

Plating of the First Issue of the Grand Ducal Stamps of Tuscany

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Introduction

Philatelic research and studies have always been aimed at understanding more and more the intrinsic characteristics of stamps and the issues that brought them to life.

Once the 'Prototype' has been identified, its components are researched and studied including colour, watermark, printing varieties, etc.

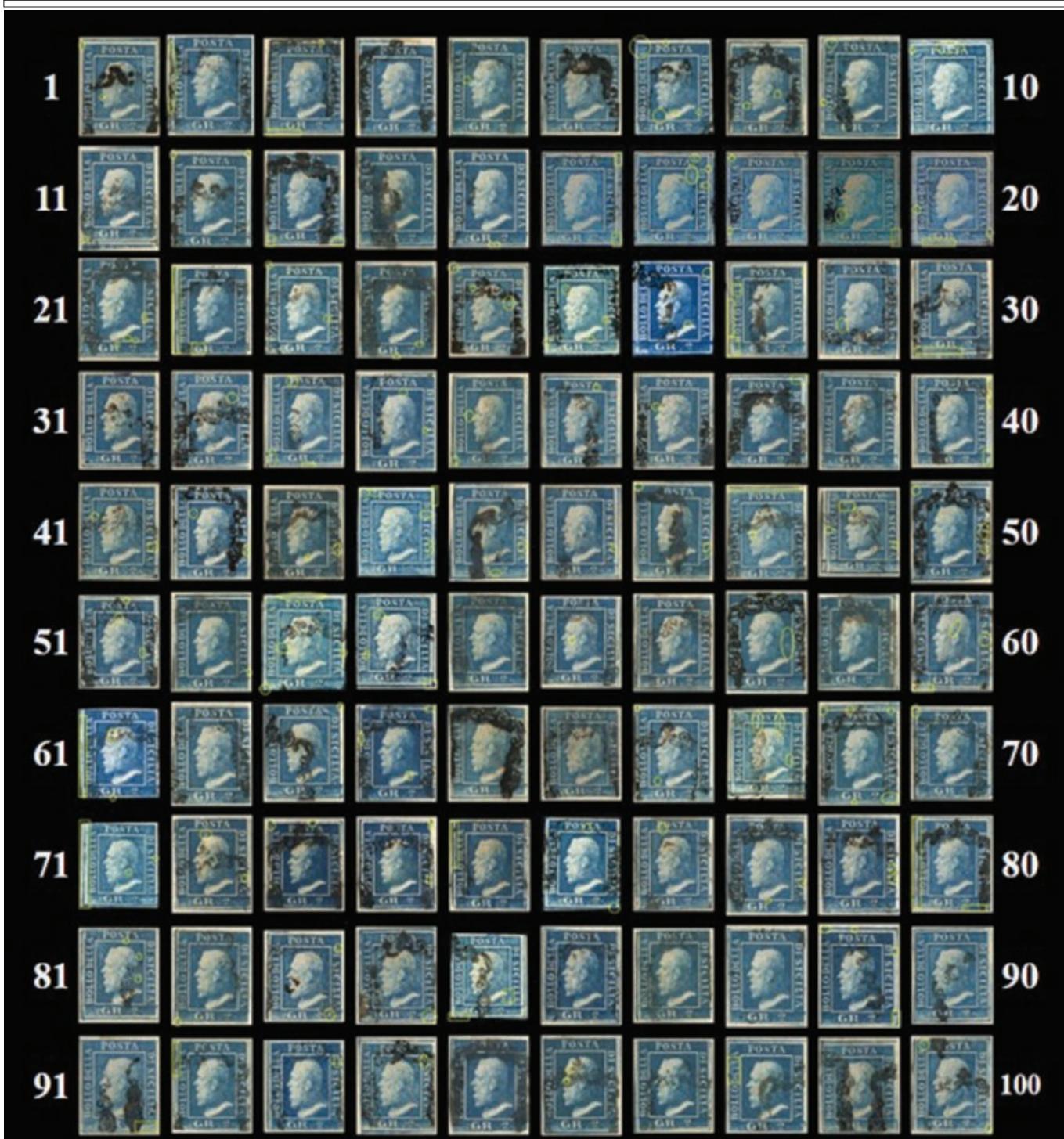
In classical philately and in particular the stamp issues of the stamps of pre-unification Italy, studies and research have been focused on PLATING, which is the identification of the position of the stamp in the matrix (or table) of printing.

The plating technique allows, through the study and analysis of the characteristics of the individual elements, the complete or partial reconstruction of the composition of the sheet, which relied upon the choice of one of the various printing techniques used at the time: typography, lithography and line engraving.

The plating works and detailed study of the stamps, as well as the attempts to identify the position where they were meant to be originally as well as the composition plates used to carry out the various printings, are very important to identify, in the context of the plating, the stamps that are positively genuine.

The examples that do not find a place on the plate can be considered as dubious and therefore needing further examination, before being deemed definitively genuine or fake. Important studies on plating have been published, such as the one focusing on the provisional issue of the former Duchy of Modena and the Naples Half Tornese (commonly known as Crocetta) by De Angelis and Pecchi.





A well-known classic and time-consuming exercise in philatelic research is the reconstruction of the plates of the 1859 Kingdom of Sicily postage stamps .

The postage stamps of the Grand-Duchy of Tuscany

At this point a question arises: is it possible to plate the Grand Ducal stamps of Tuscany, issued on 1 April 1851?

It seems an absurd question: to plate stamps you need a reference that shows the setting of a given plate: but as is known, in the production process of Tuscan stamps, the plates were assembled, disassembled and reassembled after having recovered the clichés and having the value plugs changed, making them, for lack of a setting reference, impossible to reconstruct.

However, if a specific **WATERMARK MATRIX** is used as a reference for plating, by matching the watermark fragment showing in the stamps paper with a **Reference Overlay**, the position of the stamp/s on the watermarked sheet can be conclusively determined.

The Reference Overlay, with the stamp correctly positioned, is then aligned with a cliché mask, called **PLATE OF POSITIONS**: in this way it is possible to detect exactly in which of the 240 positions of the plate the stamp was printed on the watermarked sheet.

