

# EDGE INSCRIPTION PARTICULARITIES ON SOME ROMANIAN COINS

Cornel Cătălin GAVRILĂ\*

**Abstract:** Minting metal coin, mean to impress a given relief model on both coin faces and also on the edge. Due to the high striking pressure, the round blank material is forced to fill the inner space between dies. In the past, for less coin value, the coin edge remained cylindrical, without any inscription. Following the increased coin value, it was introduced a security feature against forgery; on the coin edge, model could be toothed or inscribed with relief or incuse text logo. Besides the coin edge basic design, a various amount of coin edge variant types are released. In the paper there are studied some particularities on some old Romanian metal coin edge impressed with embossed text and, respectively, with incuse text by punching. There are introduced some general aspects about the coin edge manufacturing and there are also presented some particular examples.

**Keywords:** metal coin, variant, coin edge, embossed letters, incuse letters.

## Introduction

In general, the manufacture of the coin consists in pressing the disc (or blank) in the closed space between the two dies – corresponding to the obverse and the reverse – respectively of the ring (ferrule) on the circumference. In this way, at an adequate pressure, the metal of the disc must completely fill the relief corresponding to the engraving of the dies, creating an item with the desired characteristics<sup>1</sup>.

The edge of the finished coin usually has a cylindrical shape, smooth, serrated or printed with a certain pattern. Depending on the value of the item in question, for the old Romanian coins it was chosen either the simple, smooth edge (for coins with low nominal value), the serrated edge or the one printed with various logos or graphic elements (for coins with a higher value). Introduced both as an element of ornamentation, and especially as a safety element against forgery, over time the edge being inscribed either in relief (embossed) or incus (deepened).

## Romanian coins with the edge imprinted in relief

In Europe, the modern technique of imprinting with embossed inscription of the edge has been used since the beginning of the 19th century, but also during the 20th century, by a number of countries such as England, France, Belgium, Switzerland, on coins made of precious metal, with a high face value<sup>2</sup>.

In Romania, the technique of embossed imprinting of the edge was implemented starting with 1881, for the new silver coins of 5 lei, issued at the National Mint after the proclamation of the kingdom.

\* Transylvania University from Braşov; e-mail: cgavrila11@gmail.com.

<sup>1</sup> Iliescu, Tureac 1987 p. 266.

<sup>2</sup> Currently, among European countries, Switzerland still uses this type of edging for 5 franc coins, after having given it up for several years in favor of the incus (Schön, Schön 2002, p. 463).

These coins followed those from 1880 and 1881, with the title DOMN (ruler), but also to those, also from 1881, with the title REGE (KING). If the obverse, having the title king, had already been changed to the previous series<sup>3</sup>, for the new coins, the reverse was modified (larger coat of arms, without the name of the country above – **fig. 1/a**) and the serrated edge was renounced in favor of the smooth one, inscribed in relief with the motto PATRIA ȘI DREPTUL MEU (my country and my right). This motto inscribed in relief, in various variants, was subsequently used in all coins of 5 lei silver, until 1885, in the coins of 20 lei gold in the years 1883 and 1890, respectively in the coin of 100 lei gold from the jubilee series of 1927 (with the die year 1922)<sup>4</sup>.

