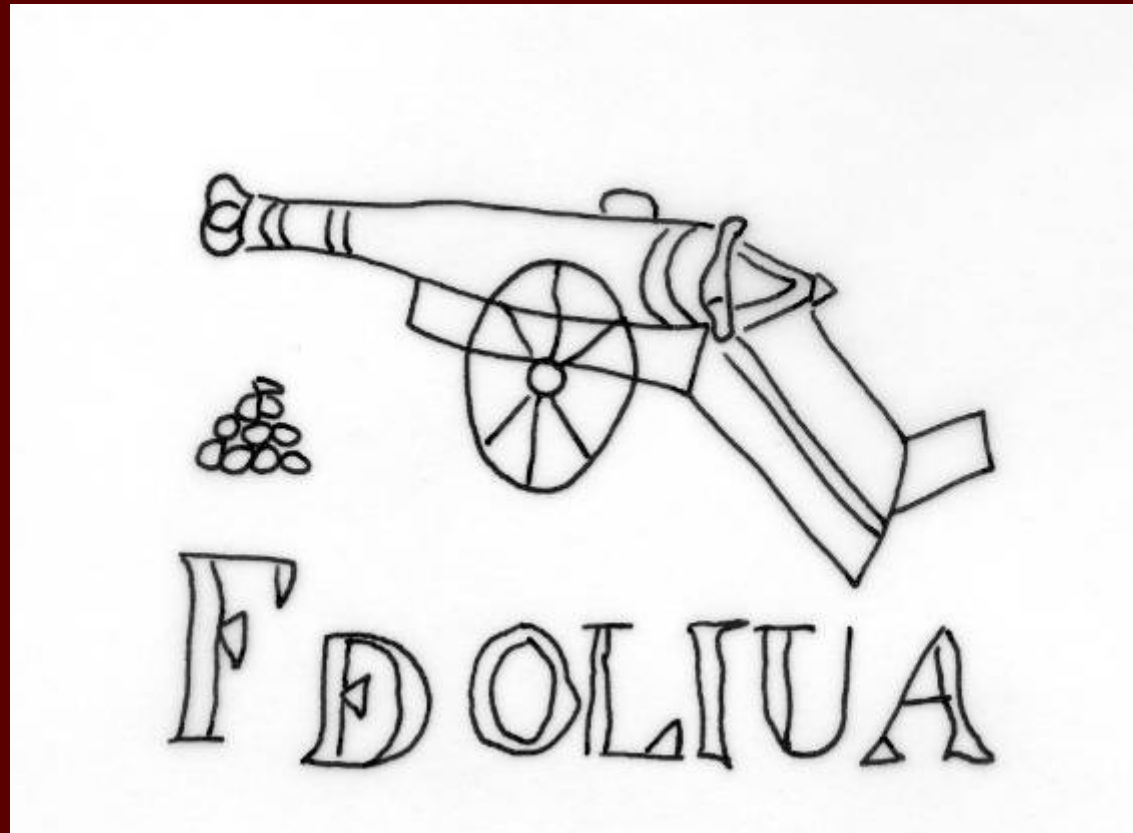
HIDALGO (1986) p. 745.

MADURELL (1972) pp. 56, 265-278 and 725.

VALLS (1970), pp. 242 and 295.

