

# MILLED EDGES AND COUNTERFEIT FLORINS

By J. C. RUDGE

IN December 1964 several newspapers reported a case in which an Edinburgh old age pensioner, by name James Steele (1884–1968), had minted his own money 'to augment his pension'. He had bought strips of the required metal from Imperial Chemical Industries (what metal does not appear to have been reported), and by means of machinery, dies and patterns, made from them 14,144 florins of excellent quality. Indeed, his counsel stated that the only discernible difference from genuine coins was that 'on the milled edge there were two niches fewer',<sup>1</sup> 'two grooves less',<sup>2</sup> 'two mill notches less',<sup>3</sup> 'two less mill nicks on the rim',<sup>4</sup> or was 'the omission of two minute ridges on the edge'.<sup>5</sup> This had been detected by the counterfeit department of the Royal Mint.<sup>6</sup>

The mention of machinery (rather than moulds) points to the likelihood that the method of manufacture was that used in another enterprise of the same James Steele, with Robert Ramsay, from 1927 to 1930—when they were detected through the superabundance of coins bearing the same date. Halfcrowns dated 1920 and 1921 were then made from nickel 'or German silver'; the charge was of having a puncheon, four dies, an electrotyping machine, a rolling machine, an edging machine, a charcoal stove, an annealing box, electro-plating tanks, frames, an hydraulic press, and an ejecting machine . . . 'These misdirected geniuses had perfected what was virtually a miniature Scottish Mint'.<sup>7</sup> In the early nineteen-sixties this remained the only successful case in which counterfeiters had struck pressed sheet metal in the same manner as the Royal Mint.<sup>8</sup>

The excellence of the counterfeits no doubt explains why the discernible difference in 1964 was such a minor detail. Although the reports of the defending counsel's statement vary, they agree on the figure two and leave no doubt that the graining and not the beading is meant; and it occurred to me to ask how many nicks (as I am calling them) there should be on the edge of a florin. My failure to find any public knowledge of this has led into an investigation of milled edges which still continues. It has been represented to me, however, that I could publish such results as have a bearing on another question raised, that is, whether the Royal Mint has used the milled edge to protect the coin not only against clipping but also against counterfeiting. (From a report that Steele had given up minting some time before he was discovered, and that the offence came to light when the police were making a routine visit on another matter,<sup>9</sup> it is clear that he was not actually detected from his counterfeits.) I therefore publish here my findings for florins alone, with an indication of my general conclusions.

My method of counting was to scrape every tenth nick so that it stood out shiny to the naked eye; except that with a clean new piece it was necessary to make, with the tip of a steel scriber, a small pit visible as a black dot in reflected light. The intervals between the marked nicks were checked under the magnification of a jeweller's loupe. From the separate

<sup>1</sup> *Times*, 11 December 1964.

<sup>2</sup> *Sun*, 11 December 1964.

<sup>3</sup> *Daily Express*, 11 December 1964.

<sup>4</sup> *Scotsman*, 11 December 1964.

<sup>5</sup> *Scottish Daily Mail*, 11 December 1964.

<sup>6</sup> *Scottish Daily Mail*, 11 December 1964, and

confirmed to me (orally) by the defending counsel.

<sup>7</sup> *Edinburgh Evening News*, 21 February 1930.

<sup>8</sup> C. R. Josset, *Money in Britain*, 1962, p. 161–2;

cf. G. F. Ansell, *The Royal Mint*, 3rd ed., 1871, p. 64.

<sup>9</sup> *Times*, 11 December 1964.

groups of figures that emerged from the counting an example was marked as a standard, and it was then an easy if tedious task to compare any new coin with a similar standard by keeping the nicks in step while turning the two between the fingers; any displacement of the coins showed up on completing the rotation as a difference of an exact number of nicks. An enormous quantity of coin had to be searched to bring the totals for each date as far as possible up from ten to twenty-five, to a hundred, and even (though I do not publish these) above one hundred pieces where it seemed advisable. To reduce the likelihood of examining the same coins more than once (I expected, however, to be able to recognise them), the £100 bags withdrawn from a local bank were paid in elsewhere.