This method has been widely tested and works very well, as:

- For the stamps of the Grand Duchy of Tuscany because the watermark is usually 'clearly detectable'.
- The matrix of the 12 crowns watermark has a unique layout and does not have the same areas repeated, as it was made manually and it is therefore (almost) always possible to position and align the stamp correctly on the Reference Matrix.



Embroiderers sewing the watermark on the canvas of the drum.

(Fabriano's Museum of paper and watermark; image taken from Philatelic Chronicle n. 315, May 2005)

The following paragraphs illustrate the method in detail with simple exemplifications.

Determining the position of the stamp on the watermarked sheet

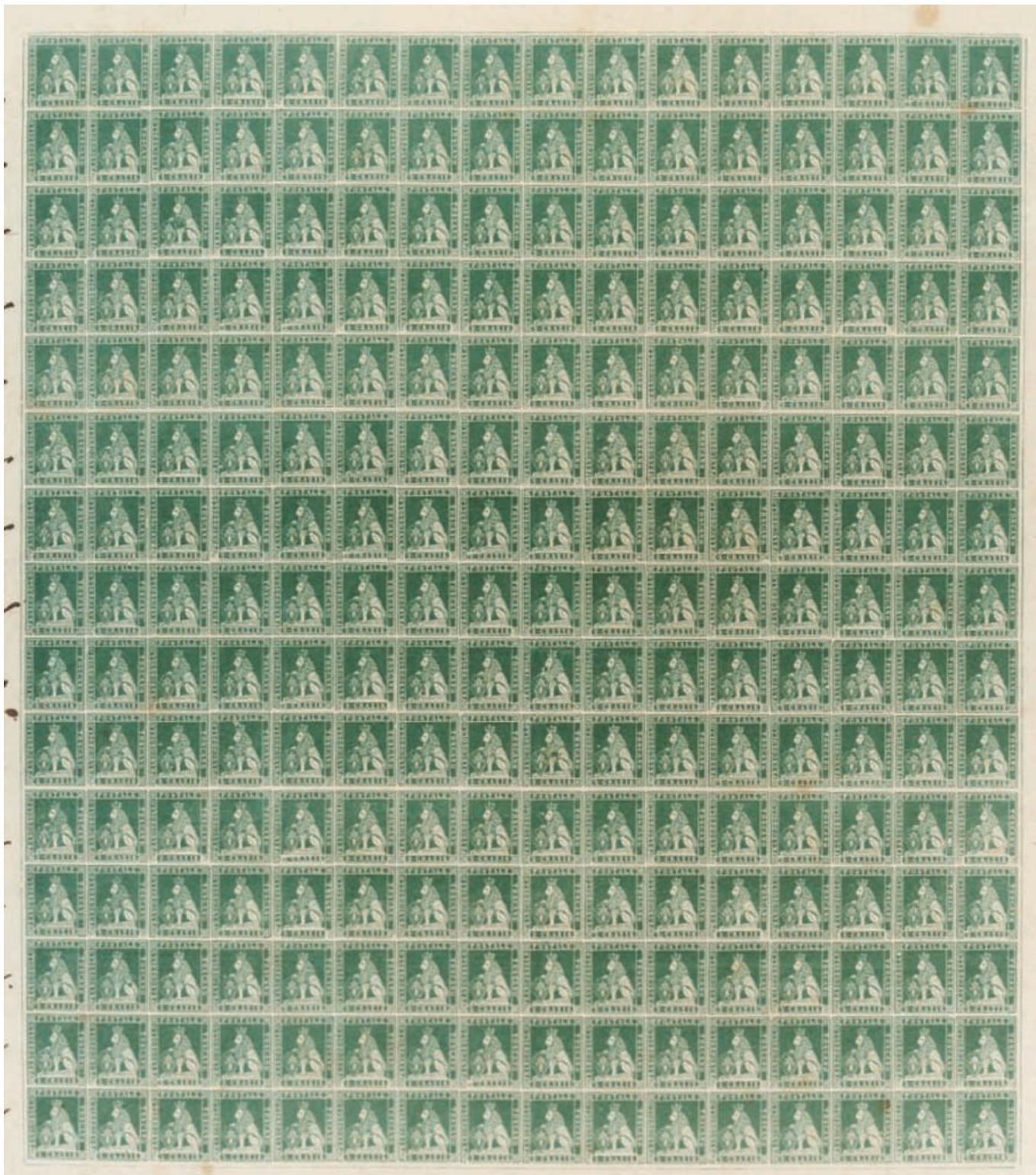
The Grand Ducal stamps of Tuscany were printed with a typographic technique in sheets of 240 examples arranged on fifteen (15) lines of sixteen (16) examples. The sheet was divided into three horizontal panes of five (5) lines each, an upper one (lines 1-5), a central one (lines 6-10) and a lower one (lines 11-15) of eighty (80) stamps each. Normally Grand Ducal stamps were printed very close to each other (0.5-0.6mm horizontally, 0.8-0.9mm vertically), but in the case of the three panes, these were more vertically spaced from each other (panes gap, 2.8-2.9 mm). This was designed to facilitate cutting and accurately separate the three panes of 80 stamps once the printing of the stamps was finished in order to correctly prepare the shipment of the copies to the various post offices.

See test full sheet of the 2 crazie on the next page

Since the use of watermarked paper was intended exclusively for the printing of stamps and therefore subjected to rules and controls typical of the production of security-printed items/documents, for the tests, essential to double check the quality of the watermark before mass production; only ordinary, unwatermarked paper was used for tests.

There are also tests made on recycled paper (such as galley proofs of books and publications) or printing tests on both sides of the same sheet. All the tests and the printer's waste (tears, printing defects, gumming, etc.) had to be handed over to the Administration which, by law, took care of their elimination.

However, not all the material was destroyed: in fact, test specimens used to frank mail and single proof examples, in blocks, in sheets (rarely complete) are known. Even the inventories of demonetized postage stamps that were withdrawn were all destroyed, although not immediately (the 2 soldi in October 1852) while the other denominations were discontinued in conjunction with the advent of **TUSCANY**'s Provisional Government stamps.



For this reason there are no sheets of Tuscany stamps today, except for a pane of 80 of 1 quattrino stamps which was purchased by an official of the Neapolitan administration (together with other stamps from other pre-unification states) in order to have references for the production of the stamps of the Kingdom of the Two Sicilies in Naples.