# OLIVA

## 7- Reproduction Watermark

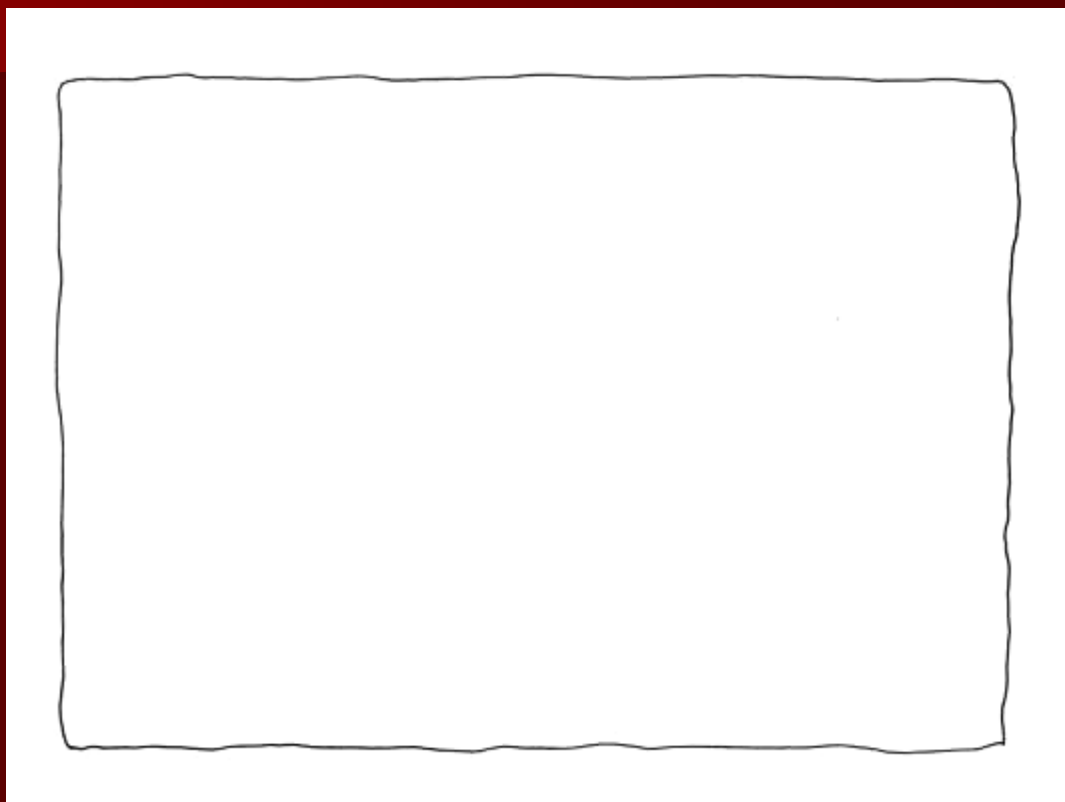


# Table with of the characteristics paper

Tabla con las características de los papeles

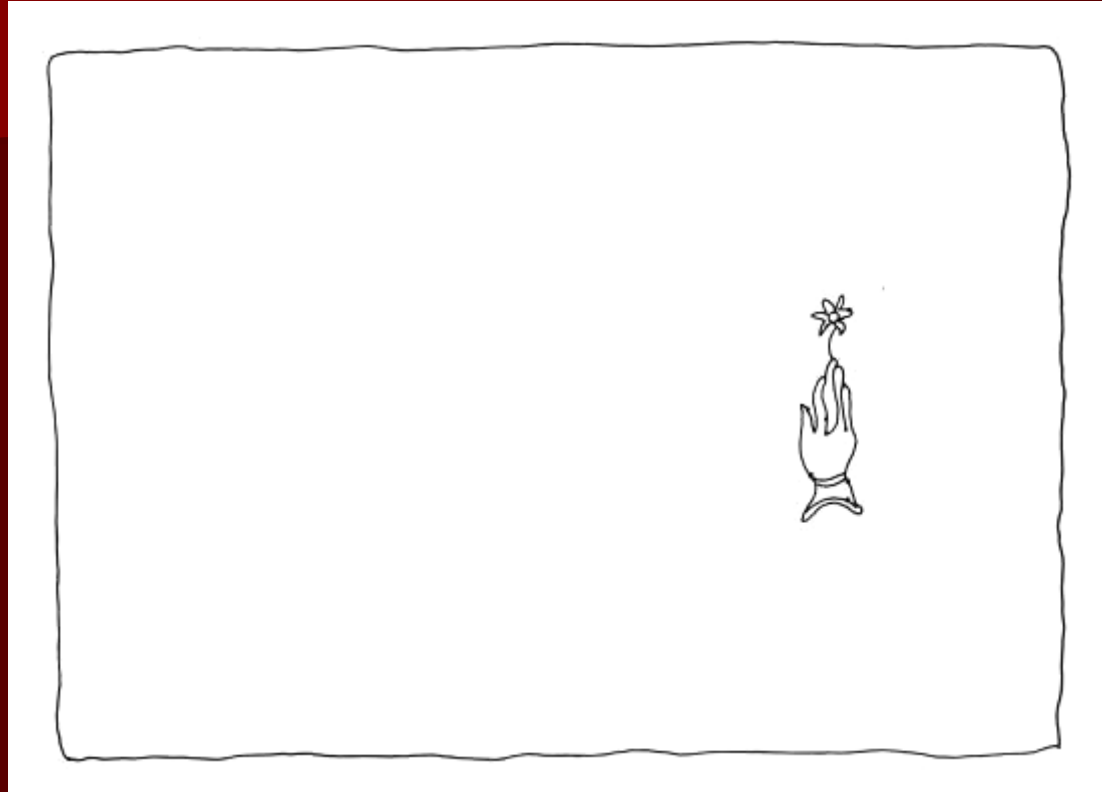
| Nº | Nº R  | Papelero               | Alt. Filig. | Anch. Filig. | D. Alt. hoja | D. Baj. hoja | D. C. I             | D. C. D    | C. Izqda | Folios                             | Bor sin cortar | C. P   | Dist. C | C. Ap | Nº C | P  | Dimensiones   | Dimensi. originaria | Año          | Se- llo | L. |
|----|-------|------------------------|-------------|--------------|--------------|--------------|---------------------|------------|----------|------------------------------------|----------------|--------|---------|-------|------|----|---------------|---------------------|--------------|---------|----|
| 1  | 1.395 | Abad. Ant <sup>a</sup> | 94          | 87           | 104          | 115          | 3                   | 5          | 3        | 95v-96r                            | 1,2,3          | 3      | 24      | D     | 18   | 19 | 313 x 433     | <b>313 x 443</b>    | 1810         | Si      | Ac |
| 2  | 1.394 | Abad. Lorez.           | 86<br>14    | 22<br>62     | 101<br>176   | 115<br>140   | 1<br>1              | 1<br>13    | 12<br>3  | 7v                                 | 1,2,3          | -<br>2 | 24-25   | 2     | 18   | 18 | 302 x 432     | <b>302 x 438</b>    | 1811         | Si      | Ac |
| 3  | 1.356 | Abad. Mar <sup>a</sup> | 23          | 84           | 150          | 136          | 9                   | 3          | 4        | 7r                                 |                | 3      | 22-25   | 1z    | 9    | 20 | 309 x 218     | -                   | 1815         | No      | Ac |
| 4  | 1.396 | Abad. Pasc.            | 90          | 117          | 97           | 126          | 3                   | 4          | 11       | 134r-133v                          | 1,2,3          | 4      | 23-26   | 2     | 19   | 18 | 313 x 432     | <b>313 x 438</b>    | 1814         | Si      | Ac |
| 5  | 1.342 | Abad. Tadeo            | 78          | 102          | 96           | 139          | 1                   | 15         | 11       | 138r-137v                          | 1,2,3,4        | 4      | 23-24   | 2     | 19   | 21 | 313 x 436     | <b>313 x 436</b>    | 1813         | Si      | Ac |
| 6  | 1.373 | AFP                    | 102         | 44           | 104          | 102          | 22                  | 0,1        | 2        | 4v-11r                             | 1,2,3,4        | 2      | 22-23   | 2     | 19   | 29 | 308 x 430     | <b>308 x 430</b>    | 1828         | Si      | Ac |
| 7  | 1.326 | Albors                 | 112<br>70   | 70<br>85     | 92<br>116    | 110<br>124   | 0,1<br>24           | 3<br>15    | 3<br>12  | 16v-15r                            | 1              | 3<br>4 | 24-25   | 2     | 19   | 20 | 310-314 x 430 | 316 x 442           | 1811         | Si      | Ac |
| 8  | 1.364 | Aloi, Felix            | 65          | 85           | 120          | 127          | 13                  | 19         | 12       | 42v-43r                            | 1,3,4          | 4      | 22-24   | 2     | 19   | 23 | 312 x 430     | <b>312 x 436</b>    | 1819         | Si      | Ac |
| 9  | 1.356 | Alonso                 | 55          | 55           | 116          | 114          | 11                  | 6          | 3        | 122r                               |                | 2      | 24-25   |       | 9    | 21 | 285 x 210     | -                   | 1812         | Si      | Ac |