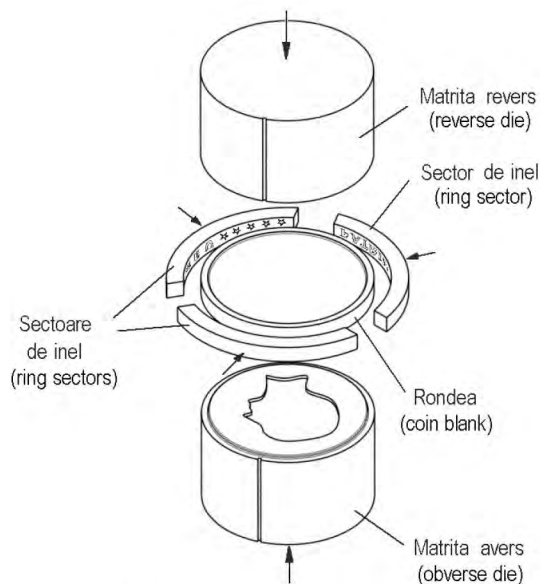


c. The obverse and the reverse



d. The beginning of the logo

**Fig. 1.** 5 lei coin from 1881, edge with relief logo.



**Fig. 2.** Imprinting the edge with the embossed motto.

As a technical peculiarity, the printing of this type of edge was made simultaneously with the actual stamping of the sides of the coin, by means of three ring sectors, theoretically equal, each having engraved the negative of the afferent part (according to the schematic representation in **fig. 2**). The result is an important characteristic of this type of embossed printing: the fixed position in relation to the sides of the coin and thus to elements of their model, which makes it possible to read the edge motto from a clearly determined position of the coin. For the mentioned Romanian coins, the logo is read if the coin is held with the obverse (effigy) above, the beginning of the motto being always positioned near the base of the effigy, as shown in **fig. 1/b**. Small deviations may be attributed to machining accuracy, and other placements may indicate an error or falsehood.

Due to the fragmentation of the ring with the motto in three portions (to allow the output of the finished coin from the mold), there are still visible on the edge<sup>5</sup> also the separation surfaces, as relief dividing lines of the inscription elements.

<sup>3</sup> According to Law no. 1639 from June 22, 1881, published in the Official Gazette no. 71 of 28 June/10 July 1881.

<sup>4</sup> Buzdugan *et alii* 1977, p. 280.

<sup>5</sup> Provided its decent condition, without major damage: strikes, gluing, filing of the material etc.

These lines may have a more pronounced or faded appearance, depending on the moves in the moulds, the knocking force, the wear of the machine, etc.

In **Table 1**, there are presented a series of peculiarities of the inscriptions printed in relief to the mentioned Romanian coins: the number and type of characters, respectively the division by ring sectors. It can be noted that, when dividing the ring, an equal distribution (in reality being approximately equal) of the negatives of the characters, letters or symbols, on each sector was taken into account: 9 characters, letters and stars, except for the inscription with 5 stars at the end, where only 8 characters are present on the 3rd sector of the ring. Only for the 5 lei coin, 1881, the beginning year of the production of coins with an edge inscribed in relief, in literature<sup>6</sup>, the most known variants of this inscription are recorded, according to the type, number of stars or their position. For the rest of the years, the inscription has the same type and the same number of stars.

**Table 1.** Particularities of embossed inscriptions.

Coin	Type of motto. Division of the characters by ring sections			Features, number of characters in the motto	Observations
	Sector 1	Sector 2	Sector 3		
5 lei 1881 and 1882	PATRIA ★ SI	★ DREPTUL ★	MEU ★ ★ ★ ★ ★	Five-pointed stars, at the end, group of 5 stars 26 characters	After PATRIA, the star in the normal position
5 lei 1881	PATRIA * SI				After PATRIA, the star overturned
5 lei 1881, 1883, 1884, 1885 20 lei 1883 and 1890 100 lei 1922	PATRIA ★ SI	★ DREPTUL ★	MEU ★ ★ ★ ★ ★ ★	Five-pointed stars, at the end, group of 6 stars 27 characters	The fifth star in the group, in normal position
5 lei 1881			MEU ★ ★ ★ ★ ★ *		The fifth star in the group, overturned
5 lei 1881	PATRIA ★ SI	★ DREPTUL ★	MEU ★ ★ ★ ★ ★ ★	Six-pointed stars, at the end group of 6 stars 27 characters	-

In **fig. 3**, there are comparatively presented two examples of the motto printed on coins of 5 lei, from 1881 (the inscription of the piece above has 6 stars, the one below 5 stars). One can observe the different arrangement of the characters of the motto, especially those near to the separation lines – closer or farther away from them. Also, the distribution of stars on the third sector of the ring differs: they are farther apart when they are five, or closer, when they are six (visible in **fig. 3/a, c**).