As a practical reference, the numbering of the positions of the stamps inside the printing plate is shown in the *illustration on the next page*, starting from the top left position with the number 1, up to the last position at the bottom right, the number 240.

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**Upper
Pane**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128
129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144
145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176
177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192
193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208
209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240

**Central
Pane****Lower
Pane****Gutter
Spaces**

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The watermarked sheets of the Grand Ducal issues of Tuscany

All the stamps of the period were printed on paper. It was manufactured with felted cellulose fibers, to which a bonding adhesive, fillers and dyes of different types and in different proportions were added depending on the use to which the paper was intended.

The hand-made watermarked paper used for the issues of the Grand Duchy of Tuscany came from the Cini paper mill at St. Marcello Pistoiese (for this reason it is called 'hand-use' paper) of good quality, with varying thickness from 0.09 to 0, 12 mm.

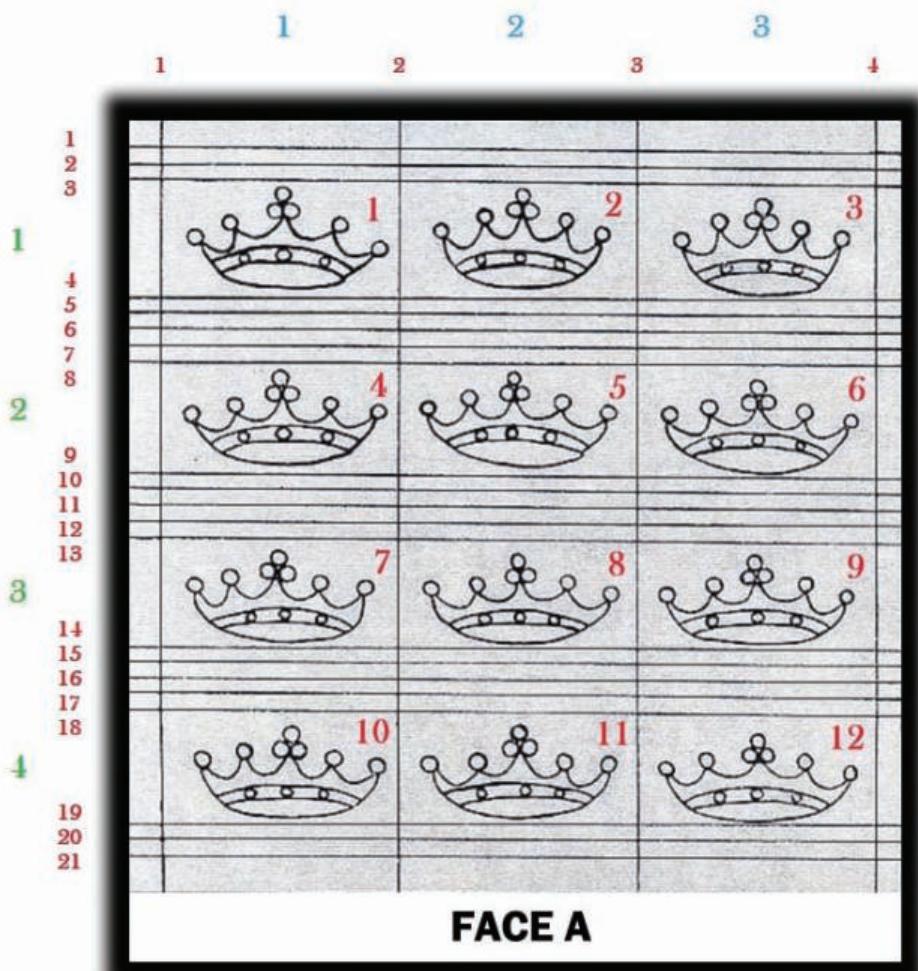
The watermark is not a process subsequent to the manufacture of the paper on which it is applied, as can be, for example, printing, but is born with the paper itself, during its manufacture.

It was decided to print the stamps on watermarked paper to protect against possible forgery. To speed up the process, and also for economic reasons, no new forms were prepared for the security watermark, but the "... (watermarks) forms already used for the manufacture of the paper used by Lucca's stamp duty office and the registry office of the Grand Duchy; the watermark forms in almost pristine conditions were found idle, with various others, in a warehouse of this general administration of the registry, the said forms have some longitudinal lines, well marked, with twelve ducal crowns, regularly distributed on their surface". [from a contemporary document]

In order not to leave too many spaces without watermark, the shape was modified for stamp printing by adding four horizontal lines to the watermark matrix. The 12 crowns are therefore separated from each other by five horizontal lines and a vertical line.

The design (pattern or matrix) of the watermark of the Grand Ducal stamps of Tuscany is shown below. These are twelve stylized crowns arranged in four rows of three crowns each, separated from each other by five straight horizontal lines. Other horizontal lines are arranged three below the last line at the bottom and three above the first line at the top to close the composition. Four other vertical straight lines are drawn, two to close the composition on the left and right and two in the center to separate the three columns of crowns from each other.

The watermark design called **Face A** is what we would have seen on the back of the entire 240-stamp sheet. The twelve crowns, although very similar, are actually all different from each other and in this particularity lies the opportunity of determining the position of a particular stamp that has a fragment of a crown in its watermark. Also for the crowns we proceed to a numbering of the specimens starting from the top left with the number 1 up to the last bottom right with the number 12. Keep in mind that the watermark we are looking at is the back of the sheet.



At printing time, the watermarked sheet could be placed in four different positions (which we can define as positioning modes) with respect to the matrix, depending on the face on which the grooves of the watermark itself are imprinted on the **Recto** (front) or **Verso** (back) and on the orientation of the stamps themselves (**upright or inverted watermark**).

From the above it follows that the watermark can occur in four different situations depending on the side on which the stamp is printed.