| 10 | 1.348 | Antiga, Pere           | 87          | 99           | 98           | 105          | 10                  | 6          | 12       | 141r-140v                          |                | 4      | 23-24   | 2     | 19   | 19 | 290 x 420     | 295 x 440           | 1812         | Si      | Ac |
| 11 | 1.352 | Barana                 | 11<br>113   | 43<br>96     | 169<br>67    | 132<br>132   | 1<br>1              | 5<br>5     | 4<br>11  | 14v-15r                            | 1,2,4          | 1<br>4 | 22-25   | 2     | 19   | 19 | 312 x 430     | 316 x <b>430</b>    | 1813<br>1814 | Si      | Ac |
| 12 | 1.393 | Barceló                | 86<br>8     | 105<br>49    | 126<br>173   | 103<br>134   | 0<br>19             | 14<br>5    | 3<br>14  | 155v-154r                          | 1,2,3,4        | 5<br>2 | 24-25   | 2     | 19   | 18 | 315 x 436     | <b>315 x 436</b>    | 1810         | Si      | Ac |
| 13 | 1.363 | Bas                    | 16<br>53    | 76<br>46,5   | 143<br>123   | 153<br>136   | 1<br>13             | 16<br>12   | 4<br>13  | 21v-22r                            | 1,3,4          | 3<br>2 | 23-24   | 2     | 19   | 22 | 312 x 430     | <b>312 x 436</b>    | 1819         | Si      | Ac |
| 14 | 1.367 | Boleda                 | 56          | 43           | 114          | 143          | 14                  | 13         | 13       | G <sub>3</sub> r- G <sub>3</sub> v | 1,2,3,4        | 2      | 23-24   |       | 19   | 20 | 313 x 430     | <b>313 x 430</b>    | 1823         | No      | Ac |
| 15 | 1.050 | Boronat                | 102         | 108          | 101          | 105          | 4                   | 8          | 12       | 478v-483r                          | 2,4            | 4      | 24-25   |       | 19   | 25 | 310 x 444     | 314 x <b>444</b>    | 1821         | Si      | Ac |
| 16 | 1.365 | Boronat, Romualdo      | 38<br>40    | 107<br>38    | 133<br>135   | 134<br>130   | 8<br>8              | 14<br>6    | 3<br>12  | 75v-76r                            |                | 4<br>1 | 25-26   | 2     | 19   | 25 | 305 x 420     | 309 x 440           | 1821         | No      | Ac |
| 17 | 1.344 | Bosque                 | 12<br>105   | 34<br>76     | 152<br>111   | 151<br>99    | 5<br>20             | 8<br>20    | 4<br>12  | 227v- 228r                         | 2,4            | 1<br>4 | 23-24   |       | 19   | 20 | 315 x 430     | 319 x <b>430</b>    | 1813         | Si      | Ac |
| 18 | 1.368 | Carol                  | 12<br>63    | 37<br>45     | 147<br>123   | 150<br>123   | 16<br>12            | 15,5<br>11 | 4<br>12  | 37r-38v                            |                | 2<br>2 | 22-24   | 2     | 19   | 25 | 309 x 420     | 313 x 432           | 1824         | Si      | Ac |
| 19 | 1.331 | Casaban                | 9           | [56]         | 150          | 150          | [3,5]               | 12,5       | 4        | 16v                                | fragmento      | [2]    | 24-25   | D     | 9    | 21 | 309 x 215     | -                   | 1812         | No      | Ac |
| 20 | 1.349 | Casa                   | 8<br>102    | 43<br>91     | 168<br>96    | 137<br>115   | 2<br>16             | 3<br>14    | 4<br>11  | 210v-209r                          | 2,4            | 1<br>4 | 23-26   |       | 19   | 20 | 313 x 428     | 317 x <b>428</b>    | 1813         | Si      | Ac |
| 21 | 1.241 | Coca                   | 50          | 106          | 132          | 125          | 53 al borde derecho |            |          | Guarda                             | 1,2,3,4        |        |         | D     |      |    | 307 x 420     | <b>307 x 420</b>    | 1847         | No      | Ac |