**Fig. 3.** Example of the arrangement of dividing lines between the characters of the motto.

In the case of seemingly identical pieces, from the point of view of the obverse and the reverse, having the motto with the same number and type of characters, they may present variants, as a

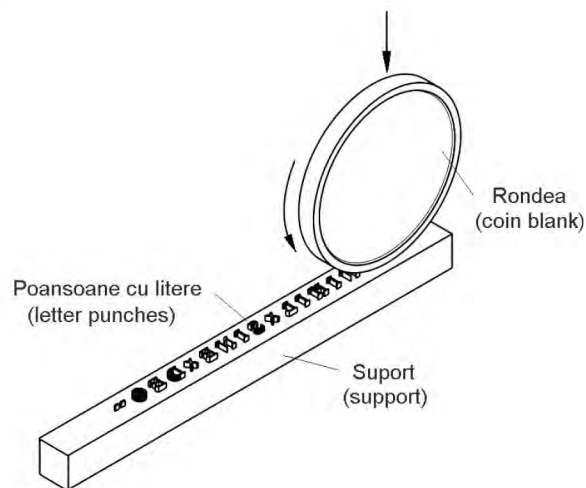
<sup>6</sup> Buzdugan *et alii* 1977, p. 285.

result of the different sets of rings used when stamped. If we also take into account the variants of dies for obverse and reverse, it results in a complex combination of factors that define the actual variants of these coins.

### Romanian coins with incuse imprinted edge

In order to increase the productivity and decrease of the cost price of the metallic coin, the incuse imprinting of the edge (marking) was introduced. Unlike embossed printing, imprinting takes place as a separate operation, on the still un-struck disc, on a specialized machine<sup>7</sup>. The disc rotates on a support containing the punches of the letters and symbols of the motto (according to the schematic representation in **fig. 4**<sup>8</sup>). Due to the applied forces, the letters will be incuse printed on the circumference of the disc<sup>9</sup>. This one, with the imprinted motto, will then randomly go to the press for the actual stamping. As a peculiarity, it results that the motto or the model on the finished piece no longer has any particular position in relation to the sides of the coin or to other design elements on them. The edge motto can be read either by holding the coin either with the obverse up, or with the reverse upwards – in **fig. 5**, it is presented the exemplification of the random positioning of the motto on the edge, at a coin of 500 lei, 1944. Also, the beginning of the motto can be positioned anywhere on the edge, being random. There are authors who number the pieces with incus inscribed edge, and, according to the positioning of the coin in order to read the currency: with the obverse up or the reverse up (catalog number A, respectively catalog number B)<sup>10</sup>. The exception is the symmetrical inscriptions and ornamentations, which cannot give such variants.

Being much more productive, over time, this process was applied on a large scale, both to high-value and to low-value or inflation coins. In Europe, the technique of stamping the edge, as it is now believed, had been used since the 19th century, by a number of countries such as Germany, Austria-Hungary, Italy or Russia, initially on coins made of precious metal, with a high face value. The use of this process has continued throughout the twentieth century, until now.



**Fig. 4.** Imprinting the edge of the disc with the incuse motto.

<sup>7</sup> Ministry of Finance 1945, p. 87.

<sup>8</sup> Gavrilă, Lateș 2021, p. 2.

<sup>9</sup> Incuse imprinting is also called punching (Iliescu, Tureac 1987 p. 266).

<sup>10</sup> In the catalog Euro 4 2007, p. 42: “Tranche A/Tranche B”, with reference to the €2 coin. In Manole 2019, p. 146: variants – “written from right to left”, referring to the 100 lei coin 1991 – 1996.