I discovered that the number of nicks varies not only from year to year but also for coins of the same date with no detectable difference in the dies,<sup>1</sup> and in such quantity that the variants could not be counterfeits. As many as ten varieties of a florin have been found, and twelve varieties of the 1967 halfcrown. The same state of affairs exists over a considerable range of dates on all denominations having milled edges, with the possible exception of crowns and sovereigns; but the extremely limited samples examined allow no firm conclusion to be drawn.<sup>2</sup>

Each figure must represent one or more collars. At first sight such variety is perplexing, but Ansell's description of the manufacture of a collar makes the cause clear (I am assuming that the method has remained the same):

'A piece of flat, soft steel is bored with a hole of the required diameter, and is fixed in a lathe so that it may be made to revolve rapidly at pleasure. While the partly-formed collar is revolving in the lathe, the slide-rest is made to place a kind of cogged wheel, carried on a rod of steel, into the hole which has been bored; by a screw in the slide-rest, the cogged wheel is brought down until it touches the inside of the partly-formed collar; at the moment of contact, the cogged wheel is turned round by the friction of the collar against it, and its continued pressure upon the inside of the collar causes the latter to receive an imprint from the cogged wheel. When the imprinting is complete, the collar is hardened, and it is then fit for use at the coining press. The system of manufacture is supposed to be the most perfect; but it is manifest that no two collars are produced of exactly the same internal diameter; hence the coin issuing from each collar of the same denomination must, as it does, vary in diameter; but this is of small consequence, the difference being so minute that it is not detected unless by very accurate measurement . . .'<sup>3</sup>

The number of nicks, therefore, is determined by the circumference of the hole divided by the intervals between the teeth on the wheel. If this does not at first correspond to a whole number of nicks, the cog-wheel may be expected to chew away the soft steel until it can lock with its own impressions and drive them deeper into the collar. Should it slip past its lock many times, the size of the collar may ultimately exceed whatever tolerance is set by the Mint and be rejected.

A cluster of figures, then, would indicate a 'family' of collars produced by the same slipping cog-wheel;<sup>4</sup> but there is no knowing how extensive such a family might be. My tables suggest

<sup>1</sup> D. L. F. Sealy, however, has published three die varieties of the 1953 florin. *Coins and Medals*, 4(6), June 1967, p. 333.

<sup>2</sup> My figures prove too simple the statement that sixpences dated 1927-30 have 104 serrations and 1931-36, 140 serrations. H. A. Seaby and P. A. Rayner, *The English silver coinage*, 3rd ed., 1968, p. 155.

<sup>3</sup> G. F. Ansell, *The Royal Mint*, 3rd ed., 1871, p. 67.

<sup>4</sup> My figures for halfcrowns suggest that the same tools have been used to cut the collars for these two denominations since the First World War at least; while comparison with the figures for sixpences puts substance in Sir John Craig's statement that 'the peculiar resilience of cupro-nickel in the coining press [was met] by greater fineness in milling which became for all denominations as close as on the sixpence'. *The Mint*, 1953, p. 357.



SILVER FLORINS, 1911-1946

<i>Nicks</i>	138	139	140	141	142	143	144	145	146	147	148		151
1946		96	4										
1945		92	7	1									
1944		95	5										
1943		100											
1942		100											
1941		100											
1940	1	99											
1939		99	1										
1938		83	2	1									
1937		13	2	85									
1936		29	10	61									
1935		12	28	46									
1934													
1933		13	6	5		61		7					
1932								1	1				9
1931					2	1	2	14					59
1930													60
1929	6	1					1	2					90
1928							28	2					70
1927		(NONE FOUND)											
1926							2	8					19
1925				1			1						3
1924				3	18	13							
1923				3	60	24	13						
1922				9	3	45		1	42				
1921								3	95	2			
1920			1					17	80	2			
1919								3					
1918									1	4	2		
1917		(NONE FOUND)											
1916									2		1		
1915								2					
1914			1	1									
1913		(NONE FOUND)											
1912				1		1							
1911						1							

that a family extends to at least five or six different collars; whereas the separate clusters in 1949, for example, would form three families from different cog-wheels. Even a hundred coins, however, is too limited a sample to be expected to reveal more than a small proportion of the collars cut in a year; a sample, moreover, obtained exclusively in West London.<sup>1</sup>

On the second question, therefore, any assumptions about the number of nicks on Steele's counterfeits are very hazardous without a specimen to examine. By good chance, a report



FIG. 1

<sup>1</sup> It should be noted that the single 1965 florin with 212 nicks was obtained from a specimen set.

of an exhibition<sup>1</sup> led me to two of Steele's florins and two dies in the National Museum of Antiquities of Scotland, and by the courtesy of Mr. R. B. K. Stevenson I have been able to examine them; he has also very kindly provided enlarged photographs of details of both faces of the counterfeits and of very clear impressions of their edge.