# CHARACTERISTICS OF THE SEALED PAPER



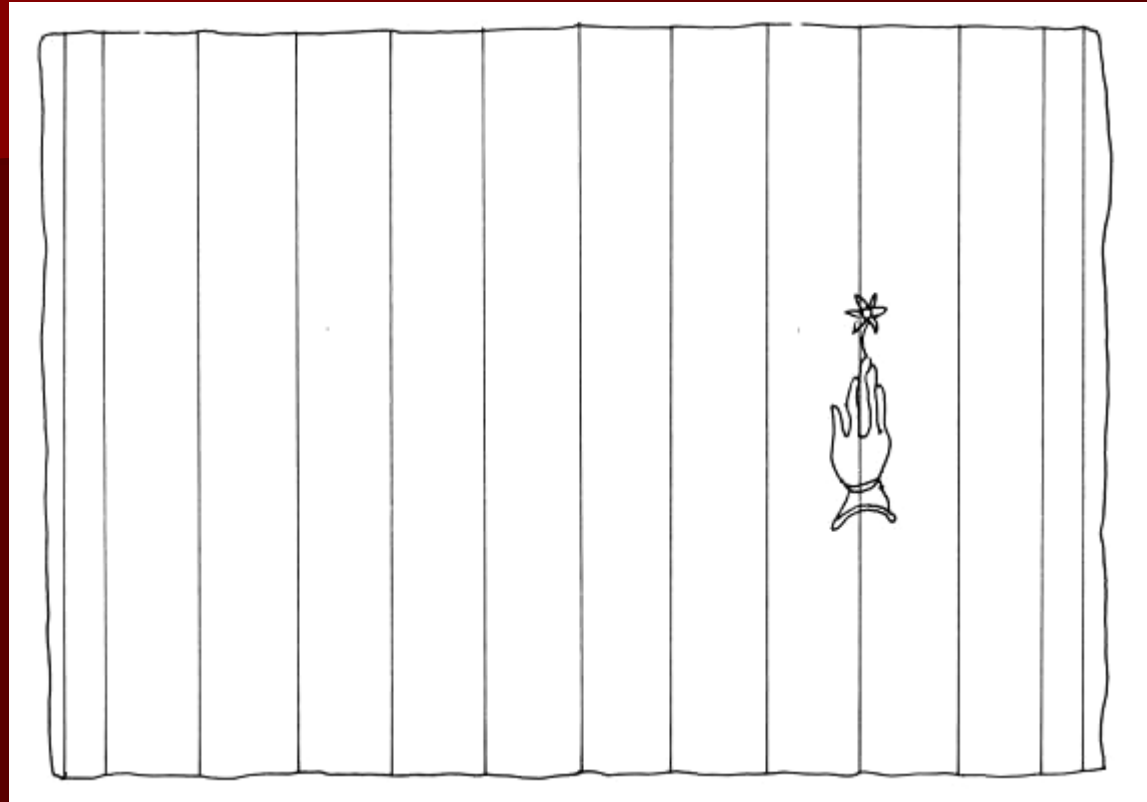
- 1. Dimensions of the sheet: between 306 and 318 mm high and 430-448 mm wide.**