Identification of the watermark placement

The four modes are defined as follows:

_Front and Upright (**FD Upr.**): i.e. the grooves of the watermark are visible on the back of the stamp and the crowns are oriented upright,

_Front and Inverted (**FD Inv.**): i.e. the grooves of the watermark are visible on the back of the stamp and the crowns are oriented downwards, i.e. in the opposite direction of the stamps,

_Front and Upright (**FD Upr.**): i.e. the grooves of the watermark are visible on the front of the stamp (on the same face of the paper where the printing took place) and the crowns are oriented upright, i.e. in the same direction as the stamp,

_Front and Inverted (**FC Inv.**): that is, the grooves of the watermark are visible on the front of the stamp and the crowns are oriented downwards, ie in the opposite direction of the stamps.

The first step in determining the position of a particular stamp in the printing plate consists in observing whether the watermark groove is present on the front or on the back of the same. To do this, it is advisable to observe the piece **in grazing light**, in order to more easily identify the "grooves" of the watermark on the surface of the paper.

The second step is to determine if the watermark crowns are oriented in the same direction as the stamps (upward watermark) or in the opposite direction (inverted watermark).

Identification of the positioning in the watermark matrix

The third step consists in determining the position of the stamp on the watermarked sheet and is carried out by comparing the watermark fragment of the stamp visible on the back with the images obtained from the superimposition of the watermark design (watermark matrix or reference overlay) with the frame of the 240 positions (**Plate of positions**), **reversed from left to right**.

This switch is necessary because, as mentioned above, we are looking at the watermark from the not printed side of the sheet.

The appropriate **Reference Overlay** must be identified and used among the four available, according to the mode used for printing, as outlined by the following scheme:

That is, if we are dealing with a **watermark on the back and upright** – in which case we must use the overlay **S01**, in the case of a **watermark on the back and inverted** the overlay **S02**, in the case of a **watermark on the front and upright** the overlay **S03** and in the case of a **watermark on the front and inverted** use overlay **S04**.

Step 1 Position	Step 2 Orientation	Step 3 Position
Back	Upright	S01
Back	Inverted	S02
Front	Upright	S03
Front	Inverted	S04

The four REFERENCE OVERLAYS are S01, S02, S03, S04

On page 178 and 179 we show the four REFERENCE OVERLAYS : S01, S02, S03, and S04

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1																	
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	10
64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	
96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	
112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	
128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	
144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	
160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	
176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	
192	191	190	189	188	187	186	185	184	183	182	181	180	179	178	177	192	191	190	189	188	187	186	185	184	183	182	181	180	179	178	177	
208	207	206	205	204	203	202	201	200	199	198	197	196	195	194	193	208	207	206	205	204	203	202	201	200	199	198	197	196	195	194	193	
224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209	224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209	
240	239	238	237	236	235	234	233	232	231	230	229	228	227	226	225	240	239	238	237	236	235	234	233	232	231	230	229	228	227	226	225	

S01

S02

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3	43	42	41	40	39	38	37	36	35	34	33	48	47	46	45
43	46	45	44	43	42	41	40	39	38	37	36	10	11	12	13
64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113
144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129
9	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145
176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161
192	191	190	189	188	187	186	185	184	183	182	181	180	179	178	177
19	208	207	206	205	204	203	202	201	200	199	198	197	196	195	194
224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209
240	239	238	237	236	235	234	233	232	231	230	229	228	227	226	225

S04

S03

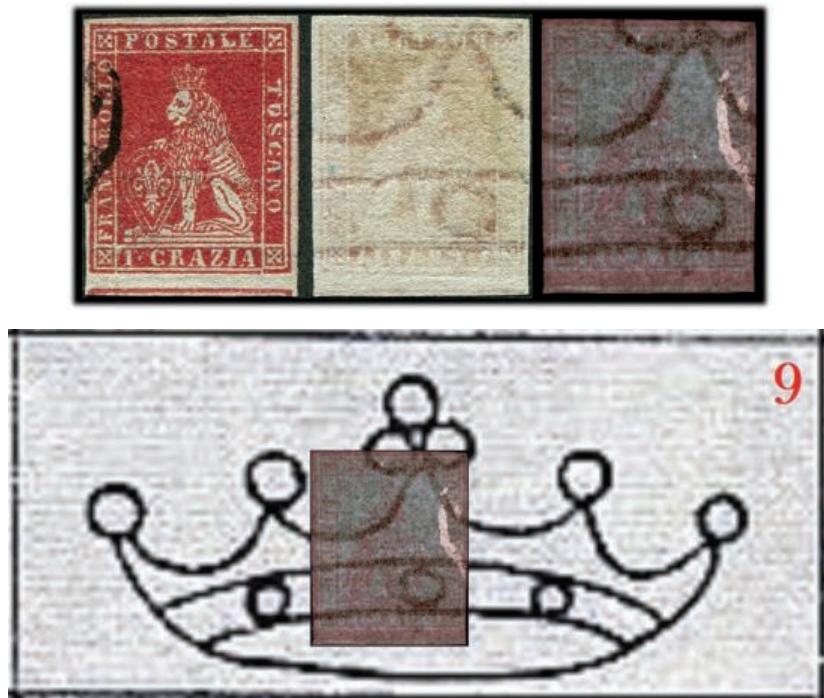
Now let's see four real cases, related to the four possible ways in which the watermark can appear:

Case # 01 – from the back – wmk upright

Step 1: the watermark is on the back

Step 2: The watermark is upright

Step 3: the watermark crown fragment of the 1 crazia stamp can be superimposed on the central part of crown 9.



To place the stamp in the print frame, we need to use the **S01 Overlay**. It is noticeable that the watermark fragment coincides with **position 147**. As can be seen, the overlap is almost never perfectly coincidental as from one print to the next the sheet was not always positioned exactly in the same way of the matrix. Slippages of up to 3-4 millimeters up or down, to the right or to the left with respect to the **Reference Overlays**, are practically always noticed.

