Large Size
Replacement
National Bank Notes, 1903 - 1920

Another Dimension to Collecting Nationals

Memphis 2013

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This publication is made possible through a grant from the Society of Paper Money Collectors

SOCIETY OF PAPER MONEY COLLECTORS INC.
1961

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Background

Collectors of U.S. paper money are familiar with "star notes," which are used to replace type notes damaged or misprinted during the production process. Star notes have serial numbers that are numbered independently and are not identical to the notes they replaced; therefore, a run of notes containing a star note has an interruption and is non-sequential.

The practice of replacing defective national bank notes with stars was not adopted at the BEP. The OCC determined that it was important to preserve the integrity of serial number sequences. Exact replacements had to be made for deficient sheets.

Before 1903, serial numbers were applied to currency one number at a time. Sheets of national bank notes had matching treasury serials and matching bank serials. The plate letter on a note along with its serial numbers is what made each one unique. On a sheet of four notes, the numbering operator stamped the same treasury serial number four times, advanced the number, and continued with the next sheet. Later, the same process was repeated for the bank serial numbers, which ran in tandem with the treasury serials.

When an error or damaged sheet was discovered, an unnumbered sheet was drawn from the inventory of currency for the appropriate bank and brought to the Numbering Division, and numbered identically to the defective sheet using the same process. The defective sheet was then destroyed.

Around September 1903, the BEP introduced high speed rotary numbering machines that applied all eight serial numbers to a sheet in a single pass. These machines greatly improved the productivity of the Numbering Division.

However, it was found to be counterproductive to use these devices to make a single replacement sheet. The overhead to reset the numbering heads for a single sheet was simply too costly.

Instead, the BEP retained the old, single action numbering machines to make the replacement sheets.

The fonts used on these two kinds of serial number presses were distinctively different. Therefore, we are able to identify notes printed after 1903 that were made as replacements. These notes bear the fonts of the old presses.

The policy of making exact replacements for defective sheets ended about 1920. Thereafter, they were simply canceled on the books, destroyed and not replaced.

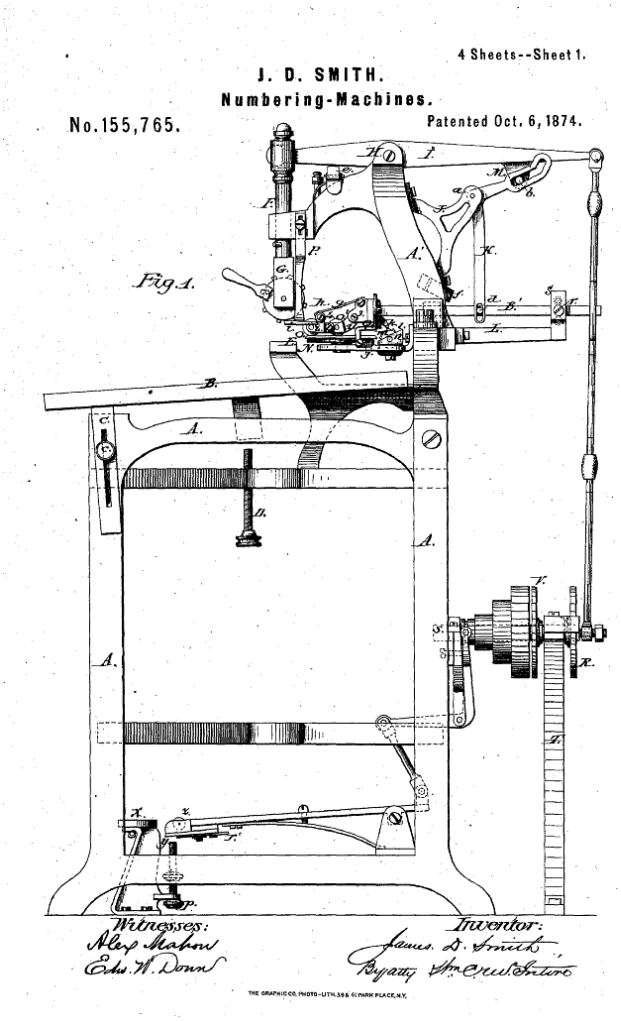


Figure 1. Diagram of a single action numbering machine used at the BEP, designed by BEP employee James D. Smith in 1874.