## CHARACTERISTIC OF THE SEALED PAPER



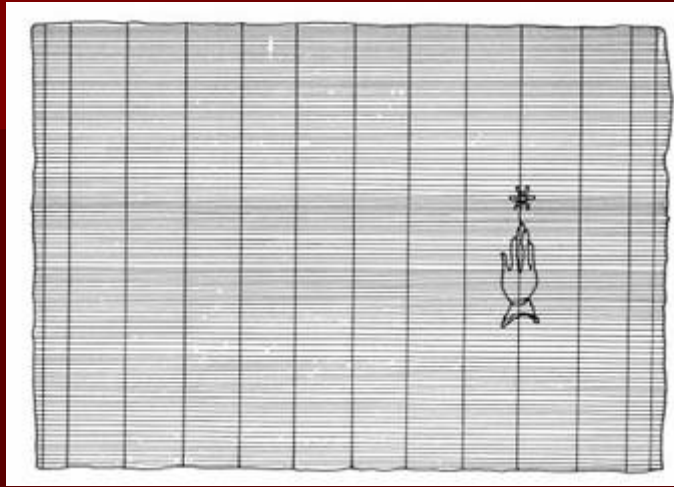
2. All the papers had watermarks, from the year 1789 to 1811 only 15% had double watermarks which were placed on the right of the sheet; while in papers from the year 1812 to 1830 48% had double watermarks, the majority of them placed on the left

## CHARACTERISTIC OF THE SEALED PAPER



3. The form used to produce these papers had 18-22 laid lines for each 20 mm and 19 chainlines each 22-25 mm.
4. Many papers have the two support chainlines, a large number only one and the rest none

## **“Standard” format for the sealed paper**



height 306-318 mm ( 91 %)

width 430-440 mm ( 86%)

laid lines 19-22 per 20 mm (84%)

chainlines 19, spaced at distances of 22-25 mm ( 88%)

Paper years 1789-1811: simple (85%) and double Watermark  
(15 %)

Paper years 1812-1830: simple (52%) and double (48%)  
Watermark

# CHARACTERISTICS OF UNSEALED PAPER

## Spanish origin:

- height 300-316 mm (80%)
- width 420-440 mm (91%)
- 18-22 laid lines in 20 mm
- Simple Watermark in 91% of papers from the years 1789 to 1811 and in 71% from the years 1812 to 1830

## French origin:

- Similar dimensions
- distances between chainlines: 26-28 mm.
- 17-18 chainlines
- Double Watermarks



# ORIGIN OF THE PAPER

## Diagram of origins



| Nº Registro | Fabricante            | Ubicación del molino                            | Región o País         | Año  | Sello |
|-------------|-----------------------|-------------------------------------------------|-----------------------|------|-------|
| R-1.395     | Abad, A.              | Alcoy                                           | Alicante              | 1811 | Sí    |
| R-1.394     | Abad, L.              | Alcoy                                           | Alicante              | 1811 | No    |
| R-1.326     | Albors, Fco.          | Alcoy                                           | Alicante              | 1811 | Sí    |
| R-1.327     | Garriga               | Alcoy                                           | Alicante              | 1811 | Sí    |
| R-1.328     | Tort, A               | Alcoy                                           | Alicante              | 1811 | Sí    |
| R-1.335     | Tort, J               | Alcoy                                           | Alicante              | 1811 | Sí    |
| R-1.000     | AB                    |                                                 | Francia ?             | 1812 | No    |
| R-1.336     | Alonso                | Sardón de Duero                                 | Valladolid            | 1812 | Sí    |
| R-1.348     | Antiga                | Sant Joan les Font                              | Gerona                | 1812 | Sí    |
| R-1.331     | Casaban               | Segovia                                         | Segovia               | 1812 | No    |
| R-1.338     | Ferrer, F             | Capellades                                      | Barcelona             | 1812 | No    |
| R-1.013     | Jerónimos             | La Flecha                                       | Valladolid            | 1812 | No    |
| R-1.339     | Lladó                 | La Riba                                         | Tarragona             | 1812 | No    |
| R-1.138     | Mallo                 |                                                 | Valladolid ?          | 1812 | Sí    |
| R-1.014     | Reig                  | Alcoy                                           | Alicante              | 1812 | Sí    |
| R-1.137     | Romaní                | Capellades                                      | Barcelona             | 1812 | Sí    |
| R-1.163     | Vinuesa               | Vinuesa                                         | Soria                 | 1812 | No    |
| R-1.342     | Abad, Tadeo           | Alcoy                                           | Alicante              | 1813 | Sí    |
| R-1.352     | Barachina, J          | Tibi                                            | Valencia              | 1813 | Sí    |
| R-1.347     | Barceló, J            | Alcoy                                           | Alicante              | 1813 | Sí    |
| R-1.344     | Bosque                | Torre de Claramunt ?                            | Barcelona             | 1813 | Sí    |
| R-1.349     | Casa                  | Tibi                                            | Valencia              | 1813 | Sí    |
| R-1.354     | Ferrer, I             | La Riba                                         | Tarragona             | 1813 | Sí    |
| R-1.345     | Jordán                | Utiel                                           | Valencia              | 1813 | Sí    |
| R-1.353     | Morato                | Torrelles de Foix (Alto Penedés)                | Barcelona             | 1813 | Sí    |
| R-1.350     | Oliva                 | Rojals                                          | Barcelona             | 1813 | Sí    |
| R-1.346     | PLA                   |                                                 | Francia ?             | 1813 | No    |
| R-1.343     | Romaní                | Capellades                                      | Barcelona             | 1813 | Sí    |
| R-1.351     | Silvestre             | Alcoy                                           | Alicante              | 1813 | Sí    |
| R-1.396     | Abad, P <sup>L</sup>  | Alcoy                                           | Alicante              | 1814 | Sí    |
| R-1.349     | Casa                  | Tibi                                            | Valencia              | 1814 | Sí    |
| R-1.397     | Frigola               | Borganyà/ Cornella Terri/ Palautordella (Osona) | Barcelona             | 1814 | Sí    |
| R-1.350     | Oliva                 | Rojals                                          | Barcelona             | 1814 | Sí    |
| R-1.341     | Tort                  | Alcoy                                           | Alicante              | 1814 | Sí    |
| R-1.355     | Tort, V <sup>te</sup> | Segorbe                                         | Castellón de la Plana | 1814 | Sí    |
| R-1.044     | Vinueza               | Vinuesa                                         | Soria                 | 1814 | Sí    |