16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113
144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129
160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145
176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161
192	191	190	189	188	187	186	185	184	183	182	181	180	179	178	177
208	207	206	205	204	203	202	201	200	199	198	197	196	195	194	193
224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209
240	239	238	237	236	235	234	233	232	231	230	229	228	227	226	225



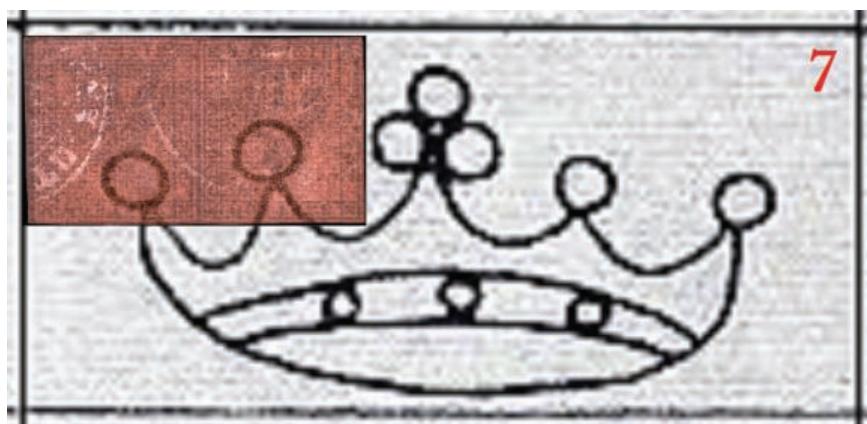


Case # 02 – from the back - wmk inverted

Step 1: the watermark is on the back

Step 2: the watermark is inverted

Step 3: The watermark fragment coincides with the crown 7



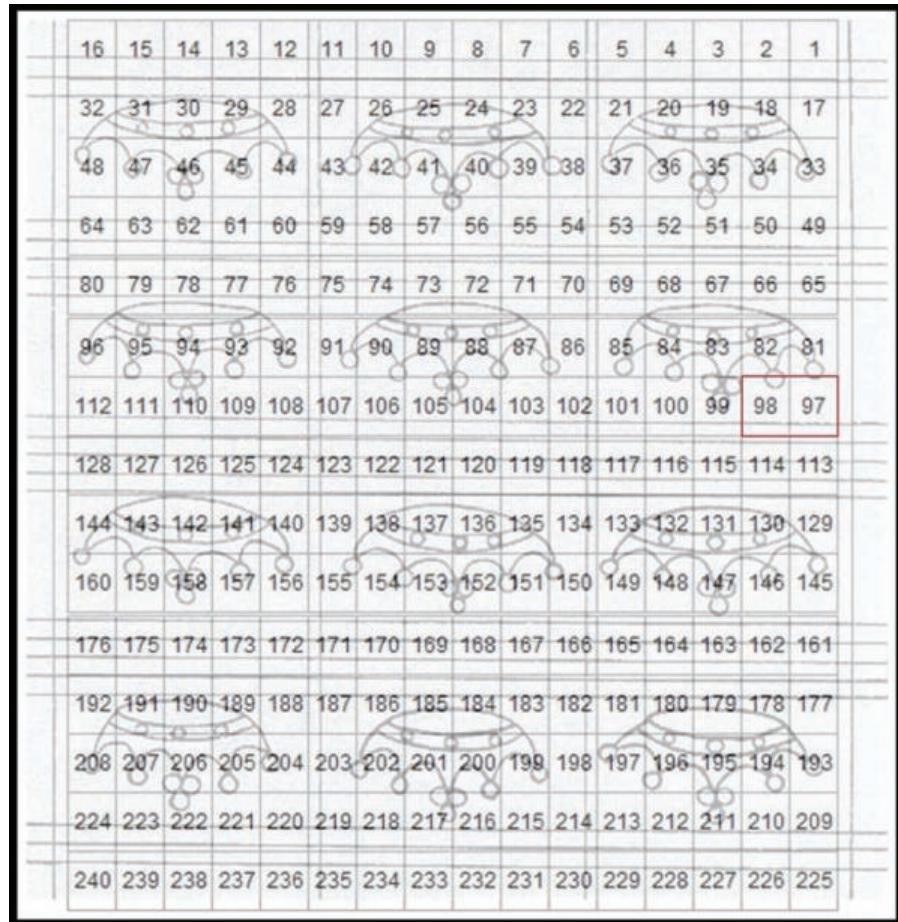
Since the watermark is of the Front-Inverted, the **Overlay S02** must be used to identify the plating position, which allows identifying the numbers **97 and 98 for the pair in question**. It turns out to be a paper edge on the left, as indeed confirmed by the abundant margin of non-printed paper visible to the left of the pair.

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Case # 03 – from the front – wmk upright

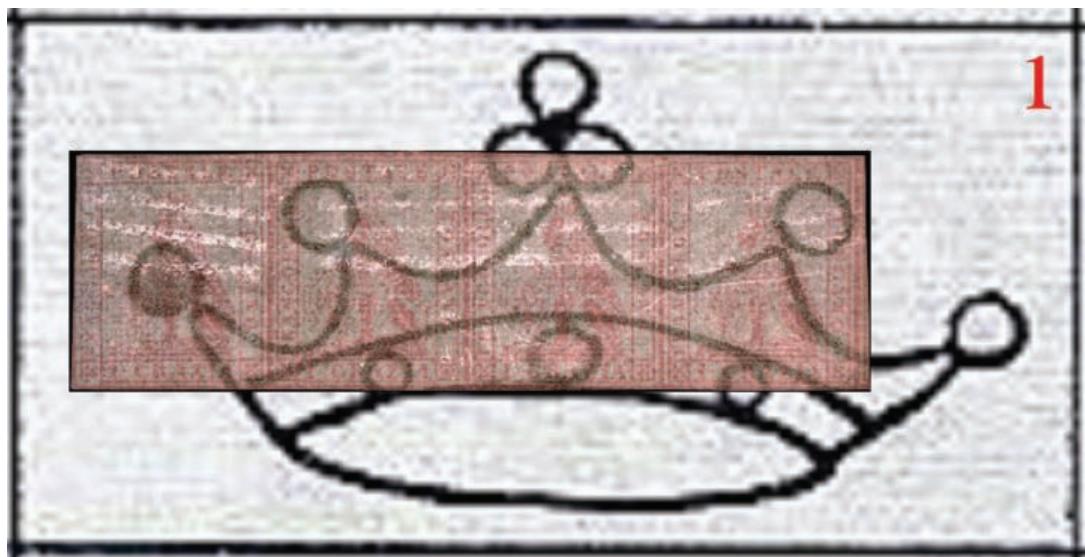
Step 1: the watermark is on the front

Step 2: the watermark is upright

Step 3: the watermark fragment coincides with the **crown 1** as shown by the following image.