Figure 2a. An operator feeds uncut sheets of $5 third charter national bank notes into a high speed rotary numbering press.

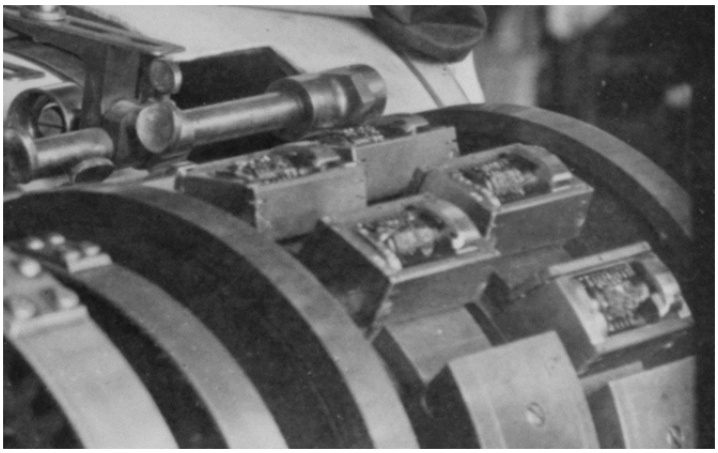


Figure 2c. Close up showing the numbering heads on the outer cylinder. The lower two heads were treasury and bank numbers for the bottom note on the sheet.

Close examination of the photograph indicates that these notes were destined to be Red Seals, likely printed in 1908.