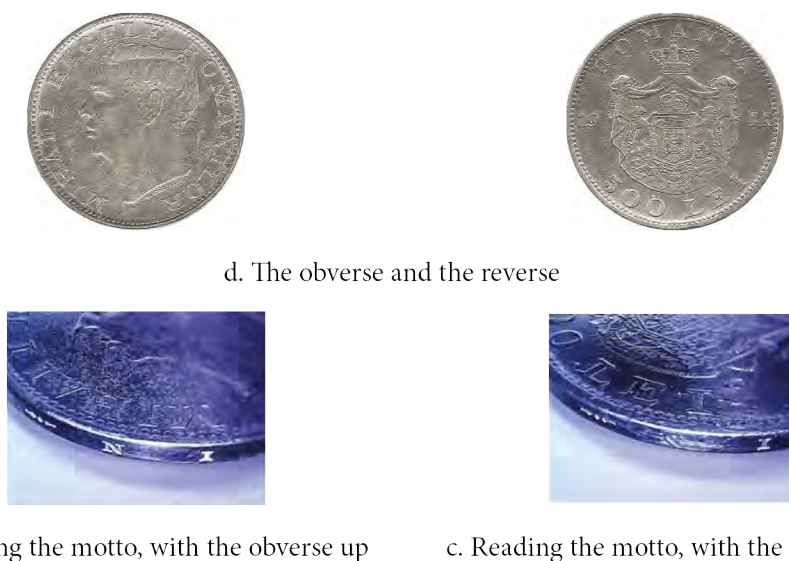


Fig. 5. The coin of 500 lei 1944, edge with incuse motto.

In Romania, the technique of incuse motto on the edge was applied for the first time to the series of coins of 250 lei silver in 1939. It was used in most of the coins manufactured in our country until 1947<sup>11</sup>, being then interrupted and resumed on some post-1989 coins. Table 2 shows the particularities of the inscriptions printed on various coins: types, diameter and number of characters<sup>12</sup>.

An important aspect of the incus imprinting of the edge is the identification of many variants, especially in the case of pieces with large circulations, as a result of using several sets of punches, the possibility of sliding the disc in the device or other causes. Since in many cases the dimensions of the letters are relatively small, these being more difficult to study, a viable criterion for defining the variants is that of the relative positioning of the letters and symbols of the currency on the circumference of the coin. Although they should be positioned equi-unghiularly, it was found that the differences appear in the free space between the character at the end of the motto and the one at the beginning of it – which can be explained by the fact that the linear arrangement of the punches on the support (with a clear beginning and end of the motto) is transposed by rolling on the circumference of the disc and at the closing of the motto, the end gets near the beginning of it. For a certain disc, imprinting a more elongated version of the inscription will decrease the space between the mentioned characters on the circumference, while the imprinting of a shorter inscription variant will increase it.

Next, there will be presented chronologically, for each type of coin, variants of the positioning of the characters of the motto, identified in the studied pieces<sup>13</sup>. There are given, for guidance, the minimum and maximum limits of the concerned distances; between these limits, there are found the variants with intermediate values. Although a large number of pieces have been studied, the possibility of other variants should not be excluded. Moreover, in the absence of a sufficient number of copies, the 1944 golden commemorative piece could not be studied appropriately.

For the coins of 250 lei from 1939 and 1940, the variants of positioning the characters of the motto are defined by the size of the free space between the letter E from NATIUNE and the ornament preceding the word MUNCA, as shown in **fig. 6**. It is worth noting that this is not the

<sup>11</sup> Buzdugan *et alii* 1977, p. 280.

<sup>12</sup> In addition to the diameter of the piece, the number of characters of the motto is an important parameter of the incuse imprinting (Gavrilă, Lateş 2021, p. 5).

<sup>13</sup> For objective reasons, we will no longer insist on the obverse and reverse of the pieces, or on the material, being known pieces (Buzdugan *et alii* 1977).

beginning/end of the motto, defined according to the law. It appears, however, that of the version presented by the report of the National Mint.

**Table 2.** Particularities of the incuse imprinted inscriptions.

Coin	Diame- tre, mm	Incuse motto	Number of characters in the motto	Observa- tions
250 lei 1939 and 1940	30	MUNCA ✠ CREDINTA ☒ REGE ✠ NATIUNE ☒	28	Footnote <sup>*</sup>
250 lei 19 <sup>###</sup> 40 and 1941	30	TOTUL ### PENTRU ### TARA ###	18	-
250 lei ~1941~	30	NIHIL ◆ SINE ◆ DEO ◆	15	-
500 lei 1941	37	✠ ✠ PRIN STATORNICIE LA IZBANDA	25	+ 3 empty spaces <sup>**</sup>
200 lei 1942	24	NIHIL + SINE + DEO ☉	15	-
100 lei 1943 and 1944	28	NIHIL ✕ SINE ✕ DEO ...	15	-
500 lei 1944	32	NIHIL ✕✕ SINE ✕✕ DEO ...	17	-
Ardealul nostru, 1944, (100 lei)	21	NIHIL + SINE + DEO ◆	15	-
2000 lei 1946	24	NIHIL + SINE + DEO ☉	15	-
25000 lei 1946	32	NIHIL ✕✕ SINE ✕✕ DEO ...	17	-
100000 lei 1946	37	NIHIL ★★ SINE ★★ DEO ★★★	19	-
10000 lei 1947	27	NIHIL ✕ SINE ✕ DEO ...	15	<b>Fig. 16</b>
100 lei 1991 – 1996	29	ROMANIA *** ROMANIA *** ROMA- NIA ***	30	-