The plating positions of the strip are to be found in the **Overlay S03**, which are **33, 34, 35 and 36**, as shown in the following images:





16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113
144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129
160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145
176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161
192	191	190	189	188	187	186	185	184	183	182	181	180	179	178	177
208	207	206	205	204	203	202	201	200	199	198	197	196	195	194	193
224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209
240	239	238	237	236	235	234	233	232	231	230	229	228	227	226	225

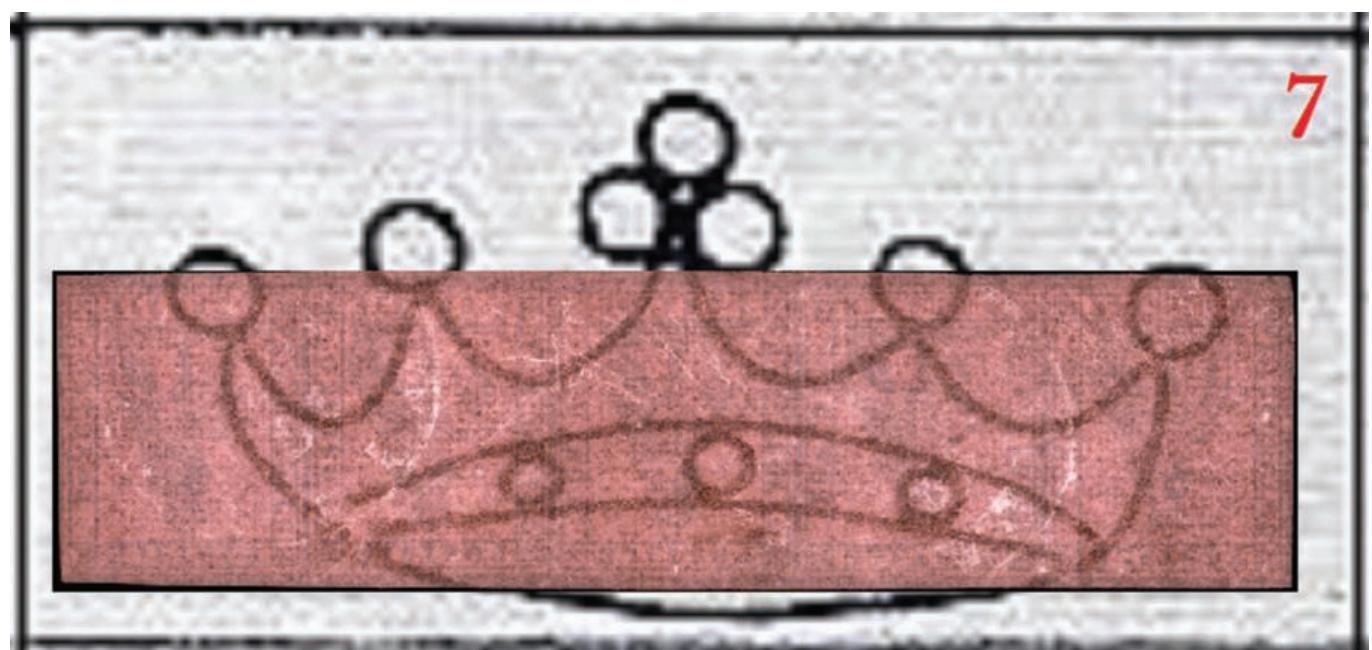
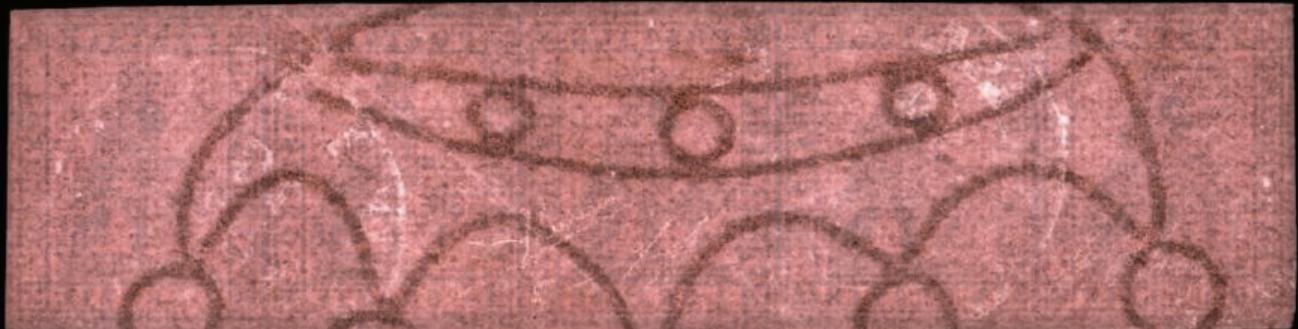
Case # 04 – from the front- wmk inverted

Step 1: the watermark is on the front

Step 2: the watermark is inverted

Step 3: The watermark fragment of the strip corresponds to the **crown 7**.

The plating positions must be searched in the **S04 Overlay** and correspond to **92, 93, 94, 95 and 96** as shown in the next page images:





16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
96 95 94 93 92					91	90	89	88	87	86	85	84	83	82	81
112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113
144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129
160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145
176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161
192	191	190	189	188	187	186	185	184	183	182	181	180	179	178	177
208	207	206	205	204	203	202	201	200	199	198	197	196	195	194	193
224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209
240	239	238	237	236	235	234	233	232	231	230	229	228	227	226	225

The 60 crazie

We now describe the case of the plating of a 60 crazie on a letter, in a mixed franking which includes a 1 crazia postage stamp of the first issue and a 4 crazie postage stamp of the second issue. Let's see how we can identify the position in the print frame of both the 1 crazia stamp and the 60 crazie example.