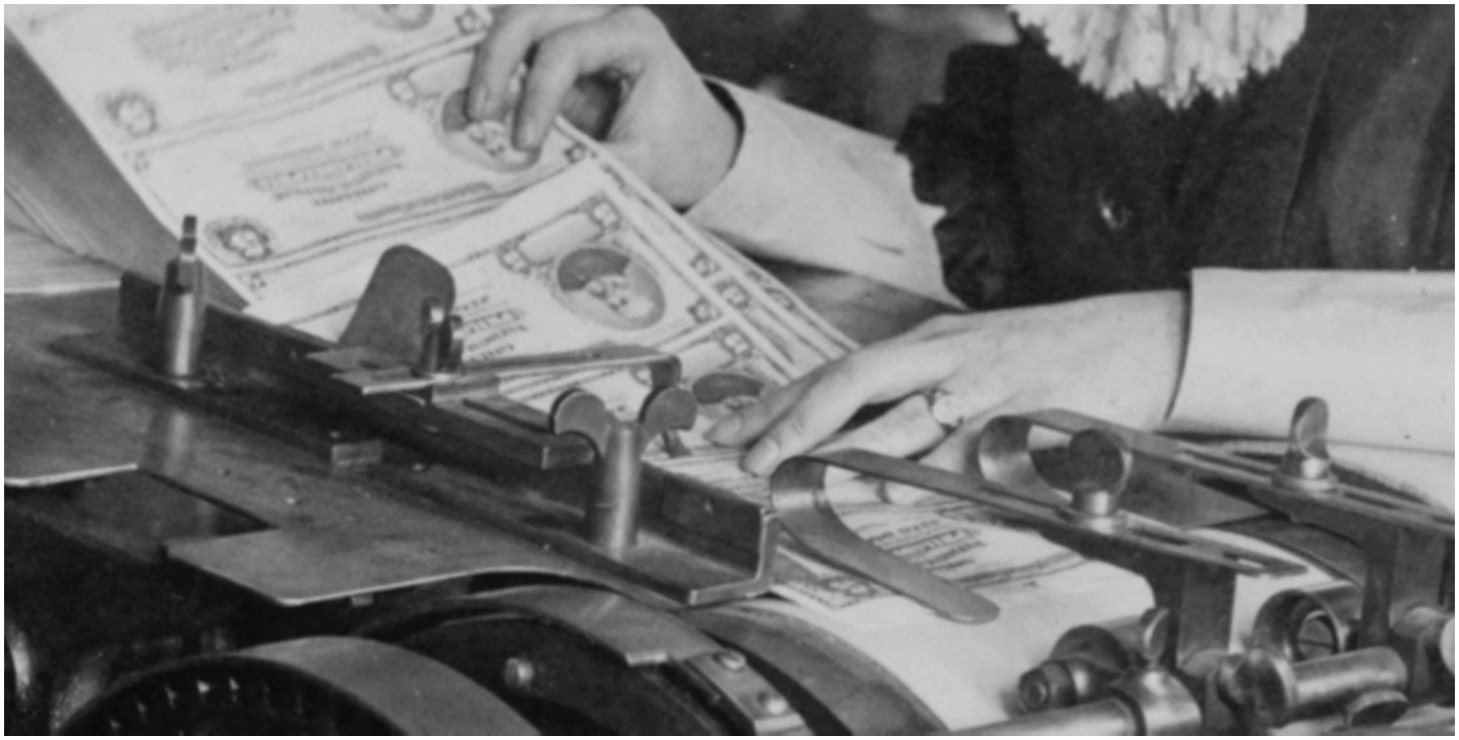


Figure 2b. Close up showing sheets being fed in top-down around a cylinder to receive the serial numbers from an opposing, outer cylinder.

Identification

Refer to the upper line of figure 3 for a sampler of the old style fonts.

National bank notes meeting the following criteria are replacement notes printed after the conversion to new style fonts:

- The note must have serial numbers of the old style.
- The note must be Series of 1882 or Series of 1902.
- The Series of 1882 Brown Backs and Series of 1902 Red Seals must have treasury serial numbers greater than the following:

Plate Layout	Brown Backs	Red Seals
5-5-5-5	H705403H	A530328
10-10-10-10	all qualify	all qualify
10-10-10-20	E538996E	B241777
50-100	B474307	A92661

The above serial numbers approximate the changeover to the new numbering presses. They are based on observation and may change as more notes are reported in the census.

Brown Backs are most easily misdiagnosed, because most were printed before adoption of the high speed presses, and therefore bear the old style serial numbers. Brown Backs without geographic letters can be instantly filtered out from the screening process because these letters were introduced in 1902. The first 18 months of Red Seals were also numbered using the old presses.

The 10-10-10-10 plate combination was introduced for Brown Backs and Red Seals in 1906. Consequently, sheets of these types and this special layout do not require a screening of the treasury serial number.

There is no ambiguity with blue sealed second and third charter notes. All were printed after 1908, so we can categorically say that any such notes found with old style fonts are replacements.

Starting around 1915, the BEP used paging machines or other equipment to apply serial numbers to some replacement notes. The droopy 2 and hunchback 3 are still distinctive, but the 4 resembles the contemporary style, as shown in figure 4.

The latest replacement 1902 Plain Backs that have been observed are a $5 note from the V-D block and a $20 note from the X-D block, both being printed in 1920. A review of all images of $5s, $10s and $20s in the census with notes having an "E" suffix resulted in no hits.

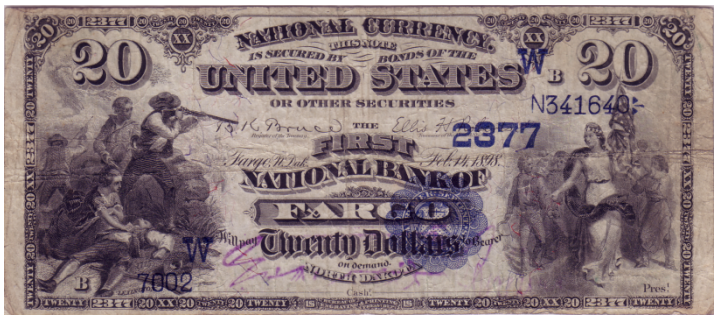
Figure 3. Comparison of the old style fonts from the single action machine (upper line) and the new style fonts from the high speed rotary press (lower line). Old style fonts are more closed in design. Note the distinctive droopy 2, hunchback 3 and long-handled 4.

Figure 4. A treasury serial from a replacement 1902 Plain Back, with a contemporary 4.