# ORIGIN

## Sealed paper

- 1789 to 1808: Catalanian paper (only one paper from Zaragoza in 1797, and from Alicante in 1804, 1805 and 1808).
- 1800 to 1808:
  - 96,7% is paper from the three Catalanian regions:
    - 45% from Barcelona, especially from the area of Anoia.
    - 33% from Tarragona, from the area of Riba and Alcover.
    - 22% from Gerona, all of them from Sant Joan les Fonts.
  - 3,3%, the rest from Alcoy and Concentaina
- 1809:
  - paper from Zaragoza and from Guadalajara
- 1810:
  - 68,4% from Alicante, most of it from Alcoy
  - 31,6% is Catalanian (1/3 from Tarragona, Riba and Alcover  
1/3 from Gerona and the other 1/3 from Capellades).

# ORIGIN OF PAPER

## Sealed Paper

- **1812:** Alcoy, Catalonia and Valladolid
- **1813:** Alcoy, Valencia and Catalonia
- **1814:** Alcoy, Tibi, Castellón de la Plana, Barcelona and Soria
- **1816:** Alcoy and Barcelona
- **1811:** papermills from Alcoy
- **1817-1819:** Catalonia
- **1830:** Catalonia and Teruel



# ORIGIN

## Unsealed paper

- The national demand for unsealed paper was met by national and imported paper.
- For unsealed paper:
  - 82,5% was from Spanish papermills
  - 13% was from French papermakers and 4,5% from Italian ones in the years 1789-1811
  - 17,5% was French in the years 1812-1830

# CONCLUSIONS

- In the Minute Books of the City Council of Oviedo we see that until the year 1744 the paper that was used was, for the most part, Genoese.
- A situation that the crown tried to change by motivating and protecting the Spanish papermills.
- From the year 1744, until the Napoleonic invasion, Catalanian papermakers formed societies with the aim of obtaining contracts for the provision of paper to the Public Treasury. With the Napoleonic invasion the Catalanian papermills were closed down and the papermakers from other places, particularly Alcoy, took charge of the supply of paper to the Royal Seal.

# CONCLUSIONS

- With the stabilization of the political situation in Spain after the Napoleonic invasion, the papermakers from Alcoy became the main competitors of the Catalonians in the supply of official paper.
- From 1817 onwards the Catalanian papermakers were able to virtually regain the monopoly in the provision of paper to the Royal Treasury.
- The presence during this period of paper from other Spanish regions, apart from Catalonia and Levante, was not relevant and was discontinuous.

# PAPERMILLS

1. The papermaker is the actual owner of the papermill
2. Association of diverse papermarkers or merchants:
  - to exploit the papermill itself
  - for the combined sale of paper to big institutions such as the Royal Treasury
  - to export it to America
  - to defend other interests
3. Conversion of flourmills to papermills or the use of the same mill for both types of production
4. The formation of big dynasties was very frequent : Costa, Romaní, Boronat, Guarro, Pastrana, Elías.