First let's look in transparency at the watermark from the back, as shown in the next page:

Plating of the 1 crazia stamp (page 186)

Step 1: the watermark is on the front

Step 2: the watermark is inverted

Step 3: The watermark fragment of the strip corresponds to **crown 11, position 41..**

Plating of the 60 crazie stamp (page 187)

Step 1: **The watermark is on the back**

Step 2: **The watermark is upright**

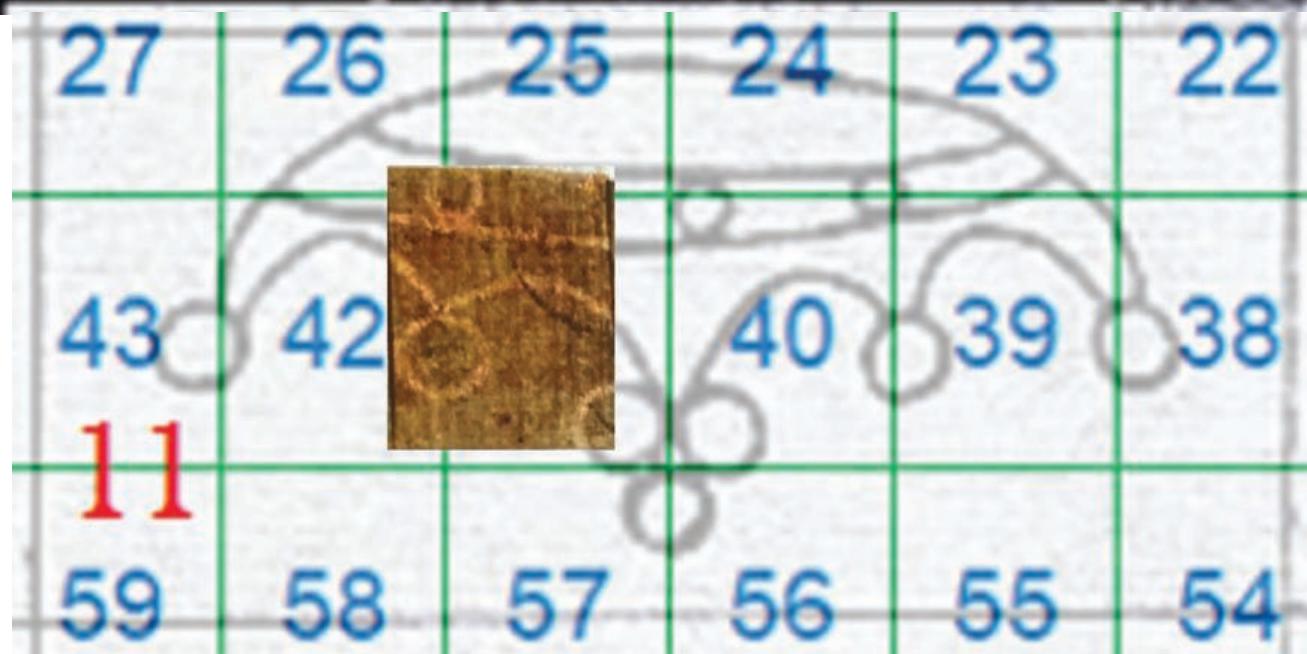
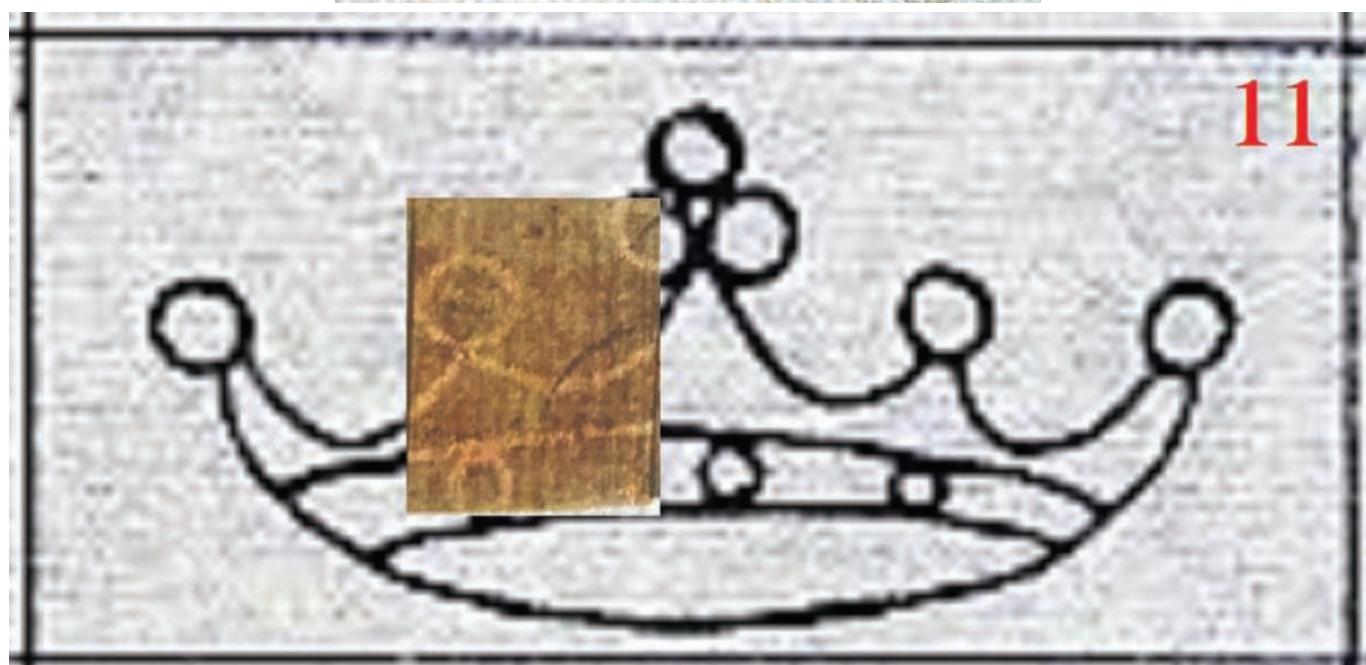
Step 3: The watermark fragment of the strip corresponds to crown 5.