Type Set of Large Size Replacement National Bank Notes

1882 Brown Back

1902 Red Seal



1882 Date Back

1902 Date Back

1882 Value Back

1902 Plain Back

Statistics

As of early 2013, a total of 113 large size replacement national bank notes have been observed. These represent notes from 93 different sheets.

Nearly all of these notes were found by screening images from National Bank Note Census and Heritage Archives. Over 10,000 candidates were reviewed. With about 25% of the notes in the census having images, we may infer that the total population of replacements among known national bank notes is about four times the current number, or about 450 notes.

Over 60% of the known replacements are #1 notes. As the first notes to be run through the numbering press, they had a higher likelihood of set up problems such as misalignment or over-inking. These notes were also the most vulnerable to damage due to smudging and poor handling. The BEP and OCC wanted to make sure that bankers had a good first impression when they opened their packages of national bank notes, and therefore replaced those top sheets showing any deficiencies.

In the same way, first-of-run sheets were often found to be unsuitable for use and were replaced. Among the known non #1 replacement notes are bank serials such as 301, 3201, 7751 and 25901, which are from the first sheets of their respective printing runs. Approximately 10% of the non #1 replacements are of this genre.

Apparently a new policy of printing or handling freshly printed national bank notes was implemented around late 1910, because no #1 or first-of-run replacement notes are observed after that date.

By type, the world of large size replacement nationals is somewhat inverted. Rare is common, and common is rare. Series of 1902 Red Seals make up about half of all known replacements. Similarly, about 20% of #1 Red Seals and third charter #1 Date Backs with images in NBNC are replacements.

The ratio of replacements to all notes is considerably lower for non #1 notes, coming in between 0.1% to 0.5% for the various types.

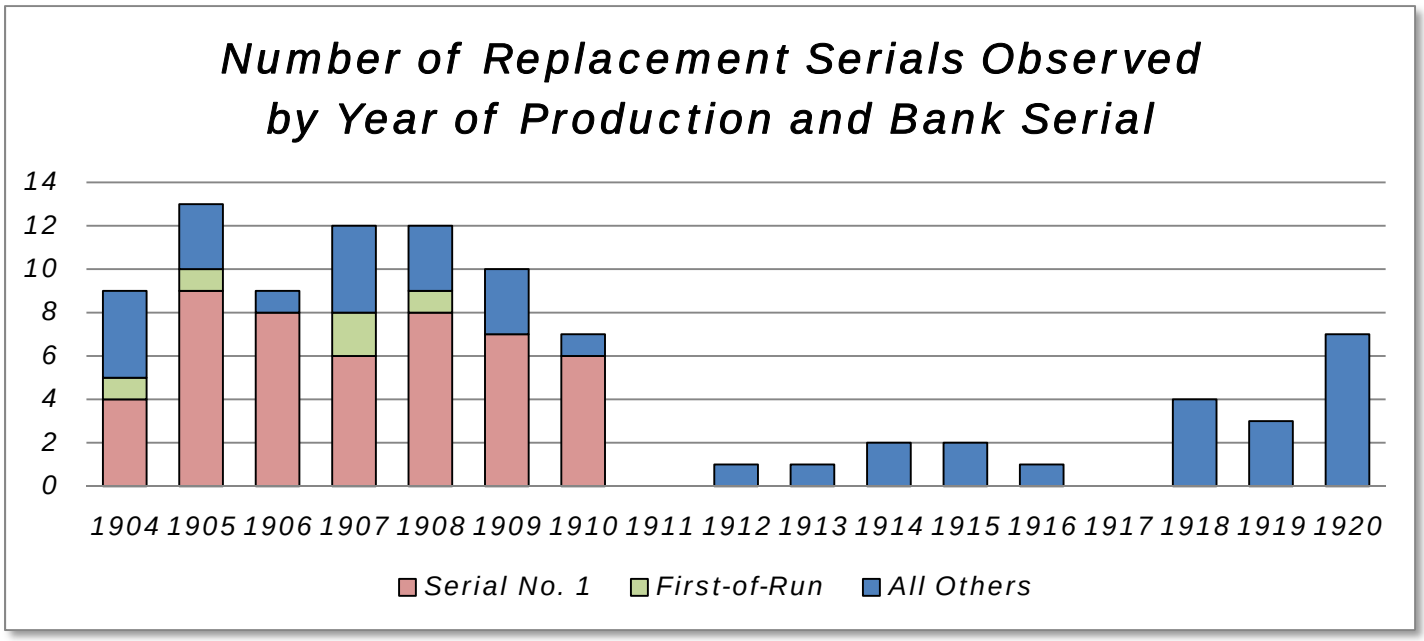
Replacements in the Series of 1882 notes are particularly scarce, in part because so few #1 notes were produced after 1902. For a bank to issue a #1 Brown Back after that date, it must have been chartered before then, and either 1) ordered a new denomination to its portfolio after that date, or 2) experienced a title change that prompted a new printing starting with number one. Similarly, by 1908, most surviving banks chartered before 1902 had converted to Series of 1902 notes, so few issued second charter #1 Date Backs.