- one papermaker can have several watermarks
- papermakers of the same family can use different watermarks



N° 47. Año 1803



N° 48. Año 1795

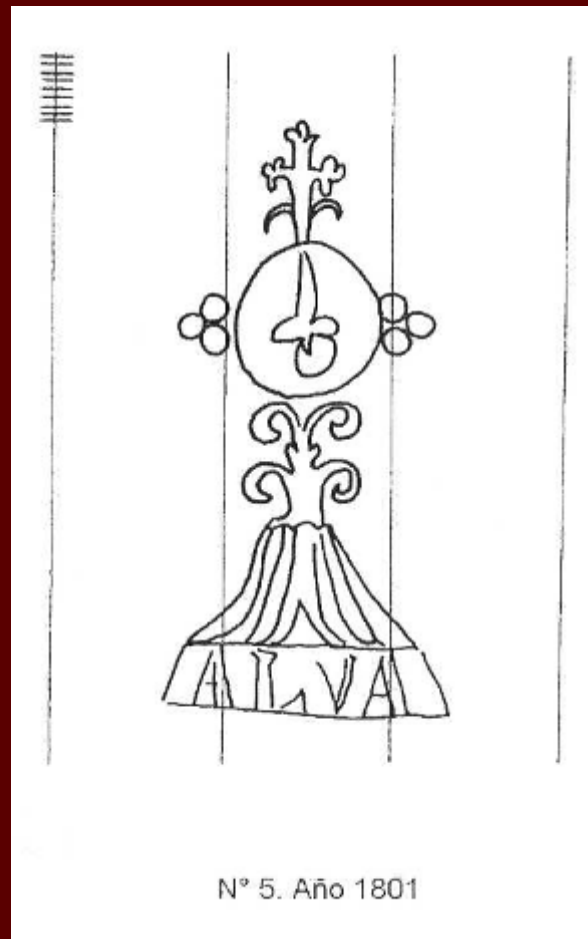


N° 49. Año 1794

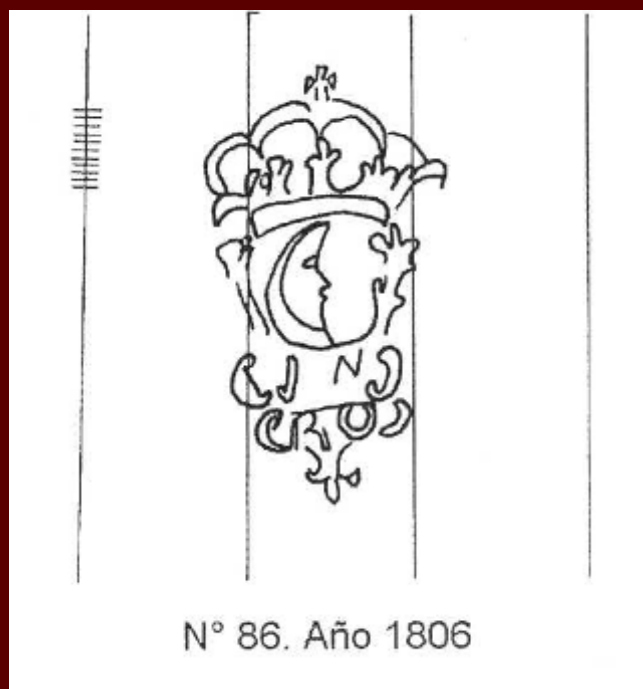


N° 50. Año 1794

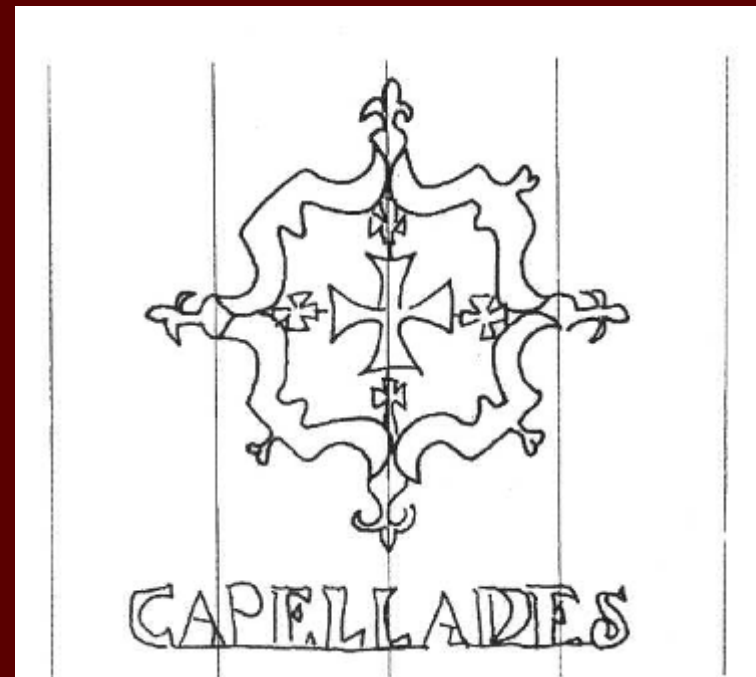
- A single watermark type for the whole family of papermakers