<sup>\*</sup> In Journal of the Council of Ministers nr. 2366 of 8 August 1939, the motto is defined as REGE ✠ NATIUNE ☒ MUNCA ✠ CREDINTA ☒. In the report of the Ministry of Finance of 1945, (National Mint. Ten Years of Activity, p. 70), the word order is reversed in the form then taken over by other authors, as it is known today.

<sup>\*\*</sup> These, too, occupy a place in the equiangular positioning of the characters of the motto (Gavrila, Lateş 2021, p. 5).



Minimum distance, 3.5 mm  
Maximum distance, 4 mm

**Fig. 6.** Variants of the edge with an incuse motto, for the coins of 250 lei, 1939, 1940.

At the coin of 250 lei 1941, type TPT<sup>14</sup>, the variants are defined by the size of the free space between the last letter of the word TARA and the ornament preceding the word TOTUL, as shown in **fig. 7**.



Minimum distance, 4 mm  
Maximum distance, 4.5 mm

**Fig. 7.** Variants of the edge with an incuse motto, for the 250 lei coin, 1941 TPT.

At the coin of 250 lei 1941, type NSD<sup>15</sup>, the variants are defined by the size of the free space between the letter O from DEO and the ornament preceding the word NIHIL, as shown in **fig. 8**.

<sup>14</sup> Abbreviation for TOTUL PENTRU ȚARĂ, to distinguish between the two 250 lei coins from 1941.

<sup>15</sup> Abbreviation for NIHIL SINE DEO.



Minimum distance, 5.5 mm  
Maximum distance, 6 mm

Fig. 8. Variants of the edge with a currency inscribed at the 250 lei coin, 1941 NSD.

For the 500 lei 1941 coin, the variants are defined by the size of the free space between the ornament preceding the word PRIN and its first letter, as shown in **fig. 9**.



Minimum distance, 4 mm  
Maximum distance, 4.8 mm

Fig. 9. Variants of the edge with an incuse motto, for the 500 lei coin, 1941.

For all the coins issued between 1942 and 1947, the variants of positioning the characters of the motto are defined by the size of the free space between the ornament preceding the word NIHIL and its first letter, as shown in **fig. 10 to 16**. For the coin of 100 lei, 1943–44, the data are presented cumulatively for both years. A large number of variants can be observed for coins with large circulations.



Minimum distance, 3 mm  
Maximum distance, 3.5 mm

Fig. 10. Variants of the edge with an incuse motto, for the 200 lei coin, 1942.



Minimum distance, 3.2 mm  
Maximum distance, 3.8 mm

Fig. 11. Variants of the edge with an incuse motto, for the 100 lei coin, 1943, 1944.



Minimum distance, 2.5 mm  
Maximum distance, 3.2 mm

Fig. 12. Variants of the edge with an incuse motto, for the 500 lei coin, 1944.



Minimum distance, 2.5 mm  
Maximum distance, 4.5 mm

Fig. 13. Variants of the edge with an incuse motto, for the 2000 lei coin, 1946.



Minimum distance, 2.5 mm  
Maximum distance, 3.8 mm

Fig. 14. Variants of the edge with an incuse motto, for the 25000 lei coin, 1946.



Minimum distance, 4.7 mm  
Maximum distance, 5.5 mm

Fig. 15. Variants of the edge with an incuse motto, for the 100000 lei coin, 1946.



Minimum distance, 2 mm  
Maximum distance, 3.5 mm

Fig. 16. Variants of the edge with an incuse motto, for the 10000 lei coin, 1947.