The die axes are (1) about  $2\frac{1}{2}^{\circ}$  ( $1\frac{1}{2}$  nicks) from the vertical, exactly as on some genuine florins, and (2) nearly  $3\frac{1}{2}^{\circ}$  (2 nicks). Their weights are respectively (1) 173.6 grains, which is within the 0.997 grs. remedy per piece permitted under the Coinage Act of 1946 for the cupro-nickel florin of standard weight 174.545 grs.; and (2) 173.5 grs. Their noticeable shine,



FIG. 2

and a very slight irregularity of surface in the field, might be due to some treatment they have received. I cannot therefore point to any positive discernible difference apart from the edge. However, it has not been possible to examine the metallic composition, structure and density of these museum specimens.

As may be seen from the photographs, the florins, which are dated 1954 and 1955, both have 211 nicks. Since there were only fourteen thousand counterfeits among something of the order of forty million genuine florins bearing those dates, it is not surprising that none has appeared in my investigations.

<sup>1</sup> *Seaby's Coin and Medal Bulletin*, no. 563, May 1965, p. 169.



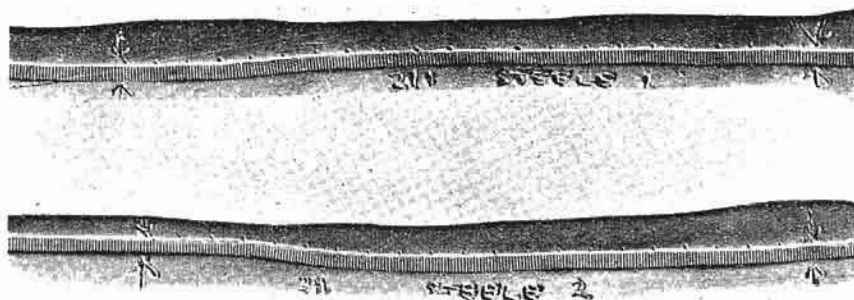


FIG. 3

More to the point, no florins of 1954 or 1955 have been found with 213 nicks; but as indicated above, that is no reason to think they do not exist. The method of making the collar argues that such a figure is possible (it might have been the smallest that the cog-wheel in use at the time could produce); the other figures would be explained by a quite justified understanding that Steele's counterfeits had two nicks fewer than *any* genuine coins; a statement in court ought to be correct. To prove it incorrect it would be necessary to find a genuine coin with 212 nicks or less, or, if any of the counterfeit florins had a number of nicks,  $x$ , greater than 211, a genuine coin with likewise fewer than  $x + 2$  nicks.

The fact that such a definite statement of such a small figure was made in court, on the authority of a body which was itself manufacturing coins with a variety of figures, and which had reported only fifteen years before that the milling of a gold sovereign had 'approximately 105 serrations'<sup>1</sup> (whereas 'approximately two' would have been meaningless), argues that that body is aware of the range of variation. Ansell actually states that, compared with lettered edges, 'The crenated edge . . . is really the best, as admitting of easier detection if counterfeited'.<sup>2</sup> Finally, the question seems to have been answered for gold (over which, however, one expects greater control) in a recent case in Bristol, where counting the number of notches in the milling was one of four tests that the Royal Mint had used to distinguish counterfeits: coins resembling a £5 piece dated 1887 contained gold worth about £20 10s. and were within the permitted weight tolerance, but they had only 181 notches instead of the 183 or 184 [or 183 plus or minus one<sup>3</sup>] on genuine coins.<sup>4</sup>

In conclusion, therefore, I have not proved that the lack of two nicks is the only difference in Steele's counterfeits, but I have shown that they probably are different in this respect; and that there are good grounds for believing that the Royal Mint can and does use the milled edge, even with cupro-nickel, as a security device against counterfeiting.<sup>5</sup>

<sup>1</sup> Royal Mint, *Annual Report*, 1949, p. 37.

<sup>2</sup> G. F. Ansell, *op cit.*, p. 62.

<sup>3</sup> *Coins, Medals & Currency*, 2 (2), 11 May 1968, p. 1, 11.

<sup>4</sup> *Times*, 2 May 1968, 3rd ed., p. 4.

<sup>5</sup> I am indebted to R. H. Thompson, librarian of the Society, for searching the literature, for the publication of my work here, and for its present form.