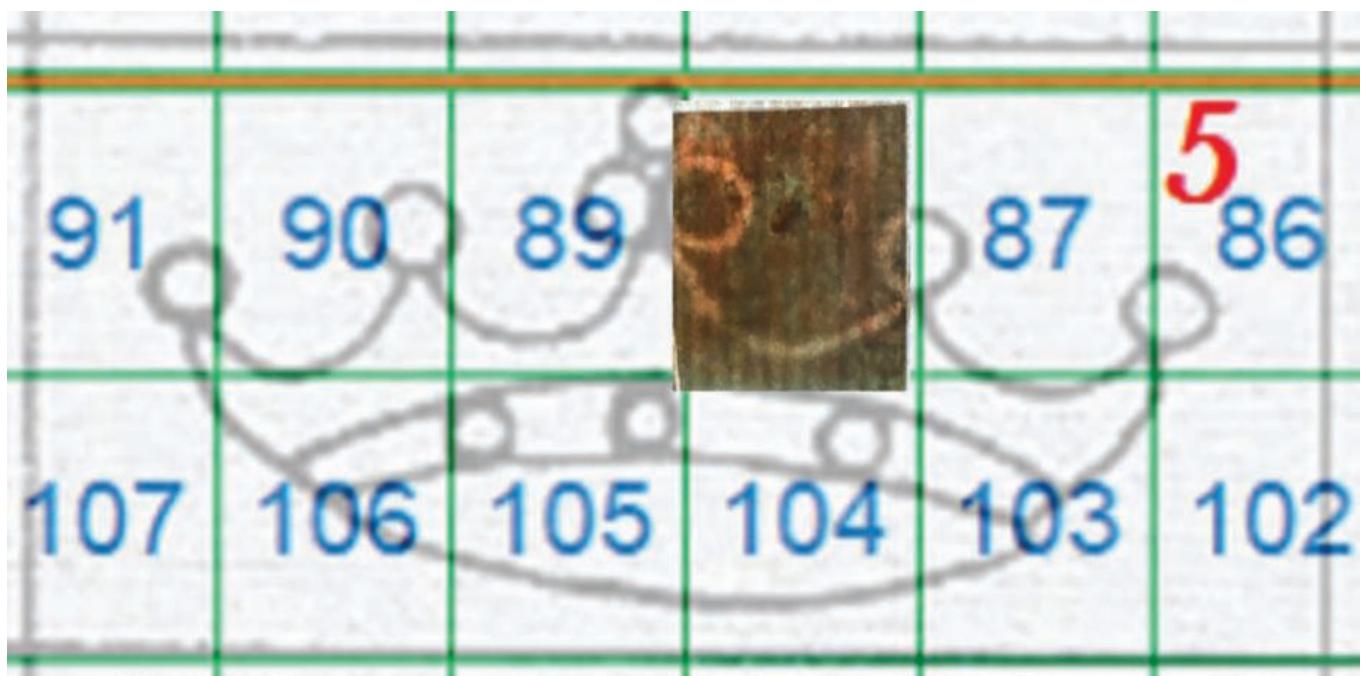
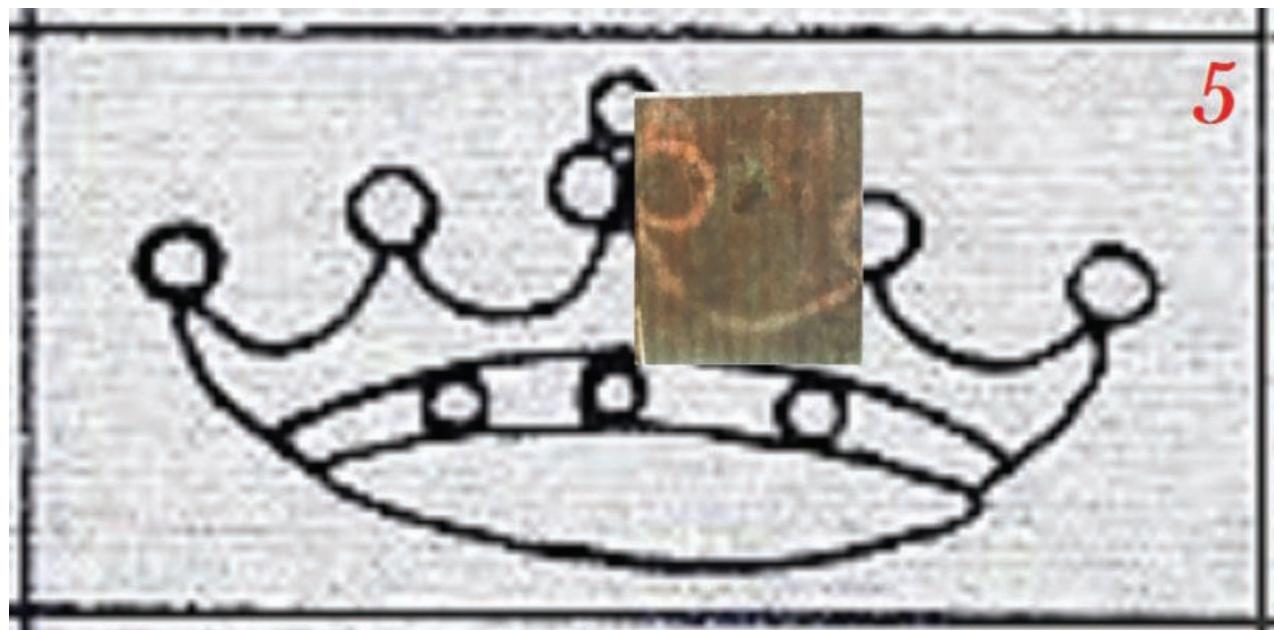
The position must be sought in the **S01 overlay** and corresponds to **plating position 88** as shown in the following images:

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Conclusions

A detailed study of the materials and processes used in the production and issuance of the Grand Duchy of Tuscany postage stamps has ultimately made it possible to determine a method for identifying the position of the stamps of the first issue on the printing plate, thus opening the doors to a reliable plating process.

Once the mode of impression of the specimen on the watermarked sheet has been established (watermark on the front, on the back, upright, inverted), the crown watermark fragment is matched on the corresponding **Reference Overlay**, reliably identifying the position of a given postage stamp in the watermarked sheet.

The detected positions are univocal since the elements of the watermark crowns, apparently similar, are rather different and distinguishable from each other.

Then by superimposing the plate of positions on the Overlay with the matching position, the corresponding number (or plating position) in the print matrix is detected, thus plating the specimen.

An important and innovative result, and a methodology that we are pleased to share as a contribution to the study of the Grand Ducal postage stamps of Tuscany.

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