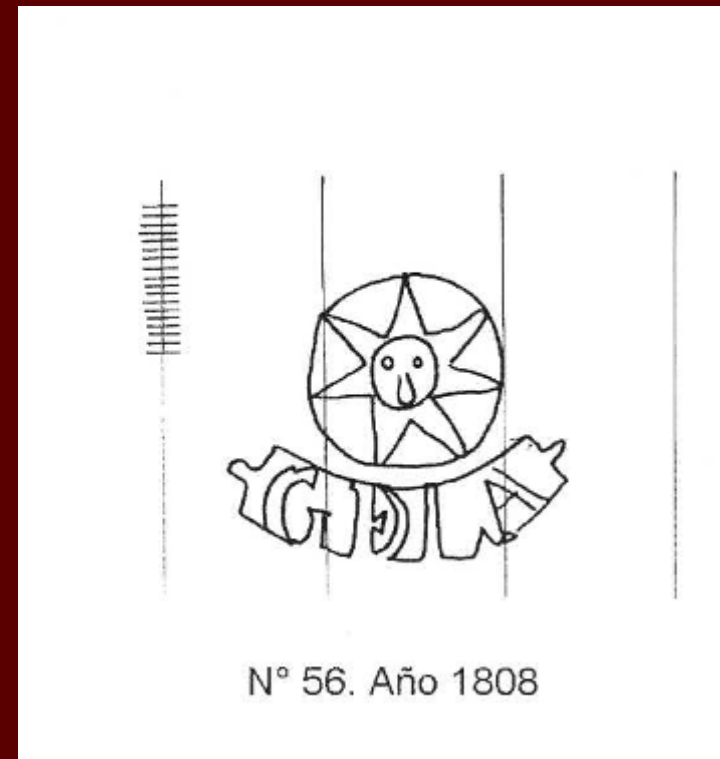
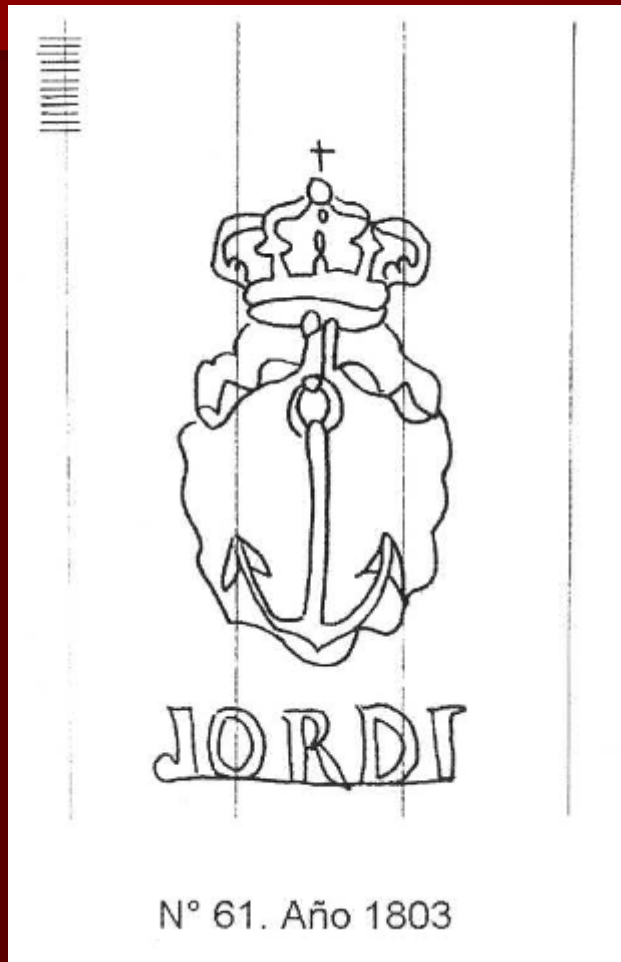
- watermark of the papermill, used by all leaseholders



- watermarks used by several generations



- less frequent were papermakers that used only one type of watermark



# GRAPHIC ELEMENTS REPRESENTED ON WATERMARKS

- 1. Watermarks composed of a shield, scroll or circle with the last name or initials of the paper inside.
- 2. Watermarks with just the letters of the papermaker.
- 3. Watermarks with the name of the town or region.
- 4. Religious watermarks: attributes of the passion, cross, chalice, church, rosary.
- 5. Watermarks with a tower.
- 6. Watermarks with a bell.
- 7. Watermarks with parts of the human body: heart, hand.
- 8. Watermarks consisting of an animal and the name of the papermaker: mermaid, wolf, dove.

## GRAPHIC REPRESENTED ELEMENTS ON WATERMARKS

- 9. Watermarks with a sun and the last name of the papermaker
- 10. Watermarks with a crescent and the initials of the papermaker
- 11. Watermarks with a caravel and the last name of the papermaker.
- 12. Watermarks with a bullfighter on horseback.
- 13. Watermarks with a broken vase and the name of the papermaker
- 14 Watermarks consisting of a vegetable motif: pomegranate, cypress.
- 15. Watermarks consisting of diverse objects: anchors, scales, crowns, keys.
- 16. Watermarks with elements alluding to the last name of the papermaker: rosemary, vine.
- 17. Watermark formed by three circles.

Gracias

Thank you

Vielen Dank