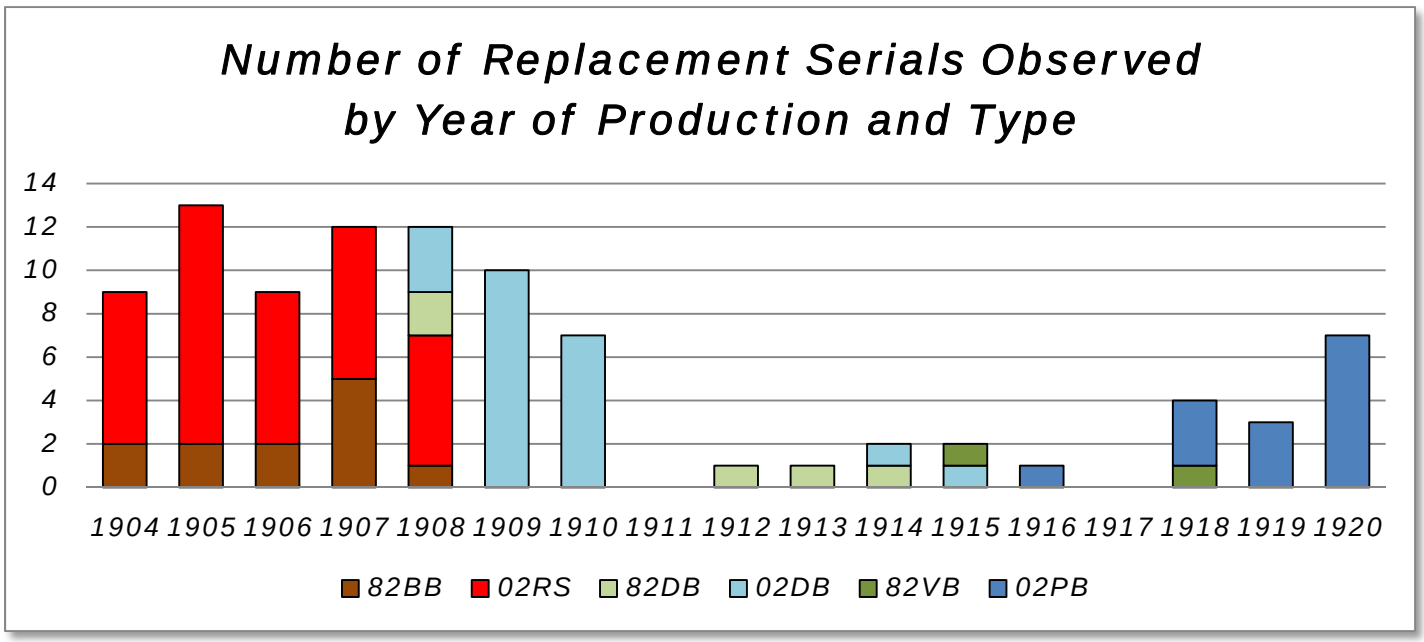
For updated statistics, visit Shawn Hewitt's blog on the SPMC website at https://www.spmc.org/blogs/4