\* If the first 14 characters of the motto are arranged at equal distances, equiangular, the dividing ornament is inserted apparently extra between the letter O for DEO and N for NIHIL, resulting in a much reduced space between them, in relation to the type of inscription and the diameter of the coin.

For the coins of 100 lei 1991 – 1996, the variants are defined by the size of the free space between the ornament preceding the word ROMANIA and its first letter, as presented in **fig. 17** (with an example on pieces from 1993). Distances are shown cumulatively, for all years. Being a repetitive inscription, the beginning/end of the motto, defined by the free space in question, can be identified in one of the three groups of stars and letters, of type ROMANIA \*\*\*.



Minimum distance, 2 mm  
Maximum distance, 4 mm

Fig. 17. Variants of the edge with an incuse motto, for the 100 lei coin, 1991 – 1996.

## Conclusions

Coins with the edge imprinted with the relief motto have an important characteristic, namely its fixed position in relation to the sides of the coin and to the graphic elements of their model; the motto reading is made from a clearly determined position of the coin.

In addition to the already known variants, other versions can also be identified for seemingly identical pieces from the point of view of the obverse and the reverse (having the motto with the same number and type of characters), as a result of the different sets of collars used for stamping. If we also take into account the variants of dies for obverse and reverse, it results in a complex combination of factors that define the actual variants of these coins.

In contrast, for the pieces marked on the edge with the incuse motto, it can be noticed that it no longer has any particular position in relation to the sides of the coin or other design elements



on them. The reading of the motto can be done by holding the coin either with the obverse or with the reverse upwards; the beginning of it can be positioned anywhere on the edge.

Due to the randomness of imprinting of the incuse motto, from a strictly theoretical point of view, countless variants of its positioning can be imagined, but without any practical importance. As has been shown, the focus is given by the position of the motto in relation to the sides of the coin for reading (cataloged in recent years by some authors<sup>16</sup>), by the possible differences of the letters or symbols of the motto (somewhat more difficult to identify, either because of the small size or the interference of errors<sup>17</sup>), respectively by the relative position of the letters and symbols of the motto on the circumference of the coin (with the specification, for orientation, of some minimum and maximum limits on the dimensions of the space between the end and the beginning of the motto).

### Bibliographic abbreviations

Buzdugan <i>et alii</i> 1977	George Buzdugan, Octavian Luchian, Constantin C. Oprescu, <i>Monede și bancnote românești</i> , Editura Sport Turism, București, 1977.
Euro 4 2007	<i>Euro4, Monnaies et Billets</i> , Edition Les Cheval-Lègers Paris, France, 2007.
Gavrilă, Lateș 2021	Cornel Cătălin Gavrilă, Mihai Tiberiu Lateș, <i>3D Modelling and FEM Analysis on Metal Coin Edge Punching Error</i> , IOP Conf. Ser.: Mater. Sci. Eng. 1169 012006, 2021.
Iliescu, Tureac 1987	Constantin Iliescu, Ion Tureac, <i>Tehnologia presării la rece</i> , Editura Universității din Brașov, 1987.
Manole 2019	Mircea Gheorghe Manole, <i>Catalog numismatic. Monedele românești, 1867 – 2019</i> . Euronumisfil, București, 2019.
Ministerul Finanțelor 1945	<i>Monetăria națională. Zece ani de activitate</i> , Monitorul oficial și Imprimeriile statului București, 1945.
Monitorul Oficial 1881	<i>Legea nr. 1639 din 22 iunie 1881</i> , în Monitorul Oficial, nr. 71 din 28 iunie/10 iulie 1881.
Monitorul Oficial 1881	<i>Jurnalul Consiliului de Miniștri nr. 2366 din 8 august 1939</i> , în Monitorul Oficial, nr. 189 din 18 august 1939.
Schön, Schön 2002	Günter Schön, Gerhard Schön, <i>Kleiner Deutscher Münzkatalog</i> , Battenberg, München, 2002.

<sup>16</sup> Euro 4 2007, p. 42; Manole 2019, p. 146.

<sup>17</sup> Gavrilă, Lateș 2021, p. 3.