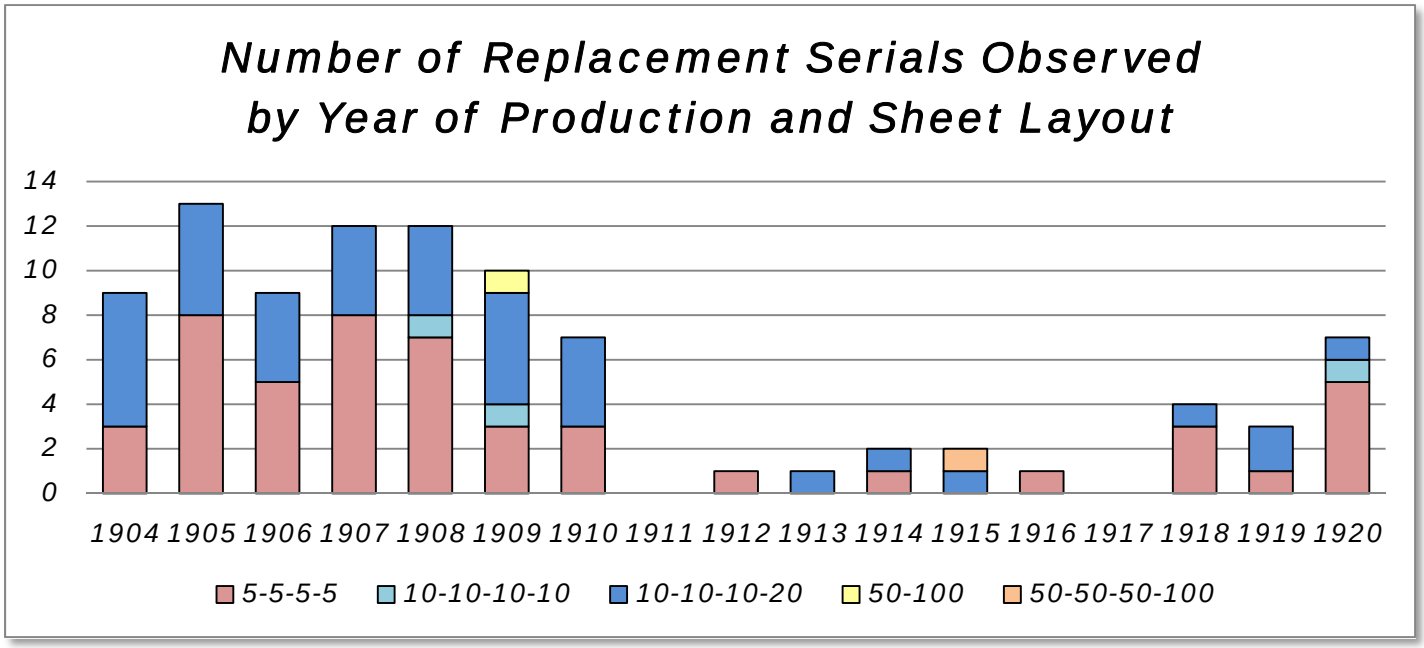
All	$5	$10	$20	$50	$100	Total
82BB	8	3	2	0	0	13
82DB	3	0	2	0	0	5
82VB	1	1	0	0	0	2
02RS	28	19	4	0	0	51
02DB	10	15	1	2	0	28
02PB	9	3	2	0	0	14
Total	59	41	11	2	0	113

Not #1	$5	$10	$20	$50	$100	Total
82BB	4	2	2	0	0	8
82DB	2	0	2	0	0	4
82VB	1	1	0	0	0	2
02RS	7	4	0	0	0	11
02DB	0	3	1	2	0	6
02PB	9	3	2	0	0	14
Total	23	13	7	2	0	45

Figure 5. Tables showing the number of known large size replacement national bank notes. The top table includes #1 notes, whereas the bottom table excludes them.


Number of Replacement Serials Observed
by Year of Production and Bank Serial
14
12
10
8
6
4
2
0
1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920
Serial No. 1
First-of-Run
All Others


Number of Replacement Serials Observed
by Year of Production and Type
14
12
10
8
6
4
2
0
1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920
82BB
02RS
82DB
02DB
82VB
02PB


Number of Replacement Serials Observed
by Year of Production and Sheet Layout
14
12
10
8
6
4
2
0
1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920
5-5-5-5
10-10-10-10
10-10-10-20
50-100
50-50-50-100

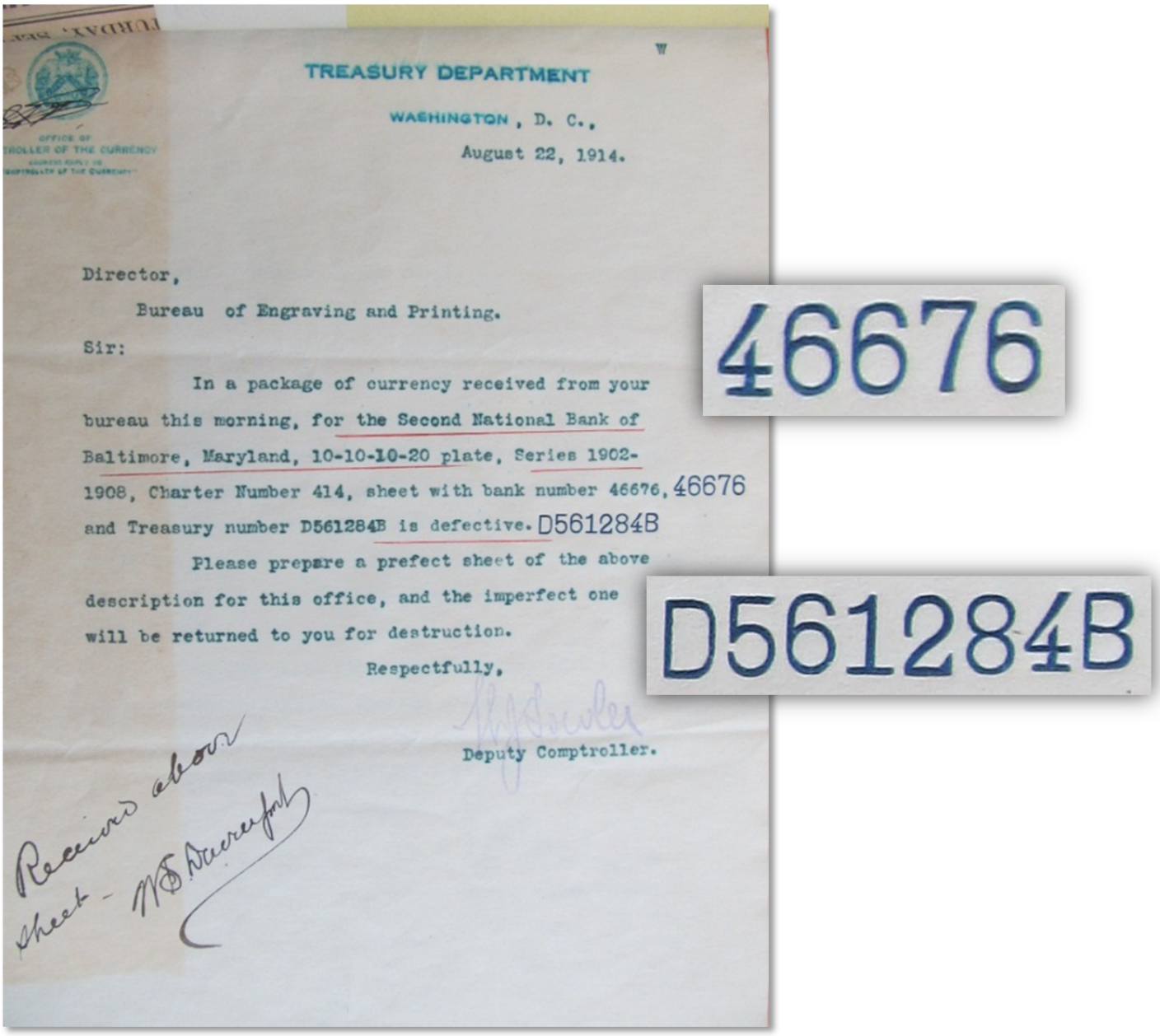


Figure 6. A 1914 letter from the OCC to the BEP requesting a replacement sheet is made for a defective one. The numbering operator stamped test impressions of the replacement numbers on the letter.

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